Public Document Pack

Havering
LONDON BOROUGH

STRATEGIC PLANNING COMMITTEE AGENDA

7.00 pm	Tuesday 3 March 2026	Council Chamber, Town Hall, Main Road, Romford RM1 3BD

Members 6 Quorum 3

COUNCILLORS:

Conservative Group (2)	Havering Residents' Group (3)	Labour Group (1)
Ray Best Timothy Ryan	Reg Whitney (Chairman) Robby Misir (Vice-Chair) John Crowder	Jane Keane

For information about the meeting please contact:
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To register to speak at the meeting please call 01708 433100 before Friday 27 February 2026

Please would all Members and officers attending ensure they sit in their allocated seats as this will enable correct identification of participants on the meeting webcast.

Under the Committee Procedure Rules within the Council's Constitution the Chairman of the meeting may exercise the powers conferred upon the Mayor in relation to the conduct of full Council meetings. As such, should any member of the public interrupt proceedings, the Chairman will warn the person concerned. If they continue to interrupt, the Chairman will order their removal from the meeting room and may adjourn the meeting while this takes place.

Excessive noise and talking should also be kept to a minimum whilst the meeting is in progress in order that the scheduled business may proceed as planned.

Protocol for members of the public wishing to report on meetings of the London Borough of Havering

Members of the public are entitled to report on meetings of Council, Committees and Cabinet, except in circumstances where the public have been excluded as permitted by law.

Reporting means:-

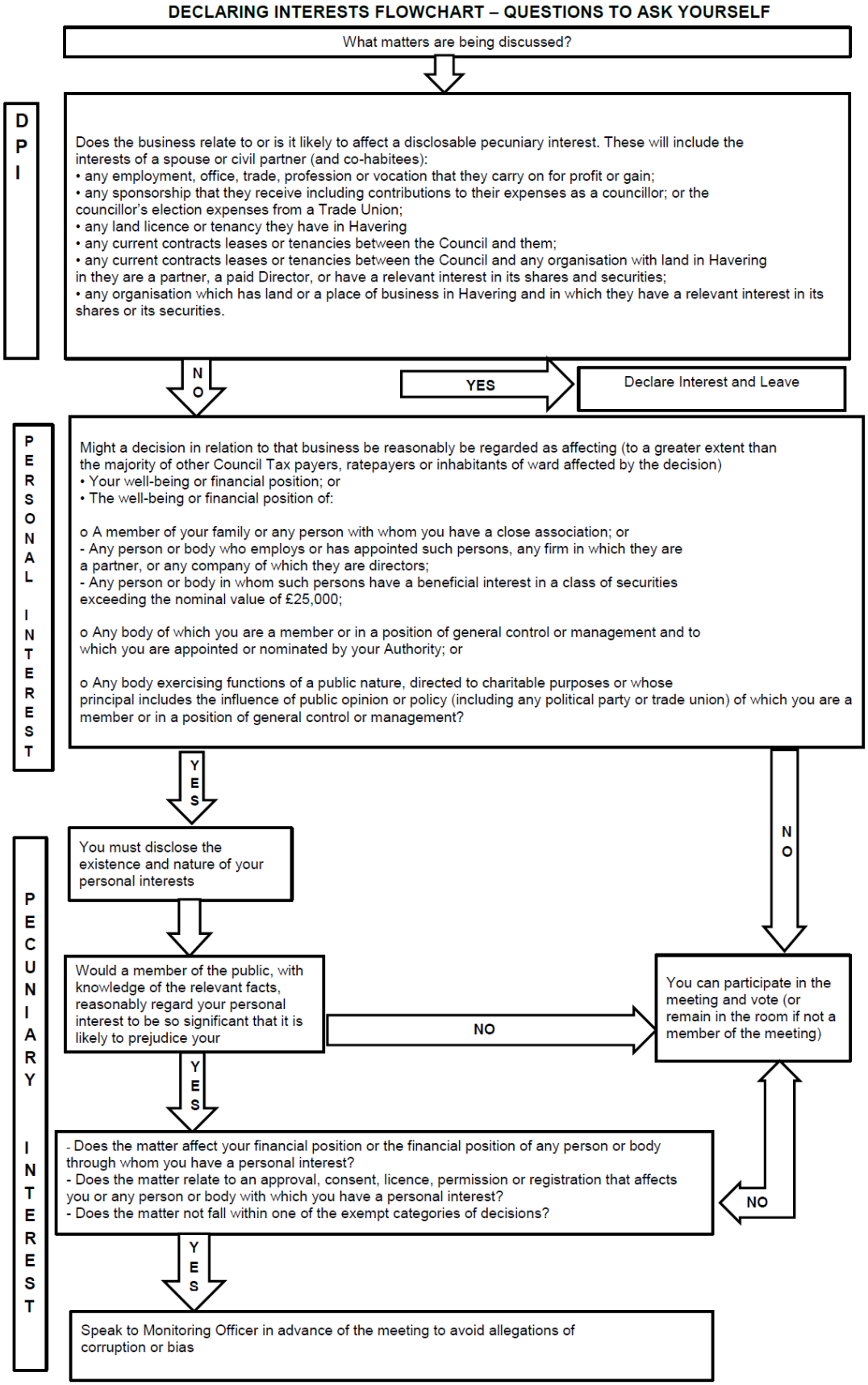
- filming, photographing or making an audio recording of the proceedings of the meeting;
- using any other means for enabling persons not present to see or hear proceedings at a meeting as it takes place or later; or
- reporting or providing commentary on proceedings at a meeting, orally or in writing, so that the report or commentary is available as the meeting takes place or later if the person is not present.

Anyone present at a meeting as it takes place is not permitted to carry out an oral commentary or report. This is to prevent the business of the meeting being disrupted.

Anyone attending a meeting is asked to advise Democratic Services staff on 01708 433076 that they wish to report on the meeting and how they wish to do so. This is to enable employees to guide anyone choosing to report on proceedings to an appropriate place from which to be able to report effectively.

Members of the public are asked to remain seated throughout the meeting as standing up and walking around could distract from the business in hand.

Strategic Planning Committee, 3 March 2026



Principles of conduct in public office

In accordance with the provisions of the Localism Act 2011, when acting in the capacity of a Member, they are committed to behaving in a manner that is consistent with the following principles to achieve best value for the Borough's residents and to maintain public confidence in the Council.

SELFLESSNESS: Holders of public office should act solely in terms of the public interest. They should not do so in order to gain financial or other material benefits for themselves, their family, or their friends.

INTEGRITY: Holders of public office should not place themselves under any financial or other obligation to outside individuals or organisations that might seek to influence them in the performance of their official duties.

OBJECTIVITY: In carrying out public business, including making public appointments, awarding contracts, or recommending individuals for rewards and benefits, holders of public office should make choices on merit.

ACCOUNTABILITY: Holders of public office are accountable for their decisions and actions to the public and must submit themselves to whatever scrutiny is appropriate to their office.

OPENNESS: Holders of public office should be as open as possible about all the decisions and actions that they take. They should give reasons for their decisions and restrict information only when the wider public interest clearly demands.

HONESTY: Holders of public office have a duty to declare any private interests relating to their public duties and to take steps to resolve any conflicts arising in a way that protects the public interest.

LEADERSHIP: Holders of public office should promote and support these principles by leadership and example.

AGENDA ITEMS

1 CHAIR'S ANNOUNCEMENTS

The Chairman will make his announcements.

Applications for Decision

I would like to remind members of the public that Councillors have to make decisions on planning applications strictly in accordance with planning principles.

I would also like to remind members of the public that decisions may not always be popular, but they should respect the need for Councillors to take decisions that will stand up to external scrutiny or accountability.

2 APOLOGIES FOR ABSENCE AND ANNOUNCEMENT OF SUBSTITUTE MEMBERS

(if any) - receive.

3 DISCLOSURE OF INTERESTS

Members are invited to disclose any interest in any of the items on the agenda at this point in the meeting.

Members may still disclose any interest in an item at any time prior to the consideration of the matter.

4 APPLICATIONS FOR DECISION (Pages 7 - 10)

5 LAND NORTH OF FEN LANE, NORTH OCKENDON (Pages 11 - 822)

Appendices 1-9 are published in full within the committee agenda pack, with a link provided for completeness.

Appendices 10-24 are only included as links. Links are available at the end of the committee report.

Zena Smith
Head of Committee and Election Services

Agenda Item 5

Applications for Decision

Introduction

1. In this part of the agenda are reports on Strategic Planning applications for determination by the committee.

2. Although the reports are set out in order on the agenda, the Chair may reorder the agenda on the night. Therefore, if you wish to be present for a specific application, you need to be at the meeting from the beginning.

3. The following information and advice only applies to reports in this part of the agenda.

Advice to Members

Material planning considerations

4. The Committee is required to consider planning applications against the development plan and other material planning considerations.

5. The development plan for Havering comprises the following documents:

   - London Plan Adopted March 2021
   - Havering Local Plan 2016 – 2031(2021)
   - Site Specific Allocations (2008)
   - Site Specific Allocations in the Romford Area Action Plan (2008)
   - Joint Waste Development Plan (2012)

6. Decisions must be taken in accordance with section 70(2) of the Town and Country Planning Act 1990 and section 38(6) of the Planning and Compulsory Purchase Act 2004. Section 70(2) of the Town and Country Planning Act 1990 requires the Committee to have regard to the provisions of the Development Plan, so far as material to the application; any local finance considerations, so far as material to the application; and any other material considerations. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires the Committee to make its determination in accordance with the Development Plan unless material planning considerations support a different decision being taken.

7. Under Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990, in considering whether to grant planning permission for development which affects listed buildings or their settings, the local planning authority must have special regard to the desirability of preserving the building or its setting or any features of architectural or historic interest it possesses.

8. Under Section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990, in considering whether to grant planning permission for development which affects a conservation area, the local planning authority must pay special

attention to the desirability of preserving or enhancing the character or appearance of the conservation area.

9. Under Section 197 of the Town and Country Planning Act 1990, in considering whether to grant planning permission for any development, the local planning authority must ensure, whenever it is appropriate, that adequate provision is made, by the imposition of conditions, for the preservation or planting of trees.

10. In accordance with Article 35 of the Development Management Procedure Order 2015, Members are invited to agree the recommendations set out in the reports, which have been made based on the analysis of the scheme set out in each report. This analysis has been undertaken on the balance of the policies and any other material considerations set out in the individual reports.

Non-material considerations

11. Members are reminded that other areas of legislation cover many aspects of the development process and therefore do not need to be considered as part of determining a planning application. The most common examples are:

- Building Regulations deal with structural integrity of buildings, the physical performance of buildings in terms of their consumption of energy, means of escape in case of fire, access to buildings by the Fire Brigade to fight fires etc.
- Works within the highway are controlled by Highways Legislation.
- Environmental Health covers a range of issues including public nuisance, food safety, licensing, pollution control etc.
- Works on or close to the boundary are covered by the Party Wall Act.
- Covenants and private rights over land are enforced separately from planning and should not be considered.

Local financial considerations

12. In accordance with Policy 6.5 of the London Plan (2015) the Mayor of London has introduced a London wide Community Infrastructure Levy (CIL) to fund CrossRail.

13. Other forms of necessary infrastructure (as defined in the CIL Regulations) and any mitigation of the development that is necessary will be secured through a section106 agreement. Where these are necessary, it will be explained and specified in the agenda reports.

Public speaking and running order

14. The Council's Constitution allows for public speaking on these items in accordance with the Constitution and the Chair's discretion.

15. The items on this part of the agenda will run as follows where there are registered public speakers:

a. Officer introduction of the development
b. Registered Objector(s) speaking slot (5 minutes)
c. Responding Applicant speaking slot (5 minutes)
d. Ward Councillor(s) speaking slots (5 minutes)
e. Officer presentation of the material planning considerations
f. Committee questions and debate
g. Committee decision

16. The items on this part of the agenda will run as follows where there are no public speakers:

a. Where requested by the Chairman, officer presentation of the main issues
b. Committee questions and debate
c. Committee decision

Late information

17. Any relevant material received since the publication of this part of the agenda, concerning items on it, will be reported to the Committee in the Update Report.

Recommendation

18. The Committee to take any decisions recommended in the attached report(s).

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Strategic Planning Committee

3 March 2026

Location:	**Land north of Fen Lane, North Ockendon**
Ward:	**Upminster**
Description:	**East Havering Data Centre Campus Draft Local Development Order**

1. SUMMARY

1.1 This report seeks approval from the Strategic Planning Committee ("the Committee") to publicly consult on the East Havering Data Centre Campus Draft Local Development Order ("draft LDO"), Statement of Reasons (SoR) Environmental Statement (ES) and associated documents in accordance with statutory requirements.

2. RECOMMENDATIONS

2.1 For the reasons set out in this report and its appendices, the Committee resolves to:

1. Agree the publication of the East Havering Data Centre Campus Draft Local Development Order, Statement of Reasons and associated documents (as listed in paragraph 12.1 of this report) for consultation pursuant to Article 38 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended); and

2. Agree the publication of the East Havering Data Centre Campus Environmental Statement and Non Technical Summary of the Environmental Statement ("the NTS") for consultation pursuant to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

3. BACKGROUND

3.1 Digital Reef London Ltd ("Digital Reef"), a private sector developer gave an initial presentation to The Committee in April 2023 to introduce their proposals for a data centre campus on land in the east of the borough. Subsequent briefings and updates were presented to The Committee by officers in June 2023, September 2023 and May 2024. Committee Member site visits, led by Officers, took place in March and July 2024.

3.2 The Committee has previously been advised that there are a number of potential planning routes through which the proposal could be considered and in September 2023, Local Planning Authority (LPA) Officers confirmed that the making of a Local Development Order (LDO) was being explored.

3.3 A LDO is a legally binding document which grants planning permission for specified types of development in defined locations. The power to make an LDO rests with the Council in its capacity as Local Planning Authority, under the provisions contained in the Town and Country Planning Act 1990, as amended.

3.4 Once adopted an LDO removes the need for a planning application to be made by a developer or landowner. In effect, the permission is granted upfront by the making of the LDO, subject to any limitations and conditions that are included.

3.5 The process for making a LDO is set out in articles 38 and 41 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended) and includes:

i. LDO preparation: the LPA prepares a draft of the Local Development Order and a Statement of Reasons and other supporting documents.

ii. Consultation: the LPA is required to publicly consult on the draft Local Development Order and Statement of Reasons.

iii. Consideration of representations: the LPA must take into account the responses received and determine whether any modifications should be made or whether the LDO should be adopted.

iv. Adoption: The LDO is formally made by the LPA through a resolution to do so. The LDO and Statement of Reasons is sent to the Secretary of State and is placed on the Planning Register.

3.6 Further to the most recent briefing to the Committee in May 2024, a significant amount of technical assessment and document preparation has been

undertaken by LPA Officers and specialist consultant team. The work has now progressed to the point whereby authority is being sought from the Committee to launch statutory public consultation.

4. SUMMARY OF PROPOSED DEVELOPMENT

4.1 The proposed development would consist of up to 400,000 m2 of gross external area (GEA) comprising the following:

1. Erection of buildings up to a maximum of 400,000 m^2 (GEA) including the following:

    a. Data centre uses up to 340,000 m^2;
    b. Indoor horticulture of 50,000 m^2;
    c. Visitor centre up to 600 m^2 (and no less than 300 m^2);
    d. District heating centre up to 3,300 m^2;
    e. Campus management facilities up to 2,700 m^2; and
    f. Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2.

2. Installation of electrical infrastructure and associated plant equipment to serve the proposed development.

3. Creation of an ecology park.

4. Any operations or engineering works necessary to enable the delivery of the proposed development including the following:

    a. Excavation and earthworks (e.g. ‘cut and fill’);
    b. Formation of compounds for the stockpiling and sorting of excavated materials;
    c. Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
    d. Creation of estate roads and associated infrastructure for access for all modes of transport;
    e. Site security measures including fencing, gates and gate houses;
    f. Works to install underground services and utilities;
    g. Provision of temporary site offices and welfare facilities; and
    h. Highway works on Fen Lane and Ockendon Road.

5. SITE AND SURROUNDINGS

Site Location

5.1 The site is located within the Metropolitan Green Belt in an area of open agricultural land to the northeast of the village of North Ockendon, approximately 4.5km to the east of Upminster.

5.2 The administrative boundary of Thurrock Council adjoins the site to the east and south. The boundary with Brentwood Borough lies approximately 1.4km to the north.

5.3 The site has direct access to Fen Lane to the south which connects to Junction 29 of the M25 via the B186/B187 and the A127. The A127 is approximately 1.9km to the north of the site boundary. Junction 30 of the M25 can be accessed via the B186, the A1306 (Arterial Road North Stifford), approximately 5.5km south, and the A126. The M25 is to the west of the site at a distance of 900m at its closest point.

5.4 The site location and proposed site boundary are shown in Figures 1 and 2 below.

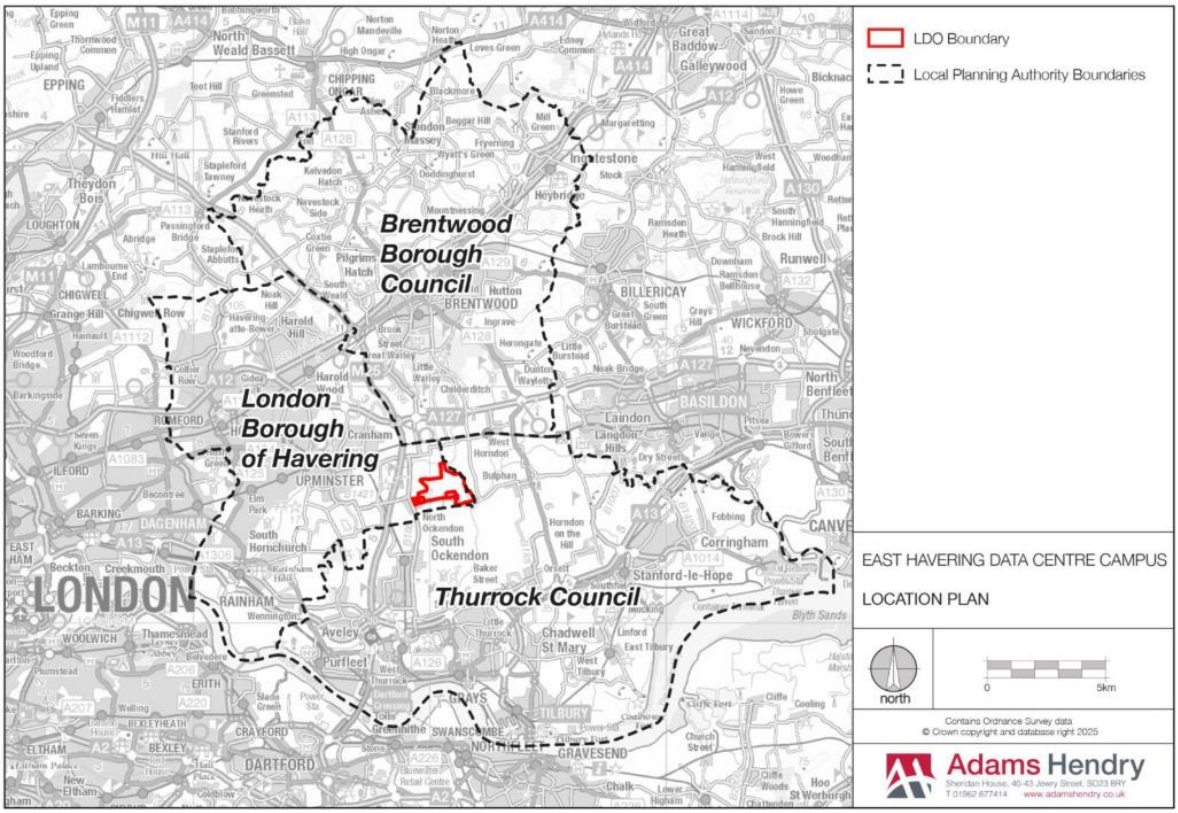


Figure 1: Site Location Plan

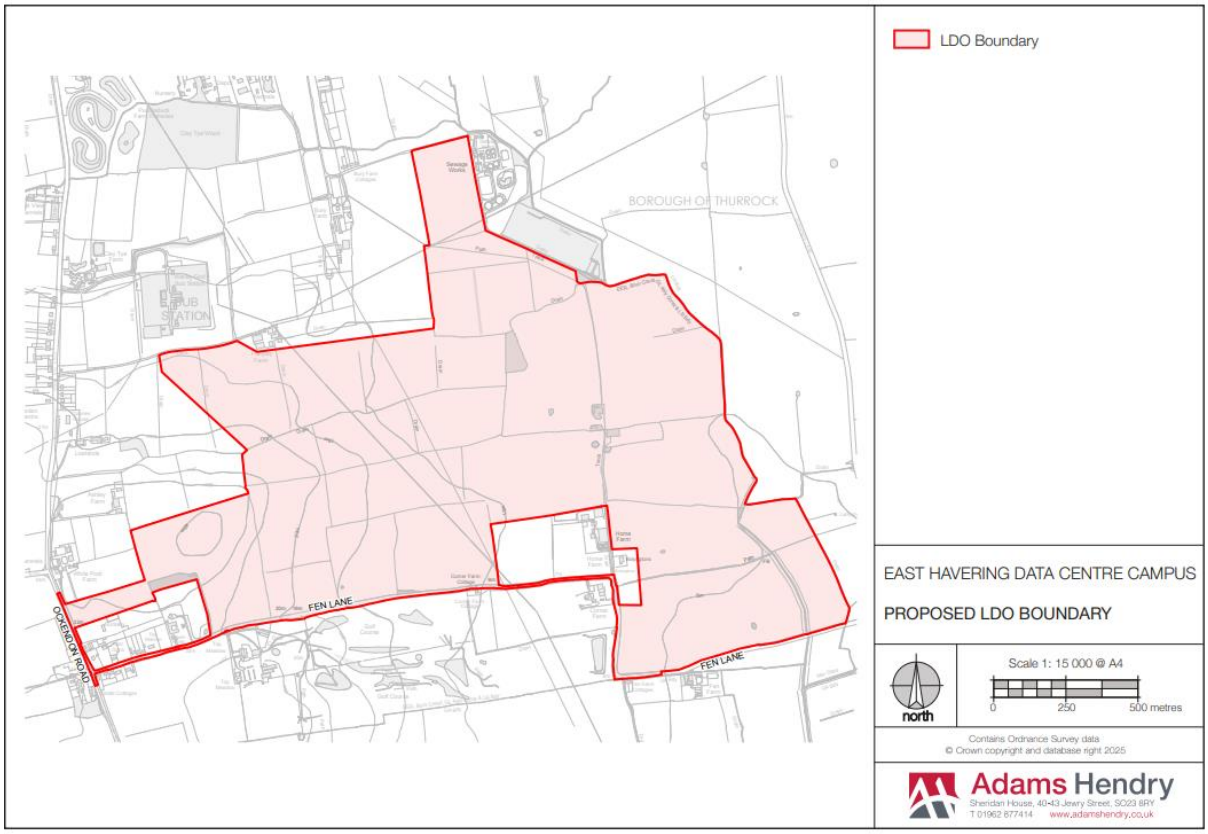


Figure 2 – Proposed Site Boundary

Site Description

5.5 The site is approximately 218.8 hectares (ha) and currently consists of four individual working arable farms, with associated field boundaries, ditches and vehicular access tracks/roads. Associated, minor structures and facilities include a small field shelter, a small agricultural building and two storage areas. There are also remnants of old farm buildings that have been demolished.

5.6 The site boundary also includes land within the public highway on Fen Lane and Ockendon Road.

5.7 Two Public Rights of Way (PRoW) cross the site. Footpath 233 from Fen Lane to Bury Farm which crosses through the centre of the site and Footpath 283 from Fen Lane to Ockendon Road which crosses the western most confines of the site.

5.8 A high pressure gas pipeline and electricity pylons run through the site.

5.9 The site topography generally slopes down from west to east. Most of the change in elevation is in the far western portion of the site, with the majority of the central and eastern parts relatively level.

5.10 The site is subject to the following designations:

- Metropolitan Green Belt;
- Mineral Safeguarding (in the west of the site);
- Flood Zones (2, 3a and 3b in the east of the site);
- Site of Importance for Nature Conservation;
- Archaeological Priority Zones;
- Countryside Conservation Area;
- Thames Chase Community Forest;
- Land Suitable for Small and Medium Wind Energy Developments; and
- Air Quality Management Area (AQMA) for exceedances of the annual mean NO_2 objective and the daily mean PM_{10} National Air Quality Strategy Objective/2006) (applies to whole borough)

Site surroundings

5.11 The site is mainly surrounded by open farmland. To the north of the site are agricultural fields and an unnamed road. Bury Farm sewage works is immediately adjacent to the north-east site boundary. The Upminster sewage works grass beds Site of Importance for Nature Conservation (SINC) is adjacent to the north-east of the site boundary.

5.12 To the east of the site, are further agricultural fields beyond which is Dunnings Lane. The Grade II Listed Blankets farmhouse is located approximately 300m to the east of the site

5.13 A small cluster of industrial buildings is located to the south-east.

5.14 Immediately adjacent to the southern boundary of the site and north of Fen Lane are the closest residential properties of Home Farm, which also includes a number of commercial buildings which are part of the wider Home Farm Estate, and Bolyngtons, accessed via an unnamed road off Fen Lane. To the south of Fen Lane is the Top Meadow Golf Course, Corner Farm, Fen Farm and Fen Farm Cottages.

5.15 Agricultural fields and woodlands are adjacent to the south-western boundary of the site, beyond which is a small cluster of residential properties, Ladyville Lodge Care Home and Fenlands Nursery.

5.16 Grade II Russell Cottage is approximately 130m to the south-west of the site boundary.

5.17 Adjacent to the far west boundary is Ockendon Road/Clay Tye Road (B186), with further residential properties beyond.

5.18 The Clay Tye Wood (SINC), an area of Ancient Woodland is approximately 600m to the west.

5.19 The village of North Ockendon is located, in part, within a Conservation Area, part of which borders a short length of the western site boundary. Cranham Conservation Area is located approximately 1.6km west of the site boundary at its closest point.

5.20 Agricultural fields, Fairplay Farm and an unnamed access road to Fairplay Farm are adjacent to the north-western boundary, beyond which is Warley substation, a battery storage scheme (approximately 1.7 ha), Clay Tye Road (B186) and further residential properties.

5.21 Bury Farm is located appropriately 250m to the north-west of the site boundary.

6. LOCAL DEVELOPMENT ORDER AND COMPLIANCE DOCUMENTS

Draft LDO

6.1 The draft LDO (refer to Appendix 1) sets out the development that would be permitted (as summarised in Section 4 of this report) and the specific limitations, conditions and prior notification requirements that would apply. Once adopted, the LDO would become a legally binding document and only development that comes forward in accordance with the LDO would be lawful.

6.2 The draft LDO is set out in four main parts covering different components of the development that the Order would permit:

- Part 1: Erection of Buildings - for use as a data centre, campus management, campus security, indoor horticulture use, district heating energy centre or visitor centre.

- Part 2: Other Development - Ecology Park and play area

- Part 3: Associated Infrastructure - Including internal roads, vehicle parking and servicing, hard and soft landscaping, foul and surface water drainage infrastructure, vehicle refuelling and washing facilities, utilities infrastructure including any substations or pumping stations, CCTV and lighting.

- Part 4: Site Preparation Works - Including earthworks required to change the level of any land, provision of temporary site offices and welfare facilities and the external storage of plant and equipment.

6.3 Various Codes and Plans are referred to in the conditions within the draft LDO. These compliance documents set out detailed guidance to control overall design quality, construction management practices, landscape and ecological mitigation and management related to the Data Centre Campus and Ecology Park. These are intended to ensure that the LDO fulfils the requirement to enable delivery of an acceptable and sustainable development.

6.4 Development permitted by the draft LDO must comply with the requirements set out within the following compliance documents:

- East Havering Data Centre Campus LDO Design Code (refer to Appendix 1d); and
- East Havering Data Centre Campus LDO Code of Construction Practice (CoCP) (refer to Appendix 1e).

6.5 A Section 106 agreement will accompany the LDO. The Section 106 draft Heads of Terms (refer to Appendix 2) requires, amongst other matters, the implementation of and compliance with:

- the East Havering Data Centre Campus LDO Travel Plan (refer to Appendix 3); and
- the East Havering Data Centre Campus LDO Landscape and Ecological Mitigation and Management Plan (LEMMP) (refer to Appendix 4)

6.6 A summary of each of these documents is set out below:

Design Code

6.7 The draft Design Code sets out the minimum applicable standards to be applied to the building plots, infrastructure and Ecology Park and, amongst other things, restricts the locations of certain types of buildings as well as their maximum height. Its purpose is to establish the parameters for the development and to ensure that a high and consistent standard of design is maintained throughout the Campus and Ecology Park to provide a sustainable and stimulating working environment whilst at the same time enabling the commercial requirements of individual occupiers to be met.

Code of Construction Practice

6.8 The draft CoCP provides a framework for compliance for all site preparation and construction works. It establishes site-wide codes of practice and protocols, detailed work methodologies and provides a framework for the management of environmental impacts including specific control measures for managing noise levels, air quality, water resources, ecology and archaeology during the construction phase. All necessary environmental permits, licences and regulatory notifications will still have to be obtained.

Landscape and Ecological Mitigation and Management Plan

6.9 Ecological mitigation and enhancement measures are set out in the draft Design Code. The draft LEMMP includes a requirement for continued management and surveillance and sets out monitoring protocols for terrestrial ecology. These are secured through a combination of conditions and planning obligations.

Travel Plan

6.10 The LDO draft Travel Plan sets out measures to reduce the impact of the Data Centre traffic on local communities and to promote sustainable modes of transport for employees and deliveries and servicing.

7. STATEMENT OF REASONS

7.1 To bring forward a LDO, there is a requirement to prepare and consult on a Statement of Reasons.

7.2 The Statement of Reasons for the draft LDO (refer to Appendix 5) has been prepared by the LPA and its planning consultants Adams Hendry. It sets out a comprehensive and robust planning case for the proposed development that would be permitted by the draft LDO.

7.3 The Statement of Reasons includes:

- The overarching purpose of the draft LDO and how it has been prepared;
- A description of the development and the conditions and controls that have been included and an explanation of how the LDO will be implemented and monitored;
- The relevant policy context and an assessment of the proposed development against national policy and the Development Plan policies (including the NPPF, London Plan and Local Plan);
- The important role of data centres and the evidenced need for additional data centre capacity in London;
- The specific locational and power requirements of Data Centres;
- The consideration of alternative sites to meet the need;
- The impact of the proposed development on the green belt and an assessment of the very special circumstances that exist to justify it;
- The harm to designated heritage assets and an assessment of the public benefits that outweigh the harm; and
- An assessment of the proposal against the development plan and consideration of the planning balance;
- Consideration of the planning obligations against Regulation 122 of the CIL Regulations
- A summary and conclusion

7.4 The Statement of Reasons is an important document that draws on all of the supporting evidence and technical assessment and provides the planning case for the draft LDO. It is on this basis that officers consider that there is a sufficient case to recommend that the Committee agree the publication of the draft LDO and associated documents for public consultation.

8. SUPPORTING EVIDENCE AND TECHNICAL DOCUMENTS

8.1 The LDO, compliance documents and the Statement of Reasons have been informed by a series of technical strategy documents and assessments, including a Flood Risk Assessment, Transport Assessment, Heritage Statement, Green Belt Assessment, Equalities Impact Assessment, Health Impact Assessment and an Environmental Statement. Further detail on the Environmental Statement is included in Section 10 of this report.

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8.2 Preparation of the LDO has involved a partnership between Digital Reef, the potential beneficiary of the LDO, and the London Borough of Havering, as local planning and highway authority.

8.3 Evidence prepared by Digital Reef and its consultants has been relied upon to support the draft LDO. Key documents include information on need and alternative sites prepared by Savills, details on the availability of power prepared by Noveus and an assessment of the potential economic benefits prepared by Oxford Economics.

8.4 Technical information on the delivery of the proposed development has been provided by Digital Reef and their consultants on matters including earthworks, drainage, landscape and ecology, energy, whole life carbon, the circular economy, lighting and minerals.

8.5 All of the material produced by or on behalf of Digital Reef has been carefully scrutinised by the Local Planning Authority, supported by its consultants, in accordance with the Tameside duty. This places on obligation on the decision maker to make sufficient or due inquiry of the submitted information.

8.6 Refer to paragraph 12.1 for a full list of supporting documents and Appendix reference numbers.

9. SECTION 106 AND COMMUNITY INFRASTRUCTURE LEVY

9.1 An agreement under Section 106 of the Town and Country Planning Act 1990 (the s.106 Agreement), between the Council and the owners of land within the LDO boundary will be entered into, before the LDO is made. This is primarily to ensure that the mitigation necessary to support the development, which

cannot be secured through the LDO codes or conditions, will be delivered when required. The draft S106 Heads of Terms is set out in Appendix 2.

9.2 The proposed development would be subject to the Mayor of London's Community Infrastructure Levy (CIL) applied at a rate of £25 per square metre of additional gross floor area. The Havering Community Infrastructure Levy is not applicable due to the nature of use.

9.3 The Committee should note that CIL liability is not material to the determination as to whether the draft LDO should be consulted on.

10. ENVIRONMENTAL IMPACT ASSESSMENT

10.1 The draft LDO is accompanied by an Environmental Statement and a Non Technical Summary (refer to Appendices 10 and 11).

10.2 The Environmental Impact Assessment (EIA) Regulations define two categories of development – Schedule 1 and Schedule 2. EIA is mandatory for all projects within Schedule 1, whereas Schedule 2 establishes a series of thresholds at which it is considered that developments have the potential to cause significant environmental effects. Where a relevant Schedule 2 threshold is met or exceeded, a decision has to be made (taking in account various criteria set out in the EIA Regulations) as to whether a project is a relevant project for EIA. A relevant project is one that is likely to have significant effects on the environment by virtue of factors such as its nature, size or location.

10.3 The proposed development is not a Schedule 1 project. The need to undertake EIA for Schedule 2 projects is formally determined or confirmed by the relevant planning authority through an EIA Screening Opinion, carried out under Regulation 32 (in respect of development to be permitted under a LDO), of the EIA Regulations.

10.4 The LPA confirmed in an EIA Screening Opinion dated 22 May 2024 that the proposed development would be likely to have significant effects on the environment (reference LDO0001.24). On 23 May 2024 the LPA adopted an EIA Scoping Opinion (reference Z0001.24) setting out the scope of the EIA and ES, including the information to be provided in the ES.

10.5 EIA is a process that identifies the likely significant effects on the environment (both beneficial and adverse) of a proposed development and proposed mitigation to avoid, reduce or off-set any likely significant adverse environmental effects, and where possible enhance any beneficial effects. This is set out in the Environmental Statement.

10.6 The Non Technical Summary provides an overview of the main findings that have been reported in the ES.

11. HABITAT REGULATIONS SCREENING ASSESSMENT

11.1 Regulation 80 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') requires the Council as 'competent authority' to decide if a plan or project is likely to have a significant effect on a European site or a European offshore marine site, either alone or in combination with other plans or projects. The decision on whether to make an LDO can only be taken if it is first determined that there are not likely to be significant effects.

11.2 A report to inform a Habitats Regulations Assessment (Refer to Appendix 6) carried out for the purposes of the Habitats Regulations confirms that the LDO would not have likely significant effect on a European site or a European offshore marine site, either alone or in combination with other plans or projects.

11.3 The recommendation to the Committee to approve consultation on the draft LDO is based on the conclusion of the Habitats Regulations Screening Assessment that the proposal is not likely to have significant effects. Notwithstanding this, should the Committee be asked in due course to determine whether to adopt the LDO, a formal decision would first be required confirming that the development permitted by the LDO will not have a likely significant effect and that the requirements of the 2017 Regulations are met.

12. CONSULTATION

12.1 The following documents are proposed for consultation:

- Draft Local Development Order (refer to Appendices 1a-1h)
- Draft Design Code (an appendix to the LDO) (refer to Appendix 1d)
- Draft Code of Construction Practice (an appendix to the LDO) (refer to Appendix 1e)
- Draft Heads of Terms for Section 106 Agreement (Refer to Appendix 2)
- Draft Travel Plan (Refer to Appendix 3)
- Draft Landscape and Ecological Management and Monitoring Plan (Refer to Appendix 4)
- Statement of Reasons (Refer to Appendix 5)
- Habitat Regulations Screening Assessment (Refer to Appendix 6)
- Human Health Impact Assessment (Refer to Appendix 7)
- Equalities Impact Assessment (Refer to Appendix 8)
- Environmental Statement Non-Technical Summary (Refer to Appendix 9)
- Environmental Statement (Refer to Appendix 10)
- Green Belt Assessment Report (Refer to Appendix 11)

- Need Assessment (Refer to Appendix 12)
- Power Report (Refer to Appendix 13)
- Sites Assessment (Refer to Appendix 14)
- Energy and Sustainability Statement (Refer to Appendix 15)
- Circular Economy Statement (Refer to Appendix 16)
- Landscaping Strategy (Refer to Appendix 17)
- SuDS and Drainage Strategy (Refer to Appendix 18)
- Arboriculture Impact Assessment (Refer to Appendix 19)
- Lighting Assessment (Refer to Appendix 20)
- Flood Risk Assessment (Refer to Appendix 21)
- Transport Assessment (Refer to Appendix 22)
- Letter from Green house growers (Refer to Appendix 23)
- BNG Report (Refer to Appendix 24)
- Site Investigation and Mineral Safeguarding Assessment (Refer to Appendix 25)

12.2 Appendices 1 to 9 are reproduced in full within this agenda pack. Appendices 10 to 25 are available digitally via the links provided.

12.3 Consultation requirements for a LDO and ES, are set out in the Town and Country Planning (Development Management Procedure) Order 2015 and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 respectively.

12.4 Article 38 (5) of the Town Country Planning (Development Management Procedure) (England) Order 2015 (as amended) requires a consultation period of not less than 28 days before a decision is taken to make or adopt the LDO.

12.5 Regulation 32 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 of the EIA regulations requires a consultation period of not less than 30 days. Consultation on the draft LDO and the ES can run concurrently.

12.6 The London Borough of Havering Statement of Community Involvement 2021 sets out the commitments of the Council to involving the community and other stakeholders in the preparation of planning policy and the determination of planning applications. The SCI does not contain any consultation commitments specifically in relation to Local Development Orders.

12.7 It is proposed that consultation will run for a minimum of 30 days, between Friday 6th March and Tuesday 7th April 2026.

12.8 Consultation will include the following:

- publication of the consultation documents on the Council's website and planning register

- Notification by letter to neighbouring occupiers
- Notification by letter to landowners and tenants within the LDO site boundary
- Consultation notification to prescribed consultees (including, but not limited to) the Mayor of London, the Environment Agency, Natural England, Historic England, neighbouring boroughs, Health and Safety Executive)
- The display of statutory Site Notices
- The publication of a statutory Consultation Notice within the Romford Recorder
- Press release
- Consultation notification to other consultees to be identified, such as amenity, environment and business groups operating across the Borough or the area of the development site
- Hard copies of the consultation documents are proposed to be available to view at Romford Town Hall and Upminster Library during regular opening hours.
- Consultation events (refer to paragraph 12.9 for further details)

12.9 During the consultation period the Local Planning Authority is also proposing to hold two public consultation events and a separate stakeholder engagement session primarily aimed at statutory consultees. The events are provisionally scheduled as follows:

- Public engagement event 1: North Ockendon, Thursday 12th March 2026 6pm
- Public engagement event 2: Romford, Wednesday 25th March 2026 6pm
- Stakeholder engagement event: Online, 18th March

13. BEYOND CONSULTATION

13.1 Following the consultation, officers will review all representations received and will consider whether any modifications should be made to the draft Local Development Order or whether the order should be recommended to be made. A summary of the consultation responses and officer recommendations will be presented in a further report to the Strategic Planning Committee in due course.

13.2 The decision to make the Local Development Order will be the responsibility of the Strategic Planning Committee.

14. EQUALITIES

14.1 The Equality Act 2010 provides that in exercising its functions (which includes its role as Local Planning Authority), the Council as a public authority shall amongst other duties have regard to the need to:

- Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited under the Act;
- Advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;

- Foster good relations between persons who share a relevant protected characteristic and persons who do not share it

14.2 For the purposes of this obligation the term “protected characteristic” includes:- age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; and sexual orientation.

14.3 As part of the preparation of the draft the LDO, the LPA appointed consultants Aecom to undertake an Equality Impact Assessment to consider the effects of the proposed development on groups with protected characteristics. The EQIA is set out in Appendix 10.

14.4 The proposed public consultation on the draft LDO will provide opportunities for all residents and stakeholders to submit comments. This will include:

- On line and hard copies of the documents available to view (as set out in paragraph 12.8).
- The option to submit responses electronically or in writing
- Public consultation events held in accessible venues

15. CONCLUSION

15.1 The LPA and its specialist consultant team have prepared a draft Local Development Order, Statement of Reasons, Environmental Statement and associated documents for the development of a data centre campus on land in the east of the Borough.

15.2 There is a statutory requirement under the Town and Country Planning Regulations to publicly consult on these documents before a decision can be taken on whether to adopt the LDO.

15.3 This report seeks approval from the Committee to undertake public consultation which is proposed to take place between Friday 6th March and Tuesday 7th April 2026.

15.4 Officers will then review the representations received and a summary of the consultation responses and officer recommendations will be presented in a further report to the Committee in due course. Adoption of the Local Development Order would require a further decision by the Committee.

APPENDICES

Appendices 1-9 are published in full within the committee agenda pack, with a link provided for completeness. Appendices 10-24 are only included as links.

- **APPENDIX 1a:** Draft Local Development Order
- **APPENDIX 1b:** Site Boundary Plan (LDO Appendix 1)
- **APPENDIX 1c:** Plans 1-6 (LDO Appendix 2)
- **APPENDIX 1d:** Draft Design Code (LDO Appendix 3)
- **APPENDIX 1e:** Draft Code of Construction Practice (LDO Appendix 4)
- **APPENDIX 1f:** Discharge of Condition Form (LDO Appendix 5)
- **APPENDIX 1g:** Prior Notification Form (LDO Appendix 6)
- **APPENDIX 1h:** Non Material and Minor Material Amendment Forms (LDO Appendix 7)
- **APPENDIX 2:** Draft Heads of Terms for Section 106 Agreement
- **APPENDIX 3:** Draft Travel Plan
- **APPENDIX 4:** Draft Landscape and Ecological Management and Monitoring Plan
- **APPENDIX 5:** Statement Of Reasons
- **APPENDIX 6:** Habitat Regulations Screening Assessment
- **APPENDIX 7:** Health Impact Assessment
- **APPENDIX 8:** Equalities Impact Assessment
- **APPENDIX 9:** Environmental Statement Non-Technical Summary
- **APPENDIX 10:** Environmental Statement
- **APPENDIX 11:** Green Belt Assessment
- **APPENDIX 12:** Need Assessment
- **APPENDIX 13:** Power Availability Report
- **APPENDIX 14:** Sites Assessment
- **APPENDIX 15:** Energy And Sustainability Statement
- **APPENDIX 16:** Circular Economy Statement
- **APPENDIX 17:** Landscaping Strategy
- **APPENDIX 18:** SUDS and Drainage Strategy
- **APPENDIX 19:** Arboriculture Impact Assessment
- **APPENDIX 20:** External Lighting Impact Assessment
- **APPENDIX 21:** Flood Risk Assessment
- **APPENDIX 22:** Transport Assessment
- **APPENDIX 23:** Letter From Green House Growers
- **APPENDIX 24:** Biodiversity Net Gain Assessment
- **APPENDIX 25:** Site Investigation and Mineral Safeguarding Assessment

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East Havering Data Centre Campus









DRAFT LOCAL DEVELOPMENT ORDER

March 2026

Havering
LONDON BOROUGH

EAST HAVERING DATA CENTRE CAMPUS LOCAL DEVELOPMENT ORDER (2026)

This Order is made by the London Borough of Havering ("the Council") under the powers conferred on the Council as Local Planning Authority by sections 61A-61D of and Schedule 4A to the Town and Country Planning Act 1990 (as amended) ("the Act") and pursuant to the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended) and shall be known as the East Havering Data Centre Campus Local Development Order 1 (2026).

1. In this Order:

   1.1 definitions in the Town and Country Planning (Use Classes) Order 1987 (as amended) apply to the interpretation of this Order and references in this Order to a "Use Class" are accordingly a reference to the relevant Use Class set out in the Town and Country Planning (Use Classes) Order 1987 (as amended); and

   1.2 The terms used in this Order are as defined in Schedule 3 of this Order.

2. Planning permission is hereby granted for the development within the Data Centre Campus Area set out in all Parts of Schedule 1 subject in each case to the restrictions and conditions set out in the relevant Part of Schedule 1.

3. The grant of permission under any Part of Schedule 1 is subject to the general conditions set out in Schedule 2.

4. All development permitted by this Order may be undertaken on a phased basis.

5. Where any development permitted by this Order has been lawfully implemented before this Order expires, is revoked or revised that said development may be lawfully completed.

6. This Order comes into force on the date on which it is made and, subject to the Council's power to revoke this Order under s.61A(6) of the Act shall remain in force for a period of 20 years from that date, expiring on the 20th anniversary thereof.

Adopted by the Council on [ ]

By Order of the Council the Common Seal was affixed hereunto in the presence of

Authorised Signatory

SCHEDULE 1 – PERMITTED DEVELOPMENT 3
SCHEDULE 2 – GENERAL CONDITIONS 9
SCHEDULE 3 – INTERPRETATION 16
APPENDIX 1 – LDO BOUNDARY 20
APPENDIX 2 – LDO PLANS 1 - 6 20
APPENDIX 3 – DESIGN CODE 20
APPENDIX 4 – CODE OF CONSTRUCTION PRACTICE 20
APPENDIX 5 – DISCHARGE OF CONDITION FORM 20
APPENDIX 6 – PRIOR NOTIFICATION FORM 20
APPENDIX 7 – NON-MATERIAL AND MINOR MATERIAL AMENDMENT NOTIFICATION FORM 20

SCHEDULE 1 – PERMITTED DEVELOPMENT

PART 1 - ERECTION OF BUILDINGS

Permitted Development

Development consisting of –

(a) the erection, extension or alteration of a building for use as a data centre (sui generis);

(b) the erection, extension or alteration of a building for indoor horticulture use (sui generis);

(c) the erection, extension or alteration of a building or plant for a district heating energy centre (sui generis);

(d) the erection, extension or alteration of a building for use as a visitor's centre (Use Class F2);

(e) the erection, extension or alteration of a building for use for campus management (Use Class E(c));

(f) the erection, extension or alteration of a building for campus security (Use Class E(c)).

Development not permitted

Development is not permitted by Part 1 if,

(a) that development would result in the total amount of floorspace in Data Centre Use within the Data Centre Campus Area exceeding 340,000sq.m GEA;

(b) that development would result in the total amount of floorspace for indoor horticulture use within the Data Centre Campus Area exceeding 50,000sq.m GEA;

(c) that development would result in the total amount of floorspace within the Data Centre Campus Area in use as a district heating energy centre exceeding 3,300sq.m GEA;

(d) that development would result in the total amount of floorspace for use as a visitor's centre within Use Class F2 within the Data Centre Campus Area of less than 300sq.m GEA or exceeding 600sq.m GEA;

(e) that development would result in the total amount of floorspace in use for campus security within Use Class E(c) within the Data Centre Campus Area exceeding 3,400sq.m GEA;

(f) that development would result in the total amount of floorspace in use for campus management within Use Class E(c) within the Data Centre Campus Area exceeding 2,700sq.m GEA

Conditions

Development is permitted by Part 1 subject to the following conditions –

1. Implementation of the development shall be in accordance with the phasing shown on Plan 1.

2. The primary infrastructure corridor including the spine road, shared footpath/cycleway, drainage swales and associated landscaping must be completed prior to the occupation / first use of any development within the East Havering Data Centre Campus.

3. Prior to the occupation / first use of any development within a Build Zone the infrastructure works identified in the East Havering Data Centre Campus LDO Design Code must be practically completed for that Build Zone;

4. No data centre or other building shall be occupied until all development and associated landscaping in the preceding phase has been completed.

5. The commencement of any phase of any development permitted under this Part must not prejudice the completion of any other phase of development permitted under this Order.

6. The strategic footpath/cycleway through the Ecology Park from Ockendon Road to the entrance of the data centre campus on Fen Lane must be completed prior to the occupation of any data centre or campus security floorspace.

7. The Ground Level for each Build Zone must not exceed the levels (AOD) shown on Plan 2.

8. The visitor's centre must be completed and opened within 12 months of the commencement of the Ecology Park (Phase 2B) shown on Plan 4.

9. No more than 100,000sq.m GEA of data centre floorspace may be occupied prior to the implementation of 50,000sq.m GEA of indoor horticulture of which the net growing area should be at least 45,000sq.m GEA.

10. The District Heating Energy Centre shall be operational prior to the occupation of any more than 100,000sq.m of data centre floorspace within the Data Centre Campus Area.

11. The floorspace in the District Heating Energy Centre shall be limited to that demonstrated to be required to serve the indoor horticulture and distribution of heat off-site (up to a maximum of 3,300sq.m GEA), such demonstration to be subject to details submitted to and approved in writing by the Local Planning Authority prior to commencement of the District Heating Energy Centre and any subsequent expansion.

12. Prior to the commencement of each Build Zone containing any Data Centre floorspace, a scheme detailing the on-site heat network within that Build Zone to the on-site district heat network, approved in accordance with Condition 35 of Schedule 2, shall be submitted and approved in writing by the Local Planning Authority. Each scheme submitted shall include a detailed implementation plan for the network as the Build Zone completion progresses.

The heat network shall be installed and connected in accordance with the approved scheme.

13. Prior to the occupation or first use of each individual data centre a scheme detailing the distribution of residual heat from that data centre to the heat network approved in connection with conditions 12 of Schedule 1 and 35 of Schedule 2 shall be submitted in writing and approved by the Local Planning Authority and thereafter the data centre shall be operated in accordance with the approved details. The details to be provided shall demonstrate how the maximum quantum of residual heat is recovered and transmitted to the heat network, the Energy Centre and highway boundary.

14. The visitor's centre, campus management building and campus security building must utilise waste heat from the data centres unless it can be demonstrated to the written satisfaction of the Local Planning Authority that this is not operationally feasible or commercially viable or is less carbon-efficient than an alternative.

15. Construction of the campus management building must not be commenced prior to the occupation of 150,000sq.m GEA of data centre floorspace by a single operator and it must not be occupied prior to occupation of 200,000sq.m GEA of data centre floorspace by a single operator.

16. The campus management and campus security buildings may only be occupied in connection with the operation of the wider data centre campus.

17. 'Secured by Design' accreditation must be achieved to the written satisfaction of the Local Planning Authority and Metropolitan Police prior to the occupation of any building.

PART 2 – OTHER DEVELOPMENT

Permitted Development

Development consisting of –

(a) the creation and use of land as an Ecology Park

(b) the construction of a Locally Equipped Area for Play

Conditions

Development is permitted by Part 2 subject to the following conditions –

1. The Phase 1 landscape mounds shown on Plan 3 must be completed within 18 months of commencement of construction of the site wide infrastructure.

2. The Phase 2 landscape mounds shown on Plan 3 must be completed within 18 months of commencement of earthworks in phase 2 unless additional excavated material is required to complete the Part 1 landscaping, in which case it must be completed prior to commencement of construction of the first building in phase 2.

3. The Ecology Park (Phase 2B) as shown on Plan 4 must be implemented in the first planting season following the completion of 170,000sq.m GEA of data centre floorspace, utilisation of 300 MVA of power or 11 years post adoption of the LDO whichever is the soonest and opened to the public within 12 months of commencement of planting in accordance with the terms set out in the LDO Design Code.

4. Those parts of the Ecology Park (Phases 1A, 1, 2A and 3) outside the landscaping mounds as shown on Plan 5 must be implemented within two years of commencement of the earthworks relevant to the particular phase and the entire part of the Ecology Park must thereafter be opened to the public.

5. The Locally Equipped Area for Play within Phase 1A must be complete and operational prior to occupation of any data centre floorspace.

PART 3 – ASSOCIATED INFRASTRUCTURE

Permitted Development

Development consisting of –

(a) the construction, extension, or alteration of roads, footpaths and cycleways;

(b) the construction, extension, demolition or alteration of areas and facilities for vehicle parking and servicing;

(c) hard and soft landscaping, including the erection, extension, demolition or alteration of fences, gates, walls,

(d) securing barriers and gatehouses;

(e) the construction, extension, demolition or alteration of foul and surface water drainage infrastructure including pumps, tanks, conduits, swales, pipes, drains, ditches, channels and ponds and reservoirs;

(f) the construction of electrical infrastructure including any sub-stations;

(g) the construction, extension, demolition or alteration of other utilities infrastructure (telecommunications, radio, gas, water) including any sub-stations or pumping stations;

(h) the erection, extension, demolition or alteration of CCTV cameras and associated masts; and

(i) the erection, extension, demolition or alteration of lamp posts and any other lighting masts or infrastructure.

Development not permitted

Development is not permitted by Part 3 if –

(a) it is not primarily required to serve the development permitted by Parts 1 and 2.

Conditions

Development is permitted by Part 3 subject to the condition that –

1. Prior to the bringing into beneficial use of any permanent roads, vehicle parking or vehicle servicing areas the drainage works identified in the East Havering Data Centre Campus LDO Design Code must be completed for the relevant phase.

PART 4 – SITE PREPARATION WORKS

Permitted Development

Development consisting of:

(a) any operations or engineering necessary to clear or raise the level of any land within the Data Centre Campus Area;

(b) provision of temporary site offices and welfare facilities;

(c) erection of temporary hoarding / fencing;

(d) external storage of materials, plant and equipment.

Conditions

Development is permitted by Part 4 subject to the condition that –

1. Prior to the commencement of development on any Build Zone requiring a temporary construction compound, details of the temporary levels in relation to the adjoining land and highway, and any other changes proposed in the level of the site, drainage, surface treatment, storage areas, office and welfare facilities shall be submitted to the Local Planning Authority for approval in writing and works undertaken in accordance with the approved details.

2. Prior to the commencement of any earthworks a site wide Stage 2 Geotechnical and Geo-environmental Ground Investigation and Risk Assessment report must be prepared and submitted to the Local Planning Authority for approval.

3. Prior to commencement of construction on each Build Zone, a Remediation Strategy / Design Statement must be prepared and submitted to the Local Planning Authority for approval in writing and works undertaken in accordance with the approved document.

4. A Materials Management Plan prepared in accordance with the CL:AIRE Definition of Waste: Code of Practice, and signed off by a Qualified Person, must be submitted to the Local Planning Authority for approval in writing prior to commencement of any earthworks on each phase shown on Plan 1, and the earthworks must be undertaken in accordance with that Plan.

SCHEDULE 2 – GENERAL CONDITIONS

All development permitted by the Order is subject to the following conditions –

1. Nothing in this Order permits any development that is EIA development within Schedule 1 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

2. Prior to the submission of details and plans of the proposed development referenced in condition 3, details pursuant to any pre-commencement condition shall be submitted for approval in writing. An application to discharge a condition shall be submitted using the Discharge of Condition Form accompanied by a fee of £619 per condition.

3. Prior to the commencement of any development permitted under this Order, details and plans of the proposed development shall be submitted to the Local Planning Authority using the Prior Notification Form together with the appropriate fee as set out below:

Building Floorspace	**Fee per Submission**
Data Centre, Campus Security, District Heating, Visitor's Centre, Campus Management (including any ancillary plant/infrastructure)	£1.07 per sq.m GEA floorspace
Indoor Horticulture	£3,677
Site Area	**Fee per Submission**
Electrical infrastructure (including buildings containing such infrastructure)	£659 per 0.1 ha (or part thereof)
Site-wide infrastructure	£399 per 0.1 ha (or part thereof)

4. Details pursuant to any post commencement of development condition shall be submitted and approved in accordance with the requirements of the particular condition. An application to discharge a condition shall be submitted using the Discharge of Condition Form accompanied by a fee of £619 per condition.

5. Details and plans of any Non-Material Amendment or Minor Material Amendment shall be submitted to the Local Planning Authority using the Non-Material and Minor Material Amendment Notification Form together with the appropriate fee as set out below:

Amendment	**Fee per Submission**
Non-material amendment	£619
Minor material amendment	£2,475

6. All the above fees are subject to change annually, starting from 1st April 2027, by the percentage increase Consumer Prices Index (CPI) for the month of September preceding the fee change date, rounded up or down to the nearest £1. If the September CPI figure is negative, then the fee shall remain unchanged (not reduced).

7. No development permitted by this Order may commence prior to the Confirmation Date for that development.

8. Development to which Condition 3 applies must be Implemented within three years of the Confirmation Date and may be completed thereafter, whether or not following its implementation in accordance with Condition 3, this Order should expire, or otherwise be revoked or revised.

9. No development may take place under this Order except in accordance with:

   (a) the East Havering Data Centre Campus LDO Design Code; and

   (b) the East Havering Data Centre Campus LDO Code of Construction Practice.

10. Works to widen Fen Lane including the provision of a footpath on the northern side of Fen Lane from the junction with Public Right of Way 283 to the junction with Ockendon Road shall be completed prior to the commencement of any earthworks on the data centre campus other than in connection with the creation of a construction compound or as part of a Stage 2 Geotechnical and Geo-environmental Ground Investigation and Risk Assessment.

11. The footpath on Fen Lane shall be 1.5 metres wide unless localised pinch points are agreed in writing with the Local Planning Authority in advance, in such case, the footpath shall be no less than 1.2 metres wide for those pinch points.

12. The highway works on Ockendon Road must be completed prior to the occupation of any data centre or campus security floorspace.

13. Vehicles on Fen Lane associated with the construction and operation of development within the East Havering Data Centre Campus must not exceed 1,250 two way vehicle movements (i.e. calculated as the total number of trips in both directions) per day.

14. ANPR cameras must be installed at each vehicular entrance to the site within 6 months of first use and retained in situ for five years post completion of development. Data on the number of vehicles using each entrance shall be made available to the Local Planning Authority on request.

15. Prior to the commencement of development, a Stage 1 Road Safety Audit for all works on the public highway and any pedestrian/cycle crossings of vehicular junctions must be submitted to the Local Planning Authority for approval.

16. Prior to the commencement of development, detailed designs of all vehicular junctions onto the public highway must be submitted to the Local Planning Authority for approval in writing and implemented in accordance with the approved details. The design must demonstrate that the junction is safe for the types and number of vehicles anticipated to be using it on completion of development.

17. Prior to the commencement of development a detailed lighting strategy for the pedestrian/cycle crossings of the vehicular junctions must be submitted to the Local Planning Authority for approval and implemented in accordance with the approved details.

18. Prior to the commencement of development on each phase as shown on Plan 1, details of the levels of the building(s), road(s) and footpath(s)/cycleway(s) in relation to the adjoining land and highway(s), and any other changes proposed in the level of the site, must be submitted to the Local Planning Authority and approved in writing. The development shall be carried out in accordance with the details so agreed.

19. No mechanical excavations are permitted above or within 3m either side of the centre line of the Local High Pressure gas main unless otherwise agreed in writing with the local planning authority in advance.

20. Prior to construction of each building (other than for District Heating and horticulture), a detailed Whole Life-Cycle Carbon Statement in line with the latest GLA's Whole Life-Cycle Assessment Guidance for that building, must be submitted to and approved in writing by the Local Planning Authority and implemented in accordance with the approved details.

21. Prior to the occupation of each building (other than for District Heating and horticulture), the post-construction tab of the latest GLA's Whole Life-Cycle Carbon Assessment template must be completed for that building in line with the latest GLA's Whole Life-Cycle Carbon Assessment Guidance and submitted to the Local Planning Authority for approval in writing.

22. Prior to construction of each building (other than for District Heating and horticulture) an Energy Statement for that building in accordance with GLA requirements must be submitted to and approved in writing by the Local Planning Authority and implemented in accordance with the approved details.

23. Prior to construction of each building a detailed Circular Economy Statement in line with the latest GLA Guidance, must be submitted to and approved in writing by the Local Planning Authority and implemented in accordance with the approved details.

24. Prior to the occupation of each building the post-construction tab of the latest GLA's Circular Economy Statement template must be completed for that building in line with the latest GLA Guidance and submitted to the Local Planning Authority for approval in writing.

25. A Fire Statement must be prepared by a competent professional registered with the Institute of Fire Engineers and approved in writing by the Local Planning Authority prior to construction of each building other than for District Heating and horticulture and implemented in accordance with the approved details.

26. Following completion of earthworks on each phase as shown on Plan 1 and prior to the commencement of construction on each Build Zone or the Primary Infrastructure Corridor, details of the final design of a surface water drainage scheme must be submitted and approved in writing by the Local Planning Authority. The final solution should follow the drainage strategy principles set out in the Design Code and shall include:

    (a) The results of infiltration testing completed in accordance with Building Research Establishment (BRE) Digest: 365 and confirmation of groundwater levels. Where infiltration is proposed confirmation is required of a 1m unsaturated zone from the base of any proposed soakaway to the seasonal high groundwater level and confirmation of half-drain times:

(i) Soakage testing in accordance with BRE Digest:365 (or similar approved method if appropriate) should be provided to confirm the suitability of soakaways on site. Locations should be specific to the location of major infiltration features.

(ii) If soakaways are proposed, the closest (in distance) set of test results should be used to calculate the size of the soakaway. Alternatively, the slowest infiltration rate should be utilised.

(iii) If a 1 metre unsaturated zone is not achievable and soakaways are proposed, thorough justification and an assessment of the risk to groundwater from contamination should be supplied.

(iv) If an Intrusive Ground Investigation Report confirms that the ground has no soakage potential or there is onsite contamination that cannot be remediated, it is unnecessary to complete soakaway tests, however clear supporting evidence should be provided.

(b) evidence that the receiving watercourse has onward connectivity and capacity to receive flows from the site.

(c) hydraulic calculations to demonstrate the proposed final solution will effectively manage the 1 in 30 (+ climate change allowance) and 1 in 100 (+ climate change allowance) storm events and 10% allowance for urban creep.

(i) Manhole and pipe referencing used within the calculations should enable a clear and easy cross check to be made with the drainage strategy drawings and should reflect the 'for construction'; invert and cover levels and pipe diameters.

(d) Detailed design drawings for all sustainable drainage elements including cross sections and detailed drainage layout plan to include:

(i) Finalised Finished Floor Levels and proposed external ground levels
(ii) Boundary levels
(iii) Proposed gullies and/or drainage channels
(iv) Chambers and pipe runs including chamber references, pipe numbers, diameters and gradients (ensuring they match with the supporting calculations)
(v) Attenuation features/ devices including area and length
(vi) Location of flow control and flow control rate
(vii) Location of any existing drainage infrastructure which is to be retained or removed
(viii) Location of any existing watercourses on or adjacent to the site.
(ix) If above ground storage structures and crates/tanks are proposed, details of any mitigation measures required to appropriately deal with groundwater and offset any flotation risk should be provided

(e) An exceedance flow routing plan (including levels and flow directions) demonstrating no increase in surface water flood risk on or off site. The drawing should include as a minimum:

(i) Finalised Finished Floor Levels.
(ii) External levels, including but not limited to external plot levels, road levels, parking areas, and boundary levels.
(iii) Surface water drainage system including private plot drainage.
(iv) Directional arrows or contours indicating where surface water would flow during exceedance events i.e. rainfall events over and above the design criteria (usually 1 in 100 year + climate change event) this should include the flow route off site.
(v) Areas where surface flooding would occur, including water depths where applicable
(vi) Any existing retained surface water drainage infrastructure
(vii) Existing watercourse on or immediately adjacent to the site

(f) Details of drainage management responsibilities and maintenance regimes for all drainage elements.

29. Prior to the first occupation of each Build Zone or first use of the Primary Infrastructure Corridor, a verification report must be submitted to and approved by the Local Planning Authority demonstrating that the surface water drainage system has been constructed as per the agreed scheme (or detail any minor variations) and confirming any defects have been rectified.

The following supporting information must be provided:

i. As Built drawings and statement which includes details of minor variations (and confirmation of impact) from approved plans to As-Built plans.
ii. Easting and northings to national grid reference for major surface water drainage features e.g. attenuation areas and flow control devices.
iii. Confirmation of who will be responsible for the long-term maintenance of the system including contact details (for example appointed management company or landowner).

30. Prior to development above slab level on each Build Zone, a foul water drainage strategy for that Build Zone shall be submitted to and approved in writing by the Local Planning Authority and implemented in accordance with the approved details.

31. Prior to any vegetation clearance, earthworks and/or other enabling or construction work commencing on each phase of development, an ecological walkover survey must be undertaken to assess the need for further surveys, followed by survey(s) for great crested newts, reptiles, bats, badgers, nesting birds and other species and habitats, as deemed appropriate by an experienced ecologist.

The supplementary surveys shall be of an appropriate type for the above habitats and/or species, appropriately timed and survey methods shall follow current national good practice guidelines. Where the survey results indicate that changes have occurred that will result in ecological impacts not previously addressed in the approved scheme, the original approved

ecological measures and mitigation shall be revised, and a timetable for their implementation, must be submitted to and approved in writing by the Local Planning Authority prior to the commencement of development of that phase. Works shall then be carried out in accordance with the proposed new approved ecological measures and timetable.

32. Details of the locations and final design of the ecological mitigation shall be agreed by the Local Planning Authority prior to construction of each Build Zone and implemented in accordance with the approved details.

33. Prior to commencement of each phase of development (shown on Plan 6), a full tree survey shall be undertaken to confirm the presence or absence of bats for that phase and a scheme of mitigation agreed as necessary with the Local Planning Authority where presence is identified and shall be implemented in accordance with the approved details.

34. Within six months of commencement of planting on each phase of development as shown on Plan 6 (excluding planting within Build Zones), a monitoring strategy for each habitat type including details of the number, location and frequency of surveys, shall be submitted to the Local Planning Authority for approval in writing and thereafter implemented in accordance with the approved details.

35. Prior to commencement of development, full details of the on-site district heating network from each Build Zone to the District Heating Energy Centre and/or the public highway (including connection suitable for onward transmission to an off-site district heating network) and programme for implementation shall be submitted to the Local Planning Authority for approval in writing and thereafter implemented in accordance with the approved details.

36. Structural engineering drawings of bridges and culverts must be submitted to the Local Planning Authority for approval in writing prior to the commencement of construction of any bridge or culvert and thereafter implemented in accordance with the approved details.

37. Prior to first occupation of a data centre a Wayfinding Strategy for the whole site shall be submitted to the Local Planning Authority for approval in writing and thereafter implemented in accordance with the approved details.

38. Prior to commencement of development of each Build Zone and/or infrastructure works, a detailed Dust Management Plan in accordance with the framework set out in the Code of Construction Practice, shall be submitted for approval in writing by the Local Planning Authority and thereafter implemented in accordance with the approved details.

39. Prior to commencement of each phase of development a Written Scheme of Investigation (WSI) must be submitted for approval by the Local Planning Authority as advised by the Greater London Archaeological Advisory Service (GLAAS) and all archaeological work must be undertaken in accordance with the approved WSI.

40. No soils may be exported off site for disposal and no soils may be imported to create the mounds or any other landscape feature.

41. No trees other than those shown for removal on the Tree Protection Plan and accompanying schedule shall be felled without the written prior approval of the Local Planning Authority.

42. Prior to development on Build Zone F or D, an updated tree survey shall be undertaken to confirm the root protection area of veteran trees and submitted to the Local Planning Authority for approval in writing.

43. Water Usage Effectiveness (WUE) for each data centre building must not exceed 0.0225 litres per kilowatt-hour (kWh) of IT load per annum. Automatic Meter Reading devices for water and electricity must be installed for each data centre building prior to first operational use and readings shall be made available to the Local Planning Authority on request detailing the amount of potable water used for cooling and IT kWh load for each data centre building.

44. Potable water used for the cooling process must not exceed 62,560,000 litres per annum on full occupation of the data centre campus.

45. Operational noise from each Build Zone must not exceed the noise limits at the nearest receptors set out in the Design Code.

46. Prior to commencement of development within a Build Zone, an Acoustic Specification Report containing design stage predictions of operational noise in accordance with requirements set out in the Design Code shall be submitted to the Local Planning Authority for approval in writing.

47. The LPA must be notified seven days in advance of the date of occupation / first use of development within a Build Zone. Within one month of first use / occupation of development within a Build Zone, an Acoustic Commissioning Report (ACR) in accordance with requirements set out in the approved Acoustic Specification Report (ASR) shall be submitted to the Local Planning Authority for approval. In the event of any non-compliance with the ASR, a programme must be submitted to the Local Planning Authority for approval alongside details of any additional mitigation. Within six months of first occupation / first use, a revised ACR must be submitted for approval. If there are any residual non-compliance issues, operation of the building must cease until these can be resolved to the satisfaction of the LPA.

48. The campus management security building in Build Zone C should achieve a 5dB(A) reduction over the operational limits set out in the Design Code to allow for future data centre occupation on that Build Zone.

49. All generators must be fitted with a Selective Catalytic Reduction System or an alternative advanced active emissions control technology to reduce emissions of nitrogen oxides (NO_x) and / or ammonia (NH_3) to a level where there would be no significant adverse impact on human or ecological receptors in the vicinity of the Data Centre Campus. Details of any alternative to SCR must be submitted to the Local Planning Authority for approval prior to implementation.

SCHEDULE 3 – INTERPRETATION

1. Terms used in this Order have the following meanings:

Acoustic Commissioning Report	means a report in accordance with the requirements of the approved Acoustic Specification Report
Acoustic Specification Report	means a report containing design stage predictions of operational noise
Alteration	includes the construction of any mezzanine floor;
ANPR camera	means an Automatic Number Plate Recognition camera;
Building	excludes structures housing plant or machinery such as pumping stations, kiosks and tanks;
Build Zone	means Build Zones A-G as shown on Plan 1 within which buildings and ancillary infrastructure are permitted.
Campus Management Building	means the construction of the campus management building of up to 2,700sq.m GEA of floorspace approved under Part 1 of this Order;
Campus Security Building	means the construction of the campus security building of up to 3,400sq.m GEA of floorspace approved under Part 1 of this Order;
Circular Economy Statement	means a strategy for minimising waste and maximising resource efficiency;
Confirmation Date	means the date on which the Local Planning Authority has confirmed that the proposed development falls within the scope of this Order or, failing such a confirmation or refusal by the Local Planning Authority, the day after 28 days from the submission of the Prior Notification Form;
Construction Travel Plan	means a strategy for promoting sustainable travel for construction workers;
Data Centre	means the construction of up to 340,000 sq.m GEA of data centre floorspace approved under Part 1 of this Order;
Data Centre Campus Area	means the area shown on the Plan attached to this Order at **Appendix 1** as within the LDO boundary;
District Heating Energy Centre	means the district heating energy centre up to 3,300 sq.m GEA approved under Part 2 of this Order;
District Heating Network	means the network of pipes connecting the data centres to the District Heating Energy Centre and pipes from data centres and District Heating Energy Centre to termination points at the public highway.

Electrical Infrastructure	means the electrical substations and distribution infrastructure approved under Part 3 of this Order;
Enabling works	means preliminary construction activities including site clearance, ground investigations, construction of temporary access roads and erection of site hoarding;
Energy Statement	means a document outlining how the development will meet carbon reduction and energy efficiency standards;
Exceedance Flow Routing Plan	means a plan showing the safe, planned movement of surface water runoff during extreme, high-intensity, or infrequent rainfall events that exceed the design capacity of the site's primary sustainable drainage system (SuDS) or drainage network;
Fire Statement	means a document which defines the fire safety objectives and performance requirements of the development and the methods by which these objectives will be provided/satisfied;
Foul Water Drainage Strategy	means a strategy outlining how foul water effluent is conveyed to a public sewer;
Horticultural facility	means an indoor horticultural facility of at least 50,000sq.m GEA as approved under Part 1 of this Order;
Intrusive Ground Investigation Report	means a report outlining subsurface conditions to assess geotechnical and environmental risks;
Landscape Mounds	means mounds constructed from material excavated from the site;
Lighting Strategy	means a strategy for lighting the site;
Locally Equipped Area for Play	means an area of open space specifically designated and laid out with features including play equipment for children up to the age of 8;
Minor material amendment	means an amendment to the proposals previously confirmed as falling within the LDO through the prior notification process that is not substantially different but has a material impact;
Net Growing Area	means the area used for growing produce excluding plant, machinery and other ancillary uses;
Non-material amendment	means an amendment to the proposals previously confirmed as falling within the LDO through the prior notification process that is not substantially different but has no material impact;
Plan 1	means the Plan attached to this Order at **Appendix 2**, showing the build zone phasing;
Plan 2	means the Plan attached to this Order at **Appendix 2**, showing maximum ground levels

Plan 3	means the Plan attached to this Order at **Appendix 2**, showing location of priority landscape mounds;
Plan 4	means the Plan attached to this Order at **Appendix 2**, showing the phasing of the Ecology Park;
Plan 5	means the Plan attached to this Order at **Appendix 2**, showing the Ecology Park parts 1-3 excluding priority landscape mounds;
Plan 6	means the Plan attached to this Order at **Appendix 2**, showing site wide phasing;
Practically completed	means the works are functional, safe and fit for their intended purpose;
Primary Infrastructure Corridor	means the main vehicular access from Fen Lane through the Data Centre campus including shared footpath/cycleway, swale, culverts, pipework and associated landscaping.
Qualified Person	means a person included on the Register of Qualified Persons for the CL:AIRE Definition of Waste: Development Industry Code of Practice;
Secured by Design	means an accreditation scheme operated by the UK Police supporting the principles of 'designing out crime' and administered by the Designing Out Crime Officers;
Single Operator	means data centres under the control of a single company;
Stage 1 Road Safety Audit	means an independent, proactive safety review conducted upon completion of the preliminary design for highway schemes;
Surface Water Drainage Scheme	means a strategy for managing rainwater runoff from a development to prevent flooding and pollution;
the East Havering Data Centre Campus area	means the area shown on the Plan attached to this Order at **Appendix 1** as within the LDO boundary;
the East Havering Data Centre Campus LDO Code of Construction Practice	means the East Havering Data Centre Campus Local Development Order Code Of Construction Practice attached to this Order as **Appendix 4**;
the Discharge of Condition Form	means the form at **Appendix 5;**
the East Havering Data Centre Campus LDO Design Code	means the East Havering Data Centre Campus Local Development Order Design Code attached to this Order as **Appendix 3**;

the Ecology Park	means a site for public recreation and nature conservation within the East Havering Data Centre Campus of not less than 113ha as approved under Part 2 of this Order;
the Prior Notification Form	means the form at **Appendix 6;**
Tree Protection Plan	means a drawing / document outlining how trees will be protected during construction works;
Tree Survey	means an assessment conducted by an arboriculturist to evaluate the species, size, heath and structural condition of trees on or near a development adhering to BS5837:2012 (or as subsequently amended).
Visitor Centre	means a visitor centre including welfare and storage facilities of no less than 300sq.m GEA and up to 600sq.m GEA providing information, discovery and learning facilities as approved under Part 1 of this Order.
Wayfinding Strategy	means a strategy for navigating, orientating and moving through an environment;
Welfare facilities	means essential amenities provided by employers to ensure the health, safety and well-being of staff at work such as toilets, washing stations with hot/cold water, drinking water and suitable areas for resting, eating and changing clothes;
Whole Life Carbon Statement	means a statement the evaluates the total greenhouse gas emissions of a development across its entire life cycle, combining both embodied carbon and operational carbon in line with the latest GLA's Whole Life-Cycle Assessment Guidance;
Written Scheme of Investigation	means a document outlining the scope, methodology and aims of archaeological works prepared by a qualified archaeologist.

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East Havering Data Centre Campus Local Development Order



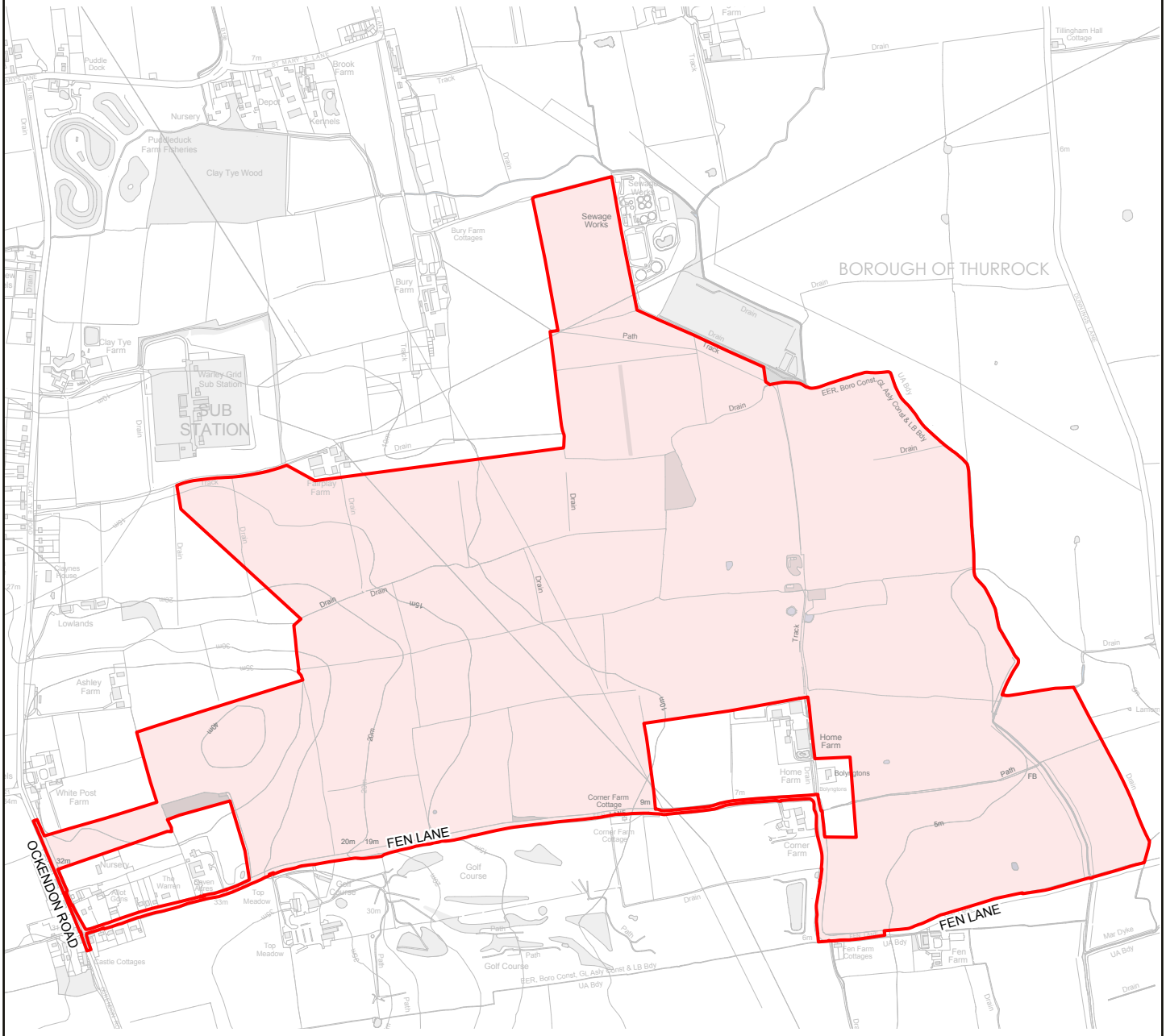




APPENDIX 1 - DRAFT LDO SITE BOUNDARY PLAN

March 2026

Havering
LONDON BOROUGH



LDO Boundary

EAST HAVERING DATA CENTRE CAMPUS

PROPOSED LDO BOUNDARY

north

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0 250 500 metres

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East Havering Data Centre Campus Local Development Order





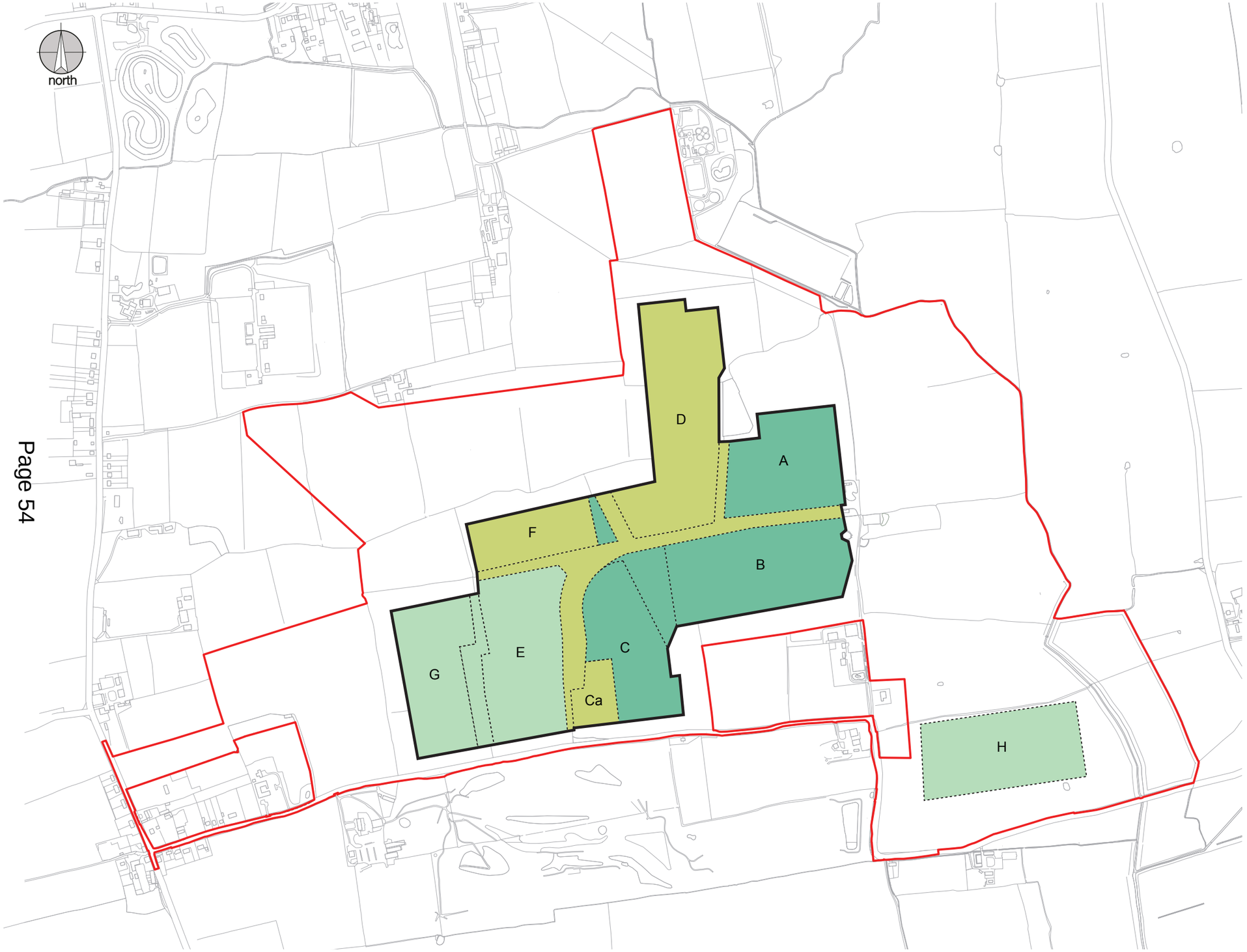




APPENDIX 2 - DRAFT LDO PLANS 1-6

March 2026

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LDO Boundary

Data Centre Campus Boundary

Phase 1

Phase 2

Phase 3

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 1

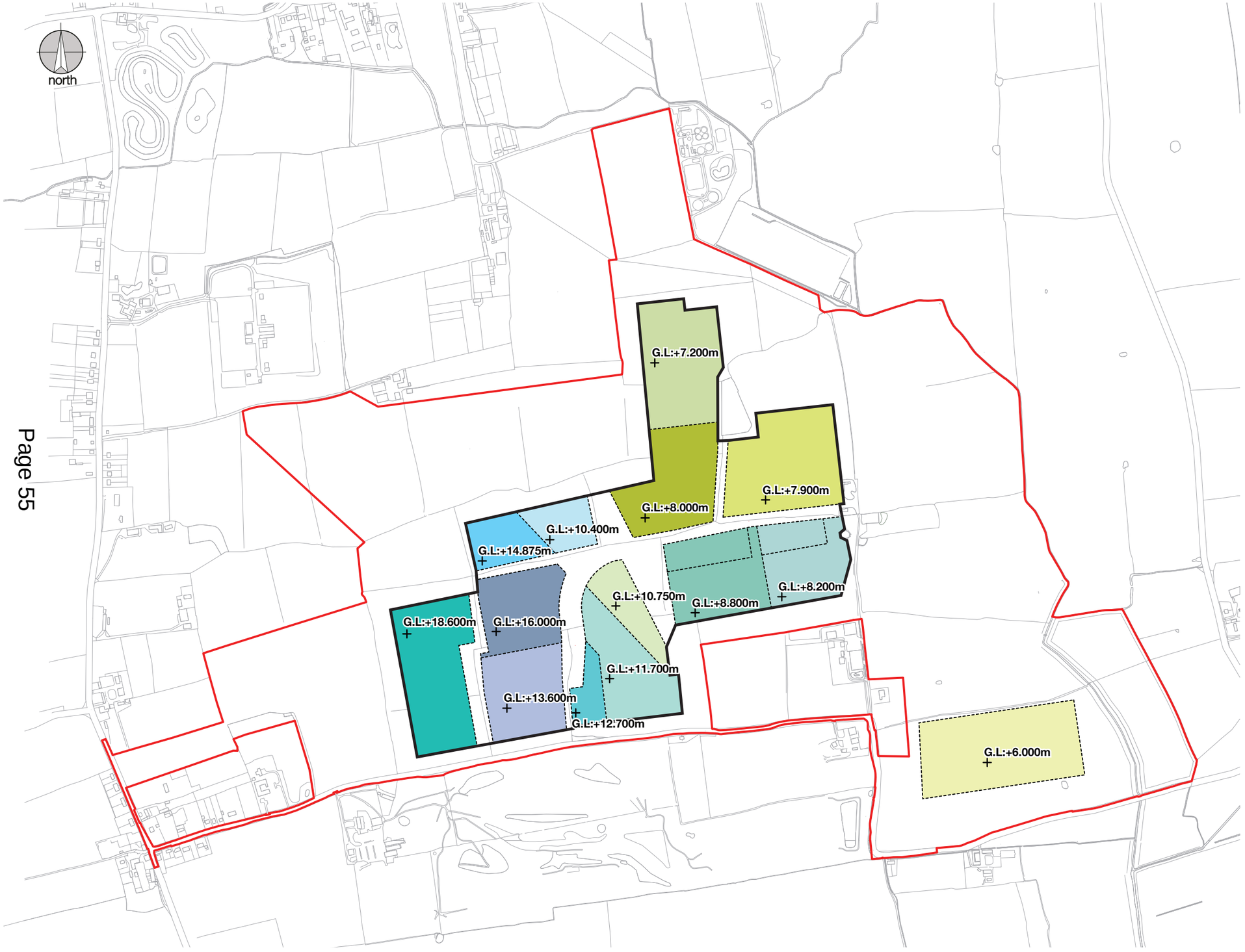
BUILD ZONE PHASING

Scale 1: 10 000 @ A3

0 500 metres

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LDO Boundary

Data Centre Campus Boundary

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 2

GROUND LEVELS

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LDO Boundary

Data Centre Campus Boundary

Phase 1

Phase 2

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 3

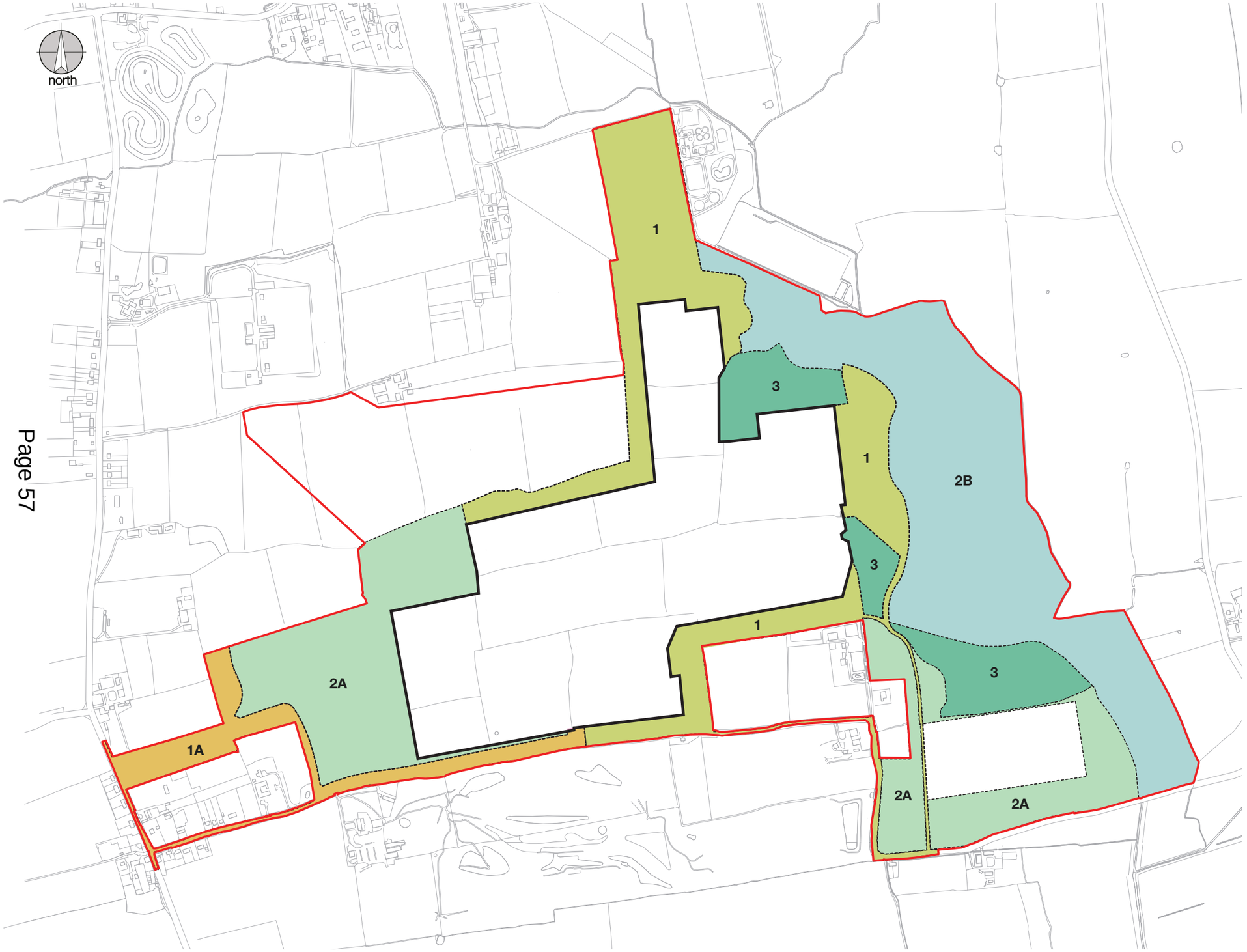
PRIORITY LANDSCAPE MOUNDS

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LDO Boundary

Data Centre Campus Boundary

Phase 1A

Phase 1

Phase 2A

Phase 2B

Phase 3

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 4

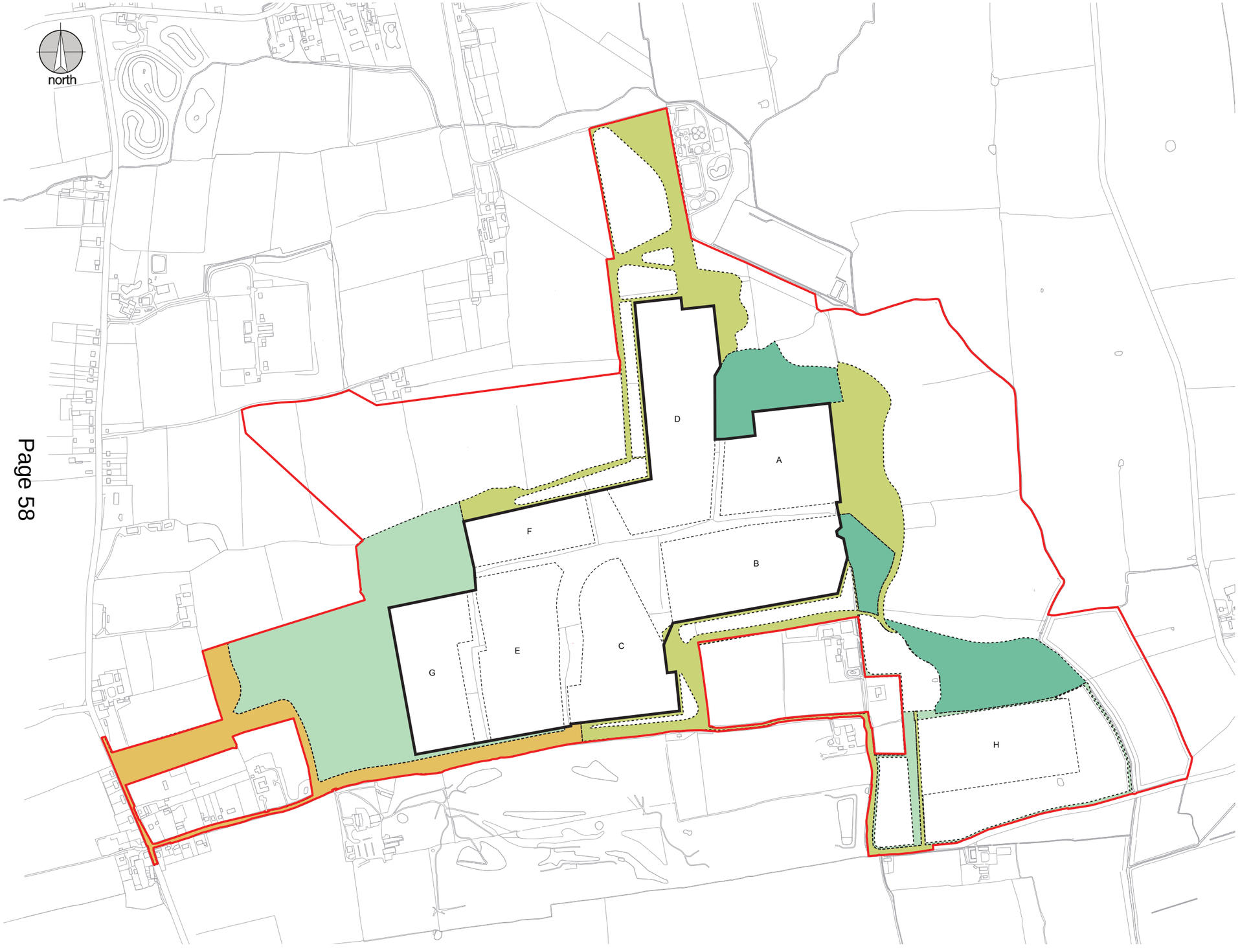
ECOLOGY PARK

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LDO Boundary

Data Centre Campus Boundary

Phase 1A

Phase 1

Phase 2A

Phase 3

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 5

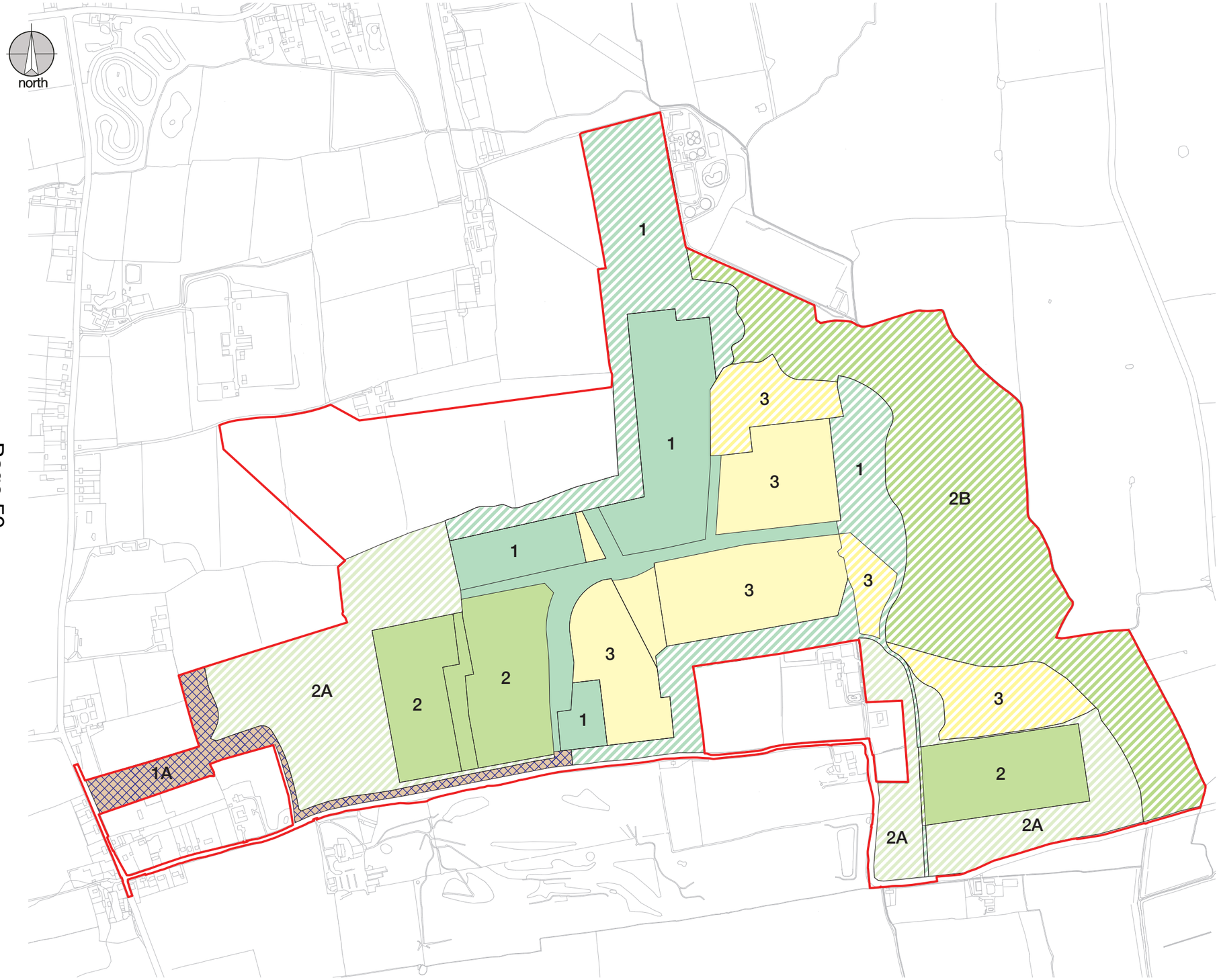
ECOLOGY PARK PARTS 1-3 EXCLUDING PRIORITY LANDSCAPE MOUNDS

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LDO Boundary

Phase 1A

Ecology Park Phase 1A

Phase 1

Ecology Park Phase 1

Phase 2

Ecology Park Phase 2A

Ecology Park Phase 2B

Phase 3

Ecology Park Phase 3

EAST HAVERING DATA CENTRE LOCAL DEVELOPMENT ORDER

PLAN 6

SITE WIDE PHASING

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East Havering Data Centre Campus
Local Development Order









APPENDIX 3 - DRAFT DESIGN CODE

March 2026

Havering
LONDON BOROUGH

East Havering Data Centre Campus LDO Draft Design Code

Contents

Page

Introduction 3

Part 1: East Havering Data Centre Campus : Introduction 5

1A Build Zone Design Requirements 6
1B Data Centres 12
1C Campus Management and Security Facilities 18
1D Electrical Infrastructure 19
1E District Heating Energy Centre 19
1F Indoor Horticulture 20
1G Visitor Centre 21
1H Sustainable Design Standards 22
1I Operational Noise Limits 23
1J Plot Access, Parking and Servicing 29
1K Lighting 35
1L Landscaping 41
1M Ecological Creation Features 46
1N Recycling and Waste Management 48
1O On Plot Drainage Standards 49
1P External Building and Site Signage 50
1Q Utility Infrastructure 51

Part 2: Site Wide Infrastructure 52

2A Site Road Design Standards 53
2B Standards for Shared Footway and Cycle Path 58
2C Signage 58
2D Campus Security Gates 58
2E Operational and Estate Management Parking Provision 60
2F Lighting 60
2G Landscaping 63
2H Ecological Creation Features 69
2I Drainage Standards 69
2J Service Infrastructure 72

Part 3: Ecology Park 73

3A Soft Landscaping 74
3B Hard Landscaping 82
3C Landscaped Earth Mounds 87
3D Visitor Provision 91
3E Lighting 95

Part 4: Highway Standards 97

4A	**General Requirements**	98
4B	**Highway Works on Fen Lane**	98
4C	**Highway Works on Ockendon Road**	99
4D	**Lighting Standards**	99
4E	**Tree Protection Measures**	99
4F	**Ecological Creation Features**	101

Apendices

Appendix 1: Accepted Luminaires
Appendix 2: Soft Landscaping Specification
Appendix 3: Schedule of General Maintenance Requirements for Street Furniture and Visitor Provision, Play Equipment and Footpaths/Cycleways
Appendix 4: Tree Protection Schedule and Tree Protection Plans
Appendix 5: Highway Drawings
Appendix 5a: Fen Lane and Ockendon Road Drawings;
Appendix 5b: Cross Sections;
Appendix 5c: Long sections;
Appendix 5d: Contours Plan;
Appendix 5e: Drainage drawings; and
Appendix 5f: Construction detail drawing.

East Havering Data Centre Campus: Introduction

1. The East Havering Data Centre Campus Design Code forms part of the East Havering Data Centre Campus Local Development Order 2026 (the LDO) and must be read in conjunction with it.

2. The Design Code sets out the minimum standards to be applied to the development permitted by the Order to ensure that a high and consistent standard of design is maintained throughout.

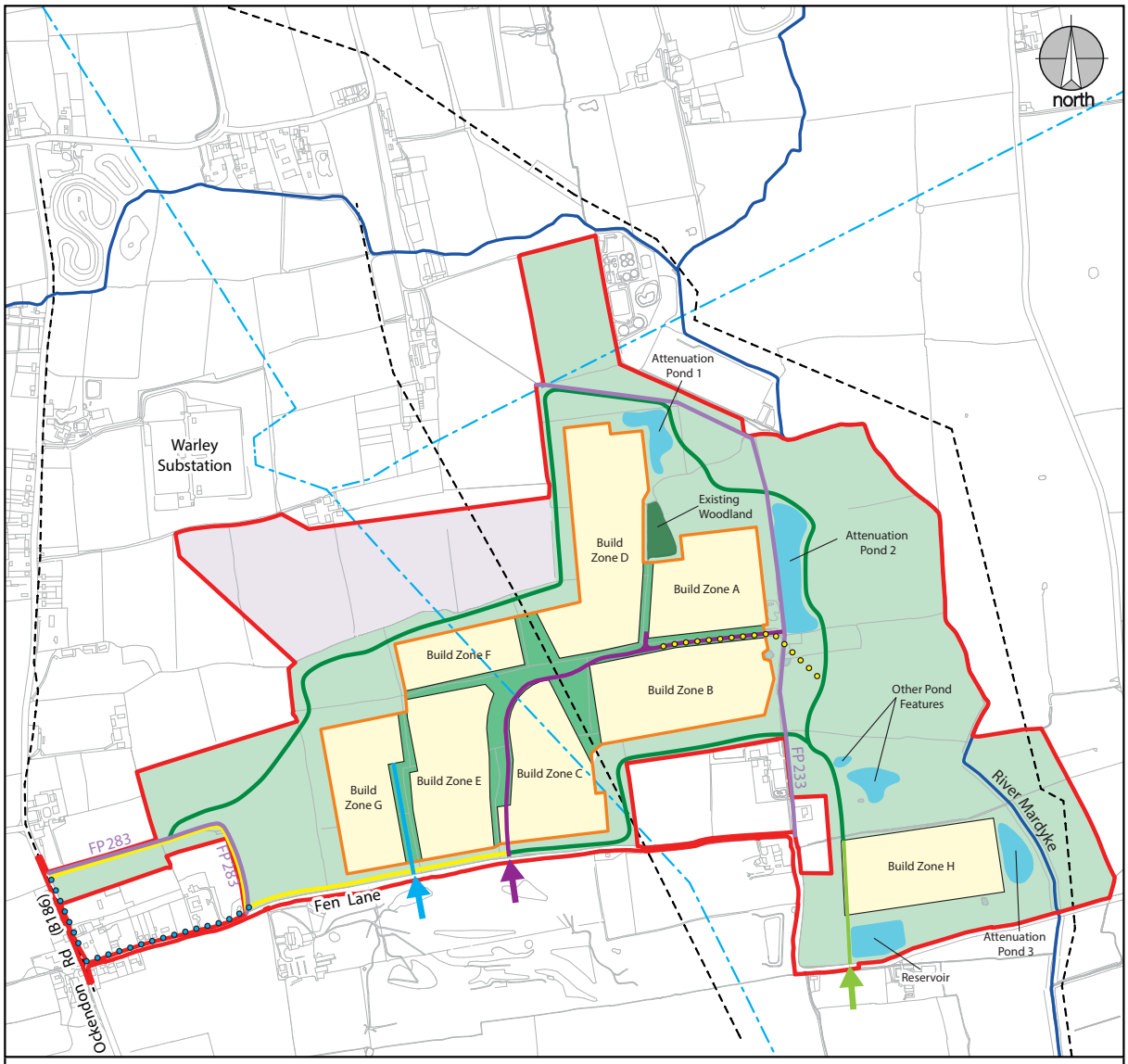
3. The principles of sustainable design are incorporated into the Design Code to deliver a stimulating working environment within the campus area which will meet the commercial requirements of future occupiers. The campus will be set within an Ecology Park providing public access to natural landscapes.

4. The principal components of the spatial development framework are identified on Figure 1.1 and are described throughout the Design Code using the terminology in the key.

5. Part 1 of this Design Code sets out standards for individual development plots within the designated Build Zones. Infrastructure standards, (excluding the ecology park) are set out in Part 2. Standards for the Ecology Park are set out in Part 3 and the standards for Highway Works on Fen Lane and Ockendon Road in Part 4.

6. Development must accord with all relevant aspects of the Design Code to benefit from the permitted development rights conferred by the LDO.

Figure 1.1: Spatial Development Framework



SPATIAL DEVELOPMENT FRAMEWORK

- LDO Boundary
- Data Centre Campus
- Campus Infrastructure / Landscaping
- Ecology Park
- Area reserved to accommodate power connections to Warley Substation
- Primary infrastructure corridor
- Emergency access route
- River Mardyke
- Gas mains
- National Grid overhead power lines
- Primary site access
- Western access
- Eastern access
- Existing public footpath
- New footway
- Primary strategic footpath/ cycleway to Data Centre Campus
- Ecology park primary footpath/ cycleway

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Part 1: Plot Design Standards within Build Zones

1A Build Zone Design Requirements

Build Zones

1A.1 All buildings, external plant and plot based infrastructure must be located within Build Zones A-H as shown on Figure 1.1.

Land Uses

1A.2 The land uses acceptable within a particular Build Zone are shown on Figure 1.2. Only these uses will be permitted.

Development Phasing

1A.3 The Build Zones shall be developed in accordance with the phasing plan at Figure 1.3.

1A.4 Other than for Build Zones F and H or the campus security facility on Build Zone C, full details of the development of each Build Zone shall be provided with each Prior Notification submission.

1A.5 The rate of development within a Build Zone shall proceed in a controlled and co-ordinated manner in accordance with the Code of Construction Practice (CoCP).

1A.6 Development within a Build Zone shall not compromise the delivery of the remaining development within that Build Zone and shall be subject to the delivery of the necessary supporting infrastructure.

Height

1A.7 Final ground levels shall not exceed the levels (AOD) shown on Figure 1.4 .

1A.8 Finished floor levels of buildings are not fixed and may be above or below the maximum ground levels shown on Figure 1.4. The height of buildings shall be measured from the finished floor level to the highest point of the roof and other than in Height Restriction Zone 4 shall include lift overruns, roof top plant and acoustic screens, and/or any other structure (excluding exhaust flues).

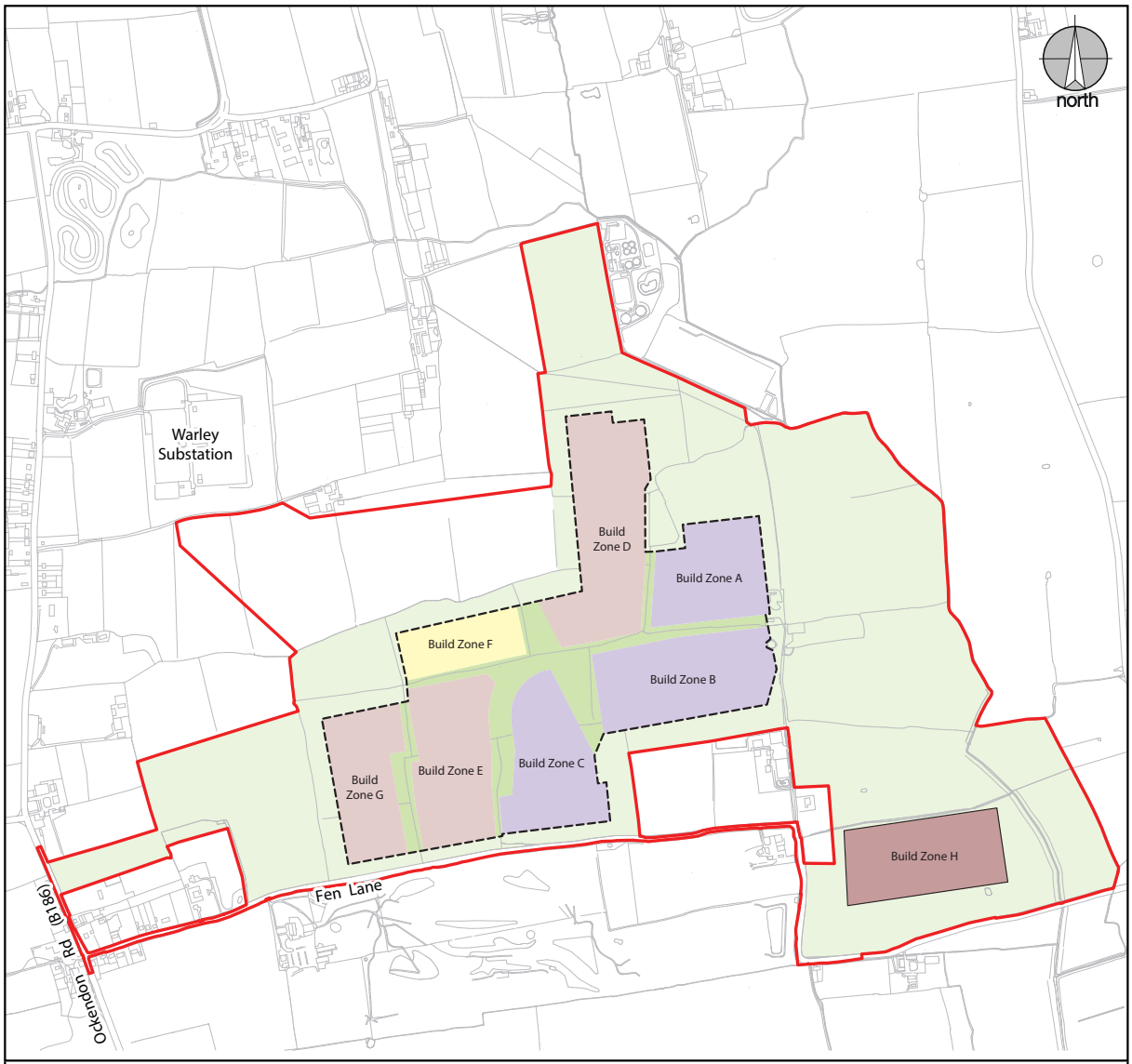
1A.9 Lift overruns, roof top plant and acoustic screens and/or any other structure (excluding exhaust flues) within Height Restriction Zone 4 shall be permitted up to a maximum height of 6m (including an allowance for a 1m high acoustic screen) above a 21m high building. Roof top plant shall otherwise not exceed 5m in height.

1A.10 Exhaust flues in all height restriction zones shall extend no more than 5m above roof top plant including acoustics screens (where required) or 5m above the building height in all other cases.

1A.11 Roof top mansafe systems shall not exceed 1.5m in height from the roof of the building.

1A.12 Where the FFL is lower than the maximum ground levels shown on Figure 1.4, buildings shall not exceed the relevant maximum height(s) (mAOD) for that part of a Build Zone as shown on the maximum heights plan in Figure 1.5. An illustrative example is shown on Figure 1.6.

Figure 1.2: Land Use Plan



LAND USE PLAN

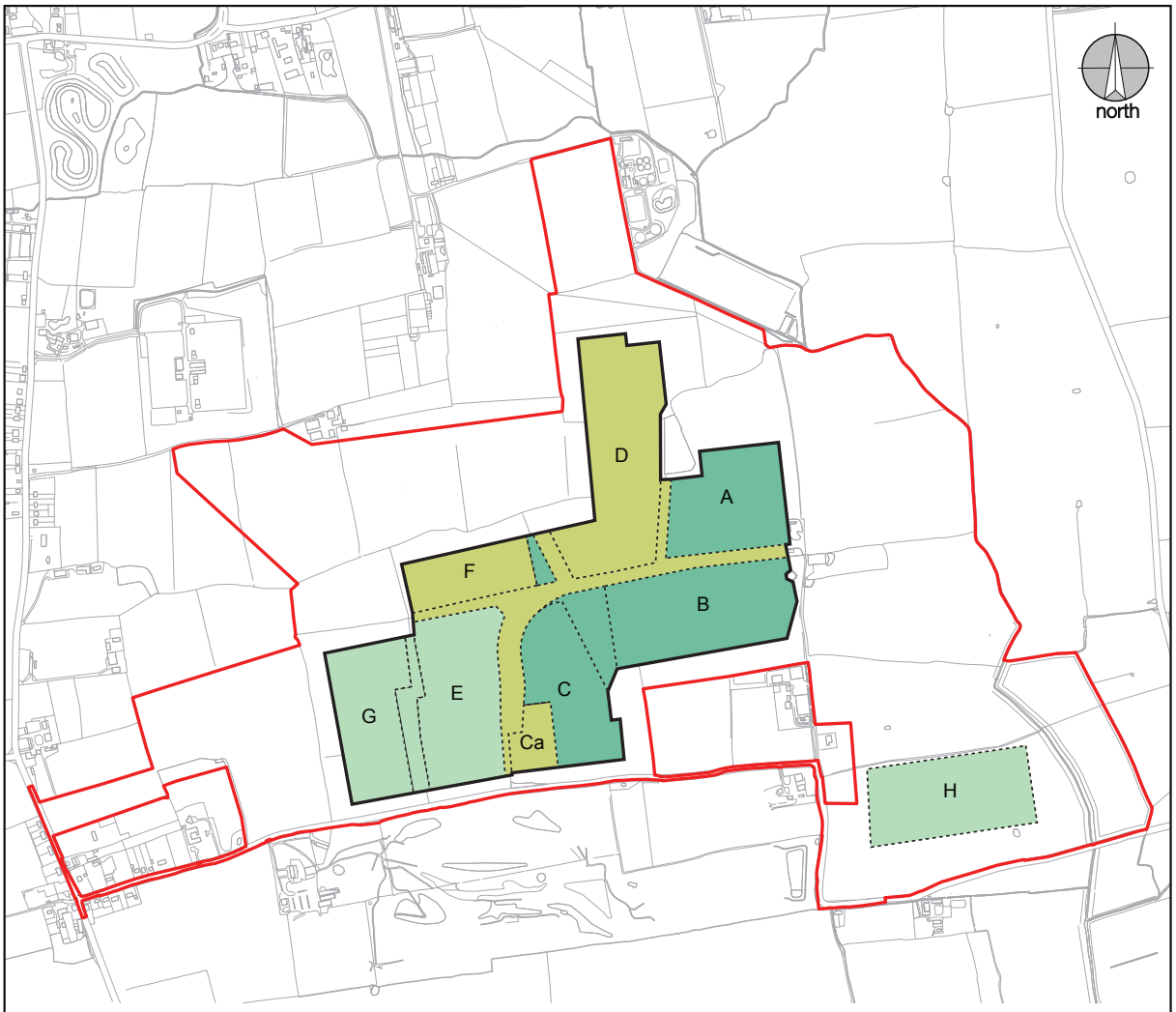
- LDO Boundary
- Data Centre Campus
- Campus Infrastructure / Landscaping
- Ecology Park
- -Campus management / security facilities
  -District heating centre
  -Electrical infrastructure
- -Data centres
  -Campus management / security facilities
  -District heating centre
  -Electrical infrastructure
- -Data centres
  -Campus management / security facilities
  -Electrical infrastructure
- -Indoor horticulture
  -District heating centre
  -Visitor centre
  -Electrical infrastructure

Scale
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Figure 1.3: Development Phasing



DEVELOPMENT PHASING

- LDO Boundary
- Data Centre Campus Boundary
- Phase 1
- Phase 2
- Phase 3

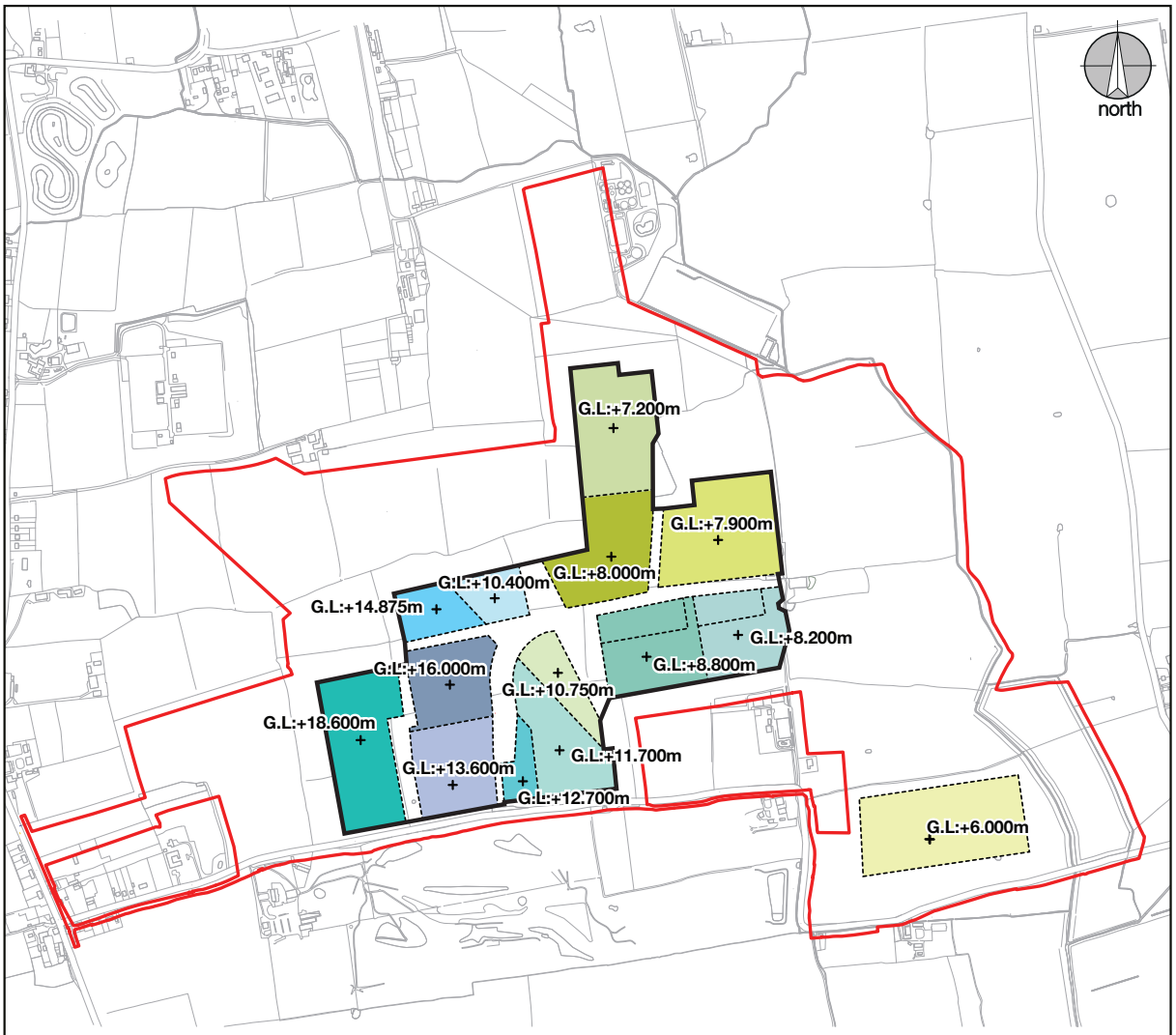
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Figure 1.4: Ground Levels



GROUND LEVELS

LDO Boundary

Data Centre Campus Boundary

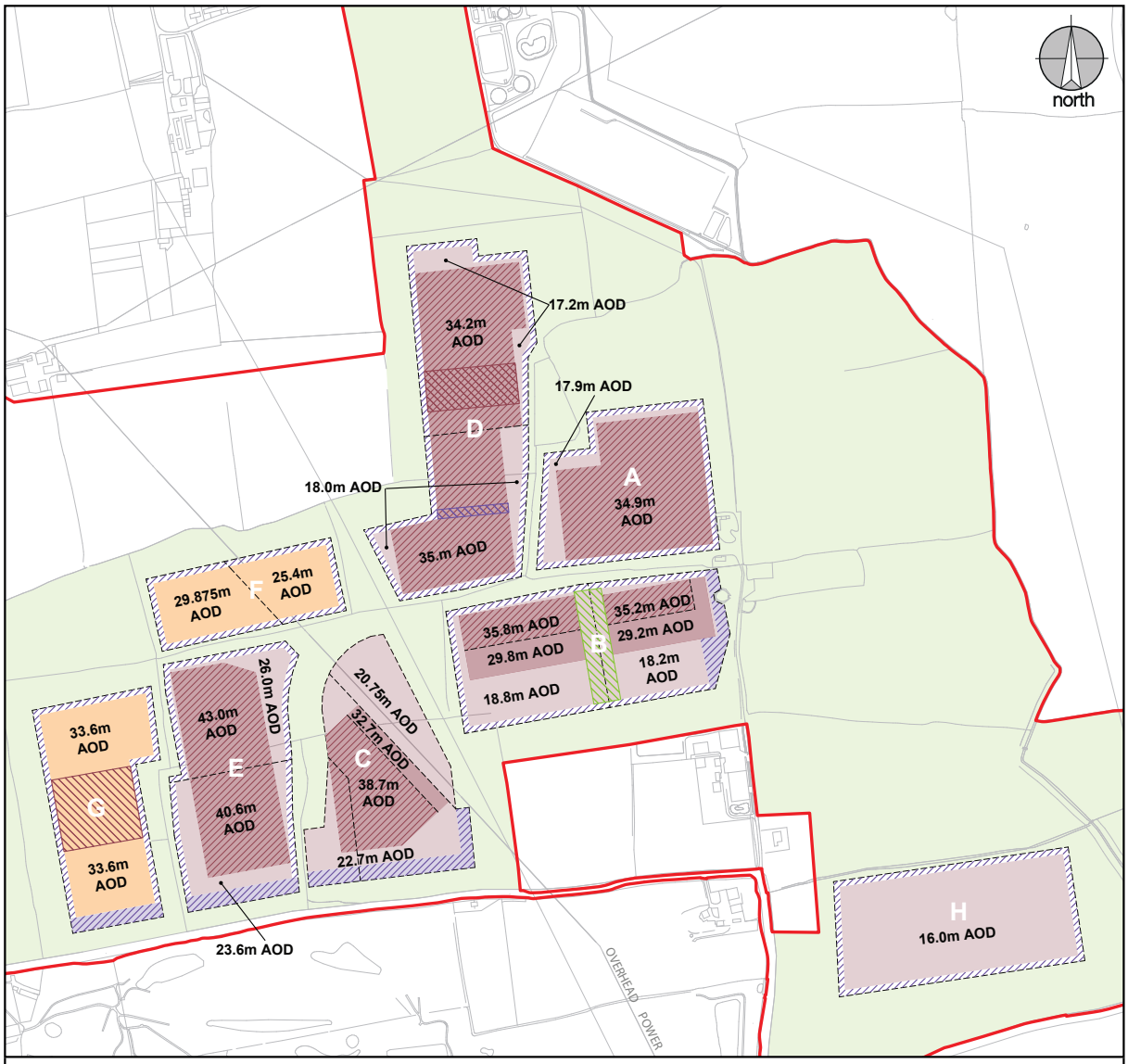
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Figure 1.5: Maximum Heights (AOD)



MAXIMUM HEIGHTS (AOD)

Scale
0 250 m

- LDO Boundary
- Height Restriction Zone 1 **(Max 15m above FFL)**
- Height Restriction Zone 2 **(Max 10m above FFL)**
- Height Restriction Zone 3 **(Max 21m above FFL)**
- Height Restriction Zone 4 **(Max 21m above FFL + lift overruns and rooftop plant including acoustic screens up to max 6m)**
- 30m Separation Corridor Zone max height 10m
- 15m Fixed Separation Corridor max height 10m
- 45m Fixed Separation Corridor max height 10m
- 25m Buffer Zone
- 10m Buffer Zone

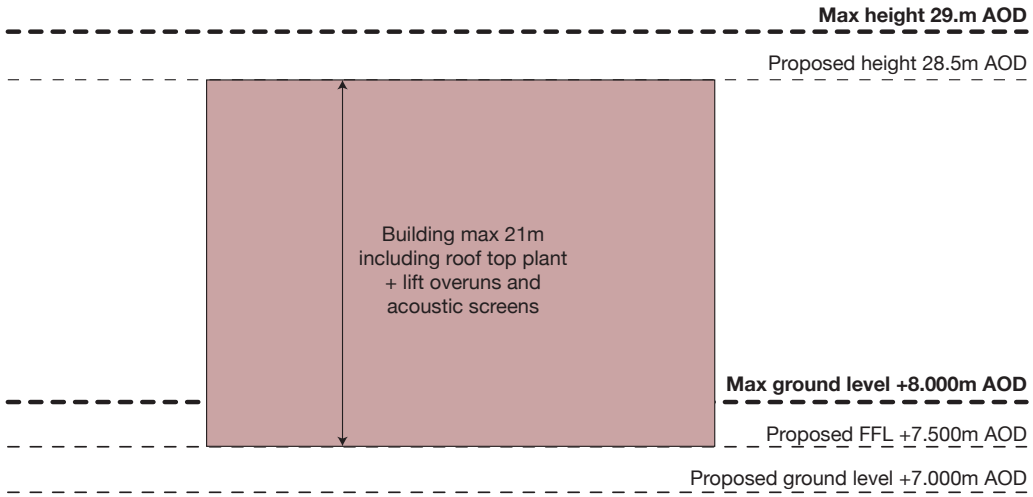
Note: All heights are maximum heights AOD
Heights are measured from finished floor levels (FFL) (AOD)

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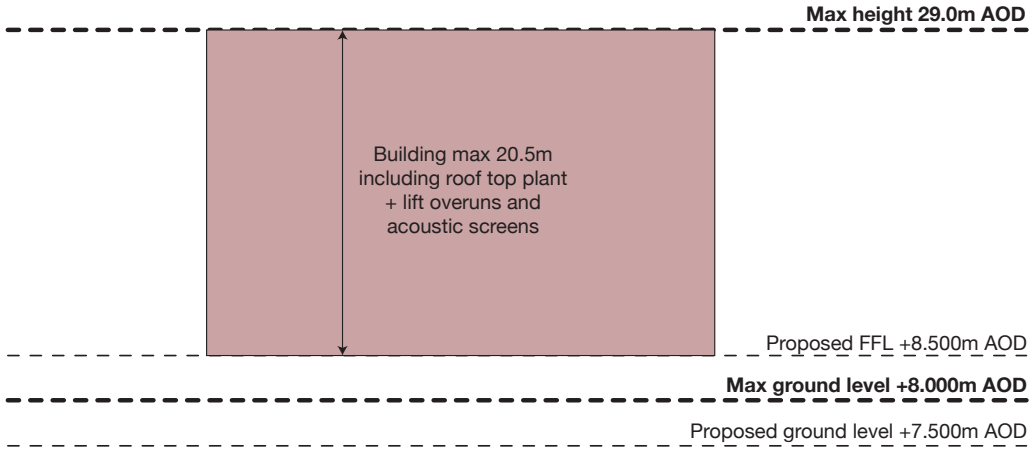
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Figure 1.6 Maximum Heights Illustration:

Height Zone 3 - Example 1: FFL below maximum ground level



Height Zone 3 - Example 2: FFL above maximum ground level



1A.13 Where the FFL is set higher than the maximum ground level, buildings shall only be permitted where the finished floor level is set to ensure that the maximum height mAOD as shown in Figure 1.4 is not breached. An illustrative example is shown on Figure 1.6.

1A.14 Within the buffer zones, only soft and hard landscaping, access roads, parking, lighting, fencing and gates, security cameras or sensors and related electric supply control cabinets or pillars may be provided.

1B: Data Centres

Building Size, Location and Separation Corridors

1B.1 Data centre buildings within any Build Zone shall not exceed 200m in length.

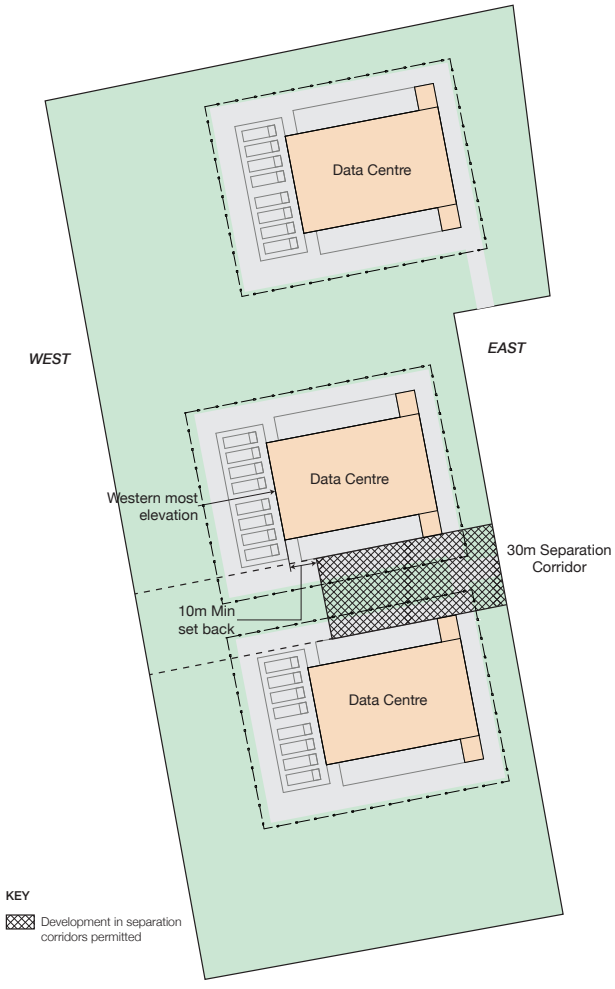
1B.2 There shall be a minimum separation corridor of 15m between data centres as measured from the façade of data centre buildings (excluding gantries) in all Build Zones. A fixed location for a separation corridor between data centre buildings within Build Zones B (minimum width 45m) and D (minimum width 15m) is shown on Figure 1.5. In Build Zones D and G, a 30m separation corridor between data centres is required within the general location shown on Figure 1.5.

1B.3 Each of the following criteria apply to development within separation corridors (including gantries). Development shall not be permitted if it:

- exceed 50% coverage within the corridor;
- exceeds a height of 10m when measured from FFL;
- spans the width of the corridor connecting two data centres.

1B.4 In Build Zone D and G, development within the separation corridors shall additionally be set back by a minimum of 10m from the western elevation of the westernmost data centre as illustrated in Figure 1.7.

Figure 1.7: Separation Corridor



Materials and Roofing Principles

1B.5 Data Centres shall be constructed to the material specification set out in Table 1.1:

Table 1.1: Material Specification

Materials	Data Centre	Campus management	Electrical Infrastructure	Energy Centre	Indoor Horticulture	Visitor Centre
Metal and Industrial Materials						
Metal Cladding including Roofing • Zinc, copper, aluminium, Corten steel or factory-coated steel cladding systems. • Pre-weathered or patinated finishes. • Standing seam or rainscreen systems for refined detailing. **Perforated Metal Plant Screening** • Laser-cut or perforated metal panels (zinc, aluminium, or steel) to screen plant, service areas, or rooftop equipment. • Integrated louvre systems with acoustic performance to mitigate noise from plant areas. • Finishes to match or complement adjacent cladding or screening materials.	✓	✓	✓	✓	✓	
Roofing						
• Single-ply membrane systems (e.g. PVC, TPO or EPDM) suitable for flat or low-pitch roofs • High-performance built-up bituminous or liquid-applied membrane systems where appropriate. • Finishes to be durable, UV-stable, and compatible with rooftop plant zones, maintenance access and photovoltaic installations where required.	✓					
Masonry and Mineral Materials						
Facing Brick (Buff and Light Earth Colours) • Buff, cream, or soft grey tones. • High-quality mortar detailing to match or subtly contrast with brick tones. **Natural Stone** • Suitable for plinths, boundary walls, or key façade elements. • Textures and colours to complement adjacent materials. **Concrete Block Bricks** • Architectural-grade concrete block units in neutral or buff tones with textured, split-face, or honed finishes for secondary façades or service structures.	✓	✓	✓	✓	✓	✓

Glazing Materials						
Glass and Transparent Structures • High-performance glass. • Low-iron, laminated, or thermally efficient glazing units. • Minimal and visually recessive framing systems (timber, aluminium, or steel). • Limited reflectivity.	✓	✓			✓	✓
Natural and Timber Materials						
Charred Timber Cladding • Sustainably sourced and charred using traditional shou sugi ban methods for accent façades and detailed architectural features. **Treated, Approved FSC-Certified Timber** • Fully FSC-certified timber, responsibly sourced. • Pressure-treated or thermally modified for cladding, detailing, or external joinery. **Timber Shingles** • Treated hand-split or machine-cut timber from durable, sustainably sourced species (e.g., cedar, larch, oak) for roofing and vertical cladding applications.		✓				✓
Roofing Materials						
Clay, Concrete Tile or Slates • Terracotta, warm grey, muted earth tones. • Sloped roofs. • Traditional appearance and thermal performance. **Green / Vegetated Roof** • Low-maintenance grasses or sedum. • Flat or low-slope roofs. • Sustainability and stormwater management. **Single-Ply Membrane (TPO / EPDM / PVC)** • White, light grey, black. • Flat roofs. • Durable, efficient, minimal visual impact.						✓

1B.6 All materials shall durable, compliant with fire safety standards, minimise visual impact and embodied carbon and shall be locally sourced where possible.

1B.7 A minimum 20% of building material elements shall comprise of recycled or reused content.

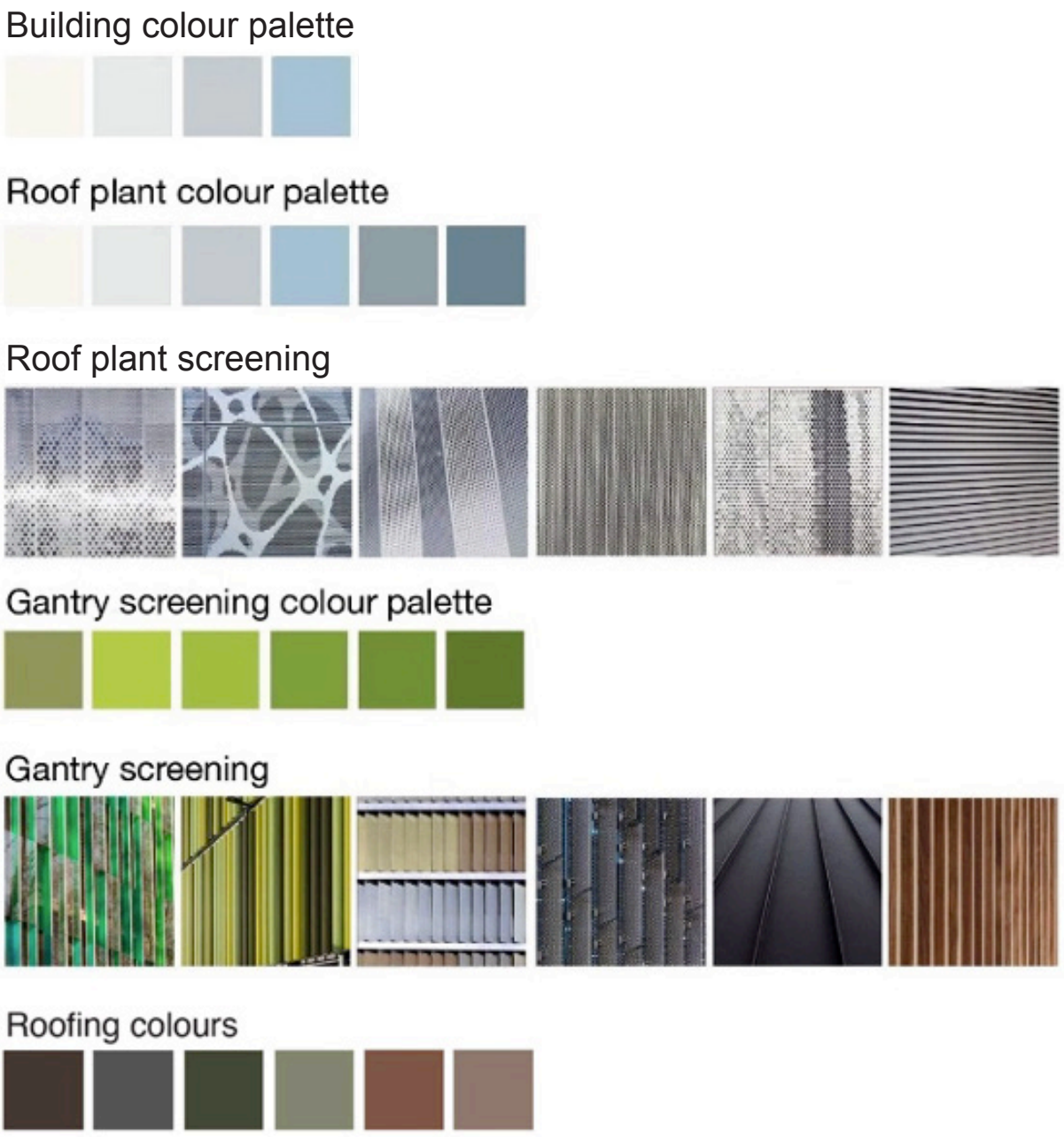
1B.8 Building entrances, technical support areas with windows and glazed facades shall face primary building frontages where possible.

1B.9 The façade of data centre buildings and external appearance of gantry screens and roof top plant shall accord with the indicative colour palette set out in Figure 1.8.

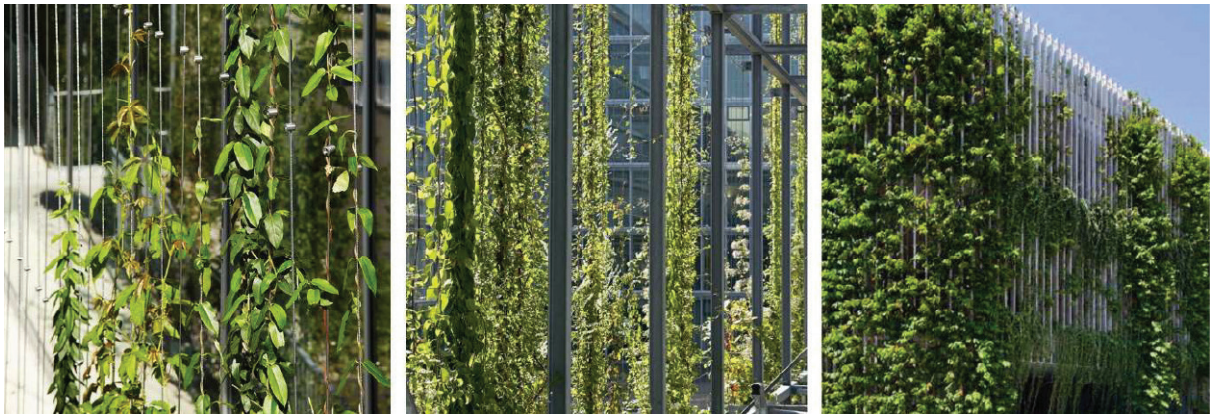
1B.10 Unless it is demonstrably not feasible

- Green/living walls and/or climbing plants shall be incorporated on building elevations; and
- Green roofs shall be incorporated on areas not required for plant or photovoltaic panels.

Figure 1.8: Data Centre Colour Palette and Indicative Materials



Indicative Green /Living Wall



1B.11 Roof materials should be non-reflective and dark or recessive in colour. Lighter colours should be avoided.

Indicative Roofing Materials



Gatehouses

1B.12 Gatehouses shall be constructed to the material specification for campus management set out in Table 1.1 and accord with the colour palette in Section 1C.

External Plant

1B.13 Permanent external plant ancillary to a data centre building (excluding electrical infrastructure as described in Section 1D) shall be located on rooftops, on gantry support systems or underneath such support systems at ground level adjacent to the data centre building they serve. Wherever possible external plant shall face away from sensitive receptors, such as residential properties, and limited in noise output to meet the operational noise limits set out in Section 1I.

1B.14 External plant may include heat exchangers and pumps, heating and cooling plant, backup power generators, rainwater harvesting and PV renewable energy systems and other related support tanks and plant equipment such as sprinkler tanks and associated pump houses.

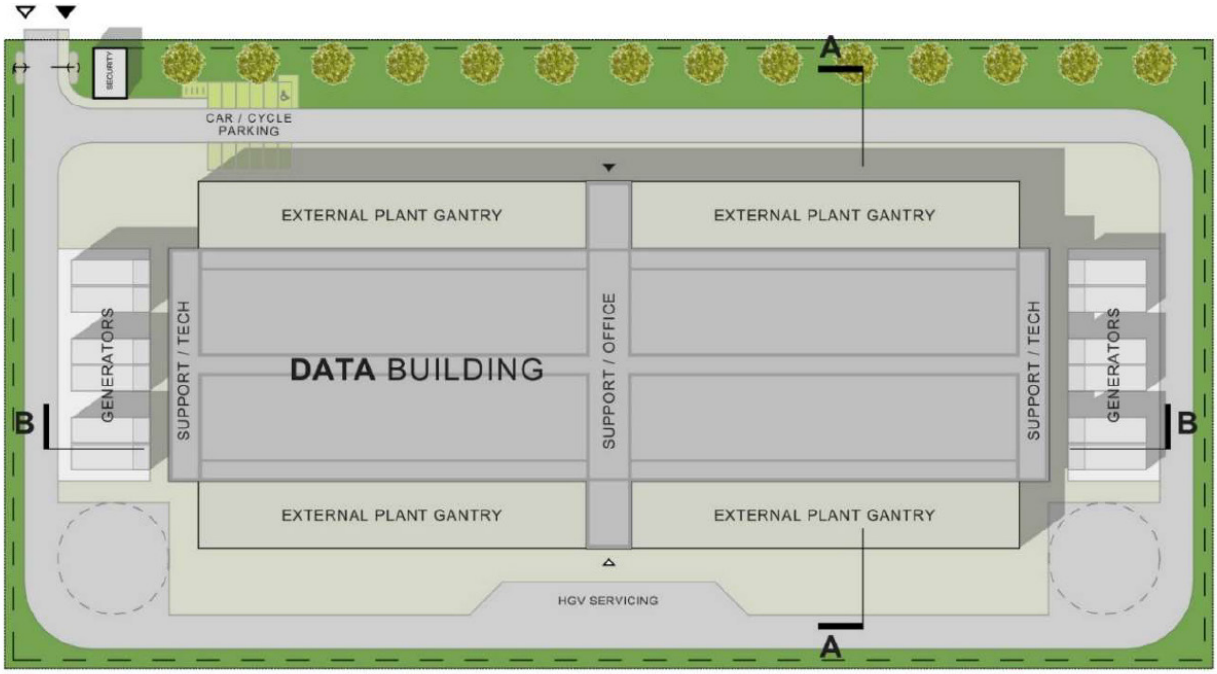
1B.15 Tanks for rainwater harvesting (see 1H.9 – 1H-12) may be stored on or under the gantries or may be underground. The tanks shall be installed to a maximum depth of 9m.

1B.16 Backup power generators may be either single or doubled stacked either at ground level immediately adjacent to the building they relate to or on gantries external to the data centre buildings. The fuel tank shall either be integral to the generator or buried underground and pumped to the generator. The requirements set out at 1O.9 shall apply to the storage of fuel on site. Where fuel is stored underground, tanks shall be installed to a maximum depth of 4.5m.

1B.17 Generators shall use hydrogenated vegetable oil (HVO) or an alternative biofuel. Diesel generators are not permitted.

1B.18 A typical arrangement of external plant and generators is shown on Figure 1.9

Figure 1.9: Typical Arrangement of Plant and Generators



1B.19 Backup generators may be used for routine testing and maintenance or in the event of a total grid outage.

1B.20 A small generator <50kVA to provide backup power for an on-plot security gatehouse at the entrance to each plot may be provided if required.

Waste Heat

1B.21 Waste heat connection points shall be incorporated into the cooling system pipework or ducting, within an appropriate location inside data centre buildings to maximise the potential recovery of waste heat.

1C: Campus Management and Security Facilities

1C.1 The Campus Management Security Control Facility (SCF) shall have oversight and management of the security of the whole site. The SCF may include CCTV monitoring rooms, storage and welfare facilities, meeting rooms, offices and maintenance facilities. The SCF shall be located at the main entrance to the data centre campus.

Materials and Roofing Principles

1C.2 The campus management and campus security building shall be constructed to the material specification set out in Table 1.1. The requirements set out at 1B.6 and 1B.7 also apply.

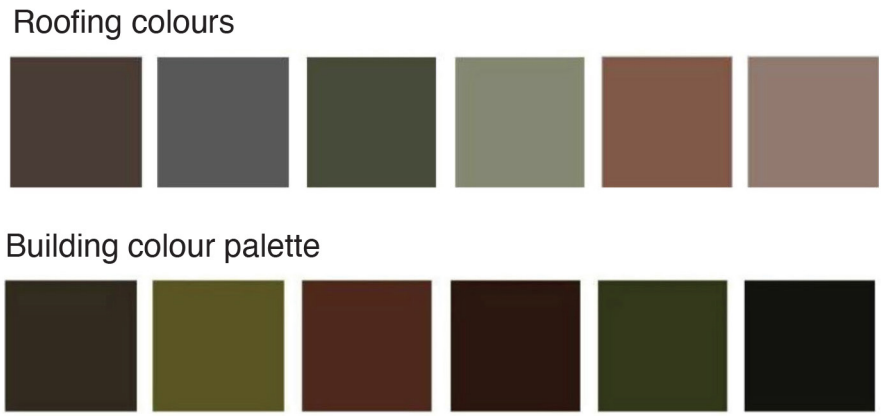
1C.3 Different elevational treatments or colours shall be used to denote the main entrance of a building. The fenestration shall be appropriate to the commercial nature of the development and include areas with windows and/or glazed facades on the primary building façade.

1C.4 External ducting shall be arranged to avoid visual clutter.

1C.5 Green/living walls and/or climbing plants shall be incorporated on building elevations unless it is demonstrably not feasible. Green roofs shall be incorporated on areas not required for photovoltaic panels.

1C.6 The façade of campus management and security building shall accord with the colour palette set out in Figure 1.10.

Figure 1.10: Colour Palette



1D: Electrical Infrastructure

UKPN Substation

1D.1 The UKPN substation shall be located within a fenced compound in Build Zone F and may include:

- a main substation building comprising electrical equipment, switch gear, control/ office building, portable buildings, and cabling; and
- external to the building within the compound:
  - o incomer feeder circuit bays @132kV;
  - o 132 kV customer bays to feed the on-site distribution transformers to include cable sealing ends, surge arrestors, disconnectors, circuit breakers, current transformers, voltage transformers and earth switches.
  - o Bus-section breakers and associated Bus-bars.

Other Electrical Infrastructure

1D.2 Other electrical infrastructure required in connection with the development approved under this LDO may be located within any Build Zone and may comprise:

- various Grid Transformers (GT);
- primary substations each comprising electrical equipment, switch gear, equipment/control buildings and cabling sitting within an external fenced compound;
- primary switch rooms each comprising electrical equipment switch gear and distribution cabling;
- electrical energy centres located adjacent to data centres each comprising low voltage switch gear and transformers. Energy centre sizes may vary depending on the electrical capacity;
- external electrical equipment, equipment rooms and cabling required for an electrical private wire and micro grid network sitting within an external compound; and
- other smaller electrical and telecommunication disruption equipment enclosures and substations.

Materials

1D.3 Electrical infrastructure shall be constructed to the material specification set out in Table 1.1. Buildings housing electrical infrastructure shall accord with the colour palette set out in Figure 1.10.

1E: District Heating Energy Centre

1E.1 The district heating energy centre shall include sufficient space for the installation of pumping and heat generation plant and required ancillary equipment.

General Cladding and Roofing Principles

1E.2 The energy centre building and roofing shall accord with the colour palette set out in Figure 1.10 and shall be constructed to the material specification in Table 1.1. The requirements set out at 1B.6 and 1B.7 also apply.

1E.3 Ducting vents shall cover no more than 5% of the façade.

1F: Indoor Horticulture

Building Size

1F.1 The greenhouse(s) may include ancillary offices, welfare facilities and a packing and storage area.

1F.2 External storage is not permitted.

External Plant

1F.3 External plant, including a hot water storage tank, a CO2 tank, standby generator and water reverse osmosis machine (treatment plant to purify water) shall be located within an external screened compound which shall be no higher than 0.5m above the external plant.

1F.4 No more than one 60 tonne tank of liquid CO2 shall be stored on the site.

1F.5 The standby generator < than 200kVA, shall use hydrogenated vegetable oil (HVO) or an alternative bio oil. Diesel generators are not permitted. Build Zone operational noise limits are set out in Section 1I.

Loading Bays and Servicing Yard

1F.6 A maximum of two loading bays may be provided to enable deliveries by an articulated lorry.

1F.7 Where dock levellers are provided, they shall include flexible shelters to minimise the ingress or air and water into the building. Insulated, electric overhead sectional doors shall include safety windows and coloured to suite the overall elevational treatment.

1F.8 Service yards and loading bays shall be designed so that an articulated lorry can turn and enter/exit the indoor horticulture site in forward gear.

Materials and Roofing Principles

1F.9 The horticultural uses shall be constructed to the material specification set out in Table 1.1. The requirements set out at 1B.6 and 1B.7 also apply.

Indicative Materials





1F.10 Glasshouses shall be provided with overhead blackout screens and side screens to prevent light pollution after dusk.

1F.11 Ancillary offices, welfare facilities, packing and storage areas shall accord with the colour palette set out in Figure 1.10.

Reservoir

1F.12 Water for use in the glasshouses shall be drawn from a new reservoir with a maximum capacity of 40,000 m3 located within the Ecology Park on land to the south of Build Zone H.

1F.13 The reservoir shall comprise a maximum 2m high graded bund (max 1:3 slope) and excavation shall be to a maximum of 2m below existing ground levels.

1G: Visitor Centre

1G.1 The Visitor Centre shall be located adjacent to the ecology park in Build Zone H and shall include:

- a flexible/multi-purpose room or space that can accommodate 25-50 people (a minimum GIA of 70m2) suitable for educational purposes;
- a dedicated area for educational exhibits;
- an ancillary food/beverage provision (vending machines as a minimum);
- ancillary office space;
- storage space; and
- staff restroom including kitchen facilities.

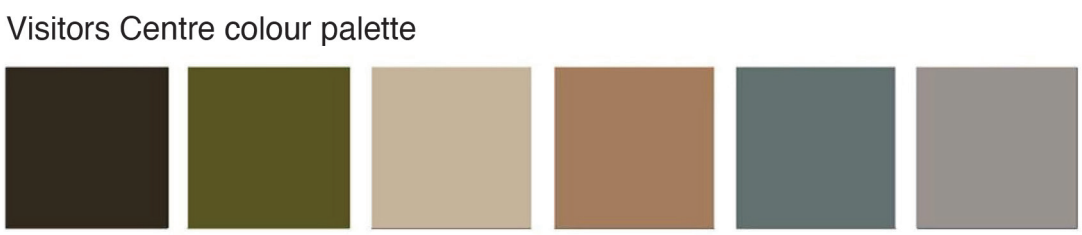
1G.2 The visitor centre shall be fully accessible in accordance with Part M of the Building Regulations (or as subsequently amended).

Materials and Roofing Principles

1G.3 The visitor centre shall be constructed to the material specification set out in Table 1.1. The requirements set out at 1B.6 and 1B.7 also apply.

The façade of visitor centre shall accord with the colour palette set out in Figure 1.11.

Figure 1.11: Colour Palette



1H: Sustainable design Standards

BREEAM Rating

1H.1 Data centres, campus security facility and campus management buildings and the energy centre shall achieve a minimum BREEAM rating of Excellent.

1H.2 The visitors centre shall achieve a BREEAM rating of Outstanding.

Carbon Reduction Targets

1H.3 All data centres shall aim to be carbon net zero.

1H.4 Each data centre building shall achieve as a minimum an on-site carbon reduction of 40% beyond Building Regulations, with at least 14% of this carbon reduction being achieved via energy efficiency measures alone. Where the London Plan target carbon reduction emission rates exceed that stated above each data centre building shall meet the requirements of the London Plan.

1H.5 The campus security facility and campus management building shall achieve an on-site carbon reduction of 100% beyond Building Regulations, with at least 10% of this carbon reduction being achieved via energy efficiency measures alone.

1H.6 The visitor centre shall achieve an on-site carbon reduction of 100% beyond Building Regulations, with at least 35% of this carbon reduction being achieved via energy efficiency measures alone.

1H.7 Where carbon net zero cannot be achieved, a financial contribution towards carbon offset schemes will be required.

Water Use

Potable Water Use

1H.8 The following measures shall be implemented in all buildings to improve domestic water use efficiency in welfare areas:

- AMR water meters and reporting software to enable effective monitoring.
- Leak detection systems equipped with alarms.
- Minimum water efficiency standards for all fixtures and fittings including:
  - Dual flush WCs with a flush volume of 4.5 litres or less;
  - Electronic sensor taps and flow rate less than 6 litres/min at 0.3MPa;
  - Showers flow rate less than 6 litres/min at 0.3MPa.
- Solenoid valves and occupancy controls in each welfare area, water supply controlled by Infra-red movement detectors.

Rainwater Harvesting

1H.9 Rainwater shall be collected and stored from the roof areas of all data centres and glasshouses and prioritised as the primary source of water for data centre cooling and irrigation purposes respectively.

1H.10 Rainwater storage tanks may only be topped up with potable water when water levels in the storage tanks fall below a mid-level sensor.

1H.11 The storage collection tanks shall be sized to meet a peak 24-hour water demand, plus an additional 24-hour reserve and may be above or below ground at a maximum depth of 9m. All rainwater collected shall be filtered and treated before use.

1H.12 Rainwater shall be collected and stored from the roof areas of the campus management, campus security building and visitor centre for non-potable use, such as toilets and irrigation of soft landscaping.

Photovoltaic Panels

1H.13 Photovoltaic panels (PVs) shall be maximised on the roofs of data centre buildings (excluding security gatehouses), the campus management and campus security buildings, the district heating energy centre and visitor centre where not occupied by roof top plant unless it can be demonstrated that this is unfeasible due to operational requirements.

1I: Operational Noise Limits

Management of Operational Noise

1I.1 Operational noise from development shall be managed through the process shown in Figure 1.12 which all developers shall follow during the design, construction, and commissioning of development within a Build Zone.

Design Stage Assessment

1I.2 The layout of buildings within a Build Zone shall be designed within input from an acoustic consultant to minimise the requirement for high specification noise mitigation devices (such as enclosures).

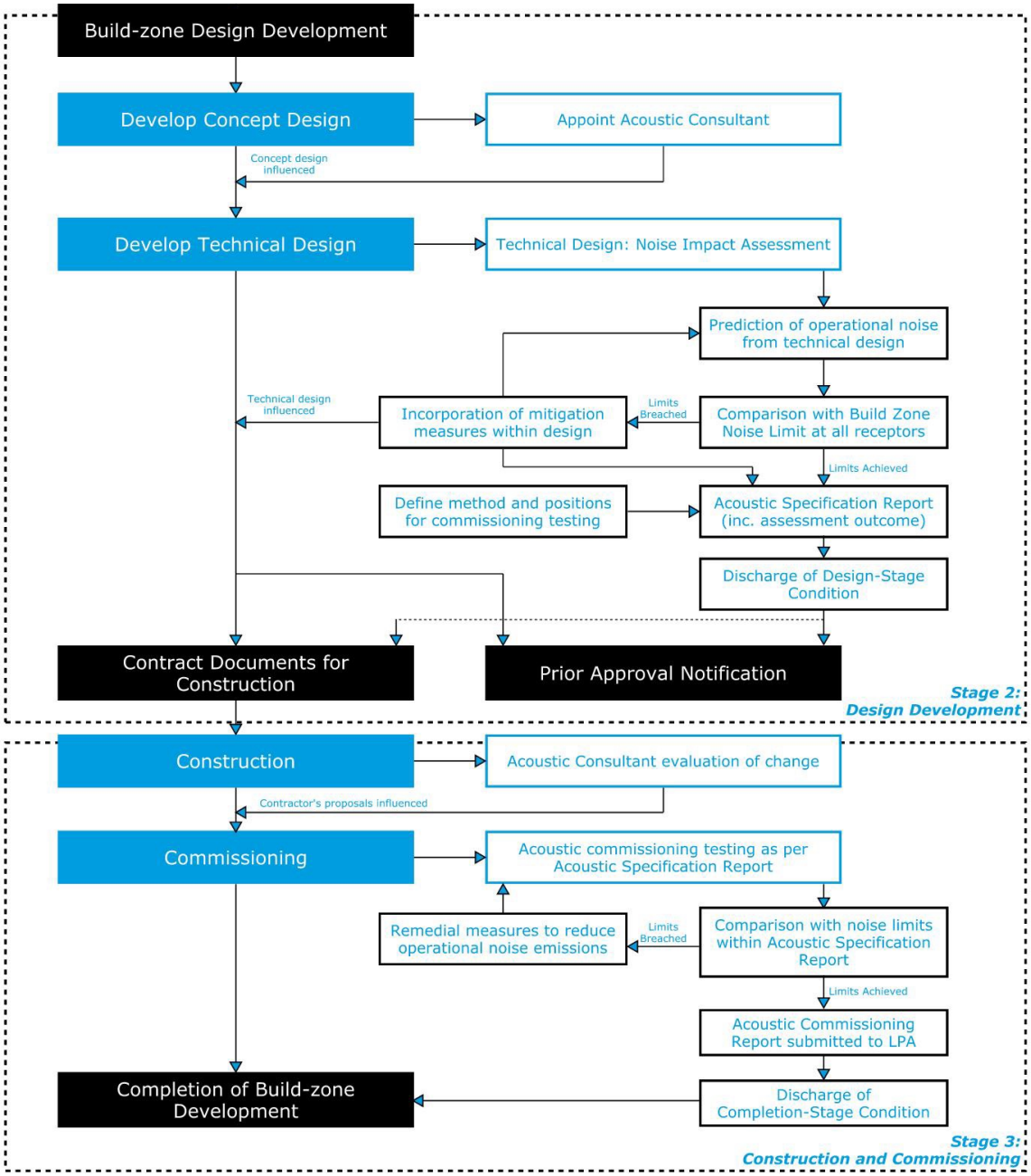
1I.3 An acoustic consultant shall carry out an assessment of the operational noise predicted to arise from all development proposed in a Build Zone. The assessment shall be repeated until the limits set out within Tables 1.2 and Table 1.3 are expected to be achieved.

1I.4 The technical design assessment shall be documented within an Acoustic Specification Report (ASR). This assessment shall incorporate the screening effects of any completed buildings and structures within the site that are present at the time of the assessment.

1I.5 The ASR shall include following information:

- Detailed acoustic specifications for the proposed development including (where relevant):
  - Noise emission limits for specific items of mechanical or electrical plant (such as a maximum sound power level);
  - Assumed quantities and operating hours of key plant items;
  - Physical requirements (mass, height, etc.) for acoustic barriers (where proposed);
  - Minimum insertion loss requirements for sound-attenuating devices such as duct attenuators, acoustic louvres, attenuation packages, acoustic enclosures); and
  - Minimum sound insulation requirements for key elements (such as plant room external walls).

Figure 1.12: Management of Operational Noise.



- Sound propagation calculations to ISO 9613-2[1] to determine the operational noise level from the fully completed Build Zone development at each of the noise-sensitive receptors as listed in Tables H1.3.1 to H1.3.4.
- A method statement for commissioning noise monitoring, informed by the Build Zone sound propagation model, to include:
  - A description of where noise monitoring will be carried out;
  - The expected operational noise level at this position; and
  - The operating conditions required for the commissioning noise monitoring.

1I.6 Prior to commencement of development within a Build Zone, the above ASR shall be submitted to the local planning authority for approval pursuant to condition 45 in Schedule 2 of the LDO.

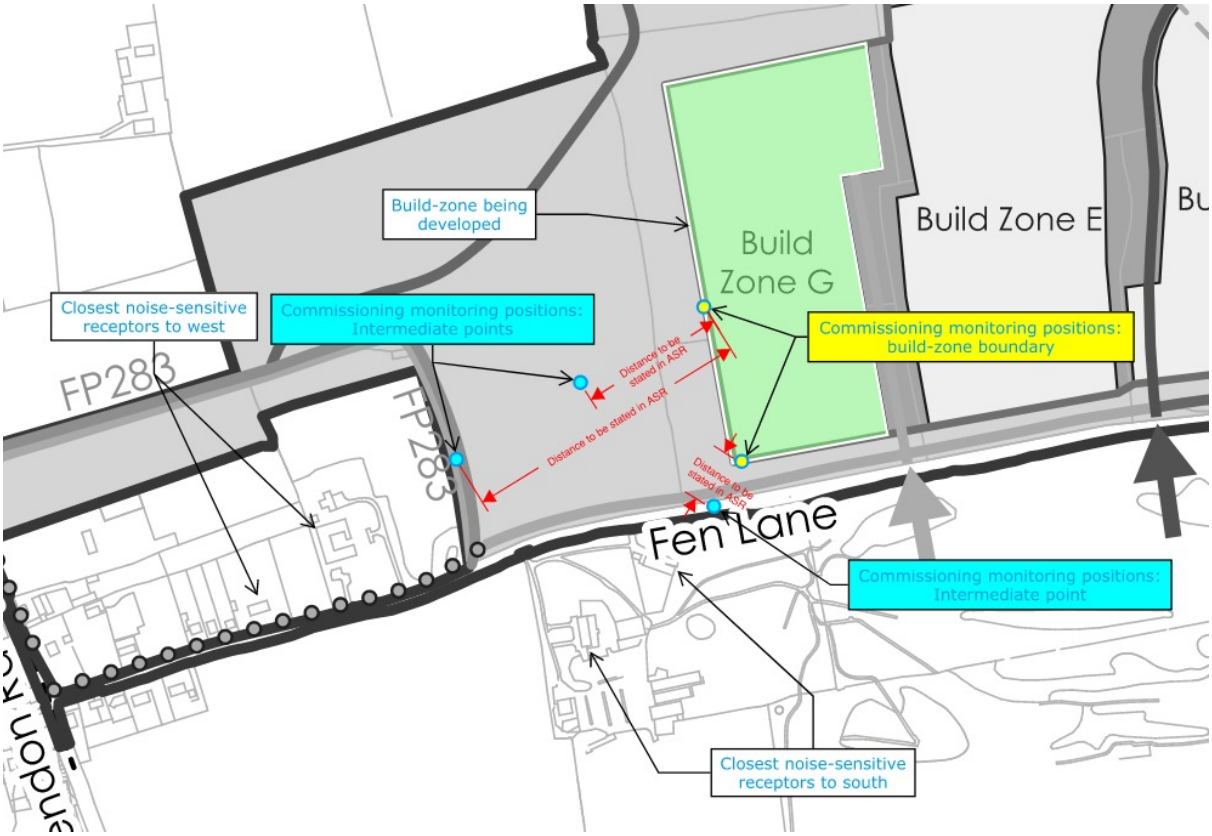
Definition of Approach to Commissioning Noise Monitoring

1I.7 The noise limits set out in Tables 1.2 - 1.5 apply at the nearby noise-sensitive receptors and are below the existing background sound level[2]. For this reason, commissioning noise monitoring positions will need to be defined closer to the source of sound.

1I.8 Noise monitoring positions shall be selected at positions where extraneous noise from other sources (including other Build Zones) is minimised and to ensure noise emission from both ground-based and roof-based plant is adequately quantified. This is expected to lead to measurements at increasing distances from the Build Zone boundary in each direction to the nearest receptors. The ASR shall state the operational noise level expected to occur at each of these noise monitoring positions under normal and emergency operating conditions.

1I.9 An example of how the commissioning noise monitoring positions could be defined for a Build Zone is shown in Figure 1.13.

Figure 1.13: Example of how commissioning noise monitoring positions could be defined



Commissioning

1I.10 Within one month of occupation / first use of development within a Build Zone, pursuant to condition 46 in Schedule 2 of the LDO, noise monitoring shall be carried out by an acoustic consultant in accordance with the ASR. The results of the noise monitoring at each position shall be compared to the operational noise predictions within the ASR, and reported to the local planning authority for approval in an Acoustic Commissioning Report (ACR)

[1]International Organization for Standardization, ISO 9613-2: 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors' (2024).
[2]Defined as per British Standard 4142:2014+A1:2019 and quantified in terms of the dB LA90,T parameter.

1I.11 Where noise monitoring results exceed the operational noise predictions within the ASR, investigations and further noise monitoring (if required) shall be carried out to determine the cause of the exceedance. Remedial work shall then be carried out to reduce noise emissions from the Build Zone and then commissioning noise monitoring shall be repeated.

1I.12 Once operational noise from the Build Zone is shown, through monitoring, to be adequately controlled, a further ACR shall be submitted to the local planning authority as evidence of compliance.

Operational Noise Limits

Normal Operating Conditions

1I.13 Operational noise from each Build Zone during normal operating conditions[3] for the daytime (07:00 – 23:00 hours) and night-time (23:00 – 07:00) shall not exceed the limits set out in Table 1.2 and 1.3 respectively at the closest residential receptors.

1I.14 Noise limits are rating levels as defined in BS 4142:2014+A1:2019 and shall include penalties, where appropriate, to account for acoustic features such as impulses, tones, intermittent features (or any other characteristics that draw more attention to the sound source) that are audible at the receptor.

Table 1.2: Build-zone noise limits at nearest receptors: day

Receptor Name	Daytime rating level limit for whole site normal operation dB $L_{Ar,Tr}$ (free-field)	Build-zone noise limits at the nearest receptors: daytime, normal operation dB $L_{Ar,Tr}$ (free-field)							
		BZ A	BZ B	BZ C	BZ D	BZ E	BZ F	BZ G	BZ H
1-6 St. Mary's Lane	45	35	35	40	35	40	30	35	30
Ladyville Lodge Care Home	46	37	37	37	37	37	33	41	36
Property North of Top Meadow Golf Club	45	35	35	37	35	37	32	41	30
Corner Farm Cottage	40	30	32	36	30	32	26	30	26
Home Farm Estate	39	31	35	31	29	29	24	29	26
Fen Farm Cottages	38	30	30	30	25	25	25	25	34
Lamorna, Dunnings Lane	38	29	29	29	29	29	25	29	32

Emergency Operating Conditions

1I.15 Operational noise from each Build Zone during the emergency operating condition[4] for the daytime (07:00 – 23:00 hours) and night-time (23:00 – 07:00) shall be controlled at the closest residential receptors to not exceed the limits set out in Table 1.4 and 1.5 respectively.

1I.16 The Environmental Health Service at the Council shall be notified should emergency, power back-up generators need to operate for more than 72 hours consecutively.

[3] Normal operating conditions is assumed to include a small number of data-centre generators under maintenance test during the day-time.
[4] Defined as the operational condition such as power failure when large quantities of power back-up generators would operate.

Table 1.3: Build-zone noise limits at nearest receptors: night

Receptor Name	Daytime rating level limit for whole site normal operation dB $L_{Ar,Tr}$ (free-field)	Build-zone noise limits at the nearest receptors: daytime, normal operation dB $L_{Ar,Tr}$ (free-field)							
		BZ A	BZ B	BZ C	BZ D	BZ E	BZ F	BZ G	BZ H
1-6 St. Mary's Lane	40	30	30	35	30	35	25	30	25
Ladyville Lodge Care Home	42	33	33	33	33	33	29	37	33
Property North of Top Meadow Golf Club	41	31	31	33	31	33	28	37	26
Corner Farm Cottage	35	25	27	31	25	27	21	25	21
Home Farm Estate	35	27	31	27	25	25	20	25	22
Fen Farm Cottages	35	27	27	27	22	22	22	22	31
Lamorna, Dunnings Lane	35	26	26	26	26	26	22	26	29

Table 1.4: Build zone noise limits at the nearest receptors: day, emergency condition

Receptor Name	Daytime rating level limit for whole site normal operation dB $L_{Ar,Tr}$ (free-field)	Build-zone noise limits at the nearest receptors: daytime, normal operation dB $L_{Ar,Tr}$ (free-field)							
		BZ A	BZ B	BZ C	BZ D	BZ E	BZ F	BZ G	BZ H
1-6 St. Mary's Lane	55	45	45	50	45	50	40	45	40
Ladyville Lodge Care Home	55	46	46	46	46	46	42	50	45
Property North of Top Meadow Golf Club	55	45	45	47	45	47	42	51	40
Corner Farm Cottage	55	45	47	51	45	47	41	45	41
Home Farm Estate	55	47	51	47	45	45	40	45	42
Fen Farm Cottages	55	47	47	47	42	42	42	42	51
Lamorna, Dunnings Lane	55	46	46	46	46	46	42	46	49

Table 1.5: Build zone noise limits at the nearest receptors: night, emergency condition

Receptor Name	Daytime rating level limit for whole site normal operation dB $L_{Ar,Tr}$ (free-field)	Build-zone noise limits at the nearest receptors: daytime, normal operation dB $L_{Ar,Tr}$ (free-field)							
		BZ A	BZ B	BZ C	BZ D	BZ E	BZ F	BZ G	BZ H
1-6 St. Mary's Lane	50	40	40	45	40	45	35	40	35
Ladyville Lodge Care Home	50	41	41	41	41	41	37	45	40
Property North of Top Meadow Golf Club	50	40	40	42	40	42	37	46	35
Corner Farm Cottage	50	40	42	46	40	42	36	40	36
Home Farm Estate	50	42	46	42	40	40	35	40	37
Fen Farm Cottages	50	42	42	42	37	37	37	37	46
Lamorna, Dunnings Lane	50	41	41	41	41	41	37	41	44

Typical Noise Mitigation Measures for Data Centres

1I.17 Noise mitigation measures shall be incorporated into the technical design where Build Zone noise limits are shown to be otherwise exceeded.

1I.18 Mitigation measures that are likely to be required for data centres to control noise to acceptable levels are set out below:

Layout and Screening Requirements

- where plant is located within a gantry area, the gantry area should be screened on all four sides either by a data centre building or by a purpose-built acoustic screening (imperforate screen of minimum mass 15 kg/m^2, or acoustic louvre of appropriate area and specification). Where required, the height of the screen shall be the same height as the data centre building, and at least 1m above the top of the noise-generating gantry plant item.
- where airflow is required to part of the gantry, it should be provided via an acoustic louvre of appropriate specification (depending on location and area required).
- where plant is located within a roof plant area, the roof plant area should be surrounded by acoustic screening (imperforate screen of minimum mass 15 kg/m^2, or acoustic louvre screen of appropriate specification). The height of the acoustic screening, where required, shall be 1m above the top eight of the data centre roof noise-sources.
- where located adjacent to the boundary of a Build Zone, generator enclosures shall be positioned as far away from the site boundary as feasible so that there is no line of sight between the receptor and the enclosure either through the positioning of the generator behind the data centre massing or through provision of purpose-built acoustic screening (as above).

Noise Controls for Operation Plant

- Plant shall be selected and operated in a manner that would not result in tonal or impulsive sound features at the nearest noise-sensitive receptors. Where this is not possible, Build Zone noise emissions shall be reduced by the forecast acoustic feature penalty using the BS4142:2014+A1:2019 subjective method (e.g. by 4 dB where tonal features are expected to be clearly perceptible at the receptor).
- A night-time "low-noise" mode should be implemented on the most significant noise sources, achieving a minimum reduction in total noise emissions of 5 dB(A) versus daytime operating mode.
- All data centre cooling plant (e.g. adiabatic air-cooled condensers) shall be provided with acoustic attenuation packages appropriate to the quantity of plant, positioning and orientation and type of equipment.
- All louvres and grilles shall have attenuators where necessary to achieve the appropriate sound pressure level limits. limits are to be defined by the Build Zone developer as part of their operational noise assessment. These positions shall then be used for commissioning testing of noise emissions.

Noise Controls for back-up Generators

- Simultaneous daytime maintenance testing of generators shall be limited to the minimum required to maintain normal operations.
- No maintenance testing of generators shall be carried out at night (23:00-07:00).

1J: Plot Access, Parking and Servicing

1J.1 The following design standards shall apply to the construction of roads within build zones, on-plot vehicle parking and servicing.

Plot Access

1J.2 All roads within Build Zones shall be 6.5m wide up to the plot threshold except where it is demonstrated through vehicle tracking that localised widening to a maximum of 7.3m required is required to accommodate two-way HGV movements.

1J.3 Vehicular access to individual plots shall be:

- a minimum of 45m apart measured from the centre line of the junction when on the same side of the road to prevent queuing of vehicles.
- a minimum of 20m measured from the centre line of the junction from a vehicle access to plots on the opposite side of the road.

1J.4 The design of plot access shall comply with the standards for access visibility set out in the Design Manual for Roads and Bridges (DMRB).

1J.5 To meet health, safety and security requirements on development plots, the shared footway and cycleway shall be terminated at the plot threshold and internal plot layouts shall be designed to accommodate individual occupier requirements whilst maintaining safe routes to the buildings for pedestrians.

1J.6 Security fences or gates shall not obscure sight lines of plot access and egress.

Gatehouses

1J.7 Security gatehouses and/or security gates shall be designed to accommodate incoming vehicles and shall be sufficiently set back from the access road to ensure that an articulated vehicle (or queue of vehicles) can be accommodated off the access road while gates are being operated.

Plot Based Vehicle Servicing

Vehicle Servicing

1J.8 Buildings plots shall be provided with sufficient service bays and turning areas to allow access and egress in a forward gear (including by HGVs where access is required).

1J.9 Plots shall be designed to allow free flowing circulation to all external areas of the building required by the unit operator.

1J.10 Refuse and storage areas shall ideally be located to the rear of the building.

Perimeter Access for fire and service vehicles

1J.11 Full site circulation and perimeter access for fire and service vehicles shall comply with The Building Regulations 2010, Fire Safety Approved Doc B or as subsequently amended.

Parking Standards

1J.12 Dedicated and conveniently located parking spaces with facilities for the charging of electric vehicles shall be provided on each plot. Dedicated spaces to encourage car sharing shall be provided.

1J.13 Car parking on each plot shall not exceed the maximum parking standards set out in Tables 1.7 – 1.9. Standards for electric vehicles, cycle and blue badge holders are minimum standards.

1J.14 All produce workers employed by horticulture business(es) shall be transported to the site by coach.

1J.15 Minimum cycle standards are set out in Table 1.8.

1J.16 Minimum parking standards for blue badge holders, enlarged spaces and active and passive EV are set out in Table 1.9.

1J.17 The design of active and passive EV charging spaces shall be in accordance with PAS1899:2022 and Approved Document S of the Building Regulations 2010 or as subsequently amended. Passive charging spaces shall be activated in line with occupier demand having regard to the use of car parking spaces dedicated for electric vehicle parking which is to be surveyed and reported in the annual survey in line with the Travel Plan.

1J.18 There shall be no parking on any roads within the data centre campus other than where occasional deliveries by HGV are required for maintenance purposes that cannot otherwise be accommodated on plot. In this case, parking on roads within the campus would be permitted under the supervision of the estates management team.

Table 1.7 – Maximum Car Parking Standards

Use	Car parking (maximum)	Service Bays (LGV/HGV)
Data Centre	Up to 249,999 m^2 (GIA): maximum of 1 space per 1750 m^2 (GIA) Between 250,000 m^2 and 299,999 m^2 (GIA): maximum of 1 space per 2,200 m^2 (GIA) Between 300,000 m^2 and 329,800 m^2 (GIA): maximum of 1 space per 2,600 m^2 (GIA)	Maximum of 1 service bay per 25,000m^2 (GEA) subject to provision of a minimum of 2 LGV spaces and 1 HGV space per plot.
Electrical Infrastructure/ District Heating Energy Centre (eg. sub stations)	-	Minimum of 1 LGV space per plot.
Horticulture	Minimum of at least 4 spaces and maximum of 6 spaces for management staff.	Minimum of 1 LGV space and 1 HGV space per plot and a minimum of 2 spaces for coaches.
Visitor Centre/ Ecology Park	Maximum of 51 spaces Overflow provision (temporary use only) – to accommodate up 25 spaces.	Minimum of 1 LGV space and a maximum of 5 LGV spaces Minimum of 2 spaces for coaches.

Table 1.8: Minimum Cycle standards

Use	Long Stay	Short Stay
Data Centre	Minimum 1 space per 10 staff (based on the anticipated maximum number of staff per shift).	Minimum 1 space per 20 staff (based on the anticipated maximum number of staff per shift).
Electrical Infrastructure (eg. sub stations)	-	-
Horticulture	A minimum of 6 spaces.	-
Visitor Centre	Minimum 1 space per 10 staff (based on the anticipated maximum number of staff per shift).	Minimum 20 spaces.

Table 1.9: Minimum Parking Standards for Blue Badge Holders, Enlarged Spaces and Active and Passive EV

Type	Definition	Requirement
Blue Badge	Spaces which are specified for use by disabled people (as per BS8300-1:2018).	Minimum 5% of total staff/visitor parking provision for data centres and indoor horticulture. Minimum 6% of total staff/visitor parking provision for the visitor centre / ecology park.
Enlarged	Spaces which are 'large enough to become disabled persons parking bays quickly and easily via the marking up of appropriate hatchings and the provision of signage, if required'.	Minimum 5% of total staff/visitor parking provision for data centres and indoor horticulture, subject to provision of at least one enlarged space per plot. Minimum 4% of total staff/visitor parking provision for the visitor centre / ecology park.
Active EV	Spaces which are provided with an active EV charging point.	Minimum 10% of total staff/visitor parking provision (including 10% of blue badge bays) for data centres and indoor horticulture (slow-charging, minimum 3kw). Minimum 10% of total staff/visitor parking provision for visitors centre / ecology park (rapid charging). All operational spaces for taxis and vehicles based on-site (e.g. minibuses). At least 1 active EV charging space for each operational parking area across the site.
Passive EV	Spaces which are provided with necessary infrastructure to enable the installation of an EV charging point in future, should need arise.	Minimum 20% of remaining staff/visitor provision without active EV charging).
Car sharing	Spaces which are provided for car with more than one occupant	Minimum 5% of spaces to dedicated as priority for car sharing, in convenient locations close to main building entrances

Table 1.10: Parking Dimensions

Type	Minimum Dimensions
Standard	2.5m x 5m
LGVs	3.0m x 10m
Rigid HGVs	3.5m x 12m
Articulated HGVs	3.5m x 18m
Mini bus	3.5 x 8m
Coach (60 seater)	5m x 15m
Disabled	3.7m x 6.2m plus 1.2m accessibility strip on side and at rear of bays.

Car Parking Layouts

1J.19 The width of standard parking bays with end bays adjacent to solid structures shall be increased by 0.5m to allow for manoeuvrability on entry/exit to and from the vehicle.

1J.20 A minimum aisle width of 6m is required for vehicles. Dedicated pedestrian routes with a minimum with of 1.2m (preferably no less than 1.5m), shall be provided. If pedestrian routes are provided in the aisles, the required widths specified above will need to be provided in addition to the 6m aisle width for vehicles.

1J.21 Parking layout may comprise 90-degree square parking, 45- or 70-degree angled parking or mixed parking provision to meet operational requirements.

1J.22 Clear directional marking signs such as exit signs shall be set out using suitable signs and surface arrows.

1J.23 Car parks shall have a clearly demarked boundary.

1J.24 Design of disabled and enlarged car parking spaces shall be in accordance with BS8300-1:2018 and Approved Document M of the Building Regulations 2010 or as subsequently amended. Space for people with disabilities shall be located adjacent to entrances and shall be marked with lines and the International Symbol for Access. Dropped kerbs shall be provided.

1J.25 Space shall be available to enable a disabled motorist or passenger to open the car door fully, to get in or out of the vehicle, and to manoeuvre around vehicles that are parked perpendicular to the carriageway. A zone of 1200 mm wide shall be provided between designated accessible parking spaces and between the designated spaces and a roadway (without reducing the width of the roadway) to enable a disabled driver or passenger to get in or out of a vehicle and access safely the boot, rear hoist or rear access ramp. These zones shall be marked with durable markings contrasting visually with the surface to which they are applied.

1J.26 Should payment be required in the visitor's centre car park, payment machines shall be positioned in the busiest areas of the car park and close to desire lines to building access points.

1J.27 Pedestrian routes and crossing points shall be clearly demarked through car parks by raised footways, the use of tactile paving or shall comprise a textured, antiskid surface and be a high contrasting colour with the surrounding area. Tactile paving shall comply with the Department of Transport Guidance on the User of Tactile Paving Surfaces December 2021 (or as otherwise updated) and the standards adopted by the Highway Authority.

1J.28 Step- free access to building entrances shall be provided.

Cycle Parking

1J.29 Where cycle parking is not provided within a building, cycle parking shall be covered, lit and positioned adjacent to building entrances accessible from roads and/or cycleways. It shall not be located so as to obstruct pedestrian and cycle routes.

1J.30 A minimum of 10% of spaces shall be available for e-bike charging.

1J.31 Provision shall be made for lockers, changing and shower facilities in accordance with relevant BREEAM standards.

1J.32 The provision of cycle parking and associated cycling infrastructure shall comply with the requirements of the Department of Transport's Local Transport Note (LTN) 1/20 Cycle Infrastructure Design July 2020 or as subsequently updated; and with Transport for London's Cycling Design Standards (2014) (as subsequently amended).

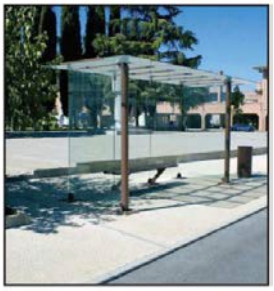
1J.33 Cycle stands shall be manufactured in galvanized steel or brushed grade 316 stainless steel and root fixed below ground. They may include a horizontal bar for additional strength and security and should allow for two bikes per unit and be of hooped form.






1J.34 Cycle shelters shall be manufactured using a galvanized steel frame with galvanized steel, powder coated steel, laminated or tempered safety glass or FSC timber infill and roof.



1J.35 A minimum of 5% of the cycle parking spaces shall be provided for non-standard cycles and to accommodate people with mobility impairments.

1J.36 Cycle parking shall be at the same level as the cycle route wherever possible, if unavoidable, dropped curbs shall be provided.

Standards for Footways and Cycleways

1J.37 A shared footway and cycleway with a minimum width of 3 m shall be provided as a minimum along one side of all roads within Build Zones up to the plot threshold.

1J.38 Clear, demarked, dedicated routes to building entrances for pedestrians and cyclists shall be provided.

Materials

1J.39 Appropriate materials for car parks and access routes shall be as follows:

- Roads: bituminous materials compliant with the appropriate British Standard or other relevant specification;
- Standard profile kerbs: precast concrete/stone adjacent to footway / cycleways and within car parking areas;

- Shared footway and cycleway: resin or bitumen bound aggregate.
- Car Parks: permeable block pavers, with demarcation provided through blocks of a distinctly different colour. The overflow car parking for the visitor's centre shall be grasscrete or similar.

1K Lighting

General Considerations

1K.1 The lighting design shall be carried out by a competent person governed by the Institution of Lighting Professionals.

1K.2 To minimise effects of obtrusive light, lighting installations shall meet the requirements outlined by the Institution of Lighting Professionals (ILP) Guidance Note 1 for the reduction of obtrusive light GN01:2021 and the International Commission on Illumination (CIE) Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations CIE 150:2017 (or as subsequently modified).

1K.3 Lighting installations shall not exceed the level of light intrusion, sky glow and luminaire intensity (glare) as defined for an Environmental Zone E2 as shown in Table 1.11. An exception will be made where lighting is required for safety reasons to meet UKPN's operational substation requirements.

1K.4 Pre- curfew is defined as after 7am and post-curfew is after 11pm.

Table 1.11: ILP Environmental Zone E2 Criteria

Environmental zone	Sky Glow		Light Spill		Glare	
	Upward Light Ration (ULR[a])	Upward Flux Ration (UFR[b])	Vertical Illuminance[c]		Luminous Intensity[d]	
		Road/Amenity	Pre-curfew	Post-curfew	Pre-curfew	Post-curfew
E2	2.5%	5% / 6%	5 lux	1 lux	7,500 cd	500 cd

(a) Upward light ratio (ULR) of the installation is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.
(b) Upward flux ratio (UFR) provides the effect of both direct and reflected upward components of the whole installation, including ground and building surface reflections.
(c) Vertical illuminance measured flat at the site boundary or on surrounding premises.
(d) Luminous intensity of bright luminaires in the field of view between an observer (at a residence/receptor location) and a light source.

1K.5 Luminaires shall be either DarkSky-approved fixtures certified by the International DarkSky Association or luminaires that meet recognised dark sky friendly performance criteria. Appendix 1 includes examples of luminaires that are considered dark sky friendly. Mounting height and aiming shall align with the requirements of ILP GN01 and CIE 150.

1K.6 The design shall ensure the luminaire mounting heights employed are the minimum necessary to achieve the lighting performance requirements.

1K.7 All external lighting shall meet standards within BREEAM UK New Construction manual. Relevant criteria are listed in Table 1.12.

Table 1.12

Category	Parameter	Description
Ene03	External lighting	To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development, external light is to comply with: 2a: Average initial luminous efficacy of not less than 70 luminaire lumens per circuit-watt 2b: Automatic control to prevent operation during daylight hours 2c: Presence detection in areas of intermittent pedestrian traffic.
Pol 4	Reduction of nighttime light pollution	The external lighting design must be designed in compliance with Table 2 (and its accompanying notes) within the Institution of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light, 2021. All external lighting (except for safety and security lighting) shall be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system shall comply with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes. **Note:** 'external lighting' includes both lighting mounted externally, and lighting mounted inside a building that is primarily intended to enhance its external appearance, or light external spaces, after dark.

1K.8 Illuminance levels from lighting within the Data Centre Campus shall not exceed 1 lux at the Data Centre Campus boundary or 0.1 lux at 25m from the Data Centre Campus boundary.

1K.9 Lighting shall adhere to the guidance as set out by the Bat Conservation Trust (BCT) and ILP GN08/23 'Bats and artificial lighting at night' (or as updated) which requires:

- Illuminance to vegetated boundaries shall be minimised with the utilisation of a warmer colour temperature of 2700 Kelvin;
- Directing lighting including the use of hoods, cowls, shields etc. to avoid spillage onto sensitive areas; and
- Movement sensors or timers on security lighting.

1K.10 The following measures shall also be applied:

- Asymmetric reflectors shall be installed on the boundary of the Data Centre Campus, adjacent to existing ponds to restrict back throw lighting.
- Only lighting areas which need to be lit, and using the minimal level of lighting required to comply with building regulations; and

- Use of lamps greater than 150 W shall be avoided.

1K.11 Lighting controls shall be adopted which allow all luminaires to be dimmed or switched off in defined areas, subject to health and safety requirements.

1K.12 A drawing showing Isolux contours shall accompany all prior notification submissions for development which includes lighting.

Power Distribution

1K.13 All lighting columns shall have a direct Distribution Network Operator (DNO) electricity power supply.

1K.14 Where lighting units are mounted on walls of buildings, cabling shall be installed within corrosion and impact resistant conduit or trunking.

1K.15 Columns on circulatory roads shall be mounted a safe distance from the carriageway for maintenance access, free pedestrian and cycle passage and to reduce collisions in accordance with the requirements of the Design Manuel for Roads and Bridges (DMRB).

1K.16 Back-up power (UPS or generator) must be provided to maintain illumination during outages to the shared footway and cycleway.

Lighting Classes

1K.17 External lighting shall be designed in accordance with the following standards (or as subsequently updated):

- BS 5489-1:2020 Code of practice for the design of road lighting. Lighting of roads and public amenity areas.
- BS EN 13201: 2015 Road lighting – Energy performance indicators.
- BS EN 12464-2:2024 –Light and lighting – lighting of workplaces. Outdoor workplaces.
- Additional standards relevant to UKPN substation:
  - BS EN 60529 – degrees of protection (IP rating).
  - HSG38 – lighting at work.
  - BS EN IEC 60598-1 – general requirement for luminaires.

Roads

1K.18 Lighting on roads shall be designed to lighting class C5 as defined in BS EN 13201-2. Light fixtures shall meet the requirements as detailed in Table 1.13.

Table 1.13

Equipment	Mounting height	Installation details	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	6-8m	0° tilt	7.5 lux	0.40	>70	≤3000K

1K.19 Lighting columns shall be positioned to avoid significant tree pruning as trees reach full maturity. Where planting is proposed, lighting design shall be coordinated with the approved landscaping scheme.

1K.20 Luminaries shall have shields or internal baffles fitted to prevent back/ sideways spill of light.

On Plot Parking Areas

1K.21 Lighting of on-plot parking areas shall meet the requirements of Table 5 of BS 5489-1 for outdoor car parks with low traffic. Light fixtures shall meet the requirements as detailed in Table 1.14.

Table 1.14

Equipment	Mounting height	Installation details*	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	6-8m	0° tilt	5 lux	0.25	>70	≤2700K
Wall mounted luminaire	2-4m	0° tilt	5 lux	0.25	>70	≤2700K

*ULR is upward light ratio

Pedestrian Pathways

1K.22 Lighting of on plot pedestrian footways / designated access routes around buildings shall meet the requirements of Table 5 of BS EN 12464-2. Light fixtures shall meet the requirements as detailed in Table 1.15.

Table 1.15

Equipment	Mounting height	Installation details*	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	3-4m	0° tilt	5 lux	0.25	>70	2700K
Wall mounted luminaire	2-4m	≤ 5° tilt < 2.5% ULR	5 lux	0.25	>70	2700K

*ULR is upward light ratio

1K.23 Any perimeter or general building lighting shall be carefully designed to ensure that the resulting façade luminance, considering the final cladding finish and its reflectance, remains within the limits specified in the ILP GN01 guidance for Environmental Zone E2.

Building façades and signs

1K.24 Care must be taken to avoid over-lighting building façades. For Environmental Zone E2, the luminance limit for building façade lighting is 5 cd/m², and the limit for sign luminance is 400 cd/m². These values apply both before and after curfew.

Shared Footway/Cycleway

1K.25 Lighting of the 3m wide shared footway/cycleway and on plot shared access routes shall be increased from pedestrian-only requirements, with performance to meet targets outlined in Table 1.16.

Table 1.16

Equipment	Mounting height	Installation details*	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	3-4m	0° tilt	10 lux	0.40	>70	2700K
Wall mounted luminaire	2-4m	≤ 5° tilt < 2.5% ULR	10 lux	0.40	>70	2700K

*ULR is upward light ratio

Campus Security Building

1K.26 The campus security building at the main entrance shall be lit to an average illuminance of 100 lux at ground level with a vertical illuminance at the level of the driver. Security lighting for the Campus Security Building shall be in accordance with the recommendations provided in section 3.2.4 of CIBSE SLL Lighting Handbook (2018) or as updated.

1K.27 The site entrance must be lit using multiple luminaires so that the failure of any single unit does not significantly reduce the lighting required by the guard on duty. The lighting layout shall ensure that guards and CCTV systems can clearly view the number plates of vehicles approaching the gate.

1K.28 Vertical lighting sufficient for facial recognition shall be provided at security entrances. Lighting must be positioned to maintain even illumination without placing luminaires within the camera's field of view.

Security Gatehouses

1K.29 Security gatehouses at individual data centre entrances where required shall be lit to an average illuminance of 50 lux at ground level with appropriate vertical illuminance at a person's eye level to enable clear facial recognition. Lighting should be uniform, and low glare, avoiding strong contrasts that impede CCTV performance or overshadow the guard's view.

1K.30 Multiple luminaires shall be used so that failure of a single unit does not compromise security visibility.

1K.31 Column-mounted or building-mounted luminaires with cut-off or full-shielded optics shall be used to control spill light, and the design should comply with ILP GN01 limits for the Environmental Zone.

Plot Boundary Security Lighting

1K.32 Where required, security lighting shall ensure that horizontal illuminance levels beyond the perimeter plot site boundary shall not exceed 5.0 lux pre-curfew and 1.0 lux post-curfew.

UKPN Substation

1K.33 External lighting shall allow for safe access, visibility of equipment during inspection and operational activities and security around substation buildings and compounds.

1K.34 Illumination levels shall meet the values detailed in Table 1.17.

Table 1.17

Area	Requirement	Luminance (Lux[1])	
		Average	Minimum
Grid compound	Floodlights	150	20[2]
Other external	Bulkhead luminaire above all exit doors[3] Activated in accordance with 1K.37	10	5
Roads and Pedestrian walkways[4]	Activated in accordance with 1K.37	10	5

[1] These values are based on HSG38 guidance for 'work requiring a limited perception of detail'.
[2] Where achieving minimum lux levels would require excessive fittings or compromise safety clearances, the design shall prioritise uniformity and safe access over strict compliance with minimum lux values.
[3] Bulkhead luminaires shall be compliant with 1K.5 (dark sky compliant).
[4] Lighting levels for operational areas (e.g. transformer bays, compounds) shall take precedence over walkway levels where overlap occurs.

1K.35 Floodlights shall be mounted on foldable or galvanised steel raise-and-lower columns (5m height, base plate mounted) to allow lamp replacement from ground level and be positioned to maintain a minimum clearance of 3.5m from all live equipment.

1K.36 Floodlights shall only be switched on when maintenance and other activities are required to take place within the compound overnight in an emergency situation (which is defined as an unforeseen event resulting in equipment failure including as a result of severe weather damage) or when lighting is required for the safety of operatives working during the day (such as when weather conditions are poor).

Lighting Controls

1K.37 Lighting controls shall incorporate use of both a photocell and time switch (with sensors set for dusk and dawn) and allow for manual override switching facility by standard switch and via a site Energy Management System (EMS).

1K.38 In normal operation exterior lights will only be switched on if required between 7am and 11pm. After 11pm, all lighting, will be switched off apart from safety and security lighting.

1K.39 Presence detectors shall be used to allow for lighting to be dimmed or turned off in areas with little to low space use.

1K.40 Car park lighting shall be zoned on a timer to allow for dimming earlier in the evening, when no movement is detected. Presence detection shall be used to activate lighting to full operation when and where it is needed.

1K.41 Wall mounted lighting installed on walkways / escape routes along the sides and rear of the buildings shall also use presence detection to activate as needed.

Emergency Operations

1K.42 Lighting required for emergency operation shall be battery operated activating independently during a power failure. It should include a minimum 3-hour duration battery packs with automatic network testing capability. Emergency lighting shall comply with appropriate standards BS 5266, BS EN 1838, BS EN 62034 and BS EN IEC 60598-2-22.

1L: Landscaping

Boundary Treatment

1L.1 Fencing to individual development plots, where required, shall be:

- BS1722-12 Steel Palisade Fencing; or
- BS1722- 14 Open Mesh Steel Panel Fencing Category 1 (General Purpose).

1L.2 Perimeter security fencing (except around the UKPN substation on Build Zone F) shall be between 2.4m and 3m in height with up to 1m anti climb topping if required, secured with concrete foundations. It shall, as a minimum, be Loss Prevention Standard (LPS) 1175 SR2 rated in line with Secured by Design (SPD) commercial guidance.

1L.3 All fencing shall accord with the following colour palette in Figure 1.14.

Figure 1.14 Fence Colour Palette



1L.4 Security gates shall match the design and height of the security fence and shall be automated.

1L.5 Indicative fence types are shown below:







1L.6 A strip comprising either gravel, concrete block paving, tarmac or mown grass shall be incorporated adjacent to the perimeter fence of each plot to allow access for maintenance.

UKPN Compound

1L.7 Security fencing around the UKPN compound on Build Zone F shall comprise high palisade or 358 weldmesh fence panels, 3000mm high (with or without spinners) or 2400mm high (with spinners) with an all-round 750mm x 350mm concrete kerb beam.

Data Centre Campus Perimeter Security Fence

1L.8 Design standards for the Data Centre Campus perimeter security fence are set out in Part 2, Section G.

Other boundary demarcation

1L.9 Other boundary demarcation requirements shall be determined in response to the individual needs of each plot. Typical systems to be used across the development shall include:

- Wooden knee rail fencing;
- Car park barrier controls;
- Galvanised steel pedestrian barriers;
- Automated sliding gate systems;
- Timber demarcation bollards;
- Timber post and wire fencing;
- Timber post and rail fencing;
- Timber post and featherboard fencing (i.e. acoustic fencing).

1L.10 Appropriate boundary treatments for the visitors centre shall also include hedgerows and grass verges or mounds.

1L.11 All timber elements shall be FSC certified.

1L.12 All fencing shall be a minimum distance of 2m from any tree canopy, video surveillance columns and light columns.

1L.13 Plant compounds shall be screened for example as shown below.

Screening Examples





Soft Landscaping

1L.14 The on plot soft landscape scheme within the designated buffer zones shown on Figure 1.5 shall incorporate neutral grassland and shrub planting.

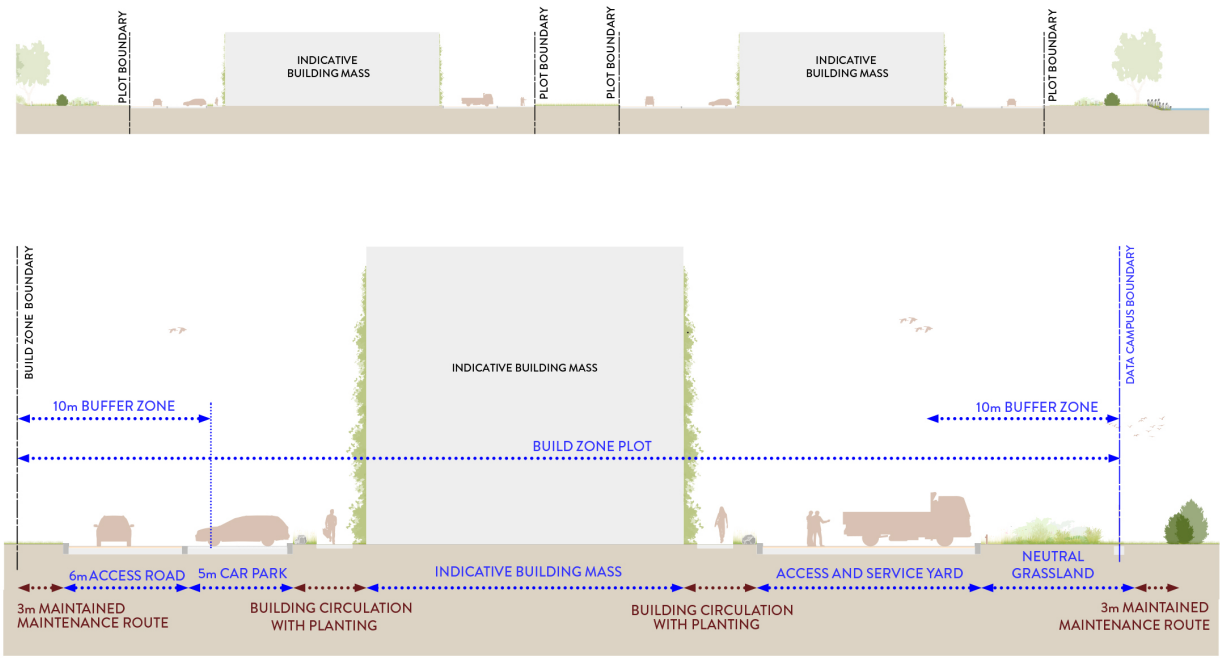
1L.15 The cross section in Figure 1.15 shows typical soft planting requirements for a data centre compound.

1L.16 On plot tree and shrub planting shall be incorporated at the entrance to buildings and within car parks where operational requirements permit.

1L.17 Planting around the visitor centre and the visitor centre car park shall be primarily ornamental with a mix of herbaceous plants, shrubs and mixed native hedgerows. Rain gardens shall be incorporated to capture, treat and infiltrate surface water runoff.

1L.18 Planting schemes shall ensure that the required visibility for drivers, cyclists and pedestrians is not compromised.

Figure 1.15: Typical Data Campus Soft Planting Requirements



1L.19 The soft landscaping scheme for each plot shall be implemented within the first planting season after building completion. Topsoil shall be maintained to eradicate weed establishment until soft landscaping is completed.

1L.20 All planting shall be in accordance with the detailed soft landscaping specification as set out in Appendix 2.

Temporary planting treatment

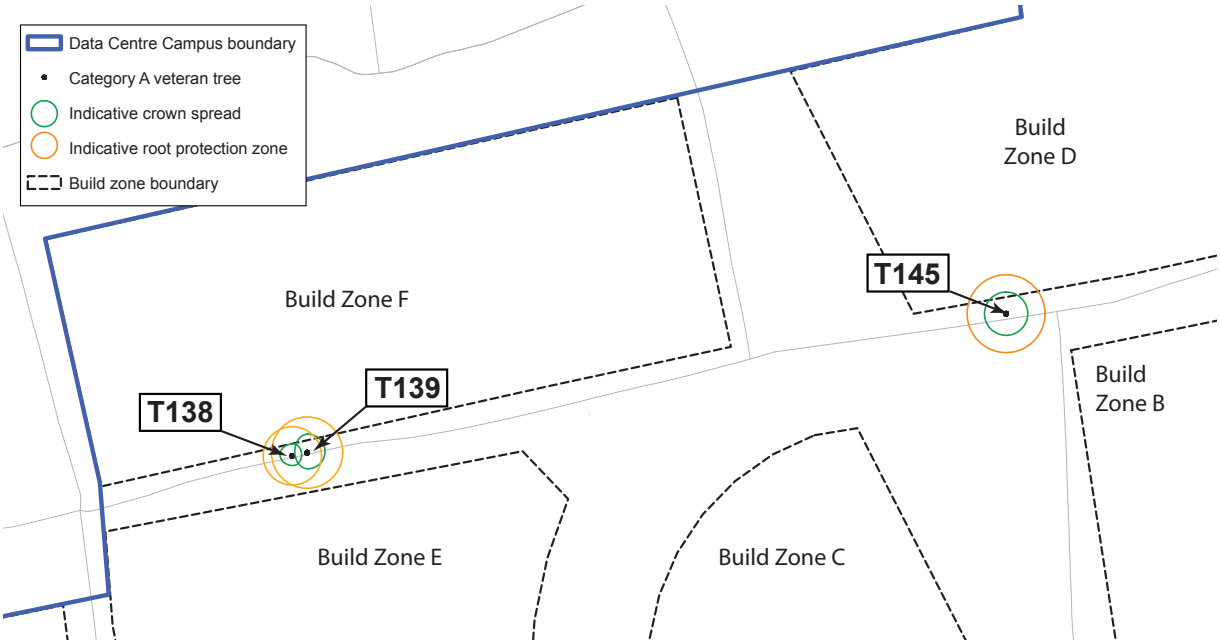
1L.21 Where a serviced development plot has been prepared (levelled post earthworks) and further development is not proposed within the next 6 months, the plot shall be seeded with a legume rich herbal ley (level 4 Habitat Classification c1b6) to improve soil structure and nitrogen fixation. Temporary planting shall be managed through annual silage cuts and shall be reseeded every three years, as necessary, until development recommences at which time vegetation may be removed.

Tree Protection Measures

1L.22 Development shall be designed in accordance with BS 5837:2012 – Trees in Relation to Design, Demolition and Construction or as subsequently amended.

1L.23 There shall be no development within the root protection area (RPA) of veteran trees as identified on the Tree Protection Schedule and Tree Protection Plans at Appendix 4 and shown on Figure 1.16. The RPA is defined as either a minimum of 15 times larger than the diameter of the tree or 5 meters from the edge of the tree's canopy, whichever is greater.

Figure 1.16: Veteran Tree Root Protection Zone



Soft Landscape Management

1L.24 A coherent, strategic and integrated approach to the management and maintenance of the soft landscape components associated with the development, shall be adopted in accordance with the Landscape and Ecological Management and Monitoring Plan (LEMMP) to ensure the successful establishment of vegetation and overall integration within the surrounding landscape.

Street Furniture

1L.25 Street furniture shall be selected to provide visual interest and respond to the individual needs of each occupier.

1L.26 Street furniture (i.e. seating, cycle storage) shall be grouped together and located in close proximity to key building entrances.

1L.27 Seating shall be provided with adequate space at the side for a wheelchair user to sidle and transfer onto the seat and shall not obstruct the pavement.

1L.28 Street furniture products shall be applied in families which are complementary to one another.

Finishes

1L.29 All street furniture items shall confirm to the following finishes:

- Timber elements: FSC certified hardwood.
- Stainless steel elements: Grade 316 stainless steel (satin polished or brushed finish).
- Galvanised elements: Hot dip galvanised to BS EN ISO 146.
- Concrete elements: White / light grey smooth finish.
- Powder coated galvanised mild steel elements: RAL 7016 Anthracite Grey.

Bollards

- Shall be manufactured in galvanised steel or brushed grade 316 stainless steel.
- Shall be heavy duty and set in a mass concrete surround (Grade ST4) in areas of HGV use e.g. Broxap 'Manchester' cast iron or similar.
- Shall be tubular with a flat or domed top or square with a flat top.
- May vary in height from 900-1200mm and in section from 76mm to 204mm diameter depending on their intended use.
- May include reflective banding, recessed banding, internal luminaries and other such accessories.
- May be fixed, collapsible, telescopic, retracting or removable depending on their intended use.
- Unless required to do otherwise all bollards will be root fixed below ground.



Seating

- FSC hardwood timber; or pre-cast smooth finished concrete.
- May include backrests, armrests, centre armrests and anti-skateboard devices.
- Shall be root fixed below ground where manufactured in composite steel and timber.
- Concrete seating units will be of sufficient weight to resist movement.



Litter Bins / Cigarette Ash Waste Bins

- Shall be manufactured in galvanised steel or brushed grade 316 stainless steel and may include areas of FSC hardwood timber.
- Shall be root fixed below ground.
- Shall have side apertures to minimise rainwater ingress.
- Shall be powder coated galvanised steel in RAL 7016 Anthracite Grey.
- Maintenance access entry points shall be fitted with secure locking devices.



1L.30 Additional street furniture items may be incorporated into the development. Where required, selection shall compliment other street furniture items.

1M Ecological Creation Features

1M.1 As a minimum, the specified number of each type of ecological feature shall be provided as each Build Zone comes forward as detailed in Table 1.18.

Table 1.18: Ecological Features

Ecological Feature	Phase 1			Phase 2					Phase 3		
	Build Zone Ca	Build Zone D	Build Zone F	Build Zone E	Build Zone G - access road	Build Zone G	Build Zone H – access road	Build Zone H	Build Zone A	Build Zone B	Build Zone C
Bird Boxes - House Sparrow	2	5	2	5	-	5	-	8	5	5	5
Bird Boxes - Swift	2	5	2	5	-	5	-	8	5	5	5
Bird Boxes - Song Birds	2	4	3	4	3	4	2	-	3	2	2
Bird Boxes – Open Fronted	2	4	3	4	3	4	2	-	3	2	2
Bird Boxes – Barn Owl	-	-	-	1	-	-	-	1	-	-	-
Skylark Plots	-	1 -	-	-	-	-	-	1	1	-	-
Bat Boxes	4	10 (2 in - built)	5 (2 in - built)	6 (1 in - built)	3	6 (2 in - built)	3	10 (3 in - built)	10 (3 in - built)	10 (2 in - built)	7
Bat Hibernation	1	2	2	2	-	2	-	2	2	2	1
Hibernaculum (amphibians, reptiles, invertebrates)	1	1	1	2	-	1	-	2	2	2	1
Invertebrate Features (Bee boxes and hotels, Bee banks, Bee posts, Stumperies and log piles)	1	2	1	-	2	2	1	2	2	2	2

1M.2 The ecological features shall be provided in accordance with the detailed specifications below.

Bird Boxes

1M.3 The bird boxes shall be constructed using untreated wood or woodcrete. If painting the exterior, light colours shall be used to prevent overheating. The interior shall not be painted.

Bird Box Type	Location and Specification	Illustrative Images *(Source: RSPB)*
House Sparrow	Terraces shall be delivered in groups of three. They shall be located on buildings ideally on an east or west side, close to vegetation and approximately 2-3 metres off above ground level. The boxes shall have entrance holes of 32mm diameter.	
Swift	Terraces shall be delivered in groups of three. They shall be located on buildings ideally on an east or west side, close to vegetation. They shall be located between 5-10 metres above ground level.	
Songbirds	Small hole fronted nest box, with an entrance hole of 25mmm diameter shall be located on the east or west side of trees, close to vegetation and at least 2m above ground level.	
Open Fronted	Open fronted boxes shall be located on the east or west side of trees, close to vegetation and at least 2m above ground level.	
Barn Owl	Nest boxes shall not be provided in close proximity to other bird or bat boxes. They shall not be positioned in close proximity to Fen Lane and Ockenden Road.	

Skylark Plots

1M.4 Skylark plots shall be provided within arable land in accordance with the requirements set out in Table 1.18 and the terms of the s106 agreement accompanying the LDO. Each plot shall comprise a bare patch of earth with a minimum area of 16m2 with two plots provided per hectare. Plots shall be created in the centre of fields (ideally >5ha) at least 50m away from field edges, hedgerows or woodlands and away from overhead lines and other structures to avoid predators. Plots shall not be installed within tramlines used by farm machinery.

Bat Boxes and Bat Hibernation Boxes

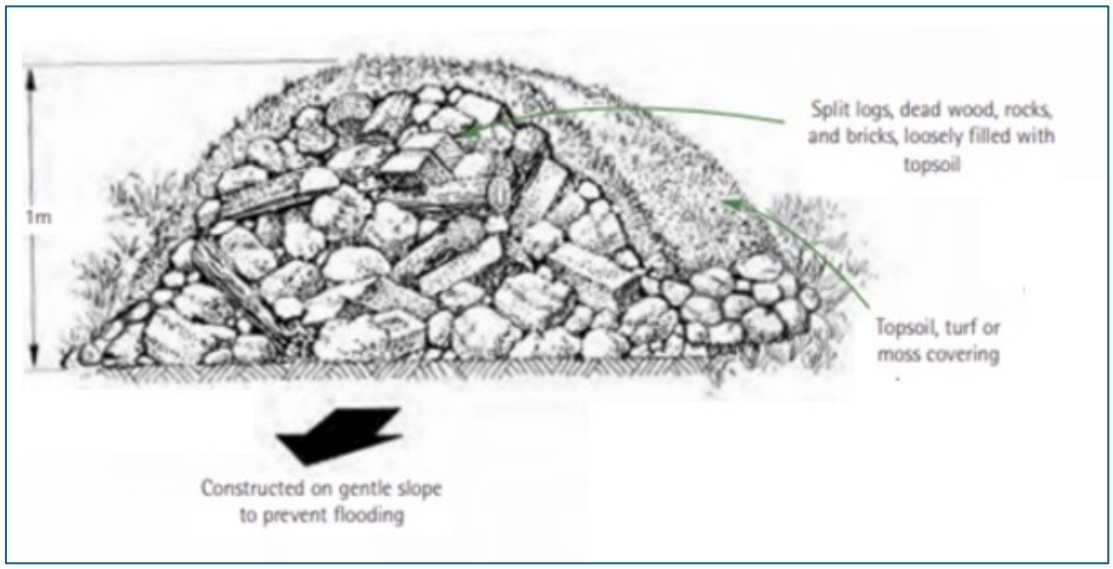
1M.5 Bat boxes shall be mounted in retained mature trees at least 3m above the ground in locations that receive 6 to 8 hours of direct sunlight daily. The boxes shall be constructed from untreated wood, with a roughened interior surface to aid bat movement and sealed to prevent water ingress. The boxes shall be designed and sited in accordance with guidance from the Bat Conservation Trust.

Hibernacula

1M.6 The hibernacula (refugia) shall be built from stone, wood, earth, and turf and shall be suitable for both amphibians and reptiles.

1M.7 The hibernacula shall be constructed on a gentle slope to prevent flooding. The structure shall be covered with soil, forming a mound about 1 m high. Native vegetation shall be provided on top See Figure 1.17.

Figure 1.17 : Hibernacula



Invertebrate Features

1M.8 Bee banks shall be created using mounds of earth and sand covering at least 1m2. The substrate depth shall be a minimum of 0.5m to allow for tunnelling. They shall be located in places which are sheltered from strong winds and excessive moisture.

1M.9 Bee hotels can be purchased boxes or logs with holes of a variety of sizes drilled into them. They shall be positioned in sunny areas, facing south or southeast, at least 1m above the ground and be securely attached to prevent movement. Vegetation must be managed to ensure that it does not obstruct the entrances.

1M.10 Log piles shall be created within areas of woodland, grassland, scrub and hedgerow. They shall be located in partially shaded, undisturbed areas. Larger logs shall be sited at the base with smaller branches and twigs stacked on top followed by leaf litter or bark chips.

1N: Recycling and Waste Management

1N.1 External recycling and waste storage containers shall be easily accessible and accommodated in lit, dedicated storage areas situated on a hard surface base.

1N.2 All waste storage areas shall be fenced and/or screened with shrubs and soft landscaping.

1N.3 Waste storage areas shall be located within 30m of an external door. The distance between the point of collection and closest access point for collection vehicle shall be no more than 25m. Gradients over which containers must traverse shall not exceed 1:12. Dropped kerbs shall be in be placed where necessary and steps shall be avoided.

1N.4 Access shall be designed to accommodate a maximum reversing distance of 12m for refuse vehicles. A minimum working area of 3.5m width and 4m in length shall be available for the emptying of waste storage containers.

1N.5 Communal waste storage compounds shall have:

- a 2m minimum working height where the compound is covered;
- a 2m minimum width of access threshold to the compound to allow for removal and return of containers whilst servicing; and
- a layout such that any one container may be removed without the need to move any other with at least 150mm clearance space between the containers;
- adequate ventilation (e.g. through the provision of louvre doors).

1N.6 Separate provision shall be made for the storage of the following waste streams:

- Dry recyclables: – mixed plastics, cans, paper and card;
- Cardboard;
- Food Waste;
- Glass;
- Residual general waste;
- Metal (if applicable).

1N.7 Waste from Electrical and Electronic Equipment (WEEE) shall be managed in accordance with the WEEE Regulations 2013 (or as subsequently amended).

1N.8 Appropriate provision shall be made to ensure a minimum of 65% commercial and industrial waste and 75% of business waste can been recycled up to 2030 and thereafter in accordance with updated GLA guidance.

1O: On Plot Drainage Standards

Foul Water Drainage

1O.1 Foul flows from plots shall be conveyed via a combination of gravity-based systems and pumped solutions to the site-wide foul sewer network (see Part 2, Section X).

On Plot Attenuation

1O.2 On plot surface water management shall be provided within Build Zones A, B, C, E, F and G and the southern half of Build Zone D with surface water discharge limited to the greenfield runoff rate of 3.62 l/s/ha calculated using HR Wallingford greenfield runoff tool up to and including the 1 in 100 year plus 40% climate change event.

1O.3 The northern half of Build Zone D shall drain freely to attenuation ponds 1 and 2. Build Zone H shall drain freely to attenuation pond 3.

1O.4 The surface water drainage for each plot shall be designed in line with Building Regulations Approved Document H, BS EN752, ‘Design and Construction Guidance (DCG) for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England’ (Version 2.3, November 2023), C635: Designing for exceedance in urban drainage, (or latest equivalent guidance) and best practice guidance to pass the 1 in 2 year flow without surcharge in the system.

1O.5 Sustainable methods of surface water collection, conveyance, disposal and attenuation shall be implemented on each plot wherever practicable to CIRIA 753: The SuDS Manual, CIRIA 768: Guidance on the construction of SuDS (or latest equivalent guidance) and DEFRA's Non-statutory standards for the design, maintenance and operation of surface water drainage systems in England[5].

1O.6 Design Standards for the site-wide attenuation strategy are set out in Part 2 Section x.

Pollution Control

1O.7 A Pollution Prevention Plan (PPP), in accordance with 'Containment systems for the prevention of pollution' CIRIA 736F (2014), or as subsequently amended, shall be prepared for each plot by the occupier. The PPP shall have regard to the processes and local risks associated with the proposed business activities and this shall be made available for inspection at any time. Provision shall be made as part of the PPP to minimise the risk of remobilisation of, and washout of any pollutants such as sediment. Equipment to contain spillages and soluble pollutants, shall be made readily available.

1O.8 Suitable surface water quality treatment measures (such as a fuel separator, vortex separator, filter, or green feature, such as a swale or filter strip, or similar approved measure) shall be in place to treat hydrocarbon runoff and potential fuel spillages within the Build Zones to ensure that surface water is well treated, prior to discharge into the main drainage system. Generator refuelling areas shall be located away from surface watercourses and drains to prevent pollution. Other equipment to contain spillages, including oil booms, drain blockers and dams to contain soluble pollutants shall be made readily available.

1O.9 Any oil, fuel or chemical storage tanks, ancillary handling facilities, filling, drawing and overflow pipes shall be enclosed within an impervious bunded area, of at least 110% of the capacity of the largest enclosed tank within the bund, and the bunded area shall be fully constructed in accordance with current Oil Storage Regulations before the relevant part of the development to which it first relates is first occupied or brought into use.

1O.10 Measures in accordance with CIRIA report C736F would also be taken to prevent any fire water from the data centre's fire suppression systems from discharging into the wider site drainage network. These measures shall include the installation of a specialised and dedicated sprinkler drainage capture system in high-risk areas within data centre buildings to capture contaminated sprinkler water. The system should be equipped with holding tanks sized to contain fire water for a minimum of 60 minutes.

1P: External Building and Site Signage

1P.1 All signage and advertisements on the site shall be subject to the Town and Country Planning (Control of Advertisements) (England) Regulations 2007 as amended and is not permitted by this Order.

[5] *DEFRA, June 2025, National standards for sustainable drainage systems. Available at: https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems*

1Q Utility Infrastructure

Installation of Services and Utilities

1Q.1 All underground services and utilities shall, wherever feasible, be confined to the shared footway and cycle path and soft verges on plot to avoid disruption to traffic during maintenance.

Works and Development near National Grid Electrical Assets

1Q.2 All development near National Grid electrical assets shall comply with the National Grid's 'Third-party guidance for working near National Grid Electricity Transmission Equipment', Technical Guidance Note 287 or as subsequently amended.

1Q.3 Development shall only be carried out in close proximity to live overhead power lines when there is no alternative, and only when the risks are acceptable and can be properly controlled. Statutory clearances exist which must be maintained, as prescribed by the Electricity Safety, Quality and Continuity Regulations 2002. The minimum clearance between the conductors of an overhead line and the ground is 7.3m at maximum sag. The required clearance from the point where a person can stand to the conductors is 5.3m.

Part 2: Infrastructure Standards (excluding the ecology park)

2A Site Road Design Standards

2A.1 These design standards apply to construction of all roads outside of Build Zones and includes design standards for the road layout at the main security entrance within Build Zone C (see Figure 2.10).

2A.2 All roads shall comply with the standards set out in the Design Manual for Roads and Bridges (DMRB), Manual for Streets (DfT) and Local Transport Note 1/20: Cycle Infrastructure Design prepared by the Department for Transport or as subsequently amended.

2A.3 The speed limit on all new roads permitted by this LDO shall be limited to 20mph.

Development Access

2A.4 Vehicle access to the development shall be from the three main access points along Fen Lane comprising the primary site access, the western access and the eastern access as shown on the Spatial Development Framework plan in Part 1 Figure 1.1.

2A.5 Detailed designs of all vehicular junctions onto the public highway must be submitted to the Local Planning Authority for approval pursuant to condition 16 in Schedule 2 of the LDO. All submitted drawings shall show vehicular tracking for the largest vehicle.

2A.6 Security fences or gates shall not obscure sight lines from any junction onto the public highway.

Primary Infrastructure Corridor

2A.7 The primary infrastructure corridor accommodating the spine road, a shared footway and cycleway, drainage infrastructure and utilities and services shall be in general accordance with the arrangements shown on Figure 2.1 and the indicative cross section at Figure 2.2.

2A.8 The spine road north of the main security entrance shall be 6.5m wide except where it is demonstrated through vehicle tracking that localised widening to a maximum of 7.3m required is required to accommodate two-way HGV movements including at the junction with the public highway.

2A.9 Paragraph 2G.23 sets out protection measures for veteran tree 145 shown on Figure 2.1.

Turning Head

2A.10 A turning head suitable for a 16.5m vehicle shall be provided in the general location shown on Figure 2.3.

2A.11 Swept path analysis shall be required to demonstrate that a 16.5m vehicle can be accommodated without putting pedestrians in danger, damaging highway infrastructure, or coming into conflict with other vehicles. Radii of the turning head shall be minimised to reduce turning speeds and allow for easier pedestrian/cycle crossing.

2A.12 Due to the conflict with the footway and cycle path and the restricted visibility of articulated HGV's whilst reversing, all HGV turning manoeuvres undertaken in this location will require the use of banksman.

Figure 2.1: Alignment of the Primary Infrastructure Corridor

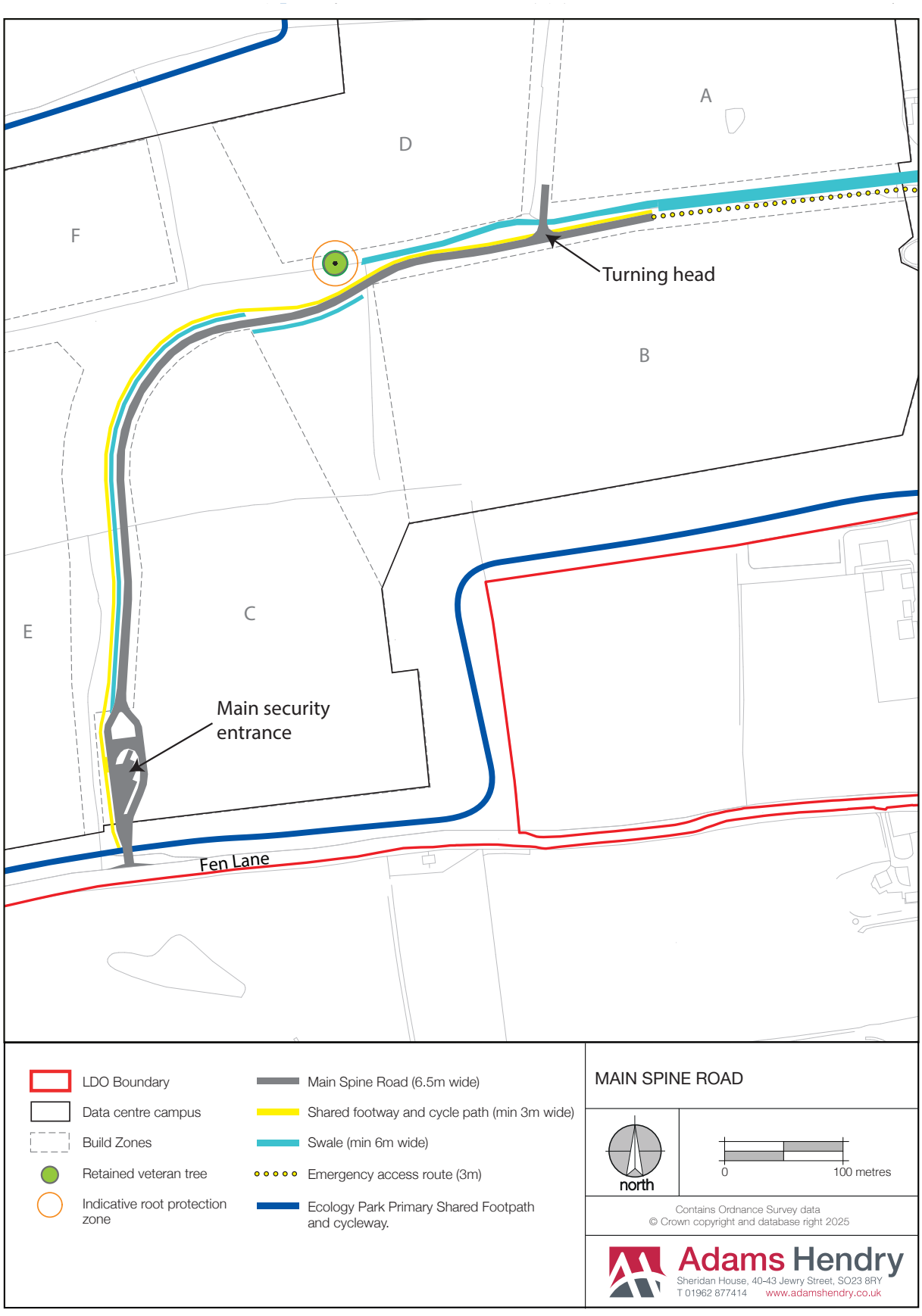


Figure 2.2: Indicative cross section of the Spine Road

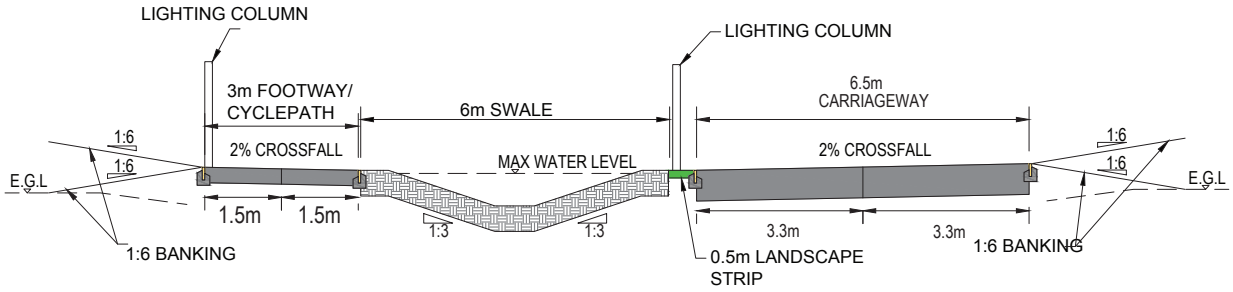
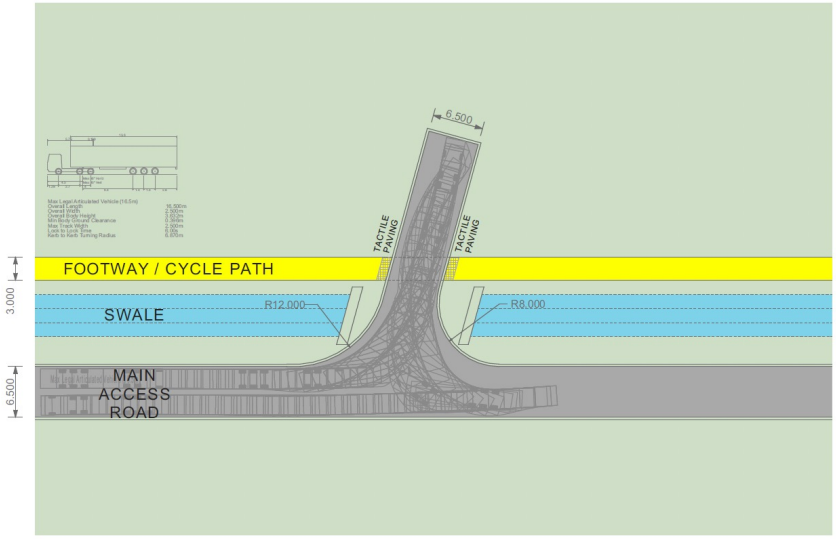


Figure 2.3: Indicative Turning head layout



Bridges

2A.13 Structural engineering drawings for any estate road or pedestrian/cycle bridge over the swale shall be submitted to the local planning authority in accordance with condition 36 in Schedule 2 of the LDO.

Eastern and Western Access Roads

2A.14 The junction of the eastern access road shall be designed to accommodate two-way HGV access and egress onto the public highway and shall be no more that 7.3m. The access road shall thereafter be no more than 6.5m.

2A.15 The western access road shall be 6.5m wide except where it is demonstrated through vehicle tracking that localised widening to a maximum of 7.3m required is required to accommodate two-way HGV movements including at the junction with the public highway.

Emergency Access

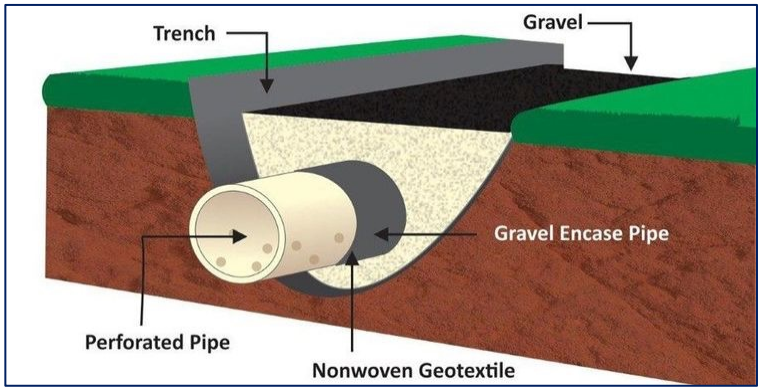
2A.16 The emergency route shown on Figure 2.1 shall be utilised to provide an alternative access route for emergency vehicles to the data centre campus when the main site access cannot be used during an emergency scenario. Emergency vehicles are permitted to use

the primary shared footpath and cycleway north of the visitors centre as shown on Figure 2.1. Standards for the emergency route are set out in Part 3, Section 3B. Locked gates in the eastern perimeter security fence to the data centre campus shall provide access to the emergency route.

Road Drainage

2A.17 The drainage design shall be compliant with DMRB CG 501 – Design of Highway Drainage Systems and shall adopt one or more of the following systems:

Combined surface and sub-surface drains
An underground porous carrier pipe, bedded in a trench filled with granular material (Type A, B or C, as defined in MCHW Series 0500 [Ref 7.N]).



Combined kerb and drainage channel
Inlets on the kerb face, connected to an enclosed internal drainage channel.



Grassed water channels (swales)
Grassed drainage channel (swale) that runs parallel to edge of the carriageway



Kerbs and gullies
Gullies in the carriageway connected to a longitudinal carrier drain, or pipe set, within the road verge



2A.18 The type of road drainage system will be dependent on its specific location and the characteristics of the road. Where a section of the road has:

- edges of cuttings, combined surface and sub-surface drains will be appropriate; or
- long stretches with minimal longitudinal gradients of less than 1%, combined surface and sub-surface drains, combined kerb and drainage channels, or grassed water channels (swales) will be appropriate; or
- nosings of interchanges, linear drainage channels or combined kerb and drainage channels will be appropriate; or
- areas of congested public utility services, combined surface and sub-surface drains or combined kerb and drainage channels will be appropriate; or
- areas where level restrictions create shallow outlets to the drainage system, combined kerb and drainage channels will be appropriate.

2A.19 Where a road is drained by gullies it shall be cambered and the long profile shall be between 1:20 and 1:150 to ensure adequate drainage along its length. Where the road is drained using a linear feature, such as a swale or channel, the long fall will be up to 1: 1000 with a crossfall of up to 1:40.

Pollution Control

2A.20 Pollution risk shall be managed on site using a qualitative approach, as outlined in the CIRIA SuDS Manual C753. The likely pollution hazard levels for each road shall be assessed and SuDS components (which shall include as a minimum the swale and the three attenuation ponds) shall be designed to provide appropriate treatment.

2A.21 The eastern and western access roads which do not connect to the swale shall include a fuel interceptor or other appropriate treatment.

Materials

2A.22 Materials for road construction shall be compliant with the appropriate British Standard or other relevant specification.

2A.23 The surface course of all roads and development plot entrances shall comprise bitumen bound aggregate in line with BS EN 13108 and MCHW SHW 912. Road marking shall be in white or yellow thermoplastic paint.

2A.24 Standard profile concrete kerbs, in accordance with BS EN 1340:2003 or as subsequently updated, (e.g. half battered and bull nose kerbs) and pin kerbs shall be used. High profile concrete kerbs shall be used at entrances used by HGVs and HGV accessible locations.

2A.25 Where there is a cross fall to an adjacent swale, a pin kerb, bull nose kerb or flush arrangement shall be used to permit overland flow to the swale.

2A.26 Car parks outside Build Zones shall be constructed from permeable block pavers and permeable sub-base.

2A.27 All service areas used by HGVs/LGVs shall comprise brushed concrete.

2A.28 Suitably recycled, locally sourced and low carbon materials shall be used where these conform to the necessary performance standards or specification.

2B Standards for Shared Footway and Cycle Path

2B.1 A 3m wide shared footway/cycle path shall be provided on all roads up to the Build Zone boundary. Part 1 paragraph 1J.35 sets out design standards for the shared footway/cycle path up to the plot threshold.

2B.2 The shared footway and cycleway shall be designed to the standards set out in the London Transport Note 1/20: Cycle Infrastructure Design (or as subsequently amended) prepared by the Department for Transport.

2B.3 Shared footway/cycle paths shall be constructed of resin or bitumen bound aggregate, subject to a suitable skid resistance for cyclists. The shared footway/ cycle paths shall be maintained to ensure it is kept free of hazards and surface defects.

2B.4 Tactile paving shall mark the edge of the shared footway and cycleway at all uncontrolled crossings and shall comprise a textured, antiskid surface and be of a contrasting colour. Tactile paving shall comply with the Department of Transport Guidance on the User of Tactile Paving Surfaces December 2021 (or as otherwise updated).

2C Signage

2C.1 All signs and road markings shall comply with Traffic Signs Regulations and General Directions 2016 (TSRGD) and the Traffic Signs Manual. All signage dimensions, colours and layouts shall meet the requirements of the 20mph road speed limit.

2D Campus Security Gates

Vehicle Control Measures
2D.1 Vehicle control measures shall be implemented at the main entrance to the Data Centre Campus at the junction with Fen Lane and on the western access road to control vehicle access.

Operational Parking Outside the Security Gate

2D.2 Parking shall be provided outside the secure campus perimeter fence up to the maximum provision set out in Table 2.1.

Table 2.1: Parking Outside the Main Security Gate

Type	Maximum No. of spaces	Purposes
Car	10	Temporary parking for visitors to the Data Centre Campus whilst undergoing security checks (limited to 15 min wait time)
Taxis	2	For drop-off/pick-up of any staff/visitors to the Data Centre Campus travelling by taxi
Electric Mini buses	2	To transport staff to and from Upminster railway station at shift change over.

2D.3 Spaces for minibuses shall be provided with an active EV charging point. Parking space dimensions shall be in accordance with Part 1 Section 1J and Table 1.10.

2D.4 Provision for enlarged vehicles and blue badge holders outside the main security gate shall be in accordance with the percentage requirements for data centres set out in Part 1 Section 1J.16 and Table 1.9.

2D.5 A clearly defined bus stop (capable of accommodating a coach during the construction period) shall be provided as indicatively shown in Figure 2.4. The design of the bus stop shall comply with TFL's Accessible Bus Stop design guidance.

2D.6 A shelter shall be provided with perched seating (or similar), fitted with end panels to provide protection from the weather and with a clear view of the approaching bus/coach shall be provided. It shall be appropriately lit. Raised kerbs shall be provided to create a level entry platform.

2D.7 A minimum of 10 Sheffield stands shall be provided. Cycle parking shall be covered and provided in accordance with London Transport Note 1/20: Cycle Infrastructure Design (or as subsequently amended).

2D.8 An anti-tailgating pedestrian gate shall be provided for visitors arriving by foot or cycle.

2D.9 The security gatehouse at the main entrance shall be set back by a minimum of 60m from the edge of the public highway. The material specification and colour palette for the security gatehouse is set out in Part 1 paragraph 1B.12.

2D.10 On the western access road (to Build Zone G), the security gatehouse shall be set back by a minimum of 36 m from the public highway.

2D.11 The gatehouse shall be certified to LPS 1175 SR1. Accessible glazing shall be resistant to forced entry and thrown objects and be certified to BS EN 356:2000 P1A as a minimum. Doors recessed back from the building façade shall be avoided.

2D.12 A rejection lane is required at each security point. Vehicle tracking shall demonstrate that unauthorised vehicles can turn around and exit the site safely in forward gear.

2D.13 An illustrative layout for the main entrance is shown on Figure 2.4.

2E Operational and Estate Management Parking Provision

Operational Parking Inside the Security Gate

2E.1 Parking provision shall be made for management and maintenance vehicles within Build Zone C adjacent to the main campus security building within the perimeter security fence as shown on Figure 2.4.

Table 2.2: Estate Management Parking inside the Campus

Type	Maximum No. of spaces	Purposes
Car/LGV	10 spaces (mix of car and LGV)	To meet operational maintenance and management requirements or for light vehicles transporting staff/visitors from the gatehouse to individual plots.
Motorcycle	4 spaces	As above.

2E.2 Parking space dimensions shall be in accordance with Part 1 Section 1J and Table 1.10.

2E.3 Provision for electrical vehicles, enlarged vehicles and blue badge holders inside the main security gate shall be in accordance with the percentage requirements for data centres set out in Part 1 Section 1J and Table 1.9.

2E.4 A minimum of 10 stands providing 20 cycle parking spaces shall be provided for estate management and operational staff. Cycle parking shall be covered and provided in accordance with London Transport Note 1/20: Cycle Infrastructure Design (or as subsequently amended).

2E.5 Parking of estate management and maintenance vehicles is only permitted on roads within the campus on a temporary basis under the supervision of the estates management team.

2F Lighting

2F.1 General lighting considerations are set out in Part 1 Section 1K: Lighting.

2F.2 Light columns shall be positioned to avoid the need for significant tree pruning as trees reach full maturity. Where planting is proposed, lighting design shall be coordinated with the approved landscaping scheme.

2F.3 Luminaries shall have shields or internal baffles fitted to prevent back/ sideways spill of light.

Spine Road

2F.4 Lighting on the spine road shall be column mounted and designed to ensure it prevents upward light above the horizontal plane. Lighting shall be designed to lighting class C5 as defined in BS EN 13201-2. Light fixtures shall meet the requirements as detailed in Table 2.3.

Figure 2.4: Illustrative access and parking layout at the main security gate

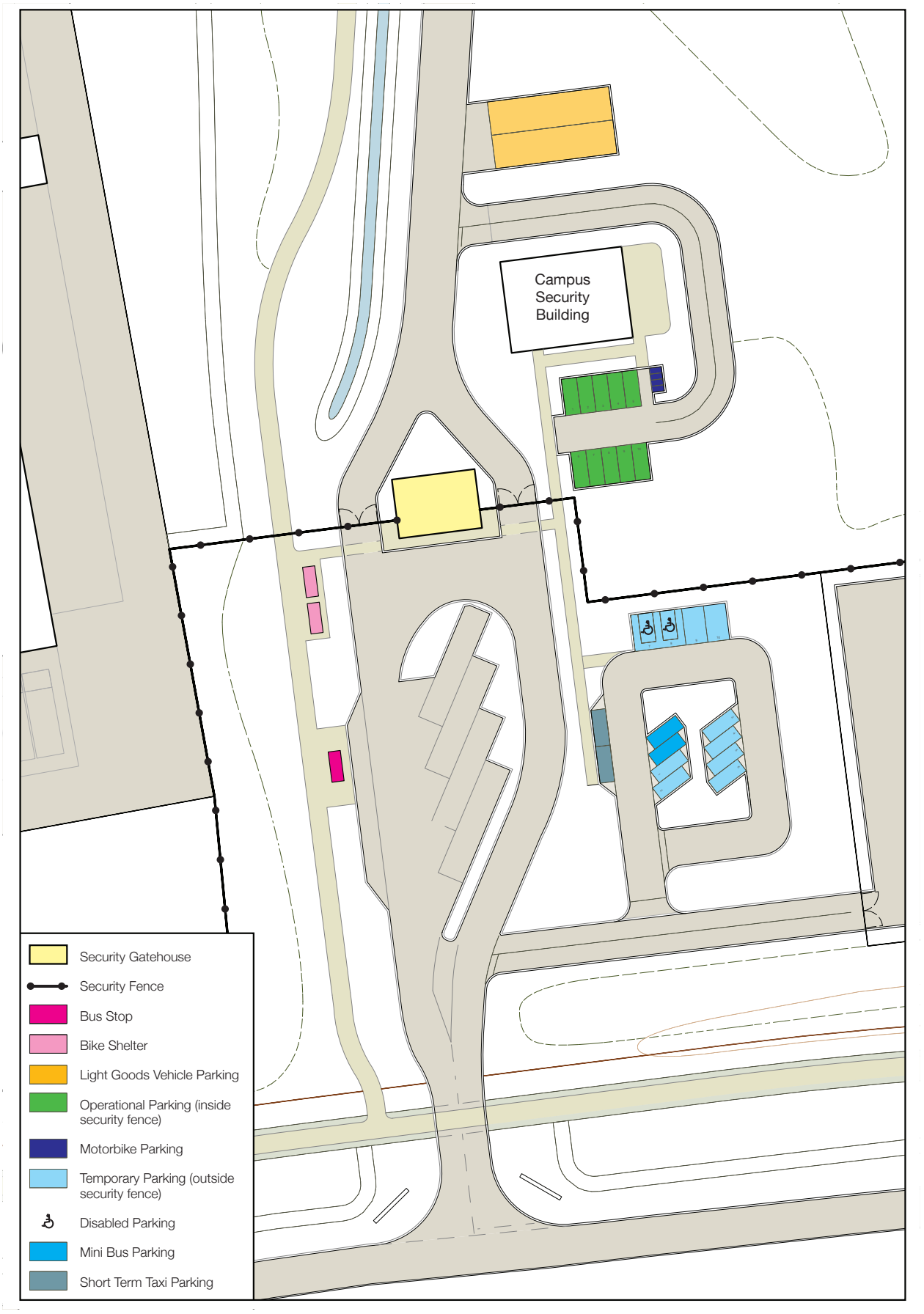


Table 2.3

Equipment	Mounting height	Installation details	Average Illuminance	Minimum Uniformity	CRI	Colour temperature
Lighting column	6-8m	0° tilt	7.5 lux	0.40	>70	≤3000K

2F.5 Lighting columns shall be mounted a safe distance from the carriageway for maintenance access, and to reduce collisions, as recommended in BS EN 5489-1 for roads at design speeds ≤ 20 mph.

Eastern and Western Access Roads

2F.6 Lighting on eastern and western access roads shall be designed to lighting class P4 as defined in BS EN 13201-2. Light fixtures shall meet the requirements as detailed in Table 2.4.

Table 2.4

Equipment	Mounting height	Installation details	Average Illuminance	Minimum Illuminance	CRI	Colour temperature
Lighting column	6-8m	0° tilt	5 lux	1 lux	>70	≤2700K

2F.7 Columns on the eastern and western access roads shall be mounted a safe distance from the carriageway for maintenance access, and to reduce collisions, as recommended in BS EN 5489-1 for roads at design speeds ≤ 20 mph.

Operational Parking Areas

2F.8 Lighting of operational parking areas shall meet the requirements of Table 5 of BS 5489-1 for outdoor car parks with medium traffic. The performance is as detailed below in Table 2.5.

Table 2.5

Equipment	Mounting height	Installation details	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	6-8m	0° tilt	10 lux	0.25	>70	≤2700K
Wall mounted luminaire	2-4m	0° tilt	10 lux	0.25	>70	≤2700K

Shared footway/cycleways

2F.9 Lighting of the shared footway/cycleway around the campus shall meet the requirements detailed in Table 2.6.

Table 2.6

Equipment	Mounting height	Installation details	Average Illuminance	Uniformity	CRI	Colour temperature
Lighting column	3-4m	0° tilt	10 lux	0.40	>70	≤2700K

2G Landscaping

Boundary Treatment

2G.1 The Data Centre Campus shall be enclosed within a perimeter security fence of a uniform style and height rated to Loss Prevention Standard 1175 Issue 7 SR1 or higher and shall be between 2.4m and 3m high with up to 1m anti-climb topping. The perimeter fence shall be fitted with a perimeter intruder detection system.

2G.2 Fencing shall typically be:

- BS1722-12 Steel Palisade Fencing; and
- BS1722- 14 Open Mesh Steel Panel Fencing Category 2 (security fencing).

2G.3 All fencing accord with the following colour palette in Part 1, Section 1L Figure 1.14.

2G.4 Illustrative examples of fencing are shown below:






2G.5 The fencing shall be designed to eliminate recesses and concealed corners.

2G.6 Gates in the Data Centre Campus perimeter security fence shall be the same height as the fence and automated.

2G.7 A wooden field gate that can be locked shall be provided at the entrance to the visitor centre car park in Build Zone H.

2G.8 All fencing shall be a minimum distance of 2m from any tree canopy, video surveillance columns and light columns.

2G.9 The perimeter security fence shall be erected in line with the development phases as shown in Figure 2.5. The interim fencing shall be to the same standard as the permanent fence.

Soft Landscaping

2G.10 The soft landscape scheme within the primary infrastructure corridor, along the western access road and in other parts of the data centre campus outside Build Zones shall be phased as shown in Figure 2.6.

Figure 2.5: Security Fencing Phasing

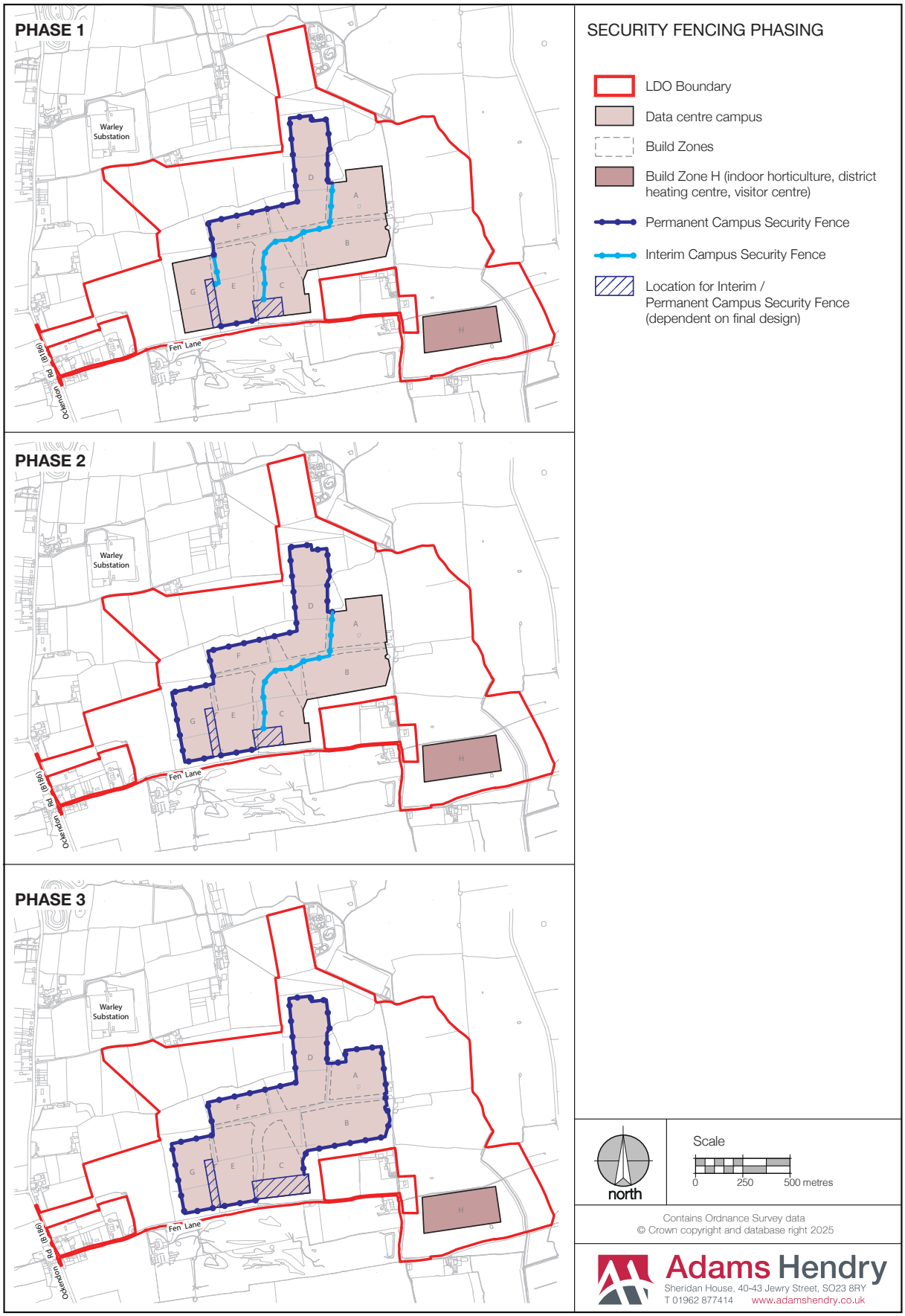
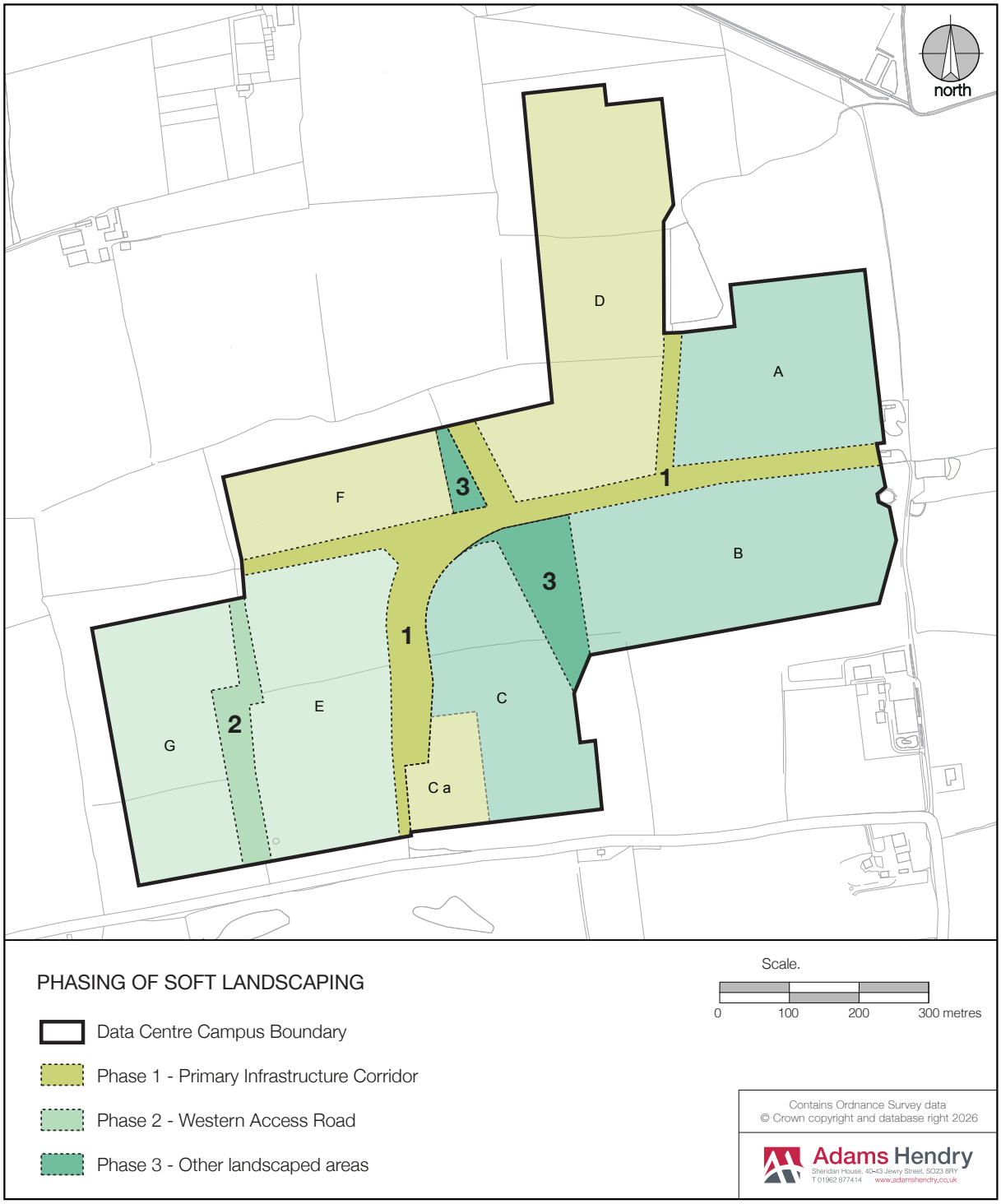


Figure 2.6: Phasing of Soft Landscaping



2G.11 Planting shall comprise primarily neutral grassland as shown on Figure 3.1: Habitat Plan (See Part 3).

2G.12 The minimum area of neutral grassland provided within the Data Centre Campus during each development phase shall be as shown in Table 2.7.

Table 2.7: Minimum Area of Neutral Grassland per Development Phase

	Phase 1	Phase 2	Phase 3	Phase 4
Neutral Grassland	5.8 ha	1.9 ha	2.7 ha	10.4 ha

2G.13 Existing mixed native hedgerows shall be retained as indicated on Figure 3.1: Habitat Plan (See Part 3).

2G.14 Copses of trees with woodland understorey planting shall be provided within areas of neutral grassland. A typical section is shown in Figure 2.7.

Figure 2.7 Typical Landscaping within Neutral Grassland



2G.15 Filtered tree planting with woodland understory and shrub planting with wildflower verges shall be provided along ditches, swales, hedgerows, roads and the shared footway and cycle path. Typical cross sections are shown in Figure 2.8 and Figure 2.9.

Figure 2.8 Typical landscaping along ditches and hedgerows

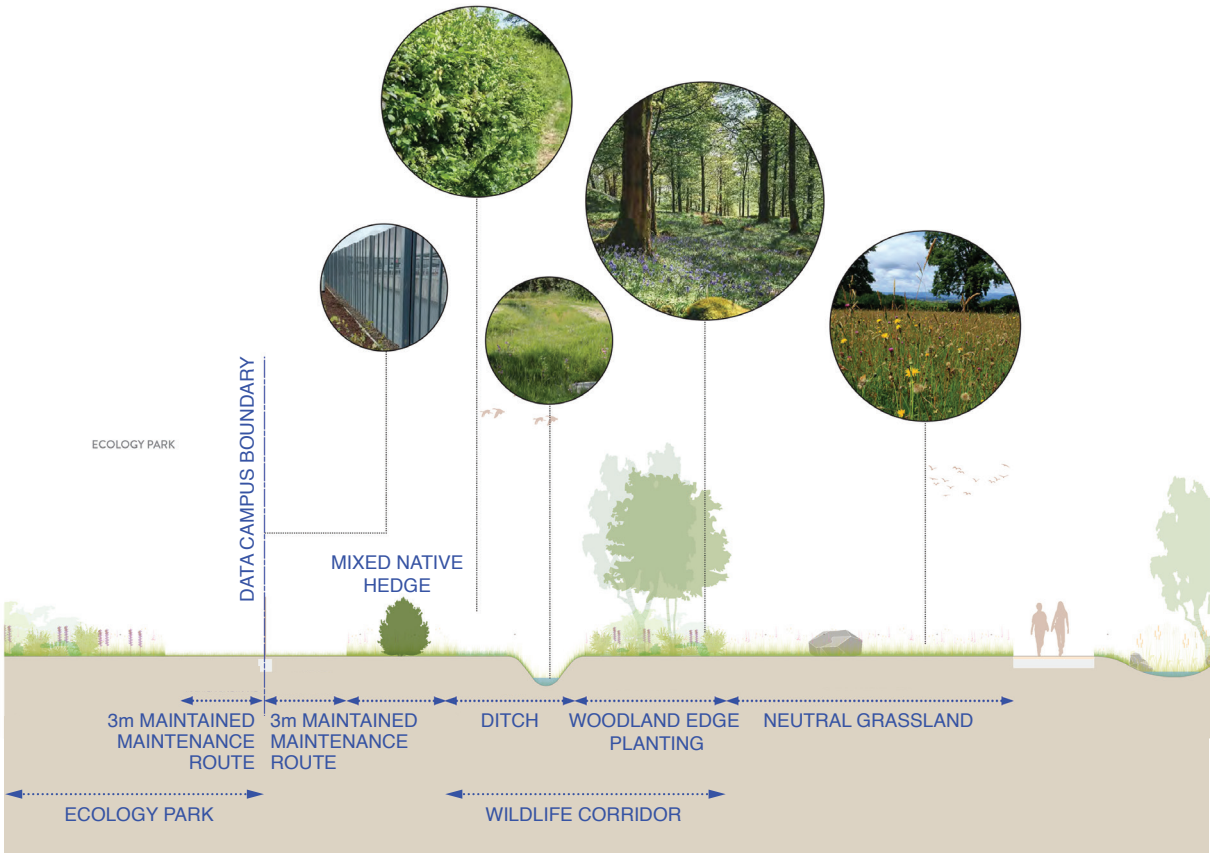
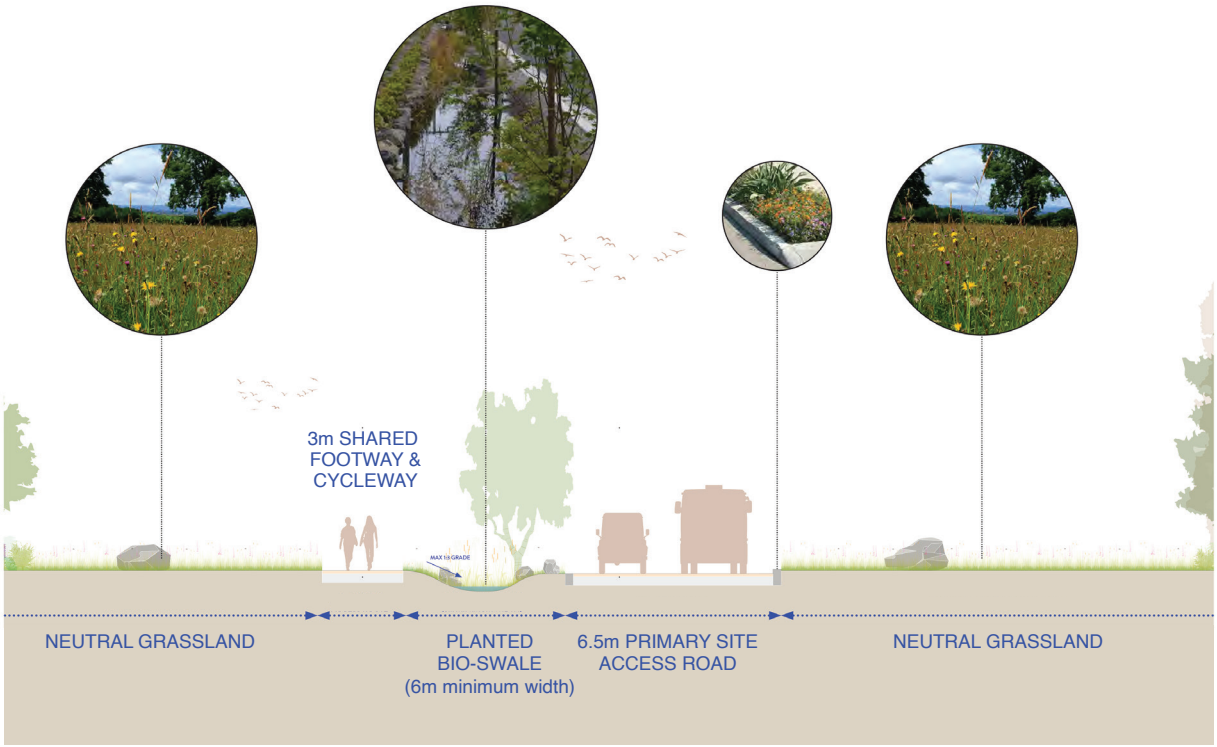


Figure 2.9 Typical landscaping along the shared walkway and cycleway



2G.16 A strip comprising either gravel, concrete block paving, tarmac or mown grass shall be incorporated adjacent to the perimeter fence to allow access for maintenance.

2G.17 The attenuation ponds and swales shall contain a combination of planting treatments with variation achieved along their length. The composition of the plants shall include species that are able to thrive in drier conditions at the upper margins of wetlands and damp tolerant varieties capable of establishing on the lower slopes.

2G.18 The planting scheme shall discourage public access to the swales. Timber knee rails shall be installed as a guide to pedestrians where planting is not otherwise available.

2G.19 All planting shall be in accordance with the detailed soft landscaping specification as set out in Appendix 2.

Tree Planting

2G.20 Tree planting shall achieve a 5% coverage within the total neutral grassland area in accordance with the requirements set out in Table 2.8.

Table 2.8: Tree Planting Densities

Tree planting	Phase 1	Phase 2A	Phase 3	Total
Area	0.28 ha @5%	0.09 ha @ %	0.13 ha %5%	0.5 ha @ 5%
Whips @50%	175	57	81	313
Standard Trees @30%	28	9	13	50
Semi Mature Trees @ 20%	7	2	4	13
Total	210	68	98	376

Tree Protection Measures

2G.21 The tree protection measures in Part 1, Section 1L.22 - 23 shall apply.

Veteran trees

2G.22 A knee rail or post and rail fence beyond the perimeter of the crown (or larger area where available) shall be implemented around veteran tree 138, 139 and 145 to restrict public access.

Landscape Management

2G.23 The management and maintenance of the soft landscape components associated with the development shall be in accordance with Part 1, Section 1L.

Street Furniture

2G.24 The design standards for street furniture are set out in Part 1, Section 1L.25 – 1L.30

2H Ecological Creation Features

2H.1 As a minimum, the specified number of each type of ecological feature shall be provided at the development stage as detailed in Table 2.9.

Table 2.9: Ecological Features

Ecological Feature	**Phase 1** Primary Infrastructure Corridor
Bird Boxes - House Sparrow	-
Bird Boxes - Swift	-
Bird Boxes - Song Birds	2
Bird Boxes – Open Fronted	2
Bird Boxes – Barn Owl	1
Sky Lark Plots	1
Bat Boxes	4
Bat Hibernation Boxes	-
Hibernaculum (amphibians, reptiles, invertebrates)	1
Invertebrate Features (Bee boxes and hotels, Bee banks, Bee posts, Stumperies and log piles)	2

2H.2 The ecological features shall be provided in accordance with the detailed specifications as set out in Section 1M of Part 1.

2I Drainage Standards

Site Wide Surface Water Drainage

2I.1 The surface water strategy shall discharge the site's surface water runoff, during storm events with up to and including a 1 in 100 annual probability (with an appropriate 40% climate change allowance or the equivalent updated requirement), into the River Mardyke on the eastern boundary of the site. Discharge to the River Mardyke, via either existing or proposed drainage ditches, shall be limited at the greenfield runoff rate as shown in Table 2.10.

2I.2 The site discharge shall be attenuated by three attenuation ponds. The attenuation ponds shall be sized to manage surface water runoff to existing drainage infrastructure from the proposed Build Zones, all estate roads and footways and cycleway at controlled rates as shown in Table 2.10. The maximum depth of the three attenuation ponds below existing ground level shall be 1.2 m with a maximum slope gradient of 1:3. The attenuation ponds shall be outside of areas at risk of fluvial flooding.

2I.3 Flows currently managed by on-site ditches within the data centre campus that do not serve off-site catchment areas shall be wholly replaced by the proposed drainage network. All ditches which convey surface water runoff from catchments external to the site shall be maintained or diverted within the site. Figure 2.10 shows the extent of the respective catchment areas for each of the attenuation ponds and the indicative location of ditches to be retained and relocated and new ditches and swales that will be required subject to detailed design pursuant to condition 26 in Schedule 2 of the LDO.

2I.4 A below ground surface water network of pipes within the spine road would discharge surface water runoff from individual development plots into Pond 2. On plot methods of surface

Table 2.10: Design Parameters for Attenuation Ponds and Discharge Rates to the Mardyke

Attenuation Feature	Maximum Attenuation Volume m^3	Maximum Discharge Rate to Mardyke (l/s)
Pond 1	6,075	25.2
Pond 2	17,620	217.7
Pond 3	8,224	33.7
Total	31,919	276.6

water management and discharge rates to the piped network shall be in accordance with the standards set out in Part 1, Section 1O.

2I.5 All drainage services shall be designed in accordance with BS 5837:2012 – Trees in Relation to Design, Demolition and Construction. Drainage services shall be located to avoid root protection areas of retained trees and groups of trees as shown on the tree protection plans in Appendix 4 unless otherwise demonstrated that this is not feasible.

2I.6 Details of the final design of the surface water drainage scheme shall be submitted to the local planning authority pursuant to condition 26 in Schedule 2 of the LDO.

Swale

2I.7 A swale designed with an appropriate 40% climate change allowance or to the equivalent requirement if updated by the Environment Agency shall be in place along the primary infrastructure corridor for the conveyance of storm water run-off from main spine road, shared footway and cycle way and other estate roads (outside of the Build Zones) to the attenuation ponds. The swale shall have a minimum width of 6m wherever feasible).

2I.8 Steps shall be incorporated into attenuation ponds and drainage swales to allow access for maintenance and safety.

2I.9 Slopes within swales shall not exceed a maximum gradient of 1:2.5.

2I.10 For safety, where stepped access is not otherwise provided, water bodies shall be designed with safe access and egress areas where the maximum gradient does not exceed a slope of 1:5.

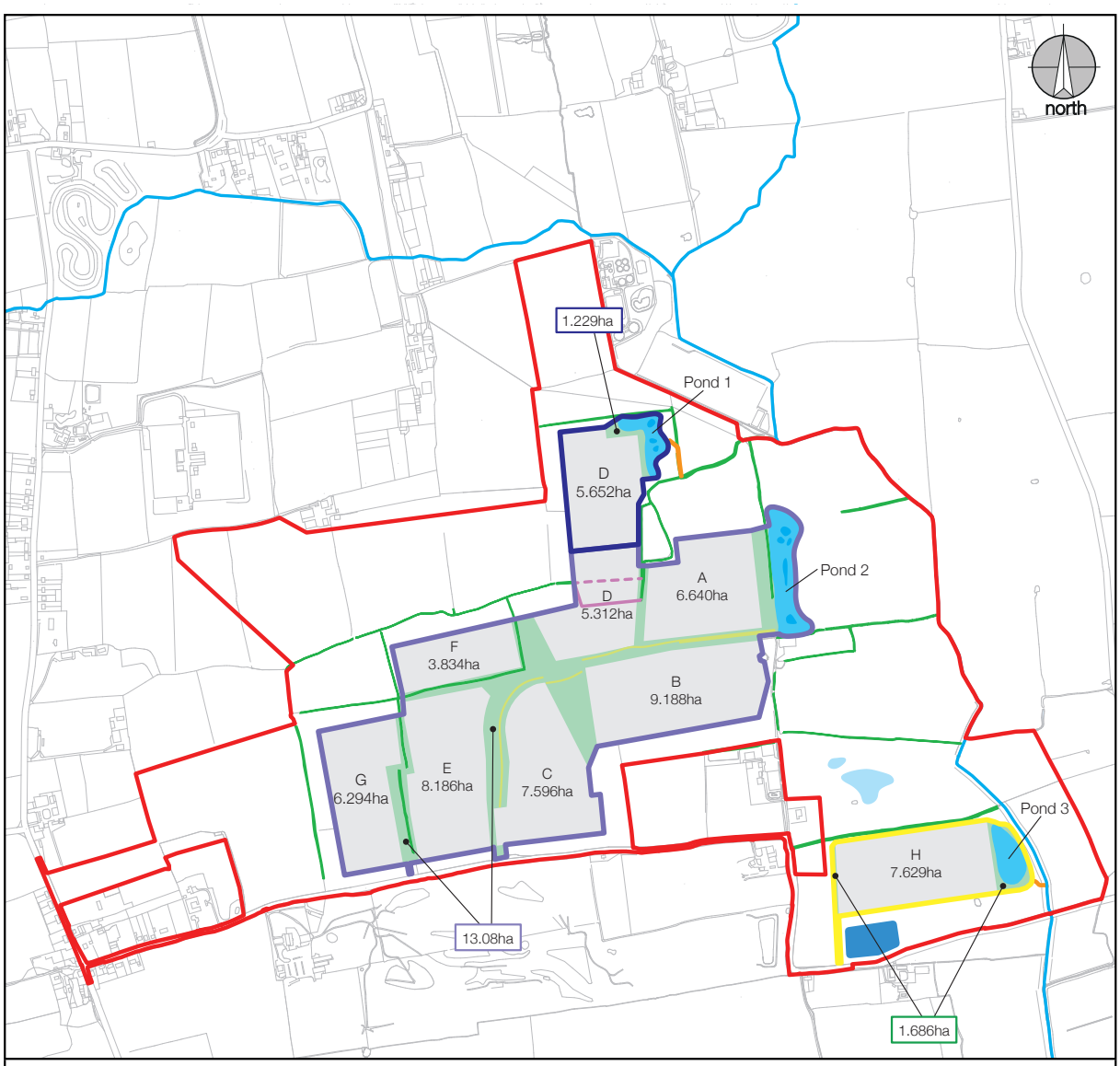
2I.11 Culverts shall be used at road crossings and entrances to plots.

Pollution Control

2I.12 The swale in the downstream ditch(es) of the attenuation ponds shall be inspected for signs of pollution in accordance with the maintenance regime to be agreed with local planning authority pursuant to condition 26 in Schedule 2 of the LDO. Where pollution is evident, appropriate clean-up measures, such as absorbent booms shall be used to remove it. Oil booms shall be removed on completion of the clean-up to avoid re-release of oil or potential blockages.

2I.13 SuDS performance capacities shall meet or exceed the pollution hazard indices in accordance with the SuDS Manual C753 (or as subsequently amended).

Figure 2.10: Catchment Areas



CATCHMENT AREA PLAN

- LDO Boundary
- Extent of catchment area managed by pond 1
- Extent of catchment area managed by pond 2
- Extent of catchment area managed by pond 3
- Proposed attenuation pond location
- Reservoir
- Build zone catchment area
- Roads, paths, swales, soft landscaping catchment area
- Proposed swales location
- Existing ditch location
- Proposed ditch location
- Existing ditch to be relocated
- Diverted ditch location
- Existing River Mardyke
- Other pond features

Scale

0 250 500m

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T 01962 877414 www.adamshendry.co.uk

Foul Water Drainage

2I.14 Foul flows from individual Build Zones shall be conveyed via a combination of gravity-based systems and pumped solutions to connect to the existing Anglian Water public foul sewer to the north of the site.

2I.15 Pumping stations shall be underground and be situated within a compound, in accordance with DCG 2.3 (November 2023).

2I.16 Appropriate storage must be provided on site to accommodate flows from a 24-hour period in the event of pump/power outage.

2J Service Infrastructure

2J.1 Power shall be supplied via a cable connection(s) between Warley GSP and the proposed UKPN substation on Build Zone F as shown in Part 1, Figure 1.1.

2J.2 Utility connections (power, fibre and water) to individual plots should be located within service corridors located under footways/cycle paths or within landscape strips adjacent to roads.

District Heating Primary Network Circuit and Export Connection

2J.3 The waste heat pipework shall be installed from the data centre cooling system offtake to a plate heat exchanger plant room in the district heating energy centre. The pipe route shall be cognisant of the installation and replacement requirements and shall be operated and maintained at all times.

2J.4 An export connection(s) at the LDO site boundary on Fen Lane or Ockendon Road shall be provided to enable a third party to connect and supply heat to a downstream energy centre/ heat network in the future.

Works and Development near National Grid Electrical Assets

2J.5 Part 1 Section 1Q applies to all works and development near National Grid electrical assets.

Works and Development near the LHP gas pipeline

2J.6 A 3m wide easement shall be maintained either side of the LHP gas main.

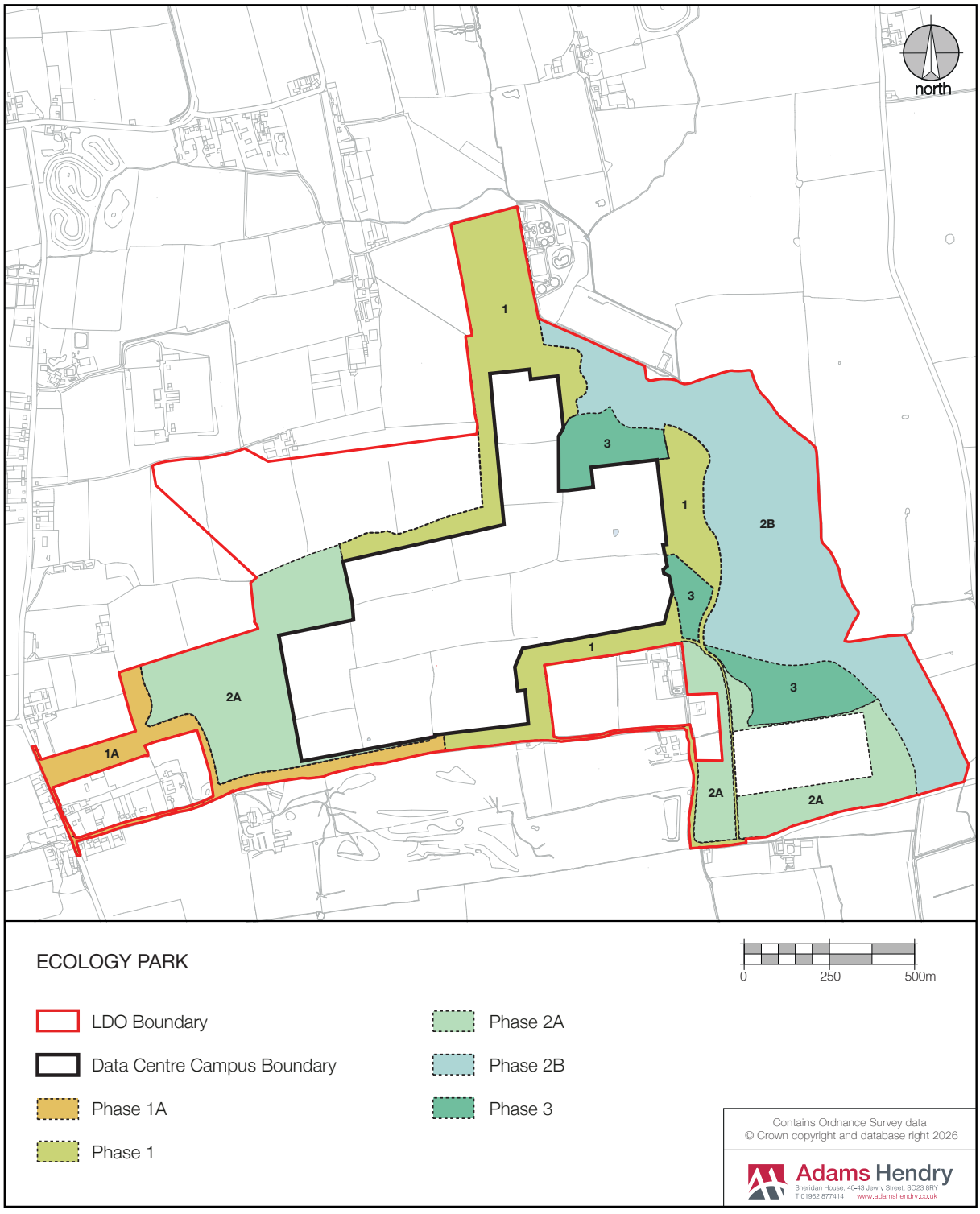
Part 3: Ecology Park

3A Soft Landscaping

General Requirements

3A.1 The Ecology Park shall be delivered in phases as shown in Figure 3.1 and include all habitat types as shown on Figure 3.2.

Figure 3.1: Ecology Park Phased Delivery



3A.2 The habitat shall be delivered in accordance with the minimum requirements set out in Table 3.1 for each phase of development.

Table 3.1: Habitat Creation

Habitat Type	Phase 1A	Phase 1	Phase 2A	Phase 2B	Phase 3	Total
Minimum Area (hectares)						
Broadleaf Woodland	1.7	2.2	5.6	-	2.7	12.2
Wet Woodland	-	0.4	-	6.6	0.7	7.7
Woodland Buffer	-	9.1	2.5	-	0.8	12.4
Meadow	3.4	11.1	23.6	-	7.7	45.8
Seasonally Wet Grassland	-	5.5	29.6	-	4.5	
Ponds and Standing Water – attenuation ponds	-	1.45	0.5	-	-	
Ponds and Standing Water – other ponds	-	-	-	-	0.35	0.35
Reservoir	-	-	1.0	-	-	1.0
Ditches	-	-	-	-	2.4	2.4
Minimum Provision (km)						
New Mixed Native Hedgerows	0.9	3.5	1.7	2.0	1.0	9.1

3A.3 Planting for each habitat type shall be in accordance with the relevant soft landscaping specification in Appendix 2 and include all species from that specification to meet the habitat classifications set out in Appendix 1 of the LEMMP.

3A.4 All trees and plants shall be certified as UK provenance (propagated and grown) and locally sourced where possible. Guidance in the Landscape Institute's Technical Guidance Note (TGN) 01/19 – Plant Health and Biosecurity: The Landscape Consultant's Toolkit (or as subsequently amended) shall be followed to identify and mitigate risks from pests and disease.

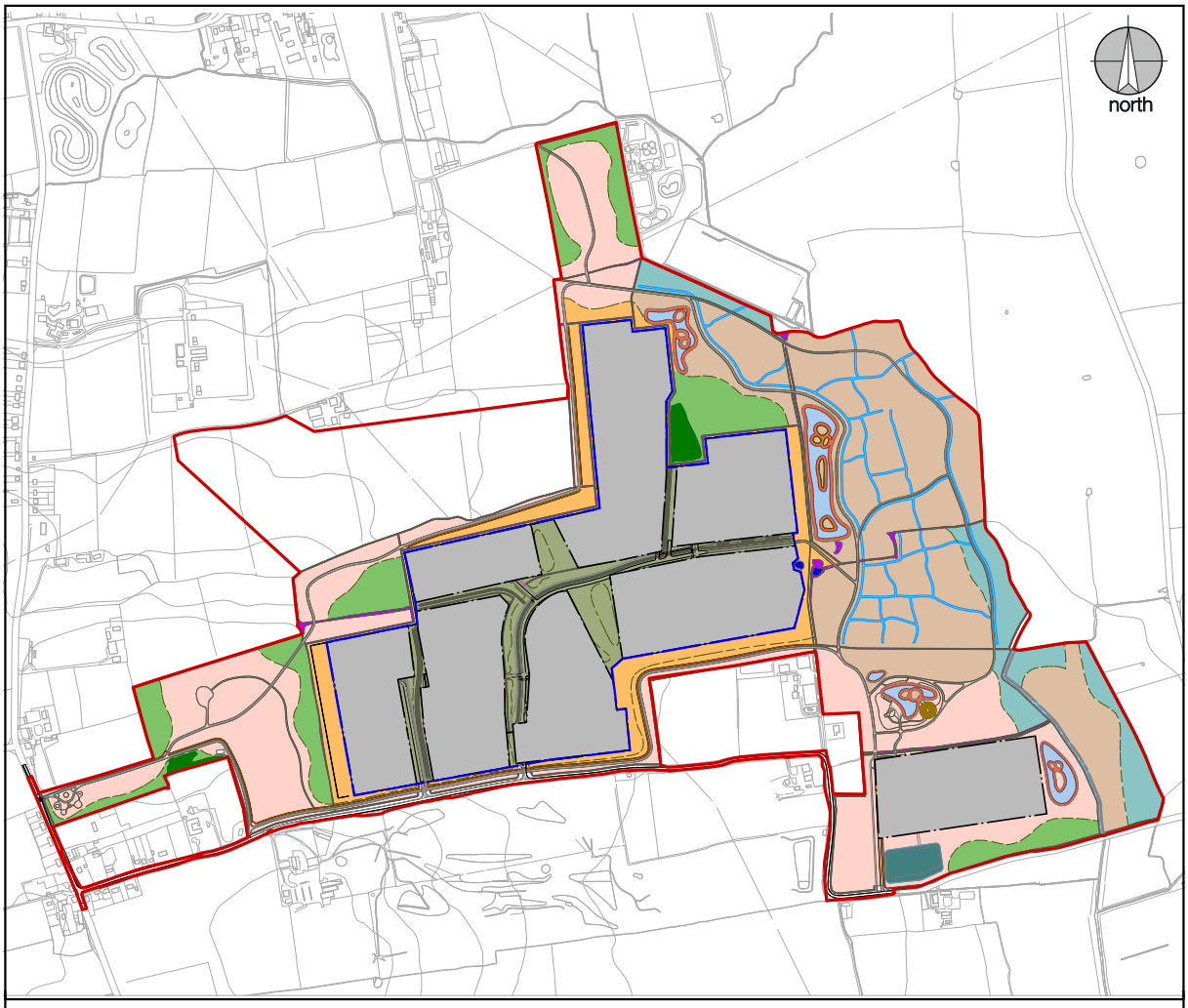
3A.5 Planting shall be undertaken in the appropriate season as detailed in Table 3.2.

Table 3.2: Planting Season

Habitat Types	Season											
	J	F	M	A	M	J	J	A	S	O	N	D
Broadleaf Woodland	■	■	■								■	■
Neutral Grassland/Meadow			■	■					■	■		
New Mixed Native Hedgerows	■	■	■								■	■
Seasonally Wet Grasslands			■	■	■	■						
Meadow			■	■					■	■		
Wet Woodland	■	■	■								■	■
Ponds and Standing Water			■	■	■	■						
Ditches			■	■	■				■	■	■	

3A.6 Any invasive species noted during planting shall immediately be removed and appropriately disposed of.

Figure 3.2: Habitat Strategy



HABITAT STRATEGY

Scale
0 250 500m

Site Boundary
Development Boundary
Build Zones / Plot Boundaries

HABITAT TYPE

Existing / Retained Broadleaf Woodland
Level 4 Habitat Classification: ***w1f - Lowland Mixed Deciduous Woodland***
Priority Habitat
Total Area: 1.0 ha

Broadleaf Woodland
Level 4 Habitat Classification: ***w1g - Other Broadleaf Woodland***
Total Area: 12.2 ha

NOTE: The long-term strategic vision is to use management practices aimed towards establishing these areas as ***w1f - Lowland Mixed Deciduous Woodland (*Priority habitat)*** condition.

Wet Woodland
Level 4 Habitat Classification: ***w1d - Wet Woodland***
Priority Habitat
Total Area: 7.7 ha

Woodland Buffer (Predominantly Broadleaf)
Level 4 Habitat Classification: ***w1g - Other Broadleaf Woodland***
Total Area: 12.4 ha

Neutral Grassland
Level 4 Habitat Classification: ***g3c - Other Neutral Grassland***
Total Area: 10.4 ha

Meadow
Level 4 Habitat Classification: ***g3c - Other Neutral Grassland***
Total Area: 45.8 ha

NOTE: The long-term strategic vision is to use management practices aimed towards establishing these areas as ***g3a - Lowland Meadows (*Priority habitat)*** condition.

Existing Retained Mixed Native Hedgerows
Level 4 Habitat Classification: ***h2a - Native Hedgerow***
Priority Habitat
Total Area: 6.9 Linear Kilometers

New Mixed Native Hedgerows
Level 4 Habitat Classification: ***h2a - Native Hedgerow***
Priority Habitat
Total Area: 9.1 Linear Kilometers

Seasonally Wet Grassland
Level 4 Habitat Classification: A mosaic of **f2f 55 Other wetlands** and **g3c 55 Other neutral grassland Floodplain wetland mosaic**
Total Area: 39.6 ha

Ponds and Standing Water
Level 4 Habitat Classification: ***r1g - 41 Other Standing Water Pond***
Total Area: 2.3 ha

Ditches
Level 4 Habitat Classification: ***r1g - 50 Other Standing Water Ditch***
Total Area: 2.4 ha

Retained Water Body
Level 4 Habitat Classification: ***r1 - Standing Open Water and Canals***
Total Area: 0.07 ha

Reservoir
Level 4 Habitat Classification: ***r1g - 45 Other Standing Water Reservoir***
Total Area: 1.0 ha

Aquatic Marginal
Level 4 Habitat Classification: ***f2d - Aquatic Marginal Vegetation***
Total Area: 2.0 ha

Swales
Level 4 Habitat Classification: ***f2d - 848 Aquatic Marginal Vegetation - Sustainable Drainage Systems***
Total Area: 0.9 ha

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Trees

3A.7 Tree planting shall be carried out in accordance with the planting densities set out in Table 3.3. Trees shall be planted in naturalistic formations and not in rows.

Table 3.3: Tree Planting Requirements

Tree Planting	Phase 1A	Phase 1	Phase 2A	Phase 2B	Phase 3	Total
Broadleaf Woodland						
Area	1.7ha	2.2ha	5.6ha	-	2.7ha	12.2ha
Whips @80%	2720	3520	8960	-	4320	19520
Standard Trees @20%	75	97	247	-	118	537
Total	2795	3617	9207	-	4438	20057
Wet Woodland						
Area	-	0.4ha	-	6.6ha	0.7ha	7.7ha
Whips @80%	-	640	-	10560	1120	12320
Standard Trees @20%	-	18	-	291	30	339
Total	-	658	-	10851	1150	12659
Woodland Buffer						
Area	-	9.1ha	2.5ha	-	0.8ha	12.4ha
Whips @80%	-	14560	4000	-	1280	19840
Standard Trees @20%	-	400	110	-	35	545
Total	-	14960	4110	-	1315	20385
Meadow						
Area	0.16 ha @5%	0.56 ha @5%	1.2 ha @5%	-	0.38 ha @5%	2.3 ha @5%
Whips @50%	100	349	748	-	236	1433
Standard Trees @30%	16	55	118	-	38	227
Semi Mature Trees @ 20%	4	14	29	-	9	56
Total	120	418	895	-	283	1716
Seasonally Wet Grassland						
Area	-	0.28 ha @5%	1.48 ha @5%	-	0.24 ha @5%	2 ha @5%
Whips @50%	-	175	923	-	149	1247
Standard Trees @30%	-	28	147	-	23	198
Semi Mature Trees @ 20%	-	7	36	-	6	49
Total	-	210	1106	-	178	1494

3A.8 Coniferous species shall be included within the Woodland Buffer comprising no more than 15% of the total tree planting in these areas.

3A.9 The following tree protection measures shall be implemented:

- ***Whip planting***

3A.10 Biodegradable tree guards shall be provided at the time of planting and removed 5 years post-establishment or when no longer needed. Plastic tree guards shall be avoided wherever possible. Where plastic guards are unavoidable, these shall be checked on a regular basis (at least once a year) and removed and disposed of responsibly once no longer needed, or at the latest 5 years post establishment.

- ***Semi-Mature and Standard trees***

3A.11 Post and rail fencing shall be utilised at the time of planting where single trees or group trees are planted. This shall be a minimum height of 1.5m.

- ***Tree Paddocks***

3A.12 A minimum area of 10% (3.2ha) of woodland planting on each phase shall be protected by deer fencing in 0.2ha paddocks as set out in Table 3.4.

Table 3.4: Tree Paddocks

Habitat Type	Minimum Paddock Area (ha)				
	Phase 1A	**Phase 1**	**Phase 2**		**Phase 3**
	Ecology Part 1A	Ecology Part 1	Ecology Part 2	Ecology Part 4	Ecology Part 3
Broadleaf Woodland	0.2	0.2	0.4	-	0.4
Wet Woodland	-	-	-	0.6	0.2
Buffer Woodland	-	1.2	-	-	-

3A.13 Deer fencing shall remain in place for 20 years. The fencing shall be 1.8m high and comprise wooden posts and mesh.

Examples of tree protection measures





3A.14 A knee rail or post and rail fence beyond the perimeter of the crown (or larger area where available) shall be implemented around veteran tree T75 to restrict public access (See Appendix 4 – Tree Protection Plan 22).

3A.15 Only trees identified for removal on the tree protection schedule at Appendix 4 shall be felled unless otherwise agreed in writing with the Local Planning Authority in advance.

Hedgerows

3A.16 Hedgerows shall be a maintained to a maximum height of four metres. Reasonable steps shall be taken to establish vegetation cover on land within two metres of a hedgerow.

3A.17 The following minimum separation distances apply when planting hedgerows:

- 3m between hedgerow and the Data Centre Campus perimeter security fence.
- 2m between hedgerow and edge of a ditch or pond.

3A.18 Hedgerows within 3m of the existing LHP gas main as shown on Figure 1.1 in Part 1 shall only be planted to demarcate boundaries or provide screening. If a hedgerow is required, the species shall be shallow rooted or alternatively an underground root barrier membrane installed to prevent the spread of roots.

Ditches and Ponds (excluding attenuation ponds and reservoir)

3A.19 Design standards for attenuation ponds, new reservoir and swales are set out in Part 2, Section 2I.

3A.20 Existing ditches as shown on Figure 2.10 shall be retained.

3A.21 The water bodies to be retained are shown on Figure 3.2.

3A.22 New ditches and ponds shall be created as shown on Figure 3.2 and in accordance with the relevant requirements in Table 3.1.

3A.23 All new ditches and ponds shall be approximately 1 metre in depth.

3A.24 The internal ditch slopes shall have a gradient of 1:1 - 1:2 where in open landscape and a gradient of 1:3 where adjacent to pedestrian routes as illustrated on Figure 3.3.

3A.25 Where a level shelf is created, the internal ditch slope shall have a gradient of approximately 1:3 to a depth of 0.5 metres. It shall then have a gradient of approximately 1:2 from the level of the shelf to a depth of 1 metre.

3A.26 The internal pond slopes shall have a gradient of 1:2 where in open landscape and away from public access as illustrated on Figure 3.4.

3A.27 Where pond edges are publicly accessible, the gradient of the internal pond slopes shall be 1:12, increasing to 1:3 at a depth of approximately 0.5 metres. Where a level shelf is created, the internal pond slope shall have a gradient of approximately 1:3 to a depth of 0.5 metres. The internal pond slope shall then have a gradient of approximately 1:3 from the level of the shelf to a depth of 1 metre as illustrated on Figure 3.3.

3A.28 Refer to Section 3D for Jetty/ Pond Dipping requirements.

Figure 3.3: Example Ditch Sections

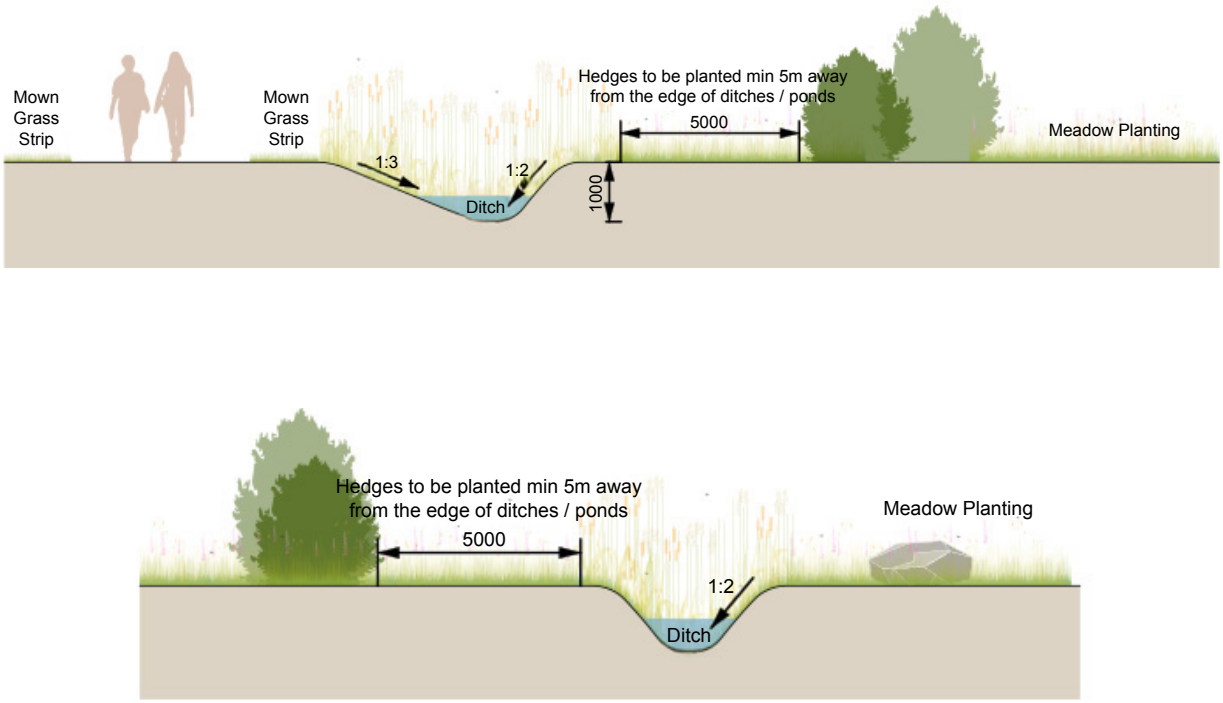
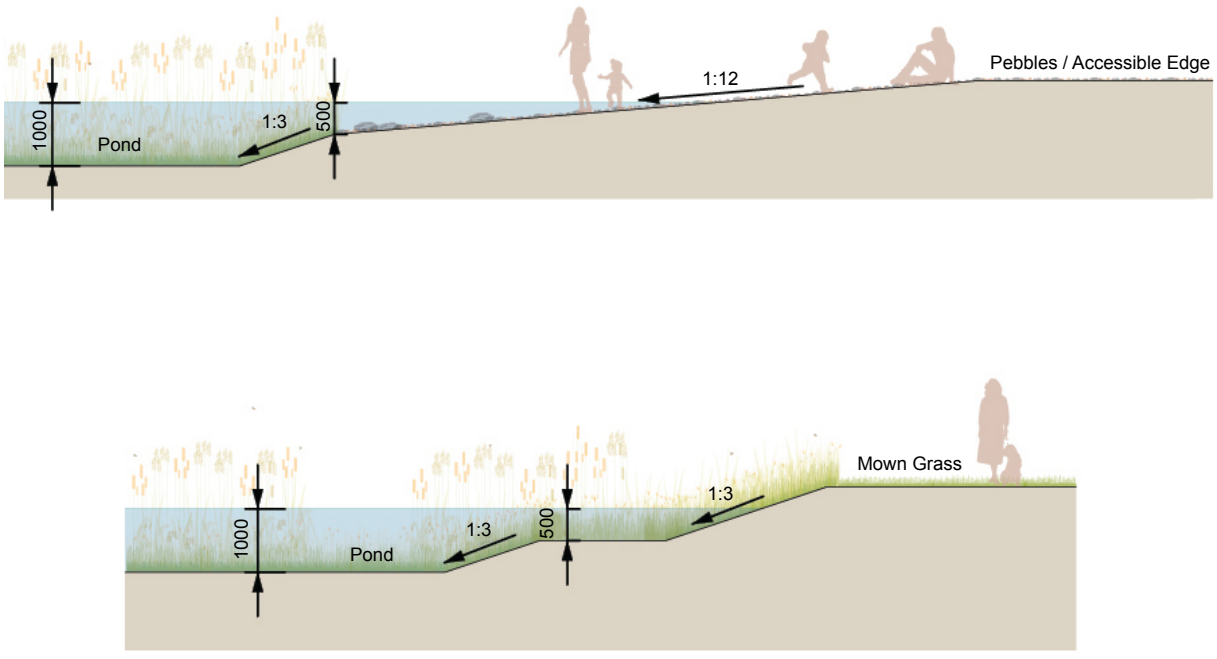
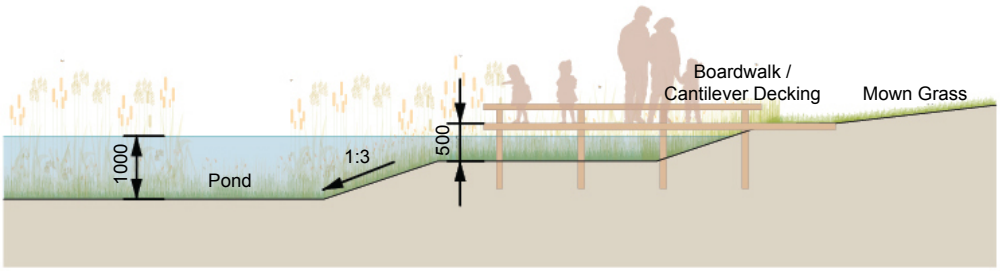
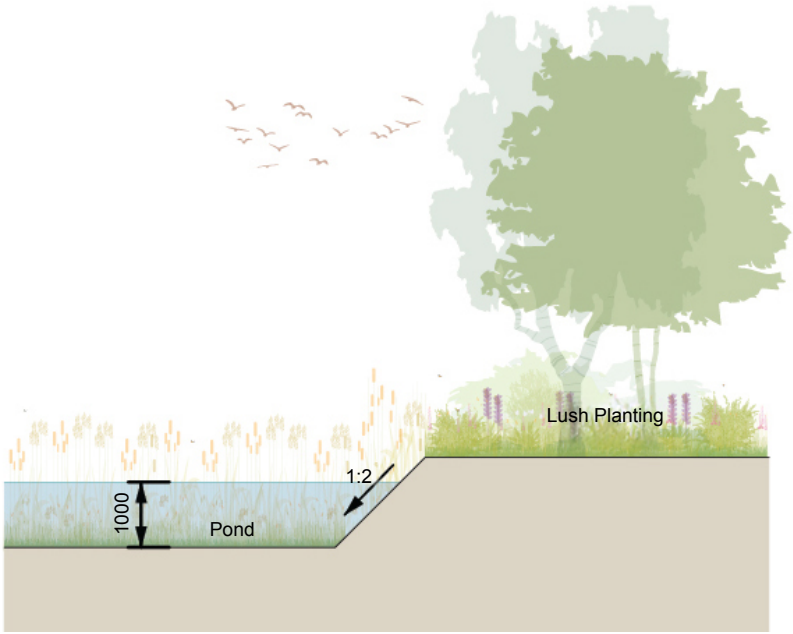


Figure 3.4: Example Pond Sections







Scrapes

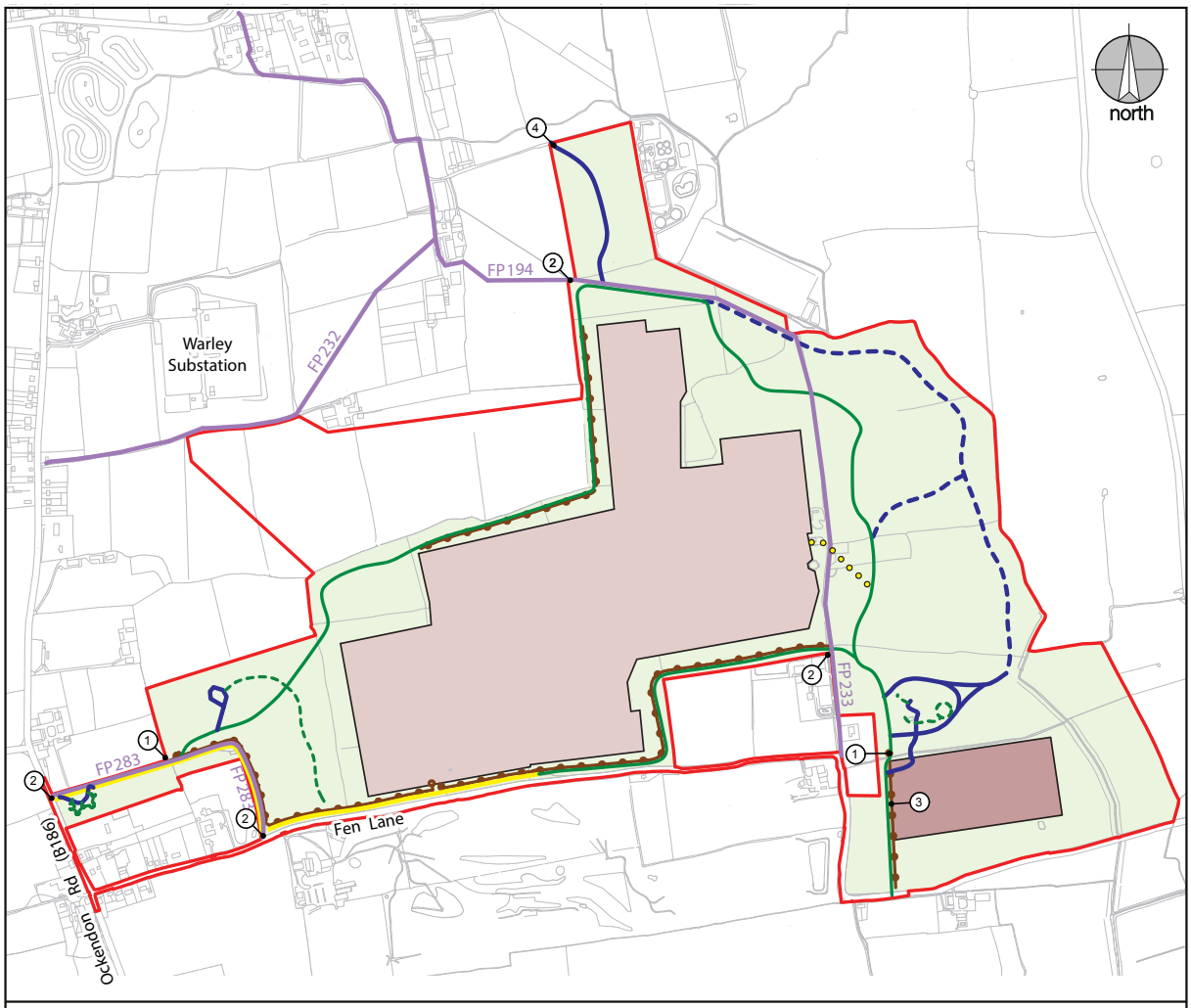
3A.29 Scrapes shall be provided in the seasonally wet grasslands shown on Figure 3.2. They shall be graded gradually from ground level towards the centre and be designed to ensure the maximum water depth in winter is 300mm, with an average depth of about 250mm. The scrapes shall be linked to each other and appear organic in shape.

3B Hard Landscaping

General Requirements

3B.1 Footpaths and cycleways shall be provided in accordance with Figure 3.5. Gradients shall not exceed 1:21.

Figure 3.5: Footpaths and cycleways, fencing and gates



Primary Strategic Footpath / Cycleway and Primary Footpath / Cycleway

3B.2 The primary strategic footpath/cycleway and primary footpath/cycleway shall be designed to the standards set out by the Department for Transport in the London Transport Note 1/20: Cycle Infrastructure Design (or as subsequently amended).

3B.3 The primary strategic footpath/cycleway and primary footpath/cycleway shall be at least 3m wide and finished with self-binding or resin bound gravel. A 1m wide geocell reinforced mown meadow strip shall be provided either side of the footpath / cycleway as shown in Figure 3.6 to enable use by maintenance vehicles.

Figure 3.6: Primary Strategic Footpath/Cycleway and Primary Footpath/Cycleway



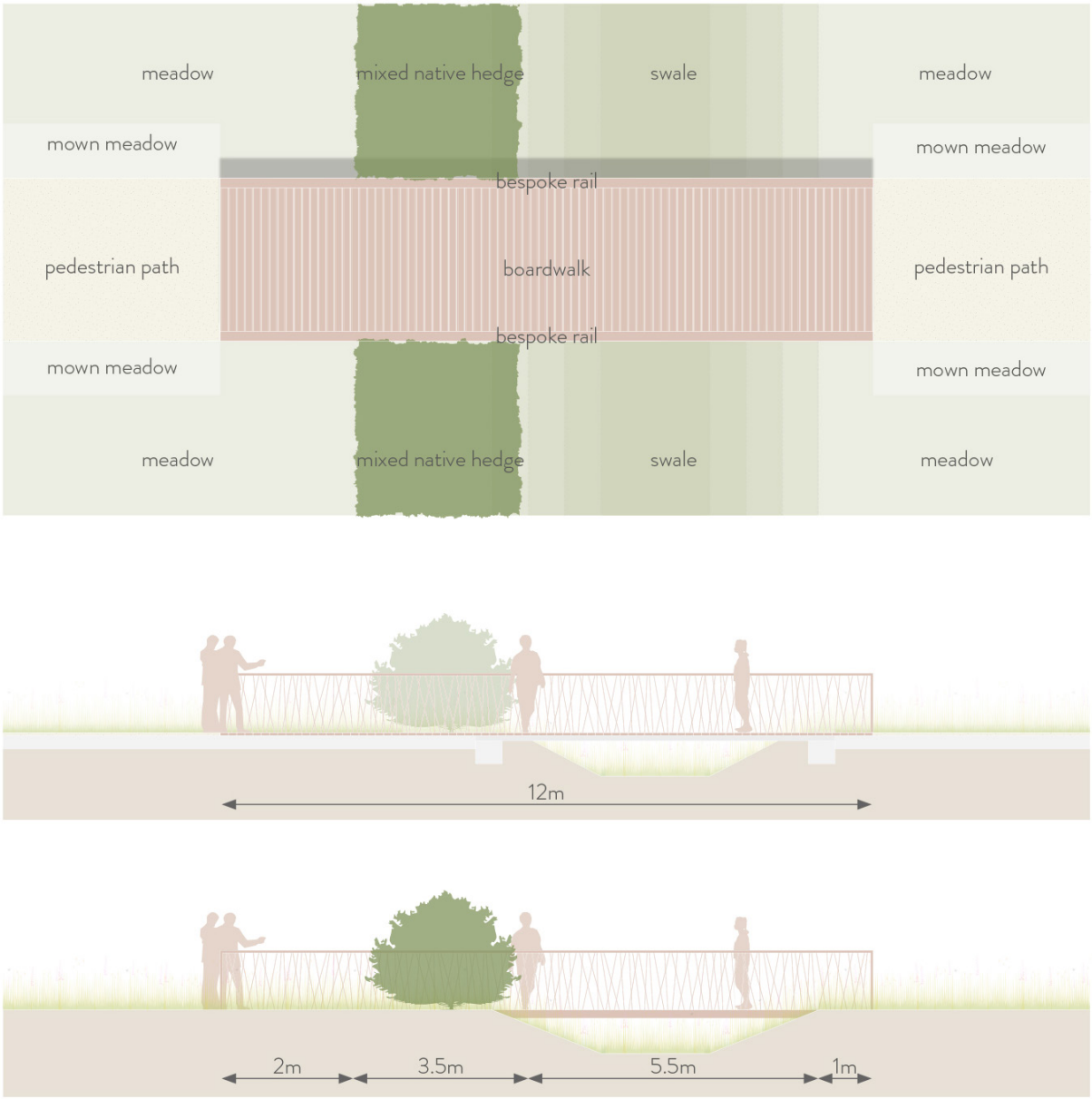
3B.4 An area of hardstanding with a minimum kerb to kerb turning radius of 8m to enable an LGV to turn around shall be provided at the entrance to the Ecology Park on Ockendon Road.

3B.5 Benches and/or seating made from natural and sustainable materials such as sustainably sourced wood certified by FSC shall be provided at regular intervals of no more than every 50m along the primary strategic footpath/cycleway and primary footpath/cycleway and at a location which is set back from the geocell reinforced mown meadow strip to not obstruct use.

3B.6 Hardstanding or geocell reinforced mown meadow shall be provided which extends by at least 1.2m on either side of each bench to enable wheelchair, mobility scooter and pushchair access.

3B.7 The pedestrian bridge over the existing swale north of the Visitors Centre shall be at least 3m wide and shall connect to the primary strategic footpaths and cycleways as shown in Figure 3.7. The bridge shall be of timber construction with barriers that are a minimum of 1.1 m high and gaps between the vertical railings no greater than 10cm. Structural engineering drawings of the pedestrian bridge shall be submitted to the local planning authority in accordance with Condition 36 of the LDO.

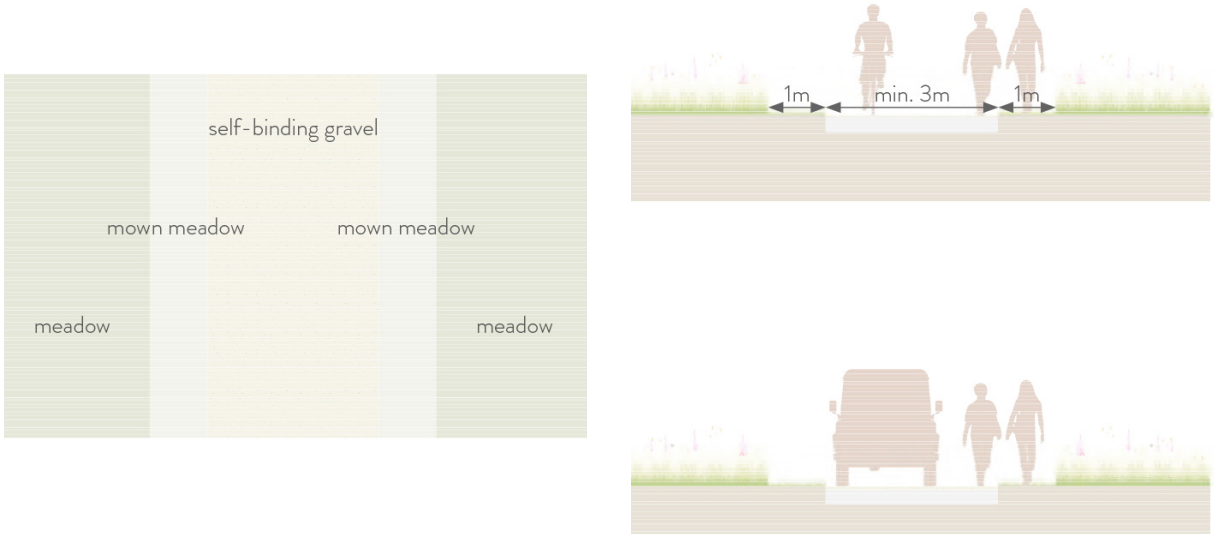
Figure 3.7: Bridge Specification



Secondary Footpath / Cycleway and Emergency Access

3B.8 The secondary footpath/cycleway and emergency access route shall be finished in self-binding gravel. The footpath/cycleway shall be at least 3m wide with a 1m wide mown meadow strip provided either side as shown in as shown on Figure 3.8. The emergency access route including the section within the Data Centre Campus (see Part 2, Figure 2.1) shall be at least 3m wide.

Figure 3.8: Secondary Footpath and Cycleway



Secondary Footpath

3B.9 The secondary footpath through the wetland areas shall comprise timber boardwalk and bridges constructed from decking boards. The boardwalk and bridges shall have a minimum clear width of 2m.

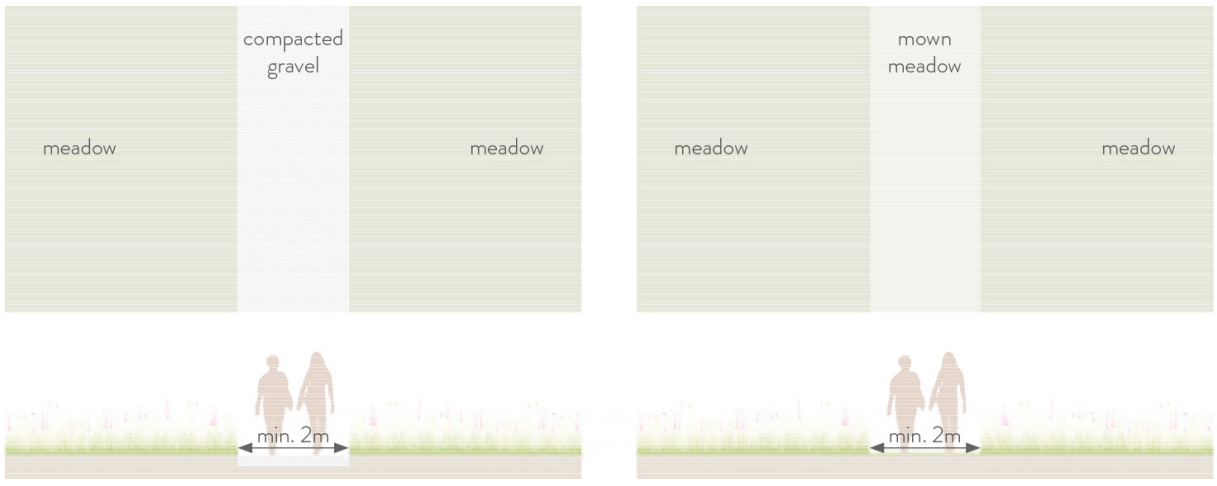
3B.10 Where the rise (fall) is less than 600mm, a timber knee rail shall be provided on both sides of the boardwalk and bridges. Where the rise (fall) is greater than 600mm. 1.1m high timber railings shall be provided on both sides of the boardwalk and bridges.

3B.11 The timber decking boards shall be a minimum of 50mm thickness with a maximum 12mm gap between boards. Anti slip measures shall be provided to improve grip for all weather conditions.

Informal Paths

3B.12 Informal paths shall comprise either mown and strimmed paths or compacted gravel. The paths shall be at least 2m wide as shown on Figure 3.9.

Figure 3.9: Informal Paths



Boundary Treatments and Gates

3B.13 Boundary treatments and gates shall be provided in accordance with Figure 3.5. Timber post and rail fencing shall be a maximum of 1.2m high.

3B.14 Mixed native hedgerows shall be provided around the perimeter of the site. Planting shall be in accordance with the detailed soft landscaping specification as set out in Appendix 2. Timber post and rail fencing shall be used in areas where hedgerows are to be established.

3B.15 Wooden wheelchair accessible kissing gates shall be used at the access points to pedestrian and cycle routes at points 1 and 2 as shown on Figure 3.5. Wooden field gates shall be used for other access points and for maintenance access at point 1. Gates shall only be locked where detailed in Figure 3.5.

Informal Field Gates



Post and Rail Fence



Mixed Native Hedgerows



3C Landscaped Earth Mounds

3C.1 Earth arisings from construction activities within the Build Zones shall be reused within the Ecology Park to create landscape earth mounds.

3C.2 Mound zones 3, 4, 5, 6, 9a, 10, 11 and 12 shall be completed to a fixed height and profile as shown on Figure 3.10.

3C.3 Mound zones 1, 2, 7, 8, 9b, 13 and 14 shall not exceed the maximum height as shown on Figure 3.11. The final form will be dependent upon the volume of earth generated during the construction works.

3C.4 There shall be a variation in the height profile of the mounds along their length. The slope gradients of the mounds shall accord with the following design parameters:

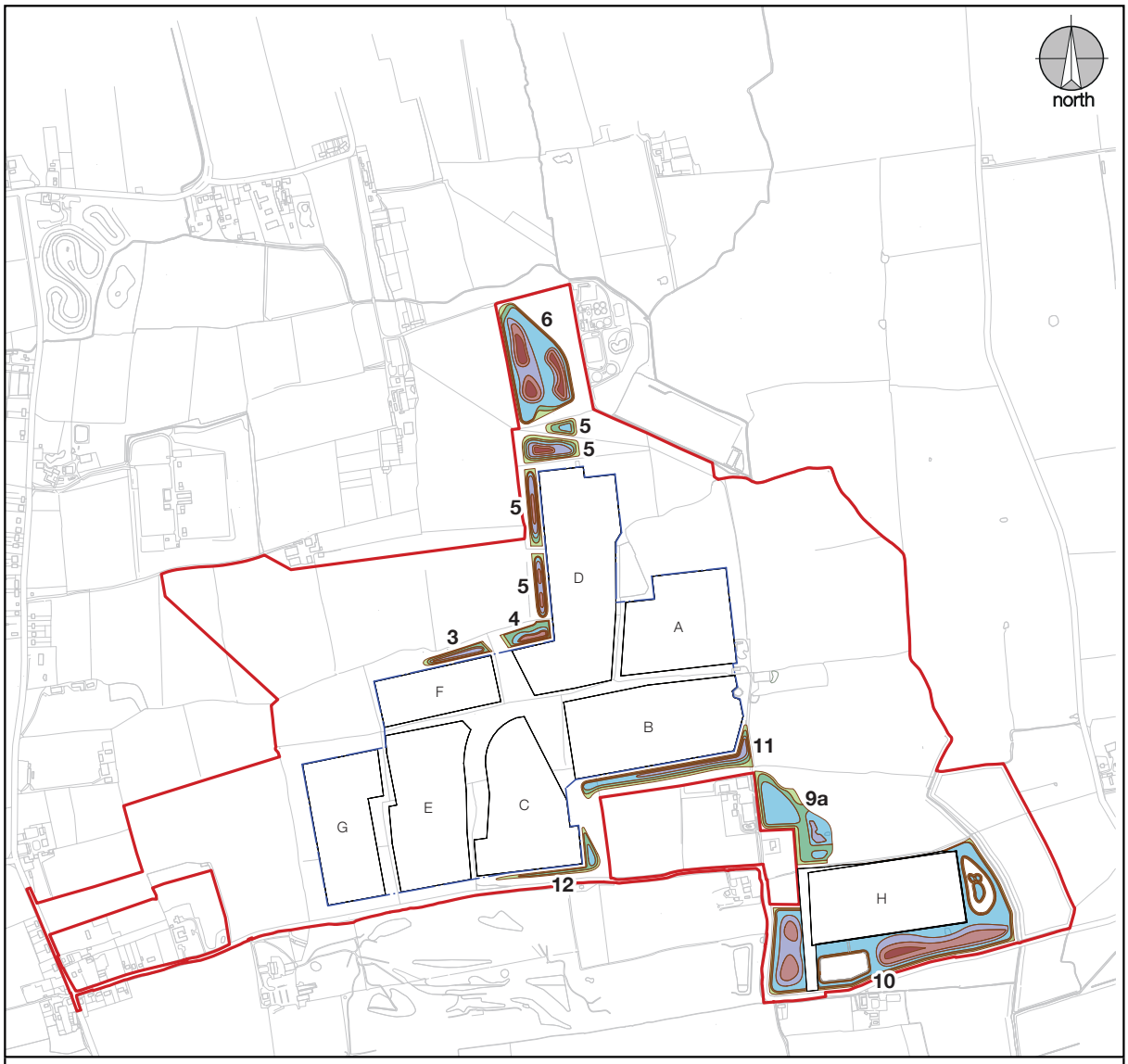
- the slope gradient shall be 1:3 maximum to 1:6 where within a Woodland Buffer corridor or immediately adjacent to the Data Centre Campus boundary as illustrated in Figure 3.12;
- where facing the open landscape (away from site boundaries) and accessible from public footpaths, the slope gradients shall as a minimum range from 1:6 to 1:12 as illustrated in Figure 3.13. Where achievable, a softer gradient of 1:12+ shall be adopted; and
- footpath/cycleway gradients shall not exceed 1:21.

3C.5 The mounds shall be planted with trees and integrated into the surrounding ecology park.

3C.6 There shall be a minimum 5m offset from the toe of the mound to the defined tree/ hedge root protection area as illustrated on Figure 3.13. For all other boundaries, a minimum mound offset of 3m shall be provided to maintain clear access routes.

3C.7 New hedges shall be offset by a minimum of 3m from the toe of any mound.

Figure 3.10: Mounds with a Fixed Height and Profile



MOUNDS WITH FIXED HEIGHT AND PROFILE

NOT TO SCALE

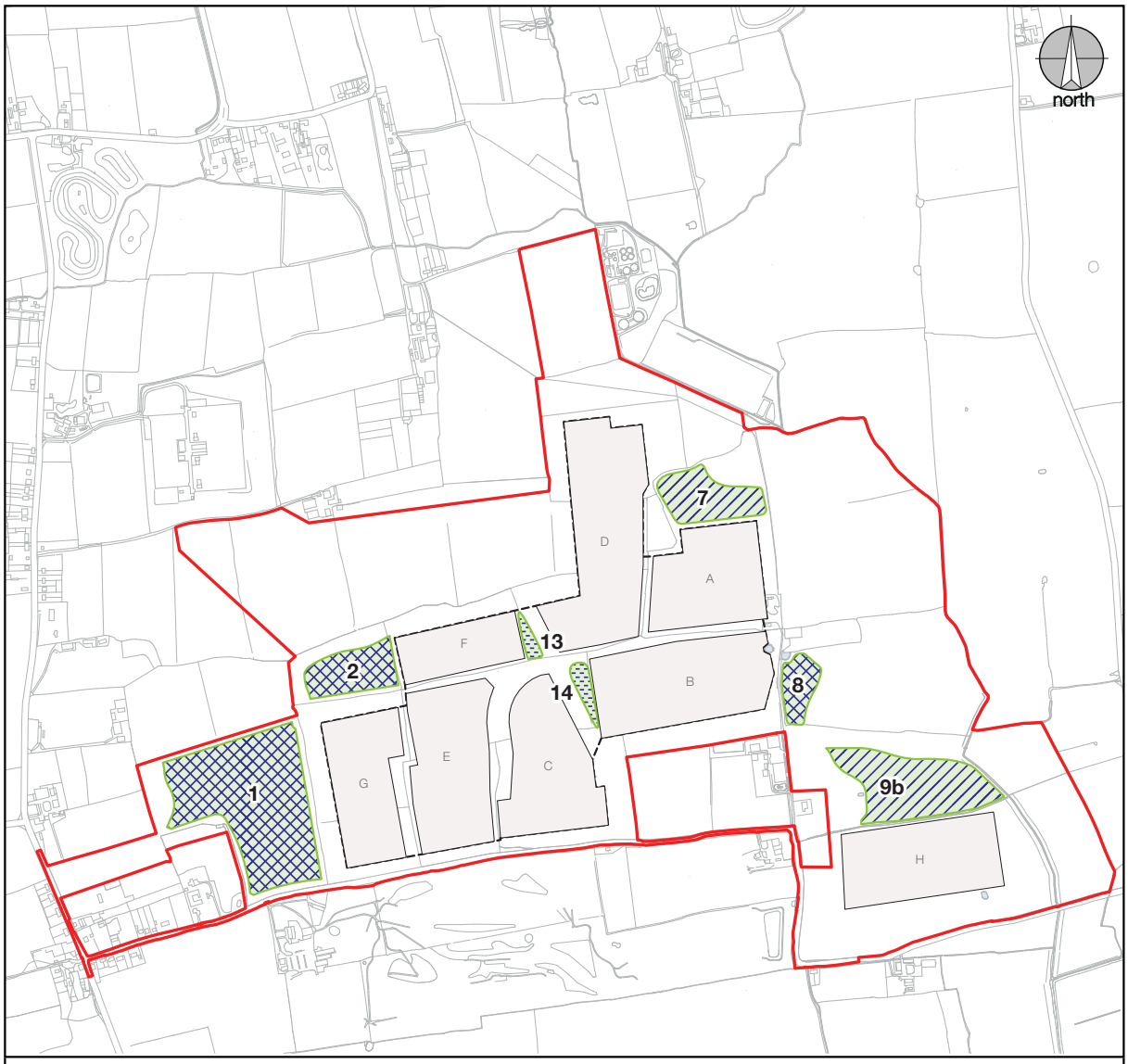
- LDO Boundary
- Data Centre Campus
- Build Zones
- 3 Mound Zone reference
- Existing Ground Levels to +0.5m (Above existing level)
- +0.5 to +1m (Above existing ground level)
- +1m to +2m (Above existing ground level)
- +2m to +3m (Above existing ground level)
- +3m to +4m (Above existing ground level)
- +4m (Above existing ground level)

Source: Camlins Earthworks and Levels Plan

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Figure 3.11: Mounding Heights



LANDSCAPE MOUNDING: HEIGHTS PLAN

- LDO Boundary
- Data centre campus
- Build Zones
- Profiled mound not to exceed max height
- 1 Mound Zone reference
- 4m above existing ground level
- 3m above existing ground level
- 2m above existing ground level

Scale
0 250 500m

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Figure 3.12: Mounds in Woodland Buffer corridors

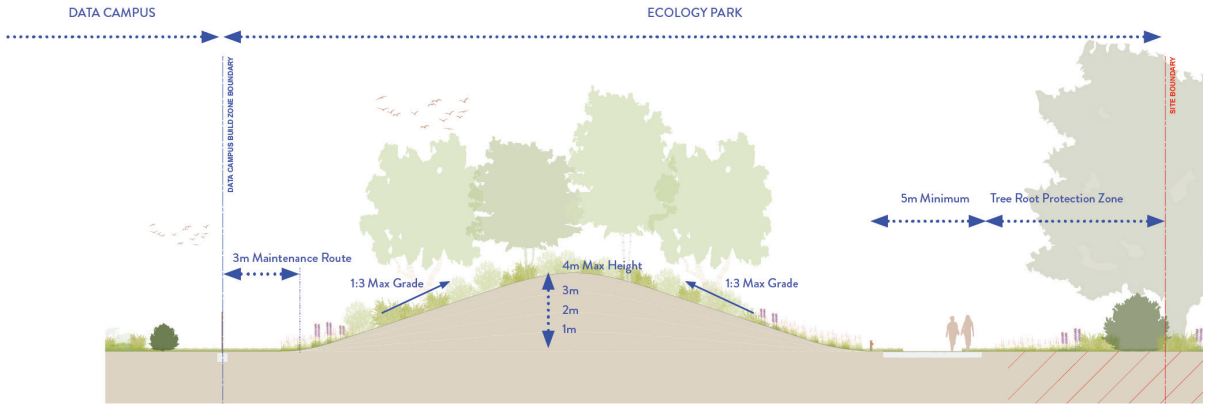
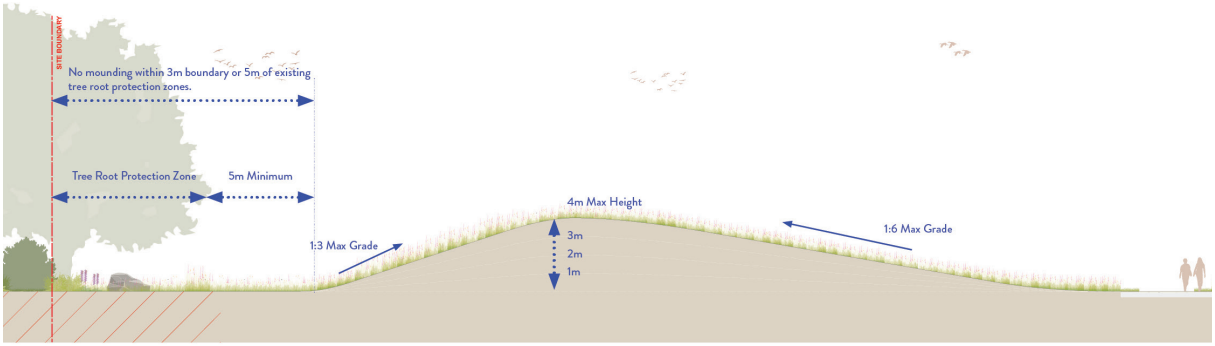


Figure 3.13: Mounds facing open landscape

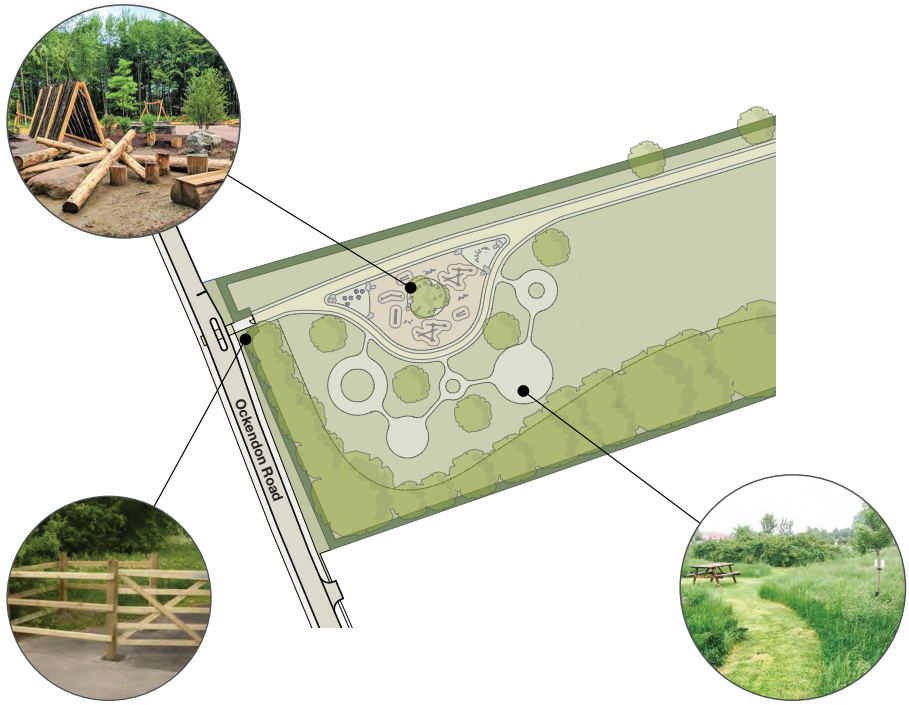


3D Visitor Provision

Play Areas

3D.1 A Locally Equipped Area for Play (LEAP) shall be provided on the western side of the Ecology Park as indicatively shown on Figure 3.14. The play area shall be a minimum of 400 sqm and provide a variety of play equipment (refer to 3D.5 – 3D.11 for minimum specification).

Figure 3.14: LEAP



3D.2 Other areas of informal play shall be provided in the Ecology Park including provision on the eastern side near to the Visitor Centre as shown indicatively on Figure 3.15.

3D.3 Any item that is used for play shall comply with the guidance of the Royal Society for the Prevention of Accidents (RoSPA) and the BS EN 1176 series of standards for playground equipment.

3D.4 All play areas and items that are used for play shall be maintained in accordance with the requirements set out in Appendix 3.

LEAP

3D.5 The LEAP shall provide at least five types of play equipment intended for early school age children (4-8 Years). At least two pieces of the play equipment shall be individual rather than part of a combination multi play unit.

3D.6 Each type of play equipment shall be designed to stimulate one of the following activities: balancing, rock climbing/agility, sliding, social play. Additional items may focus upon rotating, swinging, jumping, crawling, viewing, counting or touching

Figure 3.15: Informal Play near to Visitor Centre



3D.7 The play equipment shall be made from natural and/or sustainable materials such as:

- Timber and wood certified by Forest Stewardship Council (FSC).
- Recycled plastics and rubber with a minimum of 50% recycled content in accordance with the Global Recycled Standard (GRS).
- Natural rubber sourced following principles set out by the Global Platform for Sustainable Natural Rubber (GPSNR).

3D.8 A soft-landing surface (according with BS EN 1177) shall be provided around play equipment. Equipment shall be linked with a suitable pathway or surface. Coloured floors shall be provided in danger zones.

3D.9 As a minimum, 3 benches (each able to accommodate 3-4 adults) shall be provided for parents and/or carers made from natural and/or sustainable materials such as sustainably sourced wood certified by FSC. Waste bins shall be provided adjacent to the seating areas and comply with (refer to picnic areas section)

3D.10 The play area shall be enclosed by a 1m fence around the activity perimeter zone, with two outward opening self-closing gates to opposite sides of the play area. The play area shall be designated as a dog-free zone with signage displayed at all access points specifying 'No Dogs in Playground Area' in accordance with BS ISO 7010 standards, or as updated.

3D.11 A minimum of six cycle stands shall be provided near to the footpath/cycleway and play area. Design standards shall comply with Part 1, Section 1J.30, 1J.31 and 1J.33.

Informal Play Areas

3D.12 Informal play areas shall comprise natural elements such as sand, logs, rocks and planting.

Examples of Informal play areas





Picnic Areas

3D.13 As a minimum, 2 picnic areas shall be provided with one located adjacent to the LEAP and the other near to an informal play area. Each picnic area shall comprise a minimum of 5 picnic tables and benches (each to accommodate at least 4 people) made from natural and/or sustainable materials such as:

- Timber and wood certified by Forest Stewardship Council (FSC).
- Recycled plastics with a minimum of 50% recycled content in accordance with the Global Recycled Standard (GRS).

3B.14 Each picnic table shall provide space to accommodate a wheelchair. The designs shall provide a clear knee space measuring a minimum of 750mm high, 500mm deep and 900mm wide. Hardstanding or geocell reinforced mown meadow shall also be provided which extends by at least 1.2m on either side of the picnic table to enable wheelchair, mobility scooter and pushchair access.

3D.15 A minimum of 2 waste bins shall be provided in each picnic area. Waste bins shall have a minimum of 2 compartments/bins for separating litter and recyclables.





Bird Hides/Observation Towers

3D.16 Wildlife viewing stations and bird hides shall be provided in the Ecology Park constructed from timber and wood certified by Forest Stewardship Council (FSC).

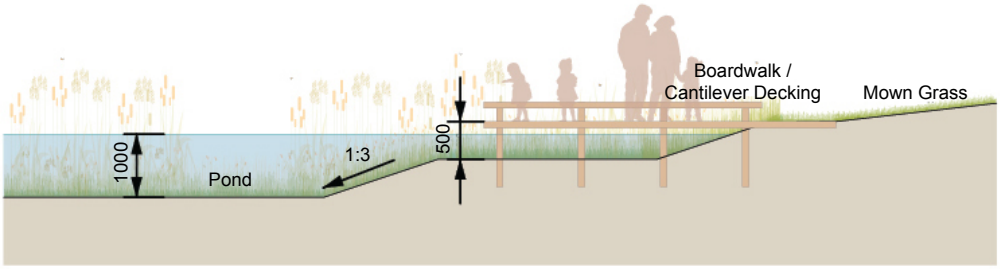
3D.17 As a minimum, an accessible bird hide shall be provided near to the Visitor Centre that can accommodate a minimum of 6 people including wheelchair users. The bird hide shall have a sloping ramp with a maximum gradient of 1:12.

3D.18 The overall height of any bird hide or viewing station shall not exceed 5 meters above the adjoining ground level.

Jetty/ Pond Dipping

3D.19 A wooden boardwalk/ cantilever decking with a minimum width of 3m shall be provided to create a jetty to the pond adjacent to the Visitors Centre as shown indicatively on Figure 3.16. The wooden boardwalk/ cantilever decking shall be provided in an area where the depth of water does not exceed 0.5 metres (See Figure 3.16).

Figure 3.16: Jetty/Pond Dipping



Wayfinding and Interpretation Boards

3D.20 Wayfinding signs shall be provided at all points where footpath/cycleways branch, intersect or change direction. The signs shall be visible from a distance, typically at eye level or above head height, and placed in areas that do not result in an obstruction.

3D.21 Educational interpretation boards shall be provided in the Ecology Park to inform the public of sensitive and ecologically important habitats.



Maintenance Requirements

3D.22 General maintenance requirements for street furniture and visitor provision, play equipment and shared footpaths/ cycleways is set out in Appendix 3.

3E Lighting

3E.1 There shall be no external lighting in the Ecology Park other than along the primary strategic shared footpath/cycleway from Ockendon Road to the Data Centre Campus main entrance shown on Figure 1.19.

3E.2 The lighting installations shall not exceed the level of light intrusion, sky glow and luminaire intensity for an E2 Environmental Zone as shown in Part 1, Table 1.10. A drawing showing isolux contours shall accompany all prior notification submissions for development which includes lighting.

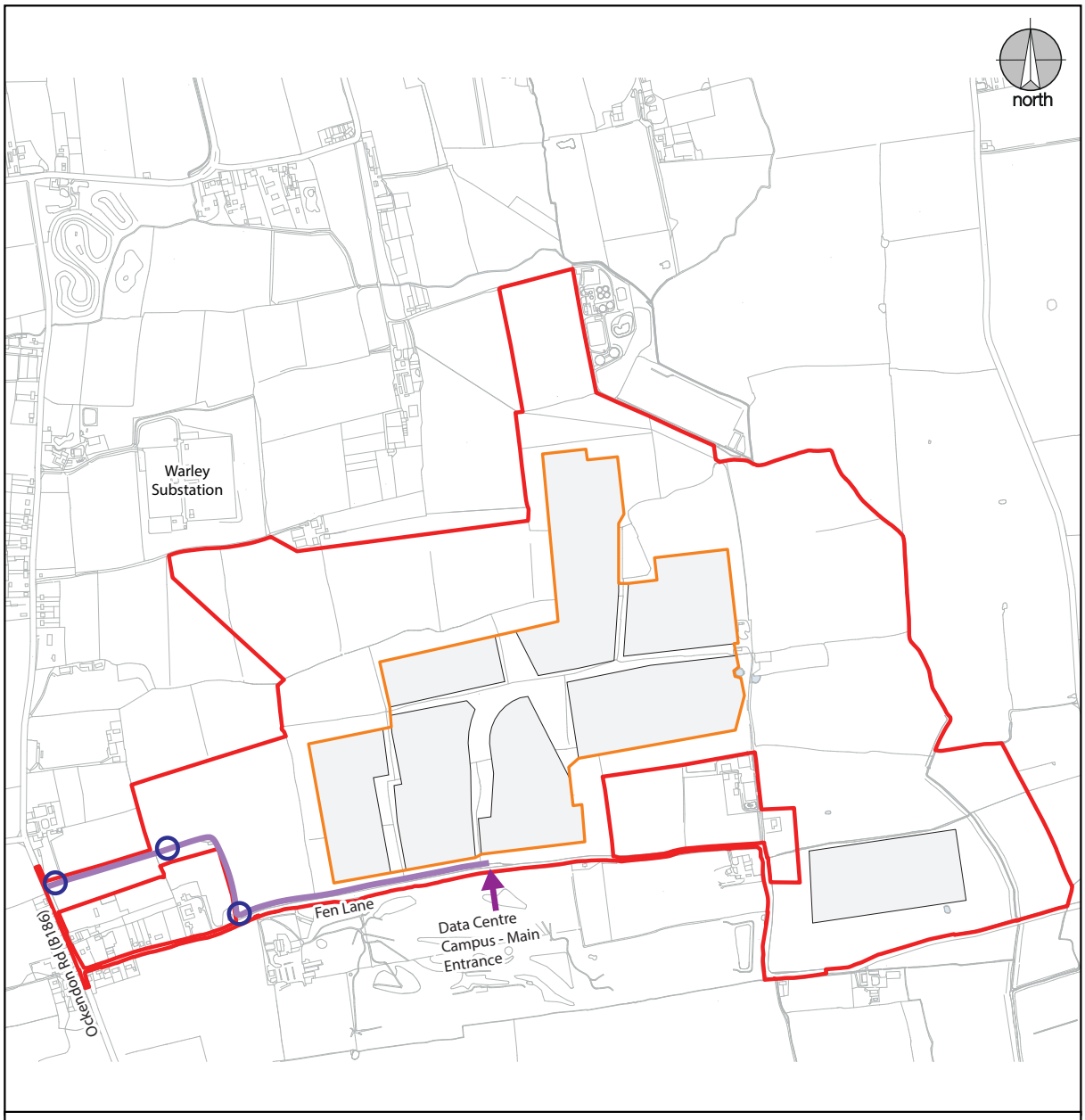
3E.3 The primary strategic shared footpath/cycleway shall be illuminated by bollard style luminaires, with low height lighting columns provided at intersections and other conflict zones as shown on Figure 3.17. Lighting shall be presence controlled, operating at dimmed levels under normal conditions and increasing to full output upon detection of personnel.

3E.4 Lighting parameters shall meet the requirements of Table 5 of BS EN 12464-2. The performance is as detailed below in Table 3.5.

Table 3.5: Lighting Performance

Equipment	Mounting height	Installation details	Average Illuminance	Uniformity	CRI	Colour temperature
Bollard style luminaire	~ 1m	Bollard with asymmetric AY optic	5 lux	0.25	>70	≤ 2700K
Lighting column	3-4 m	0° tilt	5 lux	0.40	>70	≤ 2700K

Figure 3.17: Lighting Columns



Part 4: Highway Standards

4A General Requirements

4A.1 These design standards apply to all highway works on Fen Lane and Ockendon Road.

4A.2 All works shall accord with the highways drawings in Appendix 5 subject to submission and technical approval of the final details by the local highway authority as part of a s278 agreement under the Highways Act 1980.

4A.3 The highway drawings in Appendix 5 comprise:

- Appendix 5a: Fen Lane and Ockendon Road Drawings;
- Appendix 5b: Cross Sections;
- Appendix 5c: Long sections;
- Appendix 5d: Contours Plan;
- Appendix 5e: Fen Lane drainage drawings; and
- Appendix 5f: Construction detail drawing.

4A.4 The highway works on Fen Lane and Ockendon Road shall not be undertaken concurrently.

4B Highway Works on Fen Lane

4B.1 The carriageway on Fen Lane shall be widened to a width of 6.2 m between the junction with Ockendon Road and the eastern access road as shown on Fen Lane drawings in Appendix 5a.

4B.2 A new 1.5m footway on northern side of Fen Lane between Ockendon Road and east of the Ladyville Lodge Care Home shall be provided except in the area shown on Fen Lane drawings in Appendix 5 where the footway width shall be a minimum of 1.2m if 1.5m is demonstrated not to be feasible.

4B.3 The new footway shall tie-in to the proposed primary strategic footpath/cycleway through the ecology park.

4B.4 A new informal footpath link to the primary strategy footpath/cycleway in the ecology park opposite Top Meadow Golf Course shall be provided as shown on Fen Lane drawings in Appendix 5a.

Drainage Requirements

4B.5 All works shall comply with the drainage layout drawings in Appendix 5e.

4B.6 Existing drainage gullies, including manhole covers and some headwalls, may be adjusted, and new gullies, may be installed where required with the approval of the Highway Authority under the s278 agreement.

4B.7 Hydroblocks shall be installed underneath the new footway to intercept surface water runoff in accordance with the drainage layout drawings in Appendix 5e.

4C Highway Works on Ockendon Road

4C.1 A new footway with a minimum width of 2m shall be provided on the eastern side of Ockendon Road from Fenland Nursery to the entrance to the Ecology Park on Ockendon Road as shown on Ockendon Road drawing in Appendix 5a.

4C.2 The existing traffic island and associated bollards on Ockendon Road shall be removed.

4C.3 A new informal crossing point and widened carriageway to provide a cycle lane shall be provided as shown on Ockendon Road drawing in Appendix 5a.

4C.4 The new informal crossing shall comprise a kerbed central island reservation with associated dropped kerbs and tactile paving on each side of the road. New road signs and associated bollards shall be provided.

Drainage

4C.5 Existing roadside drainage gullies would be retained as shown on Ockendon Road drawing in Appendix 5a.

4D Lighting Standards

4D.1 New lighting shall be provided at locations shown on Figure 4.1.

4D.2 Lighting shall be designed to meet the performance requirements set out in BS 5489-1:2020 Design of Road Lighting, BS EN 13201 and PD CEN/TR 13201-1 (or as subsequently amended).

4D.3 The specifications of equipment set out in the London Borough of Havering's Developer's Street Lighting Guide June 2019 (or as subsequently amended) shall apply.

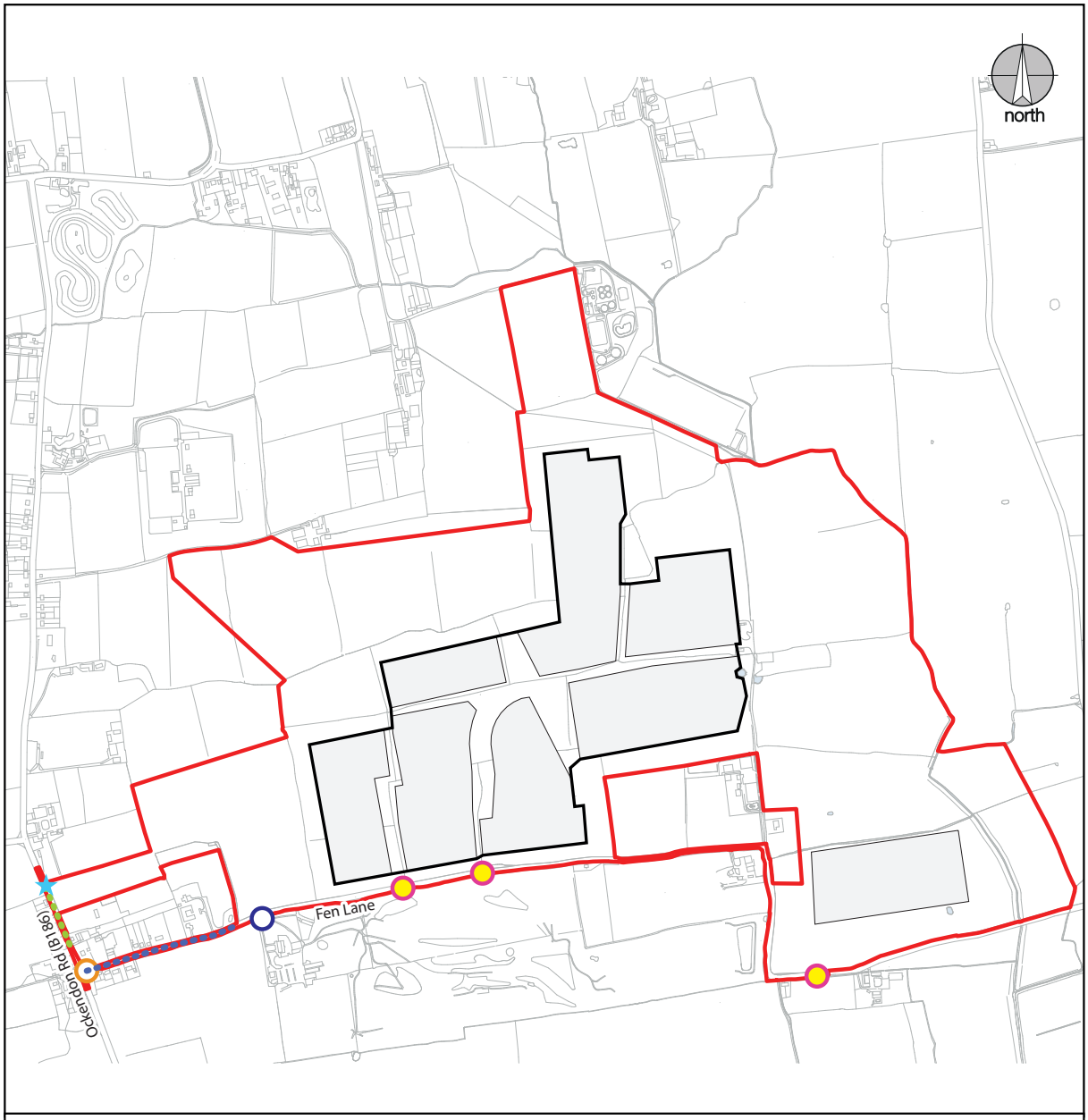
4D.4 To ensure the safety of electrical installations, all light shall comply with BS 7671: 2018+A3:2024 Requirements for Electrical Installations (or as subsequently amended).

4E Tree Protection Measures

4E.1 Individual trees along Fen Lane as identified in the Tree Works Schedule and Tree Protection Plans in Appendix 4 shall only be felled following further site investigation works with the approval of the local planning authority pursuant to condition 40 in Schedule 2 of the LDO.

4E.2 Localised pruning, trimming back of branches and removal of trees within groups may be undertaken in accordance with the Tree Works Schedule in Appendix 4.

Figure 4.1: Lighting Locations



LIGHTING LOCATIONS

- LDO Boundary
- Data Centre Campus
- Lighting on the eastern footway Ockendon Road
- Lighting on the northern footway Fen Lane
- Lighting at all junctions into the site on Fen Lane
- Lighting at the junction of Fen Lane and Ockendon Road
- Lighting at the informal crossing near Top Meadow Golf Course
- Lighting on the central island reservation and entrance to ecology park

Scale
0 250 500 metres

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4F Ecological Creation Features

4F.1 As a minimum, the specified number of each type of ecological feature shall be provided at the development stage as detailed in Table 4.1.

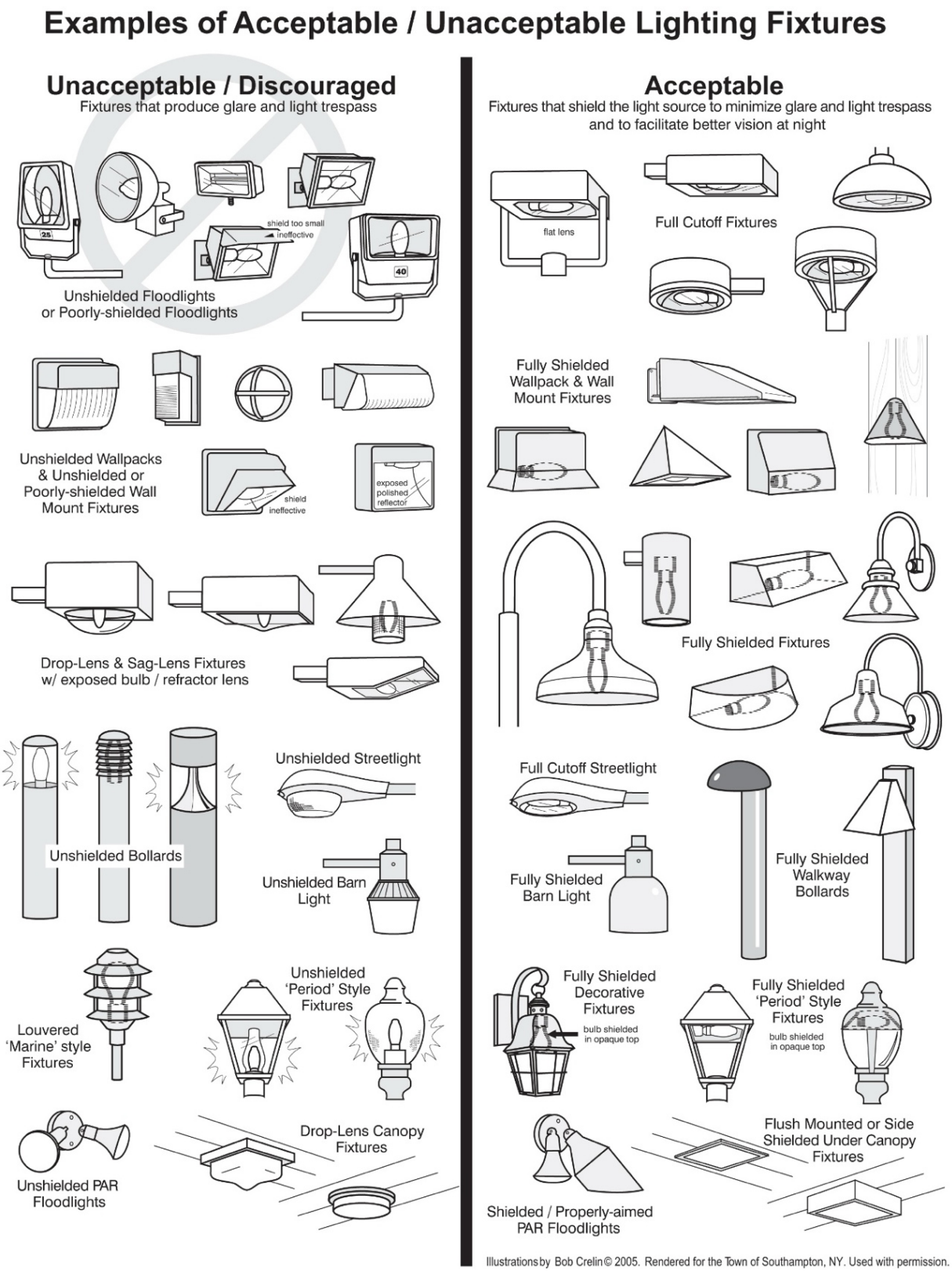
Table 4.1: Ecological Features

Ecological Feature	Phase 1
	Highway Works
Bird Boxes - House Sparrow	-
Bird Boxes - Swift	-
Bird Boxes - Song Birds	4
Bird Boxes – Open Fronted	4
Bird Boxes – Barn Owl	-
Sky Lark Plots)	-
Bat Boxes	4
Bat Hibernation Boxes	-
Hibernaculum (amphibians, reptiles, invertebrates)	1
Invertebrate Features (Bee boxes and hotels, Bee banks, Bee posts , Stumperies and log piles)	1

4F.2 The ecological features shall be provided in accordance with the detailed specifications as set out in Section 1M of Part 1.

Appendix 1:
Accepted Luminaires

The images below illustrate acceptable luminaires which are either DarkSky-approved fixtures certified by the International DarkSky Association or luminaires that meet recognised dark sky friendly performance criteria.



Appendix 2:
Soft Landscaping Specification

SOFT LANDSCAPE

WET WOODLANDS

TREES

Alnus glutinosa – (Alder)
Betula pubescens – (Downy Birch)
Salix pentandra – (Bay Willow)
Salix alba – (White Willow)
Salix fragilis – (Crack Willow)
Salix cinerea spp. oleifolia – (Grey Willow)
Quercus petraea – (Sessile Oak)

UNDERSTOREY

Prunus spinosa - (Balckthorn)
Malus sylvestris– (Crab apple)
Viburnum lantana – (Wayfaring Tree)
Viburnum opulus – (Guelder Rose)
Carpinus betulus – (Hornbeam)

BROADLEAF WOODLANDS

TREES

Populus tremula – (Aspen)
Betula utilis ‘Edinburgh’ - (Birch ‘Edinburgh’)
Betula pubescens – (Downy Birch)
Quercus robur – (English Oak)
Ulmus ‘New Horizon’ - (Elm ‘New Horizon’)
Ulmus ‘Rebona’ - (Rebona Elm)
Corylus avellana - (Hazel)

UNDERSTOREY

Malus sylvestris– (Crab apple)
Cornus sanguinea – (Dogwood)
Prunus avium – (Wild Cherry)
Crataegus monogyna – (Hawthorn)
Euonymus europaeus – (Spindle)
Viburnum opulus – (Guelder Rose)

BUFFER WOODLANDS

TREES

Populus tremula – (Aspen)
Betula pendula – (Silver Birch)
Populus nigra – (Black Poplar)
Populus alba – (White Poplar)
Tilia cordata – (Small-leaved Lime)
Larix decidua - (European larch)
Pinus sylvestris – (Scots Pine)

UNDERSTOREY

Prunus spinosa - (Balckthorn)
Ilex aquifolium – (Holly)
Cornus sanguinea – (Dogwood)
Hedera helix – (Ivy)
Cytisus scoparius – (Broom)
Rubus fruticosus – (Bramble)
Rosa canina – (Dogrose)
Lonicera periclymenum – (Honeysuckle)
Prunus avium – (Wild Cherry)

Betula pendula



Betula pubescens



Quercus robur



Salix cinerea



Betula utilis



Corylus avellana



Populus tremula



Alnus glutinosa



Salix alba



Salix fragilis



Prunus avium



Quercus petraea



Ulmus ‘New Horizon’



Ulmus ‘Rebona’



Populus nigra



Tilia cordata



Larix decidua



Pinus sylvestris



Malus sylvestris



Cornus sanguinea



Rubus fruticosus



Crataegus monogyna



Euonymus europaeus



Viburnum opulus



SOFT LANDSCAPE

SEASONALLY WET GRASSLANDS (WETLANDS)

WILDFLOWERS

Dactylorhiza incarnata - (Early Marsh Orchid)
Cirsium palustre - (Marsh Thistle)
Trifolium pratense – (Red Clover)
Petasites hybridus – (Butterbur)
Llythrum salicaria – (Purple Loosestrife)
Achillea millefolium – (Yarrow)
Centaurea nigra – (Common Knapweed)
Filipendula ulmaria – (Meadowsweet)
Galium palustre – (Marsh Bed-straw)
Hypericum tetrapterum – (Square Stemmed-wort)
Hypochaeris radicata - (Common Cat's Ear)
Lathyrus pratensis – (Meadow Vetchling)
Leontodon autumnalis – (Autumn Hawkbit)
Lotus corniculatus – (Common Bird's-foot Trefoil)
Prunella vulgaris – (Self Heal)
Sedum acre – (Yorkshire Fog)
Succisa pratensis – (Devil's-bit Scabious)
Vicia cracca – (Tufted Vetch)
Stachys officinalis – (Betony)

GRASSES

Agrostis capillaris – (Common Bentgrass)
Cynosurus cristatus – (Crested Dog's-tail)
Festuca rubra spp. rubra – (Red Fescue)
Poa nemoralis – (Smooth-stalked Meadow-grass)
Anthoxanthum odoratum – (Sweet Vernal Grass)
Alopecurus geniculatus – (Marsh Foxtail)
Deschampsia cespitosa – (Tufted Hairgrass)

TREES

Quercus robur – (English oak)
Ulmus 'Fiorente' – (Elm 'Fiorente')
Acer campestre– (Field mapel)
Alnus glutionosa– (Alder

Achillea millefolium



Centaurea nigra



Filipendula ulmaria



Galium palustre



Hypericum tetrapterum



Hypochaeris radicata



Leontodon autumnalis



Lotus corniculatus



Prunella vulgaris



Sedum acre



Stachys officinalis



Succisa pratensis



Cynosurus cristatus



Festuca rubra ssp rubra



Poa nemoralis



Anthoxanthum odoratum



Alopecurus geniculatus



Deschampsia cespitosa



Quercus robur



Ulmus 'Fiorente'



Acer campestre



Alnus glutinosa



SOFT LANDSCAPE

MEADOWS

WILDFLOWERS

Achillea millefolium – (Yarrow)
Centaurea nigra – (Black knapweed)
Galium verum – (Lady's bedstraw)
Hypochaeris radicata – (Common cat's-ear)
Lathyrus pratensis – (Meadow vetchling)
Leontodon autumnalis – (Autumn hawkbit)
Leucanthemum vulgare – (Ox-eye daisy)
Lotus corniculatus – (Common bird's-foot trefoil)
Pimpinella saxifrage – (Burnet saxifrage)
Plantago lanceolate – (Ribwort plantain)
Primula veris – (Cowslip)
Prunella vulgaris – (Selfheal)
Ranunculus acris – (Meadow buttercup)
Rhinanthus minor – (Yellow rattle)
Rumex acetosa – (Common sorrel)
Sanguisorba officianlis – (Great burnet)
Stachys officianlis – (Betony)
Succisa pratensis – (Devil's bit-scabious)
Vicia cracca – (Tufted vetch)

GRASSES

Agrostis castellana – (Common bent)
Anthoxanthum odoratum – (Sweet vernal grass)
Briza media – (Quaking grass)
Cynosurus cristatus – (Crested dog's-tail)
Festuca rubra ssp litoralis – (Slender Creeping Red Fescue)
Festuca rubra ssp rubra – (Red fescue)
Trisetum flavescens – (Yellow oat grass)

TREES

Quercus robur – (English oak)
Ulmus 'Fiorente' – (Elm 'Fiorente')
Acer campestre– (Field mapel)
Alnus glutionosa– (Alder)

Centaurea nigra



Galium verum



Hypochaeris radicata



Lathyrus pratensis



Leontodon autumnalis



Leucanthemum vulgare



Ranunculus acris



Rhinanthus minor



Rumex acetosa



Sanguisorba officinalis



Stachys officinalis



Succisa pratensis



Anthoxanthum odoratum



Briza media



Cynosurus cristatus



Festuca rubra ssp litoralis



Festuca rubra ssp rubra



Trisetum flavescens



Quercus robur



Ulmus 'Fiorente'



Acer campestre



Alnus glutinosa



SOFT LANDSCAPE

NEUTRAL GRASSLAND

WILDFLOWERS

Centaurea nigra (Common Knapweed)
Leucanthemum vulgare (Oxeye Daisy)
Rhinanthus minor (Yellow Rattle)
Trifolium pratense (Red Clover)
Vicia cracca (Tufted Vetch)
Plantago lanceolata (Ribwort Plantain)
Lathyrus pratensis (Meadow Vetchling)
Prunella vulgaris (Self-heal)
Lotus corniculatus (Bird's-foot Trefoil)
Campanula rotundifolia (Harebell)

GRASSES

Festuca rubra (Red Fescue)
Agrostis capillaris (Common Bent Grass)
Cynosurus cristatus (Crested Dog's-tail)
Phleum pratense (Timothy Grass)
Alopecurus pratensis (Meadow Foxtail)
Anthoxanthum odoratum (Sweet Vernal-grass)
Dactylis glomerata (Cock's-foot)
Bromus hordeaceus (Soft Brome)

* Note: To establish a naturalistic neutral grassland, the seed mix should mirror traditional lowland meadows or neutral pastures, which typically thrive on moderate-fertility soils with a pH between 5.5 and 7.5. The goal is to create a diverse, species-rich sward where grasses form the dominant structure (70-80%), providing stability while allowing wildflowers to flourish.

TREES

Quercus robur – (English oak)
Ulmus 'Fiorente' – (Elm 'Fiorente')
Acer campestre– (Field mapel)
Alnus glutionosa– (Alder)

Centaurea nigra



Leucanthemum vulgare



Rhinanthus minor



Trifolium pratense



Vicia cracca



Plantago lanceolata



Lathyrus pratensis



Prunella vulgaris



Lotus corniculatus



Campanula rotundifolia



Agrostis capillaris



Cynosurus cristatus



Phleum pratense



Festuca rubra



Alopecurus pratensis



Anthoxanthum odoratum



Dactylis glomerata



Bromus hordeaceus



SOFT LANDSCAPE

PERMANENT WATER BODY

MARGINAL

Caltha palustris – (Marsh Marigold)
Iris pseudacorus – (Yellow Flag Iris)
Ranunculus flammula – (Lesser Spearwort)
Veronica beccabunga – (Brooklime)
Trollius europaeus – (Globeflower)
Phragmatis australis – (Common Reed)
Sedum acre – (Yorkshire Fog)
Anthoxanthum odoratum – (Sweet Vernal Grass)
Schoenoplectus lacustris – (Common Club-rush)
Glyceria maxima – (Reed Sweet-grass)
Briza media – (Quaking Grass)
Cynosurus cristatus – (Crested Dog's-tail)
Juncus effusus – (Soft Rush)
Carex riparia – (Greater Pond Sedge)

AQUATIC

Ceratophyllum demersum - (Rigid Hornwort)
Myriophyllum spicatum - (Spiked Water-milfoil)
Pilularia globulifera – (Pillwort)
Mentha aquatica – (Watermint)
Ranunculus aquatilis – (Common Water-crowfoot)
Nymphaeaceae lutea – (Water Lily)
Hottonia alustris – (Water Violet)
Menyanthes trifoliata – (Bogbean)
Myosotis scorpioides – (Water Forget-me-not)
Hydrocharis morsus-ranae – (Frogbit)

Iris pseudacorus



Ranunculus flammula



Veronica beccabunga



Trollius europaeus



Phragmatis australis



Sedum acre



Schoenoplectus lacustris



Glyceria maxima



Briza media



Cynosurus cristatus



Juncus effusus



Carex riparia



Myriophyllum spicatum



Pilularia globulifera



Mentha aquatica



Ranunculus aquatilis



Hottonia alustris



Hydrocharis morsus-ranae



SOFT LANDSCAPE

SUDS FEATURES:
BIORETENTION SWALES & RAIN GARDENS

HERBACEOUS

Ajuga reptans (Bugle)
Aquilegia spp. (Columbine)
Aster spp. (Aster)
Bog Sage (Salvia uliginosa)
Campanula glomerata (Clustered bellflower)
Cardinal Flower (Lobelia cardinalis)
Eupatorium cannabinum (Hemp agrimony)
Globeflower (Trollius europaeus)
Helleborus foetidus (Stinking hellebore)
Iris pseudacorus (Yellow flag Iris)
Marsh Marigold (Caltha palustris)
Osmunda regalis (Royal Fern)
Primula veris (Cowslip)
Sedges (Carex spp.)
Water Mint (Mentha aquatica)

SHRUBS

Corylus avellana (Hazel)
Crataegus monogyna (Hawthorn)
Cornus sanguinea (Dogwood)
Ribes sanguineum (Flowering currant)
Salix cinerea (Grey willow)
Viburnum opulus (Guelder-rose)

Corylus avellana



Crataegus monogyna



Viburnum opulus



Cornus sanguinea



Ribes sanguineum



Salix cinerea



Mentha aquatica



Ajuga reptans



Aquilegia spp.



Campanula glomerata



Eupatorium cannabinum



Helleborus foetidus



Iris pseudacorus



Osmunda regalis



Primula veris



Lobelia cardinalis



Trollius europaeus



Caltha palustris



SOFT LANDSCAPE

VISITOR CENTRE & BUILD ZONE PLANTING

HERBACEOUS

Anthyrium felix-femina (Lady Fern)
Geranium phaeum (Dusky cranesbill)
Anthoxanthum odoratum (Sweet vernal grass)
Festuca rubra commutata (Red fescue)
Matteucia struthiopteris (Ostrich Fern)
Silene dioca (Red campion)
Prunella vulgaris (Self Heal heal)
Stachys officinalis (Betony)
Allium ursinum (Wild garlic)
Circaea lutetiana (Enchanter's nightshade)
Deschampsia cespitosa (Tufted-hair grass)
Llythrum spicaria (Purple loosestrife)
Galium palustre (Marsh bed-straw)
Myosotis scorpioides (Water forget-me-not)
Hosta undulata (Wavy plantain lilly)
Brunnera macrophylla (Siberian bugloss)
Hyacinthodies non-scripta (Bluebells)
Crocus sativus (Crocus)
Narcissus (Duffodils)
Lavandula angustifolia 'Hidcote' (English Lavender 'Hidcote')
Nicotiana sylvestris (Tobacco Plant)
Oenthera biennis (Evening Primrose)
Silene noctiflora (Night-Flowering Catchfly)

SHRUBS

Cornus sanguinea (Dogwood)
Viburnum opulus (Guelder rose)
Sambucus nigra (Common elder)
Viburnum lantata (Wayfaring)
Hamamelis mollis (Chinese witch hazel)
Jasminum officinale (Common Jasmine)
Lonicera periclymenum (Common Honeysuckle)

Anthyrium felix-femina



Geranium phaeum



Anthoxanthum odoratum



Festuca rubra



Matteucia struthiopteris



Silene dioca



Prunella vulgaris



Stachys officinalis



Allium ursinum



Circaea lutetiana



Deschampsia cespitosa



Lythrum spicaria



Galium palustre



Myosotis scorpidoides



Hosta undulata



Brunnera macrophylla



Hyacinthoides non-scropta



Crocus sativa



Narcissus



Cornus sanguinea



Viburnum opulus



Sambucus nigra



Viburnum lantata



Hamamelis mollis



SOFT LANDSCAPE

MIXED NATIVE HEDGEROW

Crataegus monogyna - (Hawthorn) - 50%
Prunus padus - (Bird Cherry) - 10%
Corylus avellana - (Hazel) - 10%
Acer campestre - (Field Mapel) - 10%
Prunus spiniosa - (Blackthorn) - 10%
Rosa canina - (Dog Rose) - 10%

DITCHES & REED BEDS

MARGINAL & HERBACEOUS

Caltha palustris – (Marsh Marigold)
Iris pseudacorus – (Yellow Flag Iris)
Ranunculus flammula – (Lesser Spearwort)
Veronica beccabunga – (Brooklime)
Trollius europaeus – (Globeflower)
Phragmatis australis – (Common Reed)
Sedum acre – (Yorkshire Fog)
Anthoxanthum odoratum – (Sweet Vernal Grass)
Schoenoplectus lacustris – (Common Club-rush)
Glyceria maxima – (Reed Sweet-grass)
Briza media – (Quaking Grass)
Cynosurus cristatus – (Crested Dog's-tail)
Juncus effusus – (Soft Rush)
Carex riparia – (Greater Pond Sedge)
Dryopteris filix-mas – (Male Fern)
Asplenium scolopendrium – (Hart's-tongue fern)
Vinca major – (Greater periwinkle)
Carex pendula – (Pendulous Sedge)
Carex vulpine – (True Fox-sedge)

SHRUBS

Salix viminalis – (Common Osier)
Prunus spinosa - (Blackthorn)
Frangula alnus – (Alder Buckthorn)
Hedera helix – (Ivy)
Rubus fruticosus – (Bramble)
Cornus sanguinea - (Common dogwood)

Crataegus monogyna



Prunus padus



Corylus avellana



Acer campestre



Prunus spinosa



Rosa Canina



Schoenoplectus lacustris



Glyceria maxima



Briza media



Cynosurus cristatus



Juncus effusus



Carex riparia



Asplenium scolopendrium



Dryopteris felix-mas



Vinca major



Carex vulpine



Veronica beccabunga



Sedum acre



Salix viminalis



Prunus spinosa



Frangula alnus



Hedera helix



Rubus fruticosus



Cornus sanguinea



Appendix 3:
Schedule of General Maintenance Requirements for Street Furniture and Visitor Provision, Play Equipment and Footpaths/Cycleways

Street Furniture and Visitor Provision (except Play Equipment)

1.1 Street furniture and visitor facilities comprise all fixed outdoor objects and equipment in public spaces such as benches, bins, picnic benches/tables, bollards, bird hides and observation towers.

1.2 The following general maintenance shall be undertaken:

- Monthly inspections of all street furniture and visitor provision (structural, fixings, cleanliness).
- Regular cleaning and graffiti removal (often monthly or more frequently)
- Litter bins emptied every 1–2 weeks (varies by use levels/season)
- Repair/replacement arranged soon after defects are found. Dangerous items shall be repaired or made safe within 24 hours, while routine works shall be completed within 30 working days.

Play Equipment

1.3 Play equipment maintenance shall be in compliance with Royal Society for the Prevention of Accidents (RoSPA) requirements and BS EN 1176 series.

1.4 The following inspections shall be carried out:

- Routine visual inspections shall be conducted daily or weekly, depending on usage. These checks shall help identify obvious hazards such as loose bolts, broken parts, sharp edges, or vandalism. Inspectors shall also ensure the area is free from litter, hazardous objects, and standing water. Moving parts like swings and roundabouts shall be checked for smooth operation, while corrosion, splintering wood, and rust shall be monitored. In the LEAP, daily inspections are recommended, while weekly checks may suffice for lower-use playgrounds.
- Operational inspections shall be conducted quarterly, involving a more detailed examination of the play equipment's structural integrity. This shall include assessing the condition of surfacing materials, checking for wear on moving parts like bearings and chains, and ensuring drainage systems are functioning effectively. These inspections shall help prevent long-term damage and extend the life of the equipment.
- An annual main inspection shall be carried out every 12 months by a qualified professional, such as a RoSPA-registered inspector to ensure compliance with BS EN 1176 safety standards, to assesses wear and structural integrity, and test the impact attenuation of safety surfacing. The inspector shall also recommend necessary repairs, replacements, or upgrades to maintain a safe play environment.
- A logbook shall be maintained to track all inspections and repairs, record any accidents or incidents, and store manufacturer guidelines and warranty information.
- Post-storm checks shall be undertaken to identify weather-related damage and shall be recorded in the logbook. An updated risk assessment shall be prepared if modifications or repairs are made.

Self-Binding or Resin Bound Gravel Footpaths/Cycleways

1.5 Routine visual inspections shall be conducted weekly.

1.6 For self-binding gravel, the following maintenance shall be carried out:

- The footpath/cycleway shall be regularly swept with a stiff brush to remove leaves, twigs, and debris.
- Weeds shall be pulled by hand when they appear. Harsh chemical weed killers shall not be used as they can damage the binder.
- During dry spells, the top layer may feel loose. In this instance, the surface shall be raked and sprayed lightly with water and compacted again with a hand roller or whacker plate.
- Small, localised potholes shall be repaired immediately to prevent them from growing.
- If the surface becomes heavily worn, the top 25-35mm can be scarified (broken up) and a new layer of gravel added, watered, and compacted.

1.7 For resin-bound gravel, the following maintenance shall be carried out:

- The footpath/cycleway shall be regularly swept with a stiff brush to remove leaves, twigs, and debris.
- Pressure washing (jet wash) shall be carried out annually to remove dirt, grime, and moss, particularly in shady areas.
- While resistant to weeds, air-blown seeds can take root. These shall be removed by hand or treated with a weed killer, provided it is a non-solvent-based product.

Boardwalks and Bridges

- Routine visual inspections shall be conducted weekly to check for warped boards and popped screws.
- Debris, dirt and algae shall be removed to prevent slippery, hazardous conditions.
- Replacement of decaying timber, tightening/replacement of fasteners, and repair of support posts shall be carried out as required.
- Regular checks shall be carried out to ensure timber knee rails and railings are in place and that the surface remains slip resistant.

Appendix 4: Tree Protection Schedule and Tree Protection Plans

	TREE WORKS SCHEDULE	
	Site:	East Havering Data Centre Campus
	Date:	February 2026
	Consultant:	Stefan Rose *BSc (Hons), TechCert (Arbor A), TechArbor.A*

THE FOLLOWING TREES WERE SURVEYED IN AUGUST 2022: T1 TO T165 AND G1 TO G88
THE FOLLOWING TREES WERE SURVEYED IN APRIL 2025: T166 TO T185, G89 TO G115 AND H1 TO H2

Tree No	Unique Combined Reference	Species	Permitted Works
T1	0.T1.0	White Poplar *Populus alba*	No works required, retain
T2	0.T2.0	Lombardy Poplar *Populus nigra 'Italica'*	No works required, retain
T3	0.T3.0	Lombardy Poplar *Populus nigra 'Italica'*	No works required, retain
T4	0.T4.0	Crab Apple *Malus sylvestris*	No works required, retain
T5	0.T5.0	Common Ash *Fraxinus excelsior*	No works required, retain
T6	0.T6.0	Crab Apple *Malus sylvestris*	No works required, retain
T7	0.T7.0	White Poplar *Populus alba*	No works required, retain
T8	0.T8.0	Common Walnut *Juglans regia*	No works required, retain
T9	0.T9.0	Silver Birch *Betula pendula*	No works required, retain
T10	0.T10.0	Oak *Quercus sp.*	No works required, retain
T11	0.T11.0	Oak *Quercus sp.*	No works required, retain
T12	3.T12.11	Oak *Quercus sp.*	No works required, retain
T13	0.T13.0	Oak *Quercus sp.*	No works required, retain
T14	4.T14.9	White Willow *Salix alba*	No works required, retain
T15	0.T15.0	White Willow *Salix alba*	No works required, retain
T16	0.T16.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T17	0.T17.0	Willow *Salix sp.*	No works required, retain
T18	0.T18.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T19	146.T19.0	White Willow *Salix alba*	No works required, retain
T20	7.T20.12	White Willow *Salix alba*	No works required, retain
T21	0.T21.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T22	72.T22.24	White Willow *Salix alba*	No works required, retain
T23	0.T23.0	White Willow *Salix alba*	No works required, retain
T24	0.T24.0	Oak *Quercus sp.*	No works required, retain
T25	0.T25.0	Oak *Quercus sp.*	No works required, retain
T26	15.T26.17	Oak *Quercus sp.*	No works required, retain
T27	0.T27.0	Oak *Quercus sp.*	No works required, retain
T28	0.T28.0	Oak *Quercus sp.*	No works required, retain
T29	0.T29.0	Oak *Quercus sp.*	No works required, retain
T30	0.T30.0	Oak *Quercus sp.*	No works required, retain
T31	0.T31.0	Oak *Quercus sp.*	No works required, retain
T32	0.T32.0	Oak *Quercus sp.*	Fell to ground level and remove stump
T33	11.T33.18	Oak *Quercus sp.*	No works required, retain
T34	0.T34.0	Oak *Quercus sp.*	No works required, retain
T35	5.T35.13	White Willow *Salix alba*	No works required, retain
T36	0.T36.0	Oak *Quercus sp.*	No works required, retain
T37	0.T37.0	Oak *Quercus sp.*	No works required, retain
T38	0.T38.0	Oak *Quercus sp.*	No works required, retain
T39	149.T39.0	Oak *Quercus sp.*	No works required, retain
T40	150.T40.0	Oak *Quercus sp.*	No works required, retain
T41	0.T41.0	Oak *Quercus sp.*	No works required, retain
T42	0.T42.0	Oak *Quercus sp.*	No works required, retain
T43	151.T43.0	Oak *Quercus sp.*	No works required, retain
T44	152.T44.0	Oak *Quercus sp.*	No works required, retain
T45	1.T45.2	Oak *Quercus sp.*	No works required, retain
T46	2.T46.1	Oak *Quercus sp.*	No works required, retain
T47	80.T47.106	Oak *Quercus sp.*	No works required, retain
T48	16.T48.107	Oak *Quercus sp.*	No works required, retain
T49	106.T49.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T50	105.T50.0	Oak *Quercus sp.*	No works required, retain
T51	96.T51.0	Oak *Quercus sp.*	No works required, retain
T52	79.T52.0	Oak *Quercus sp.*	No works required, retain
T53	0.T53.0	Oak *Quercus sp.*	No works required, retain
T54	0.T54.0	Oak *Quercus sp.*	No works required, retain
T55	145.T55.0	Oak *Quercus sp.*	No works required, retain
T56	0.T56.0	Oak *Quercus sp.*	No works required, retain
T57	14.T57.23	Oak *Quercus sp.*	No works required, retain
T58	0.T58.0	Oak *Quercus sp.*	No works required, retain
T59	0.T59.0	Oak *Quercus sp.*	No works required, retain
T60	0.T60.0	Oak *Quercus sp.*	No works required, retain
T61	10.T61.22	Oak *Quercus sp.*	No works required, retain
T62	78.T62.21	Oak *Quercus sp.*	No works required, retain
T63	144.T63.0	Oak *Quercus sp.*	No works required, retain
T64	0.T64.0	Oak *Quercus sp.*	No works required, retain
T65	0.T65.0	Oak *Quercus sp.*	No works required, retain
T66	0.T66.0	White Willow *Salix alba*	Make safe as part of good management of site for ecological habitat
T67	94.T67.48	White Willow *Salix alba*	Make safe as part of good management of site for ecological habitat
T68	67.T68.47	Oak *Quercus sp.*	No works required, retain
T69	0.T69.0	Oak *Quercus sp.*	No works required, retain
T70	95.T70.36	Oak *Quercus sp.*	No works required, retain
T71	0.T71.0	Oak *Quercus sp.*	No works required, retain
T72	75.T72.37	Oak *Quercus sp.*	No works required, retain
T73	73.T73.39	Oak *Quercus sp.*	No works required, retain
T74	69.T74.46	Oak *Quercus sp.*	Crown lift to provide 3m ground level clearance over footpath
T75	68.T75.50	Oak *Quercus sp.*	No works required, retain
T76	0.T76.0	Oak *Quercus sp.*	No works required, retain
T77	61.T77.51	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T78	57.T78.122	Oak *Quercus sp.*	Make safe as part of good management of site for ecological habitat
T79	81.T79.323	Oak *Quercus sp.*	No works required, retain
T80	82.T80.321	Oak *Quercus sp.*	No works required, retain
T81	0.T81.0	Common Ash *Fraxinus excelsior*	No works required, retain
T82	0.T82.0	Oak *Quercus sp.*	No works required, retain
T83	25.T83.312	Common Ash *Fraxinus excelsior*	No works required, retain
T84	29.T84.310	Common Ash *Fraxinus excelsior*	No works required, retain
T85	18.T85.114	Oak *Quercus sp.*	Make safe as part of good management of site for ecological habitat
T86	0.T86.0	Oak *Quercus sp.*	No works required, retain
T87	17.T87.115	Oak *Quercus sp.*	No works required, retain
T88	84.T88.307	Oak *Quercus sp.*	No works required, retain
T89	36.T89.305	Oak *Quercus sp.*	No works required, retain
T90	31.T90.301	Oak *Quercus sp.*	No works required, retain
T91	0.T91.0	English Elm *Ulmus procera*	Make safe as part of good management of site for ecological habitat
T92	89.T92.52	Oak *Quercus sp.*	No works required, retain
T93	58.T93.53	Oak *Quercus sp.*	No works required, retain
T94	62.T94.54	Oak *Quercus sp.*	No works required, retain
T95	123.T95.0	Oak *Quercus sp.*	No works required, retain
T96	63.T96.55	White Willow *Salix alba*	No works required, retain
T97	0.T97.0	Crack Willow *Salix fragilis*	No works required, retain
T98	0.T98.0	Common Ash *Fraxinus excelsior*	No works required, retain
T99	124.T99.0	Oak *Quercus sp.*	Crown lift to provide 3m ground level clearance over footpath
T100	66.T100.70	Oak *Quercus sp.*	No works required, retain
T101	64.T101.69	Oak *Quercus sp.*	No works required, retain
T102	91.T102.56	White Willow *Salix alba*	No works required, retain
T103	136.T103.0	Oak *Quercus sp.*	No works required, retain
T104	135.T104.0	Oak *Quercus sp.*	No works required, retain
T105	134.T105.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T106	133.T106.0	Oak *Quercus sp.*	No works required, retain
T107	132.T107.0	Oak *Quercus sp.*	No works required, retain
T108	131.T108.0	Oak *Quercus sp.*	No works required, retain
T109	130.T109.0	Oak *Quercus sp.*	No works required, retain
T110	129.T110.0	Oak *Quercus sp.*	No works required, retain
T111	0.T111.0	Oak *Quercus sp.*	No works required, retain
T112	127.T112.0	Oak *Quercus sp.*	No works required, retain
T113	128.T113.0	Oak *Quercus sp.*	No works required, retain
T114	125.T114.0	Oak *Quercus sp.*	No works required, retain
T115	0.T115.0	Oak *Quercus sp.*	No works required, retain
T116	0.T116.0	Oak *Quercus sp.*	No works required, retain
T117	0.T117.0	Oak *Quercus sp.*	No works required, retain
T118	92.T118.67	Oak *Quercus sp.*	No works required, retain
T119	0.T119.0	Oak *Quercus sp.*	No works required, retain
T120	65.T120.68	Oak *Quercus sp.*	No works required, retain
T121	0.T121.0	Oak *Quercus sp.*	No works required, retain
T122	55.T122.74	Oak *Quercus sp.*	No works required, retain
T123	52.T123.75	Oak *Quercus sp.*	No works required, retain
T124	0.T124.0	Oak *Quercus sp.*	No works required, retain
T125	41.T125.76	Oak *Quercus sp.*	No works required, retain
T126	51.T126.0	Oak *Quercus sp.*	No works required, retain
T127	0.T127.0	Oak *Quercus sp.*	No works required, retain
T128	54.T128.78	Oak *Quercus sp.*	No works required, retain
T129	53.T129.79	Oak *Quercus sp.*	No works required, retain
T130	0.T130.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T131	49.T131.80	Oak *Quercus sp.*	No works required, retain
T132	50.T132.81	Oak *Quercus sp.*	No works required, retain
T133	0.T133.0	Common Hawthorn *Crataegus monogyna*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T134	48.T134.82	Oak *Quercus sp.*	No works required, retain
T135	0.T135.0	Crab Apple *Malus sylvestris*	No works required, retain
T136	102.T136.0	Oak *Quercus sp.*	No works required, retain
T137	0.T137.0	Oak *Quercus sp.*	No works required, retain
T138	47.T138.29	Oak *Quercus sp.*	No works required, retain
T139	45.T139.30	Oak *Quercus sp.*	No works required, retain
T140	42.T140.31	Oak *Quercus sp.*	No works required, retain
T141	142.T141.0	Oak *Quercus sp.*	No works required, retain
T142	43.T142.33	Oak *Quercus sp.*	No works required, retain
T143	44.T143.34	Oak *Quercus sp.*	No works required, retain
T144	0.T144.0	Oak *Quercus sp.*	No works required, retain
T145	40.T145.35	Oak *Quercus sp.*	No works required, retain
T146	87.T146.25	Oak *Quercus sp.*	Fell and remove stump
T147	153.T147.0	Oak *Quercus sp.*	No works required, retain
T148	143.T148.0	Oak *Quercus sp.*	No works required, retain
T149	0.T149.0	Oak *Quercus sp.*	Fell and remove stump
T150	109.T150.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T151	0.T151.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T152	0.T152.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T153	0.T153.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T154	0.T154.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T155	0.T155.0	Oak *Quercus sp.*	No works required, retain
T156	0.T156.0	Oak *Quercus sp.*	Fell and remove stump
T157	39.T157.27	Oak *Quercus sp.*	No works required, retain
T158	117.T158.0	Oak *Quercus sp.*	No works required, retain
T159	116.T159.0	Oak *Quercus sp.*	No works required, retain
T160	0.T160.0	Oak *Quercus sp.*	No works required, retain
T161	0.T161.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T162	115.T162.0	Oak *Quercus sp.*	No works required, retain
T163	0.T163.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T164	0.T164.0	Common Hawthorn *Crataegus monogyna*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T165	113.T165.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T166	0.T166.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T167	0.T167.0	Common Hawthorn *Crataegus monogyna*	Fell to ground level
T168	0.T168.0	Weeping Willow *Salix x chrysocoma*	No works required, retain
T169	0.T169.0	Common Alder *Alnus glutinosa*	No works required, retain
T170	0.T170.0	Weeping Willow *Salix x chrysocoma*	No works required, retain
T171	0.T171.0	Pedunculate Oak *Quercus robur*	No works required, retain
T172	0.T172.0	Apple *Malus spp*	Fell to ground level
T173	0.T173.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T174	0.T174.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T175	0.T175.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T176	0.T176.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T177	0.T177.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T178	0.T178.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T179	0.T179.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T180	0.T180.0	Willow *Salix spp*	No works required, retain
T181	0.T181.0	Pedunculate Oak *Quercus robur*	Fell to ground level
T182	0.T182.0	Common Sycamore *Acer pseudoplatanus*	Fell to ground level and remove stump
T183	0.T183.0	Common Ash *Fraxinus excelsior*	No works required, retain
T184	0.T184.0	Flowering Cherry x2 *Prunus spp*	No works required, retain
T185	0.T185.0	Norway Maple *Acer platanoides*	No works required, retain
G1	0.G1.0	English Elm *Ulmus procera*	No works required, retain
G2	0.G2.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G3	0.G3.0	Willow *Salix sp.*	No works required, retain
G4	0.G4.0	English Elm *Ulmus procera*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G5	0.G5.0	Willow *Salix sp.*	No works required, retain
G6	0.G6.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G7	0.G7.0	English Elm *Ulmus procera*	No works required, retain
G8	0.G8.0	Common Hawthorn *Crataegus monogyna*	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance/visibility splay
G9	0.G9.0	Common Hawthorn *Crataegus monogyna*	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance/visibility splay
G10	0.G10.0	Oak *Quercus sp.*	No works required, retain
G11	0.G11.0	Willow *Salix sp.*	No works required, retain
G12	147.G12.0	Willow *Salix sp.*	No works required, retain
G13	0.G13.0	English Elm *Ulmus procera*	No works required, retain
G14	0.G14.0	Oak *Quercus sp.*	Fell and remove stumps
G15	0.G15.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G16	0.G16.0	Willow *Salix sp.*	No works required, retain
G17	0.G17.0	Common Hazel *Corylus avellana*	No works required, retain
G18	76.G18.105 77.G18.121 107.G18.0 108.G18.0	Oak *Quercus sp.*	No works required, retain
G19	12.G19.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond footpath edge
G20	6.G20.325 8.G20.326 9.G20.14 13.G20.16 141.G20.0	White Willow *Salix alba*	No works required, retain
G21	0.G21.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G22	0.G22.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G23	148.G23.0	English Elm *Ulmus procera*	No works required, retain
G24	0.G24.0	Hawthorn *Crataegus sp.*	No works required, retain
G25	0.G25.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G26	0.G26.0	English Elm *Ulmus procera*	Fell and remove stumps
G27	0.G27.0	English Elm *Ulmus procera*	Fell and remove stumps
G28	0.G28.0	English Elm *Ulmus procera*	Fell and remove stumps
G29	104.G29.0	Willow *Salix sp.*	Fell and remove stumps
G30	0.G30.0	Common Elder *Sambucas nigra*	Fell and remove stumps in section of group up to 1m beyond footpath edge

Tree No	Unique Combined Reference	Species	Permitted Works
G31	0.G31.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G32	0.G32.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G33	0.G33.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G34	0.G34.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G35	0.G35.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G36	0.G36.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G37	70.G37.45 71.G37.44 74.G37.38 137.G37.0 138.G37.0 139.G37.0 140.G37.0	Oak *Quercus sp.*	Fell and remove stumps in section of group up to 1m beyond footpath edge 70.G37.45 – Retain, may require pruning to provide 3m ground level clearance over footpath
G38	93.G38.49	White Willow *Salix alba*	No works required, retain
G39	0.G39.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G40	0.G40.0	Blackthorn *Prunus spinosa*	No works required, retain
G41	0.G41.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G42	19.G42.322 20.G42.320 21.G42.317 22.G42.319 23.G42.316 24.G42.315 26.G42.314 27.G42.311 28.G42.313 30.G42.306 32.G42.302 34.G42.309 35.G42.308 83.G42.318 85.G42.304 86.G45.303 103.G42.0	Oak *Quercus sp.*	No works required, retain
G43	0.G43.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G44	0.G44.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G45	0.G45.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in sections of group up to 1m beyond footpath edges
G46	0.G46.0	Hawthorn *Crataegus sp.*	No works required, retain
G47	0.G47.0	Blackthorn *Prunus spinosa*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G48	0.G48.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G49	0.G49.0	Common Hawthorn *Crataegus monogyna*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G50	0.G50.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G51	126.G51.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G52	0.G52.0	Blackthorn *Prunus spinosa*	No works required, retain
G53	0.G53.0	Blackthorn *Prunus spinosa*	No works required, retain
G54	0.G54.0	Blackthorn *Prunus spinosa*	Fell and remove stumps
G55	56.G55.0 59.G55.125 60.G55.124 88.G55.101 90.G55.123 154.G55.0	Oak *Quercus sp.*	Fell and remove stumps
G56	122.G56.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G57	0.G57.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G58	121.G58.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G59	46.G59.28	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group for swale and up to 1m beyond footpath edges and up to 1m beyond security fence 46.G59.28 – Retain (proposed works for swale, footpath and security fence do not impact this tree)
G60	0.G60.0	Willow *Salix sp.*	No works required, retain
G61	0.G61.0	Wych Elm *Ulmus glabra*	No works required, retain
G62	0.G62.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps of trees
G63	0.G63.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G64	0.G64.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section of group up to 1m beyond junction splay
G65	38.G65.0	Wych Elm *Ulmus glabra*	No works required, retain
G66	0.G66.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond junction splay and for visibility splay
G67	0.G67.0	Wych Elm *Ulmus glabra*	Fell and remove stumps
G68	0.G68.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section beneath Build Zone E and up to 1m beyond security fence
G69	0.G69.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G70	0.G70.0	Wych Elm *Ulmus glabra*	No works required, retain
G71	0.G71.0	Wych Elm *Ulmus glabra*	No works required, retain
G72	118.G72.0 119.G72.0 120.G72.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G73	0.G73.0	Wych Elm *Ulmus glabra*	No works required, retain

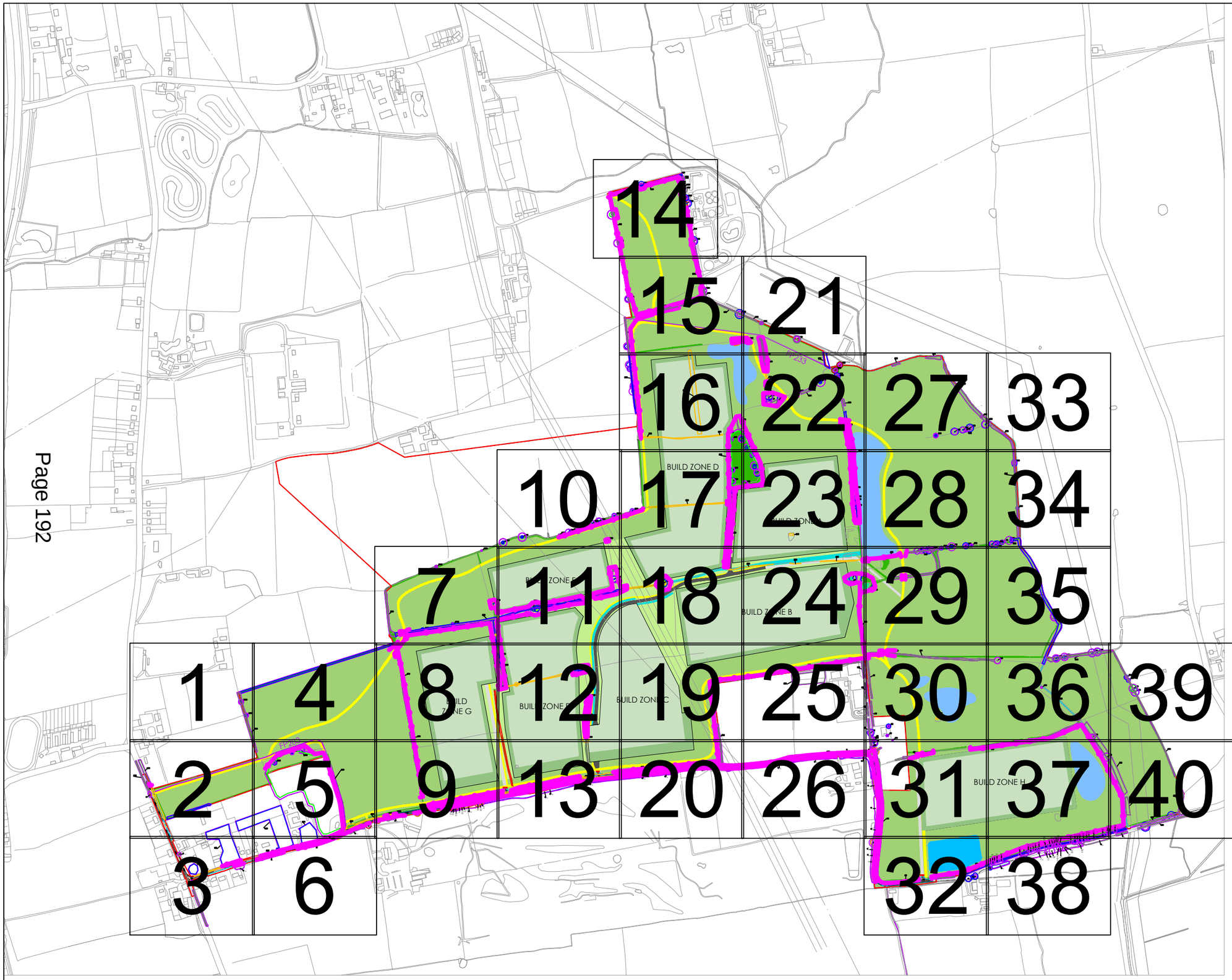
Tree No	Unique Combined Reference	Species	Permitted Works
G74	0.G74.0	Common Ash *Fraxinus excelsior*	Clip and cut back as required to back edge of new footpath edge Crown lift to provide 3m ground level clearance over footpath as required
G75	33.G75.88 37.G75.126	Wych Elm *Ulmus glabra*	Fell to ground level
G76	0.G76.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G77	97.G77.0 98.G77.0 99.G77.0 100.G77.0 101.G77.0 111.G77.0 112.G77.0	Oak *Quercus sp.*	Fell and remove stumps of trees in section of group under footprint of development and up to 1m beyond footpath edges, for the remainder of the group fell to ground level ONLY after onsite investigation works for road widening/footway and removal confirmed as necessary
G78	0.G78.0	Wych Elm *Ulmus glabra*	No works required, retain
G79	0.G79.0	Norway Maple *Acer platanoides*	Clip and cut back as required to back edge of new road edge
G80	0.G80.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G81	0.G81.0	Common Ash *Fraxinus excelsior*	Fell and remove stumps of section of trees on highways land
G82	0.G82.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps of trees
G83	0.G83.0	Sycamore *Acer pseudoplatanus*	No works required, retain
G84	0.G84.0	Cherry Laurel *Prunus laurocerasus*	Clip and cut back as required to back edge of new road edge
G85	0.G85.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G86	0.G86.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in southern section of group up to 1m beyond footpath edges
G87	0.G87.0	Wild Cherry *Prunus avium*	No works required, retain
G88	0.G88.0	Wych Elm *Ulmus glabra*	No works required, retain
G89	0.G89.0	Elm Hawthorn Wild Cherry	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G90	0.G90.0	Elm Pedunculate Oak	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G91	0.G91.0	Common Hawthorn Blackthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G92	0.G92.0	Elm Pedunculate Oak Goat Willow	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G93	0.G93.0	Common Hawthorn Silver Birch Pedunculate Oak Sycamore	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G94	0.G94.0	Elm	Fell to ground level and remove stumps
G95	0.G95.0	Elder x1 Elm x2	Fell to ground level and remove stumps
G96	0.G96.0	Blackthorn Hawthorn	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G97	0.G97.0	Blackthorn Hawthorn Pedunculate Oak	No works required, retain
G98	0.G98.0	Common Ash Blackthorn Hawthorn	No works required, retain
G99	0.G99.0	Common Hawthorn Elder Blackthorn Field Maple	No works required, retain
G100	0.G100.0	Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G101	0.G101.0	Common Hawthorn Field Maple Elm Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G102	0.G102.0	Elm Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G103	0.G103.0	Hawthorn Blackthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G104	0.G104.0	Hawthorn Apple	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G105	0.G105.0	Blackthorn Hawthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G106	0.G106.0	Blackthorn Hawthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G107	0.G107.0	Leyland Cypress Hawthorn Ash Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G108	110.G108.0	Blackthorn Hawthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G109	0.G109.0	Common Ash Pedunculate Oak	Fell to ground level ONLY the larger trees in group after onsite investigation works for road widening and removal confirmed as necessary
G110	114.G110.0	Common Ash Hawthorn Elm	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
G111	0.G111.0	Elm	Retain but fell dead Elm within group to ground level adjacent to highway works
G112	0.G112.0	Common Hawthorn Leyland Cypress	Clip and trim group on roadside as required for clearance
G113	0.G113.0	Common Yew x2	No works required, retain
G114	0.G114.0	Pear x2	No works required, retain
G115	0.G115.0	Apple x2	No works required, retain
H1	0.H1.0	Elm Hawthorn Field Maple	Retain but remove dead Elm Clip and cut back as required to back edge of new road edge
H2	0.H2.0	Elm	No works required, retain

- All tree works are advised to be carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.

- All tree works should be carried out in accordance with current best practice guidelines and BS3998:2010 – Tree Work Recommendations.

- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker that is suitably insured and experienced to carry out the tree works.

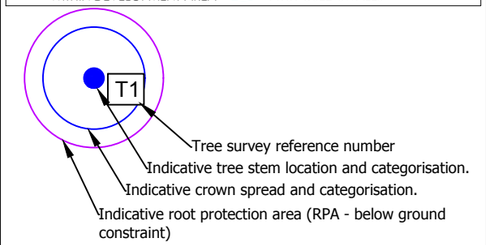


NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

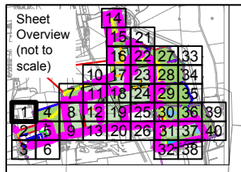
Drawing Title: Tree Protection Plan
Overview of A3 Drawing Sheets

Date: February 2026 Drawn By: DAP

Scale: 1-10,000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Sheet Overview (not to scale)



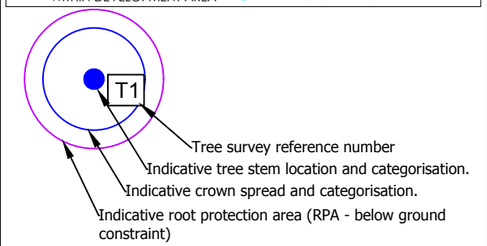


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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 1 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

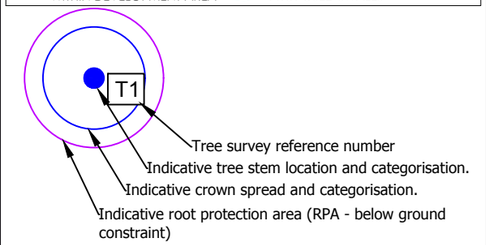


NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
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- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

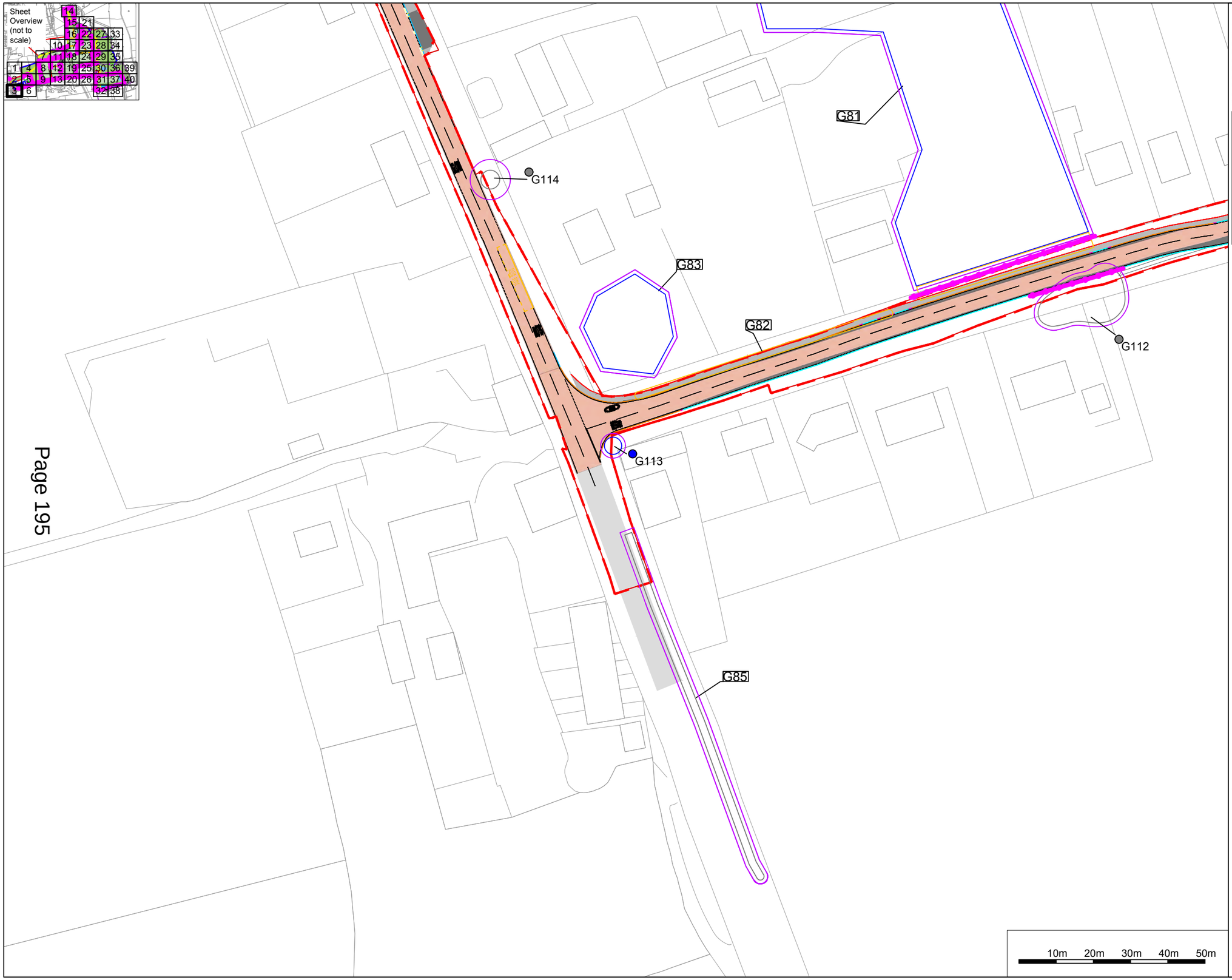
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 2 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

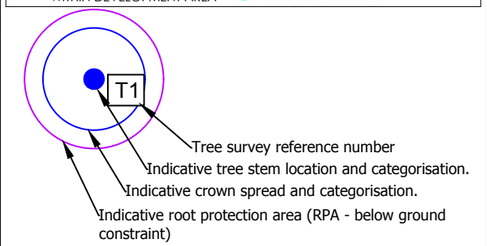


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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

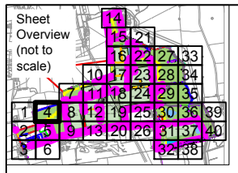
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 3 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



G72

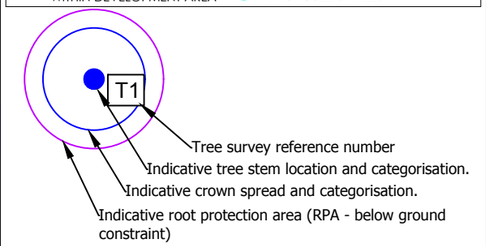
G73

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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

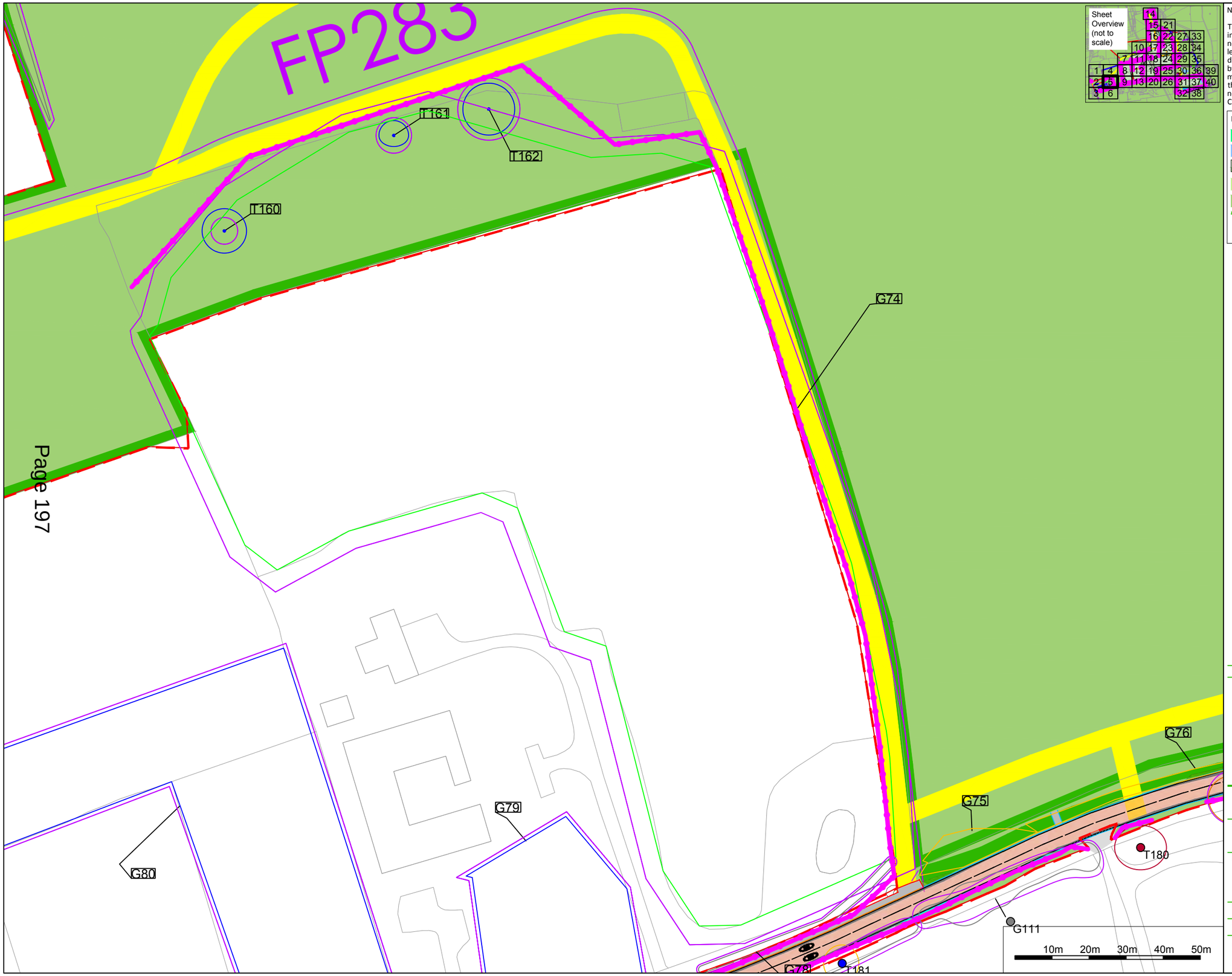
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 4 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m

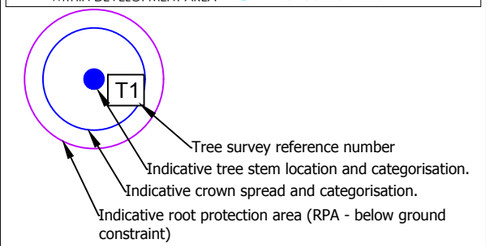


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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

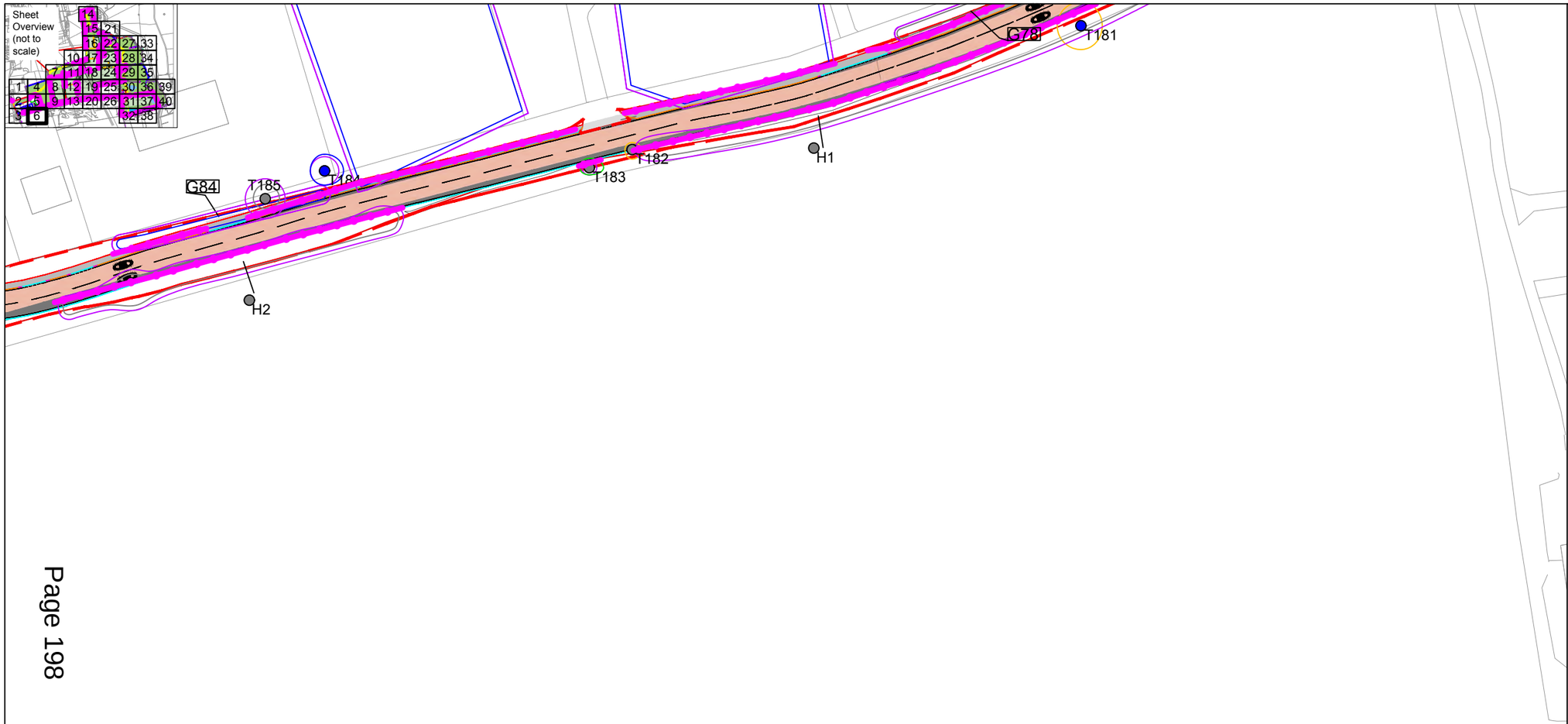
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 5 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

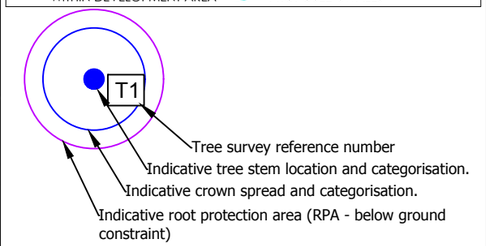


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Tel: 02380 986229

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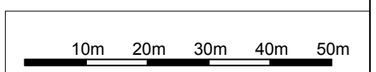
Site: East Havering Data Centre Campus

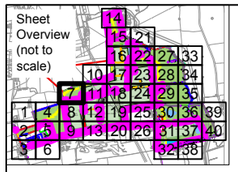
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 6 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H





T135

T133

G58

G59

T137

T136

T134

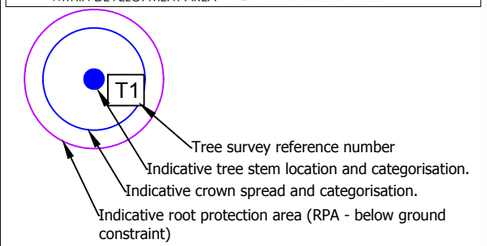
10m 20m 30m 40m 50m

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- PROPOSED PONDS
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- CAMPUS INFRASTRUCTURE / LANDSCAPING
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- PRIMARY SPINE ROAD
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

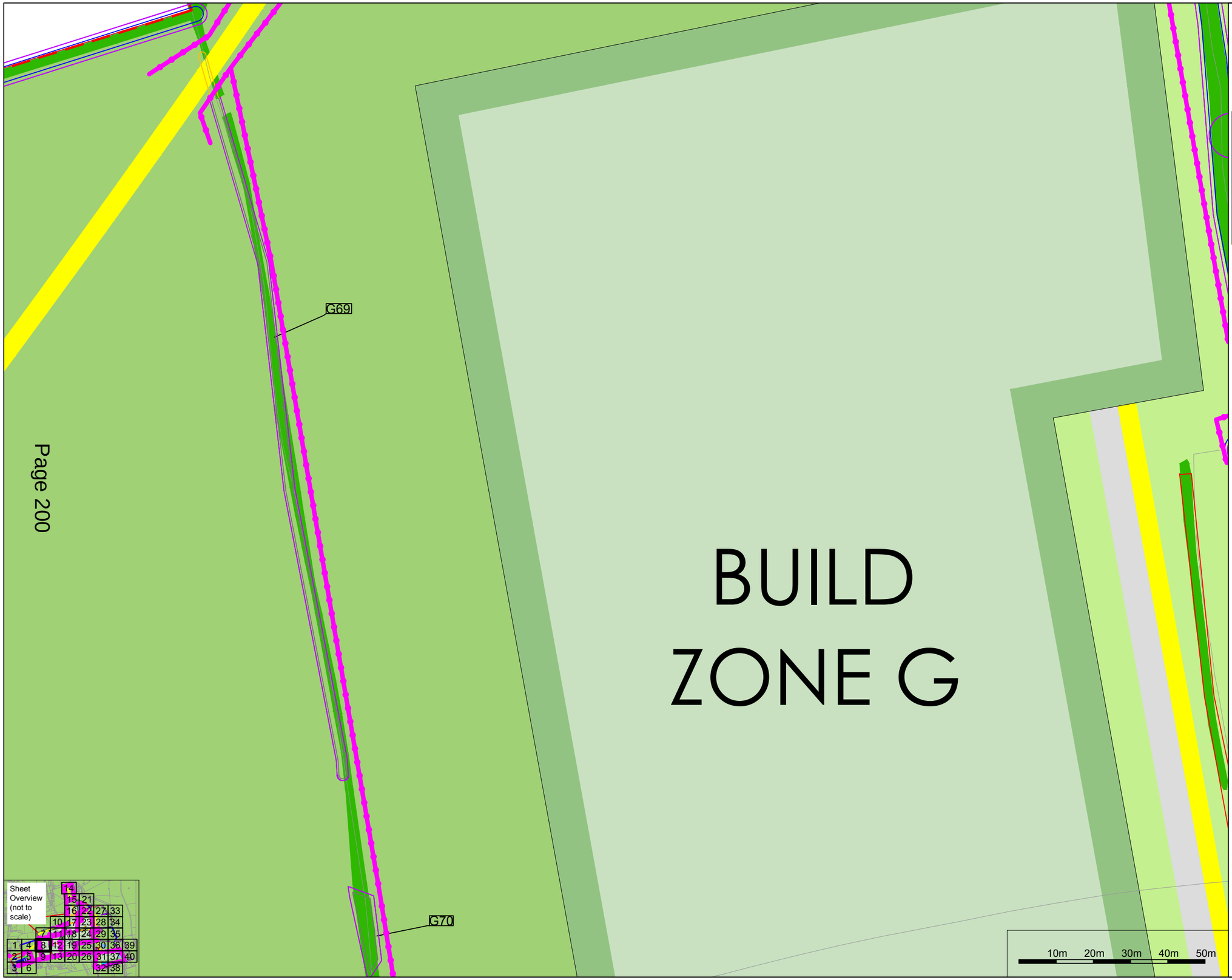
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 7 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

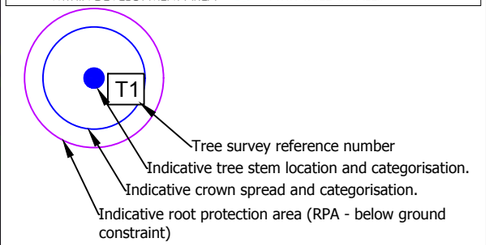


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Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
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Client: Digital Reef London

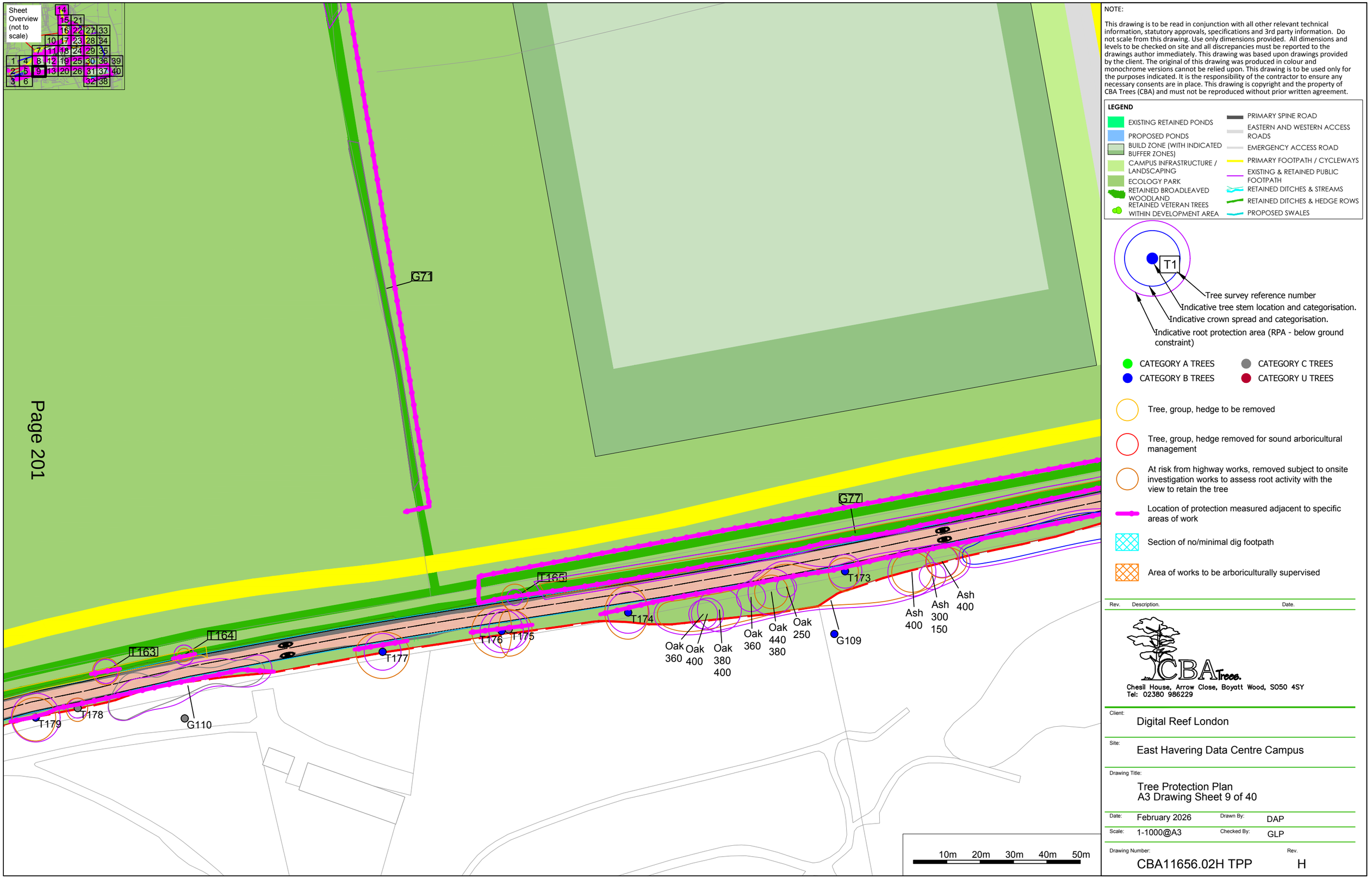
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 8 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 9 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

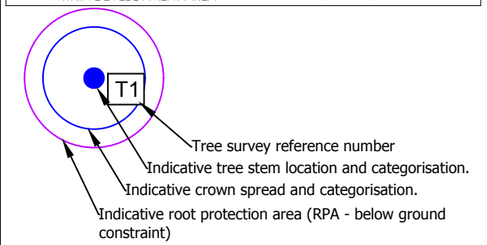
Page 202

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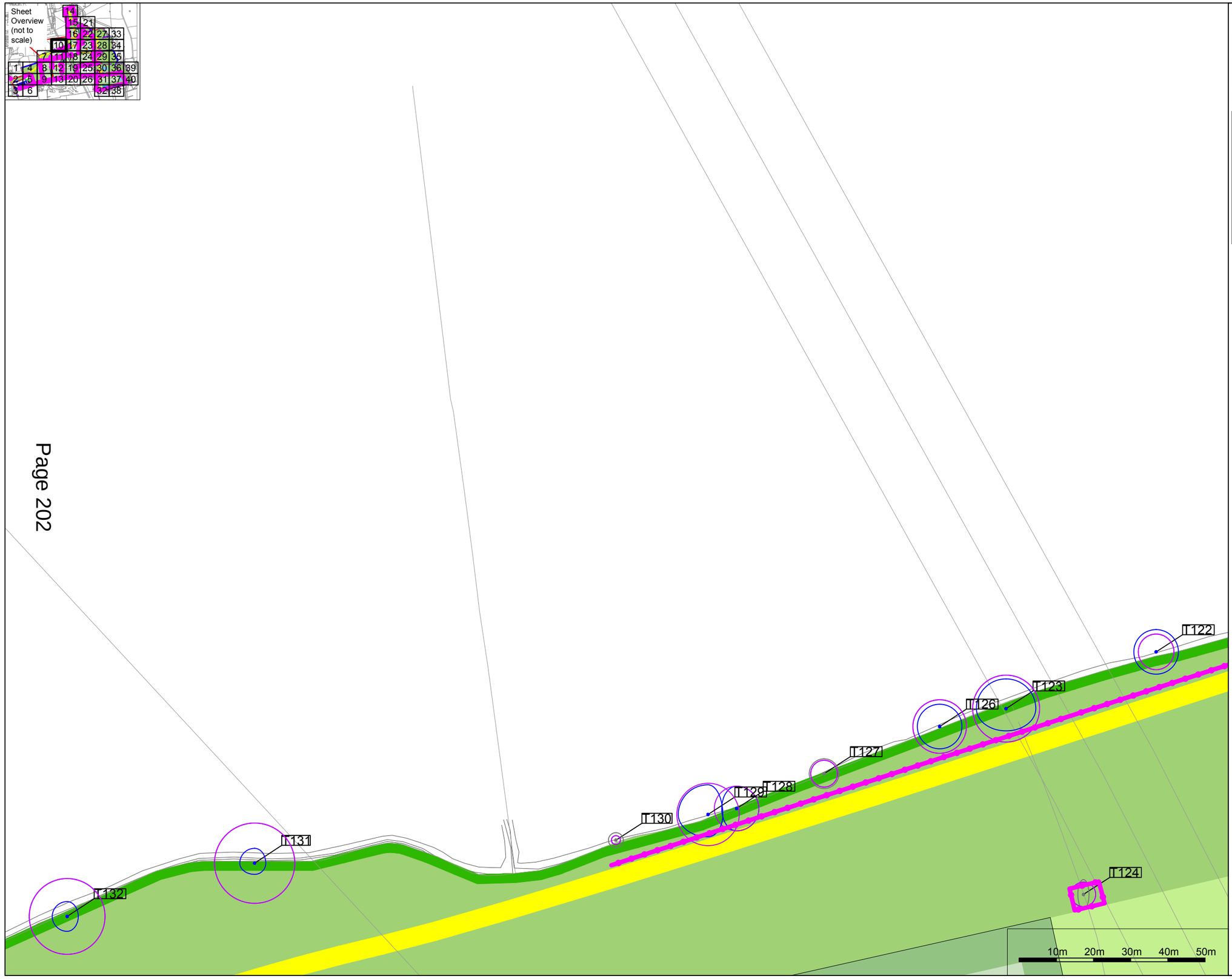
Site: East Havering Data Centre Campus

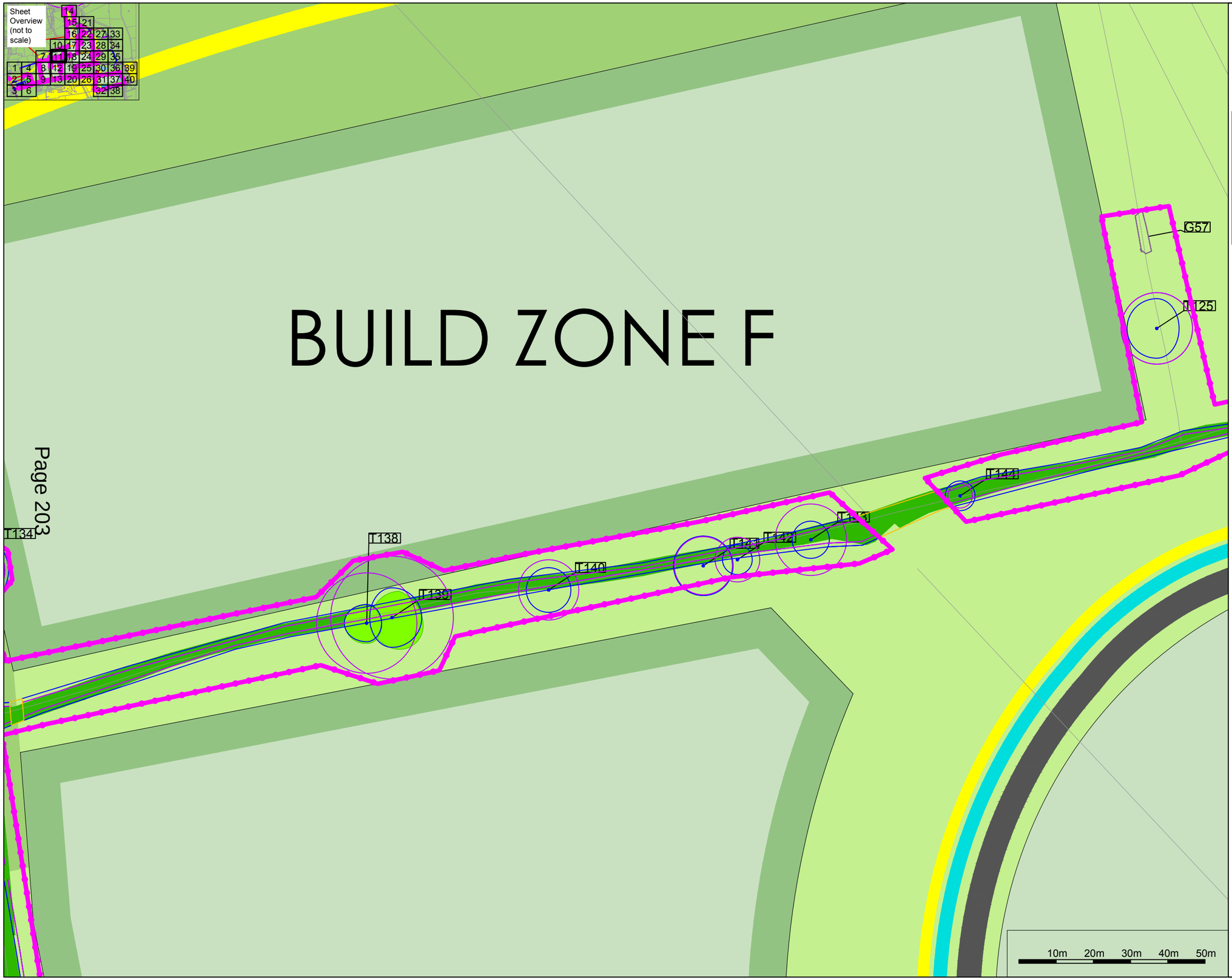
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 10 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H





NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 11 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

T157

G68

T156

T151

T148

T147

G65

T146

BUILD ZONE E

B

Page 204

Sheet Overview (not to scale)

10m 20m 30m 40m 50m

NOTE:

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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
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- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number

Indicative tree stem location and categorisation.

Indicative crown spread and categorisation.

Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

Tree, group, hedge to be removed

Tree, group, hedge removed for sound arboricultural management

At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree

Location of protection measured adjacent to specific areas of work

Section of no/minimal dig footpath

Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

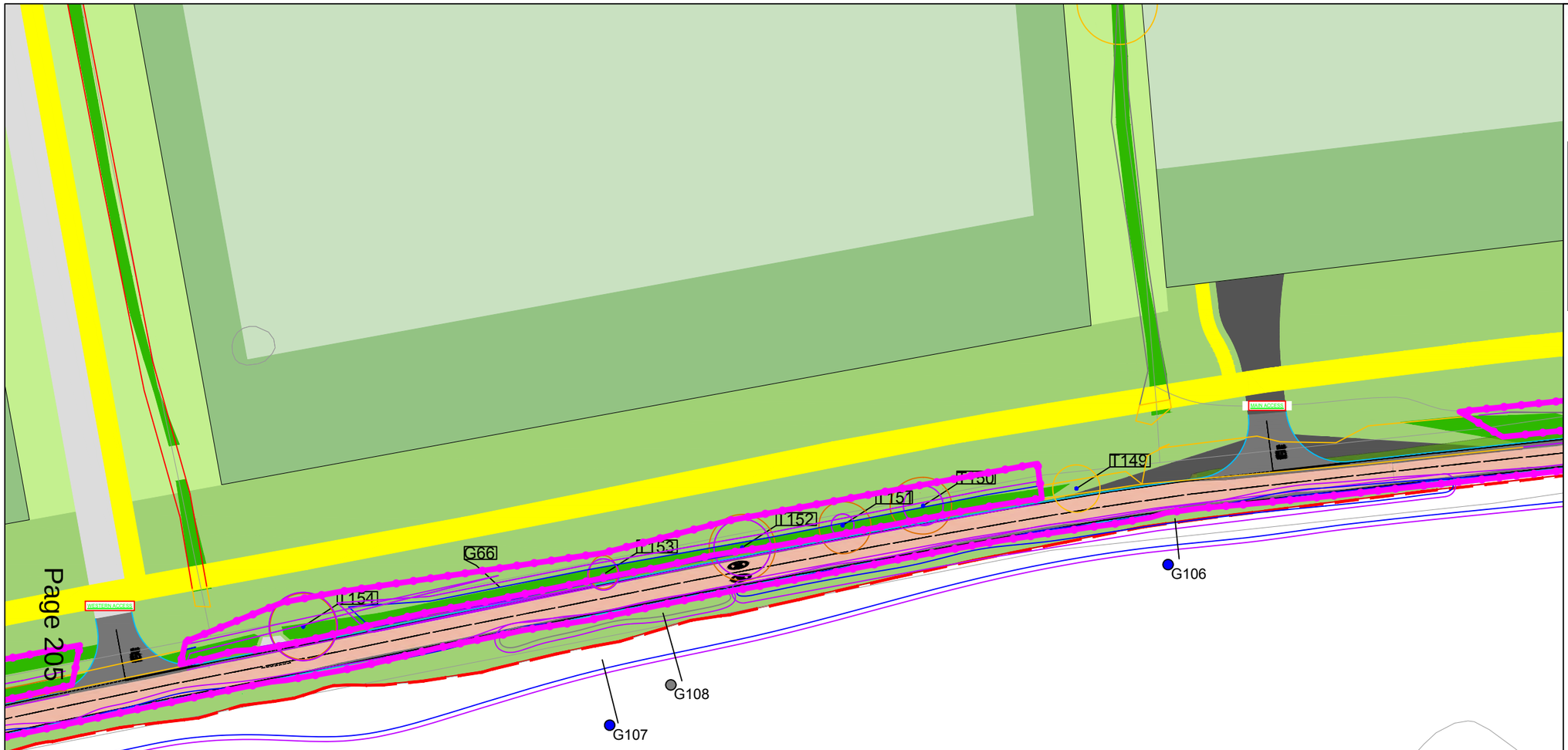
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 12 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

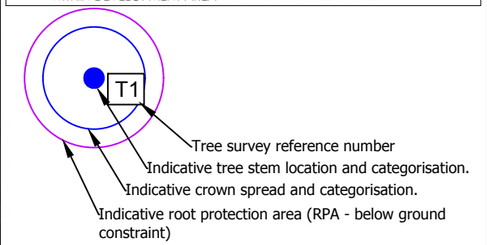


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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
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- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
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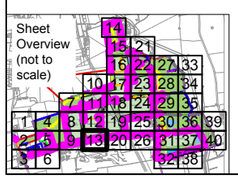
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 13 of 40

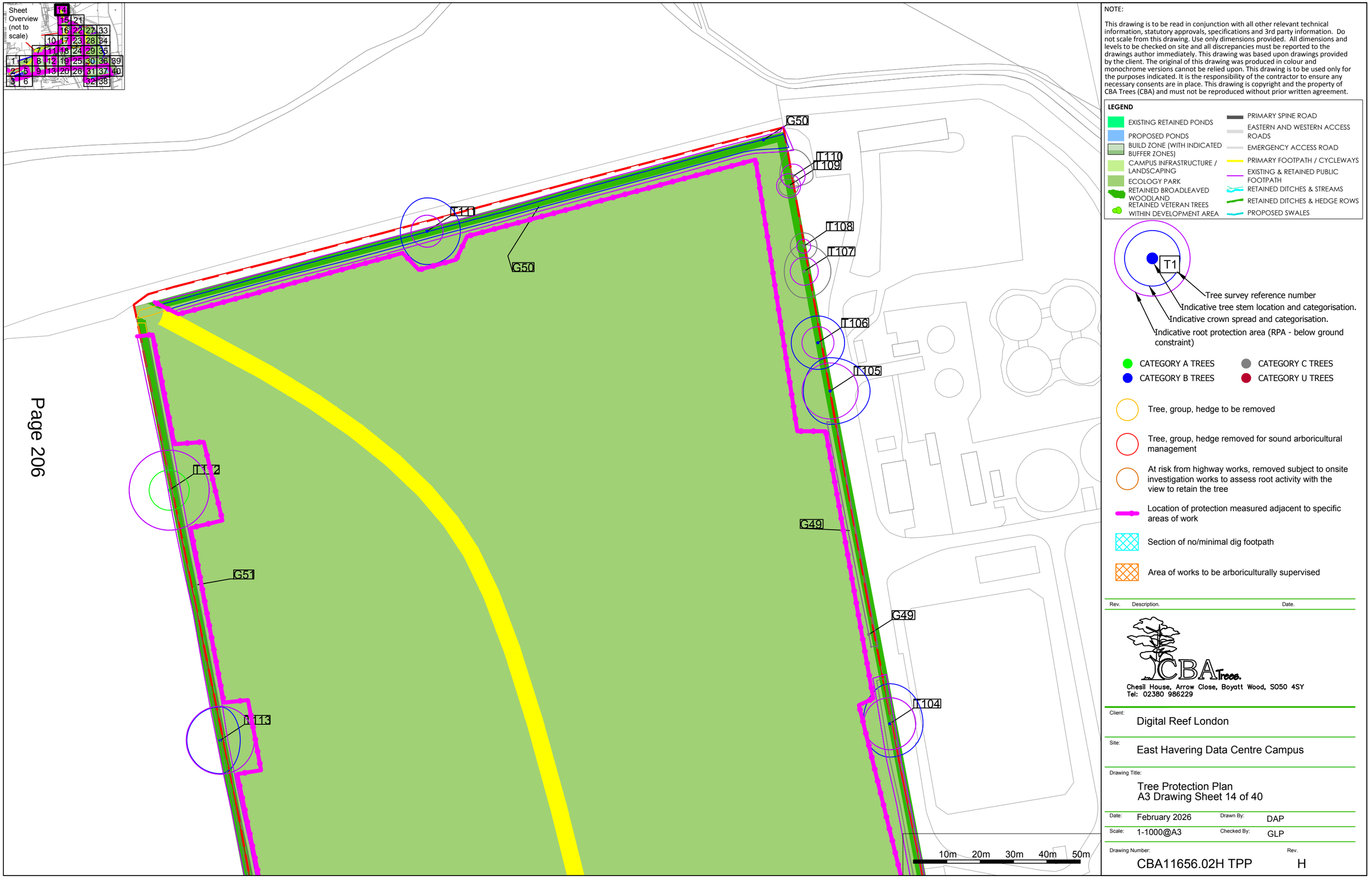
Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



10m 20m 30m 40m 50m



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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 14 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

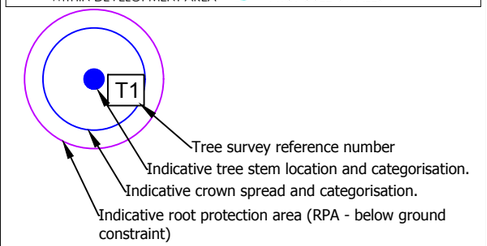


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Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 15 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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- RETAINED DITCHES & HEDGE ROWS
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T1

- Tree survey reference number
- Indicative tree stem location and categorisation.
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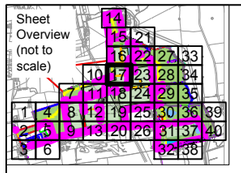
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 16 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



BUILD ZONE D

G42

T89

T88

T87

T86

T85

G56

T121

G41

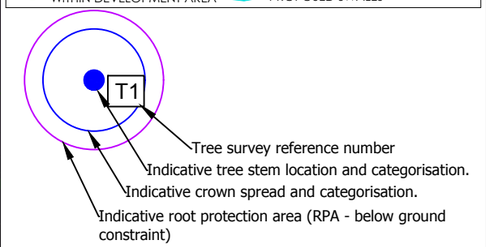
10m 20m 30m 40m 50m

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- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
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- CATEGORY U TREES
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

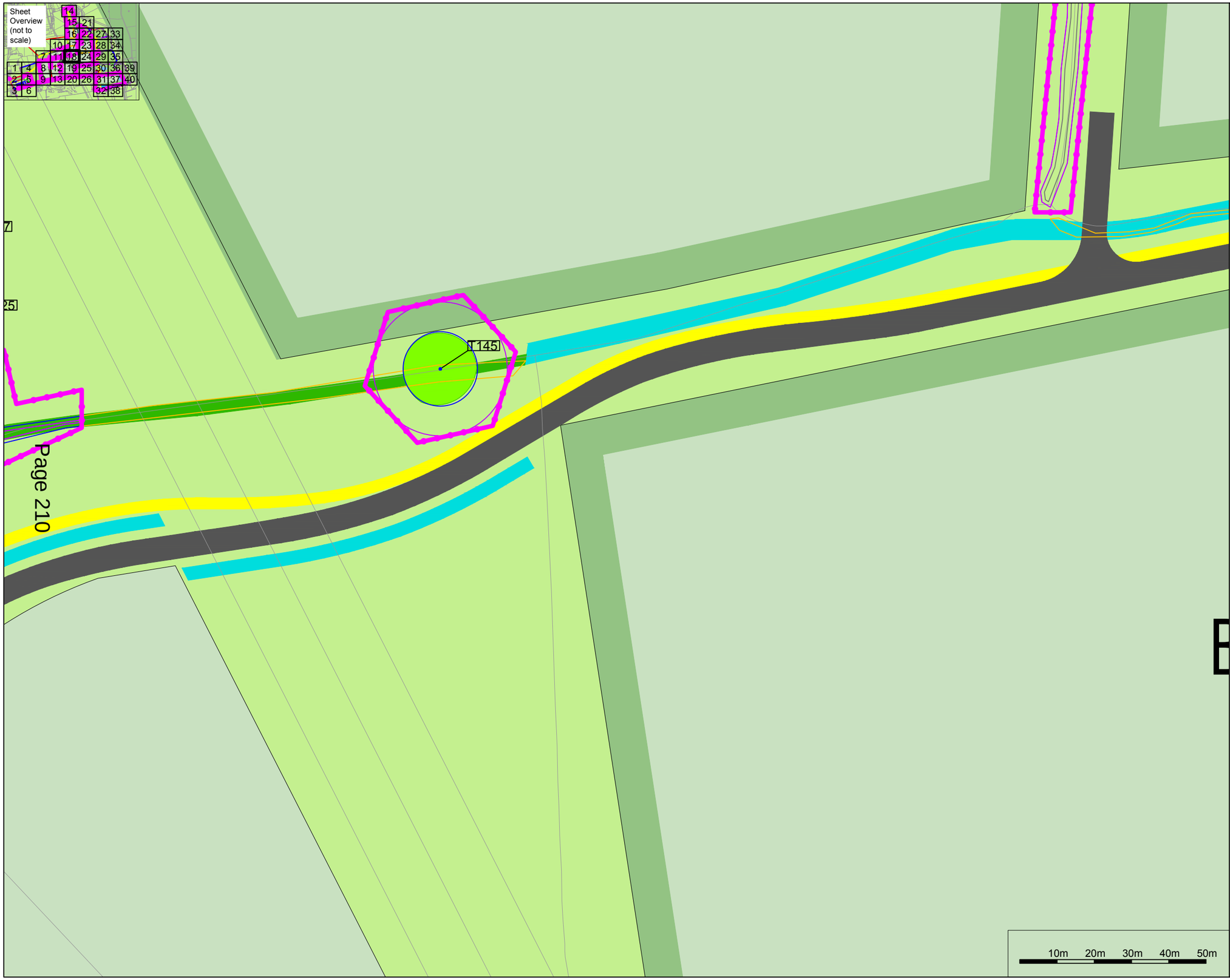
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 17 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

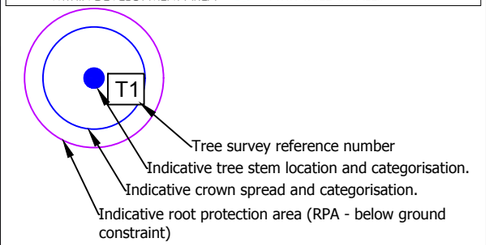


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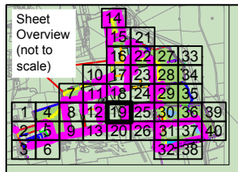
Drawing Title: Tree Protection Plan
A3 Drawing Sheet 18 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m



BUILD ZONE C

G62

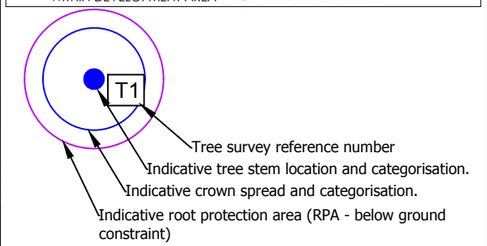
10m 20m 30m 40m 50m

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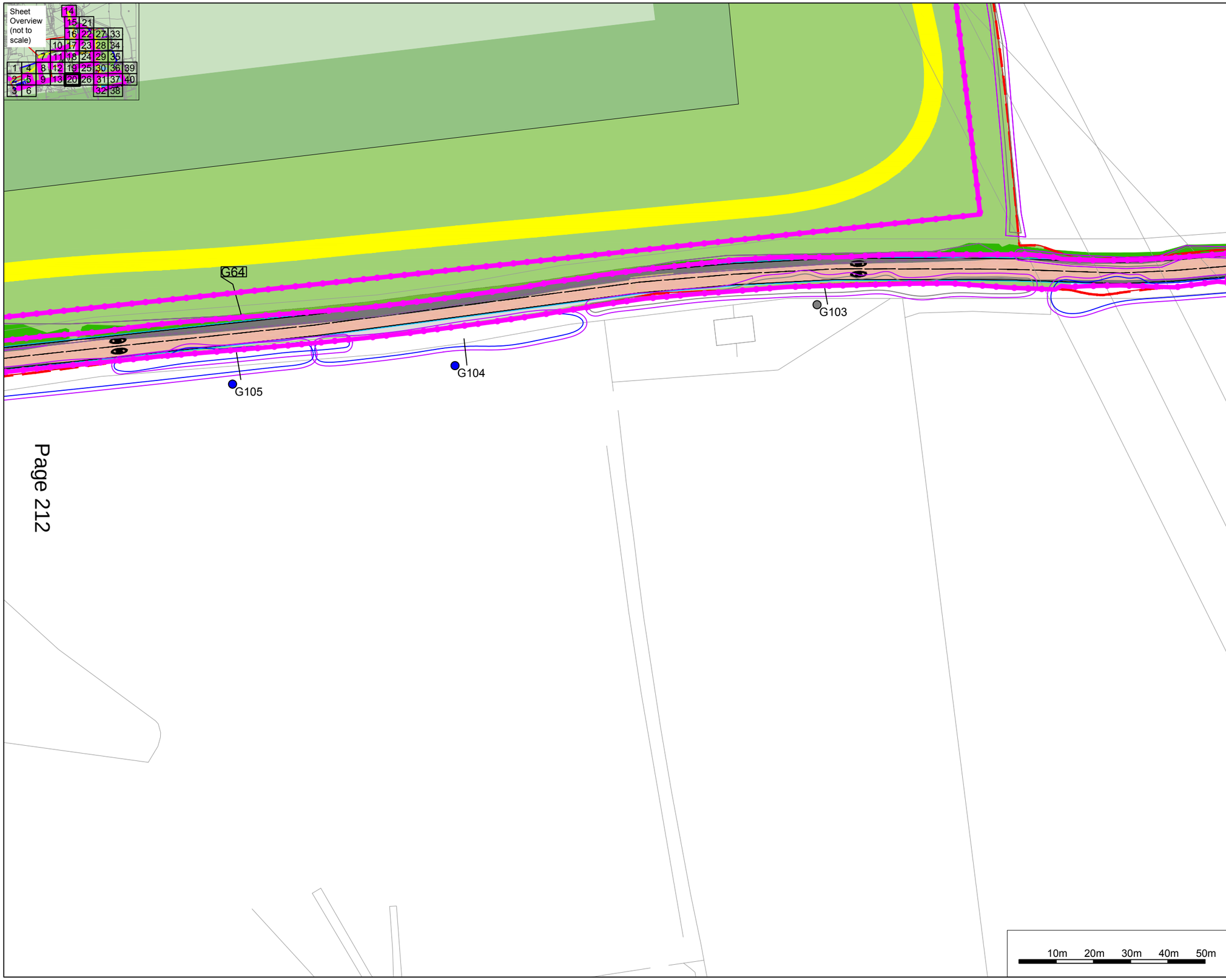
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 19 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

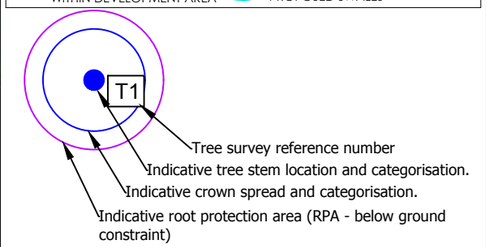


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Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
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Client: Digital Reef London

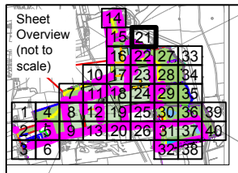
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 20 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

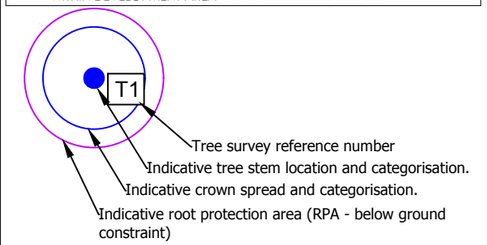


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 21 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

T102 G46 T96 T98 T97 T99 T100 T95

10m 20m 30m 40m 50m



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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

- Tree survey reference number
- Indicative tree stem location and categorisation.
- Indicative crown spread and categorisation.
- Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

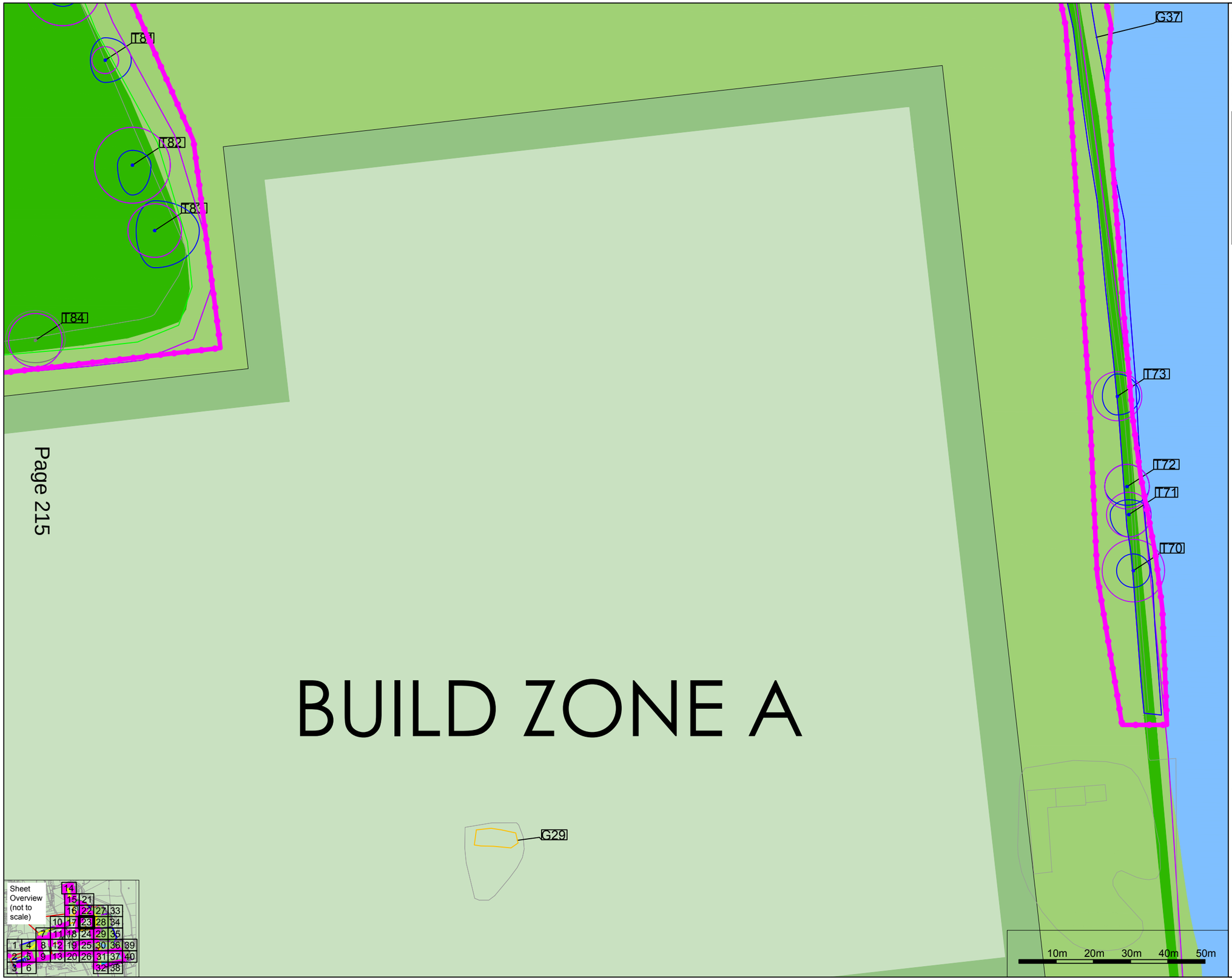
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 22 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

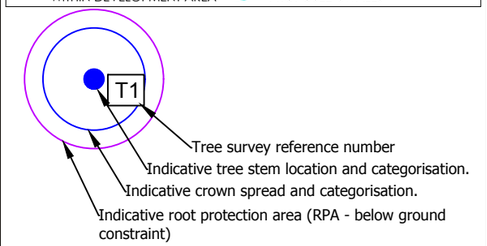


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

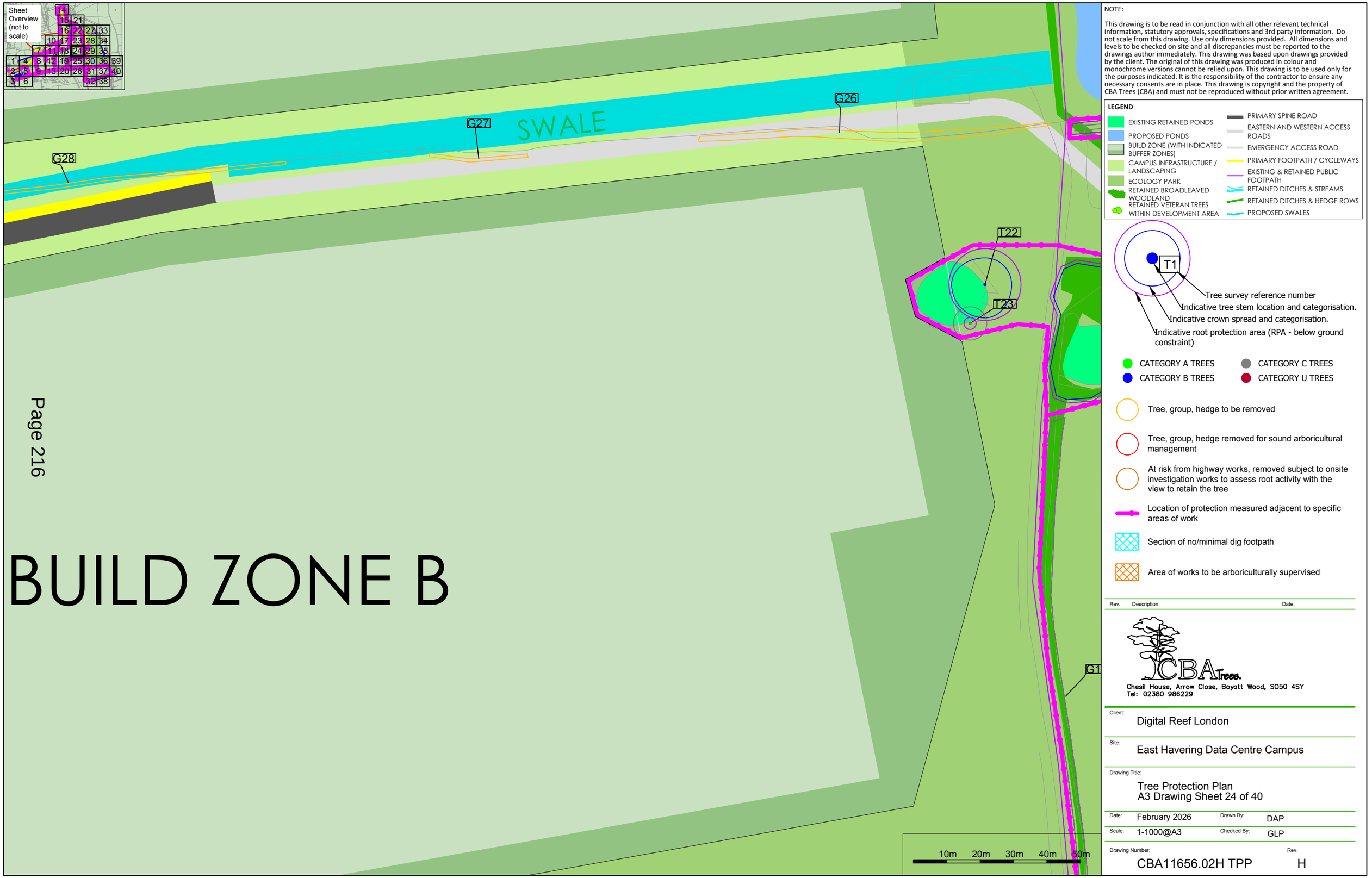
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 23 of 40

Date: February 2026 | Drawn By: DAP

Scale: 1-1000@A3 | Checked By: GLP

Drawing Number: CBA11656.02H TPP | Rev. H



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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

Tree, group, hedge to be removed

Tree, group, hedge removed for sound arboricultural management

At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree

Location of protection measured adjacent to specific areas of work

Section of no/minimal dig footpath

Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

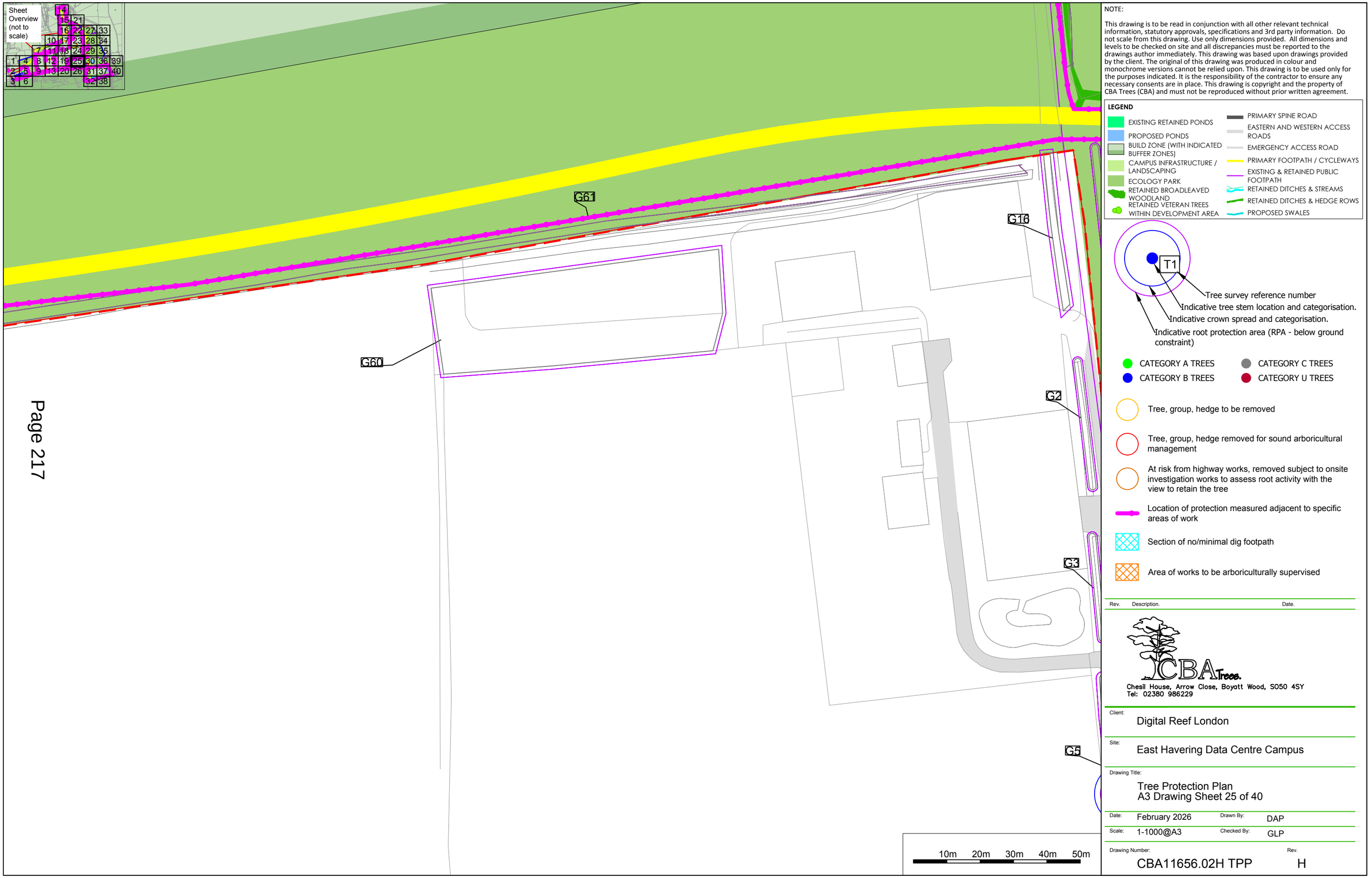
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 24 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

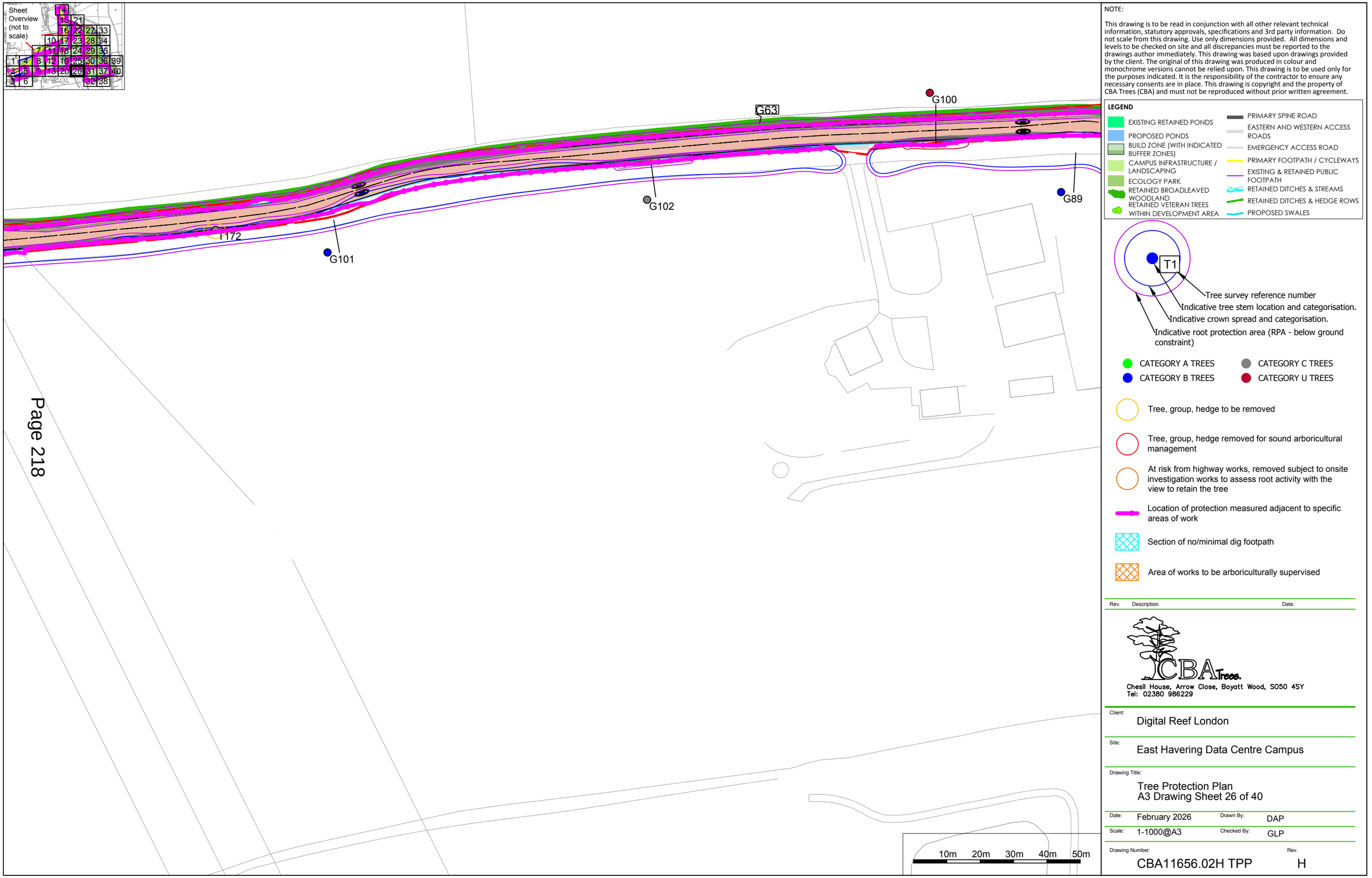
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 25 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
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- PROPOSED SWALES

- CATEGORY A TREES
- CATEGORY B TREES
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- CATEGORY U TREES
- Tree, group, hedge to be removed
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 26 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

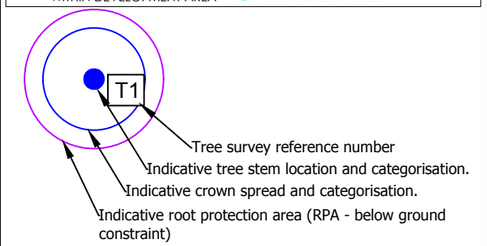


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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
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- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
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- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
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- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
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Client: Digital Reef London

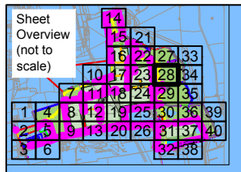
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 27 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP

Rev. H

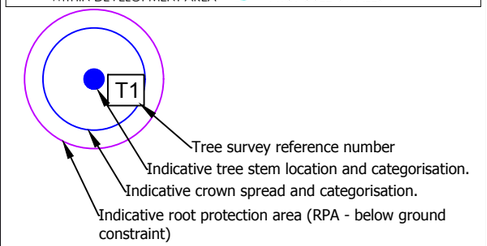


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- RETAINED DITCHES & HEDGE ROWS
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- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 28 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



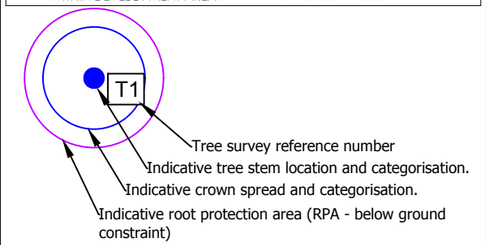


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LEGEND

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- CATEGORY A TREES
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Rev.	Description.	Date.

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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 29 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

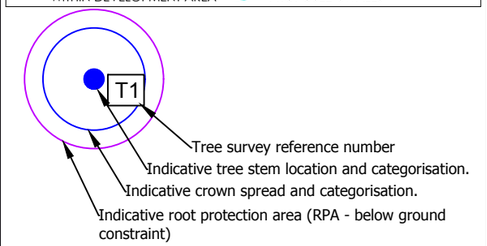


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LEGEND

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- PROPOSED PONDS
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- RETAINED BROADLEAVED WOODLAND
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Tel: 02380 986229

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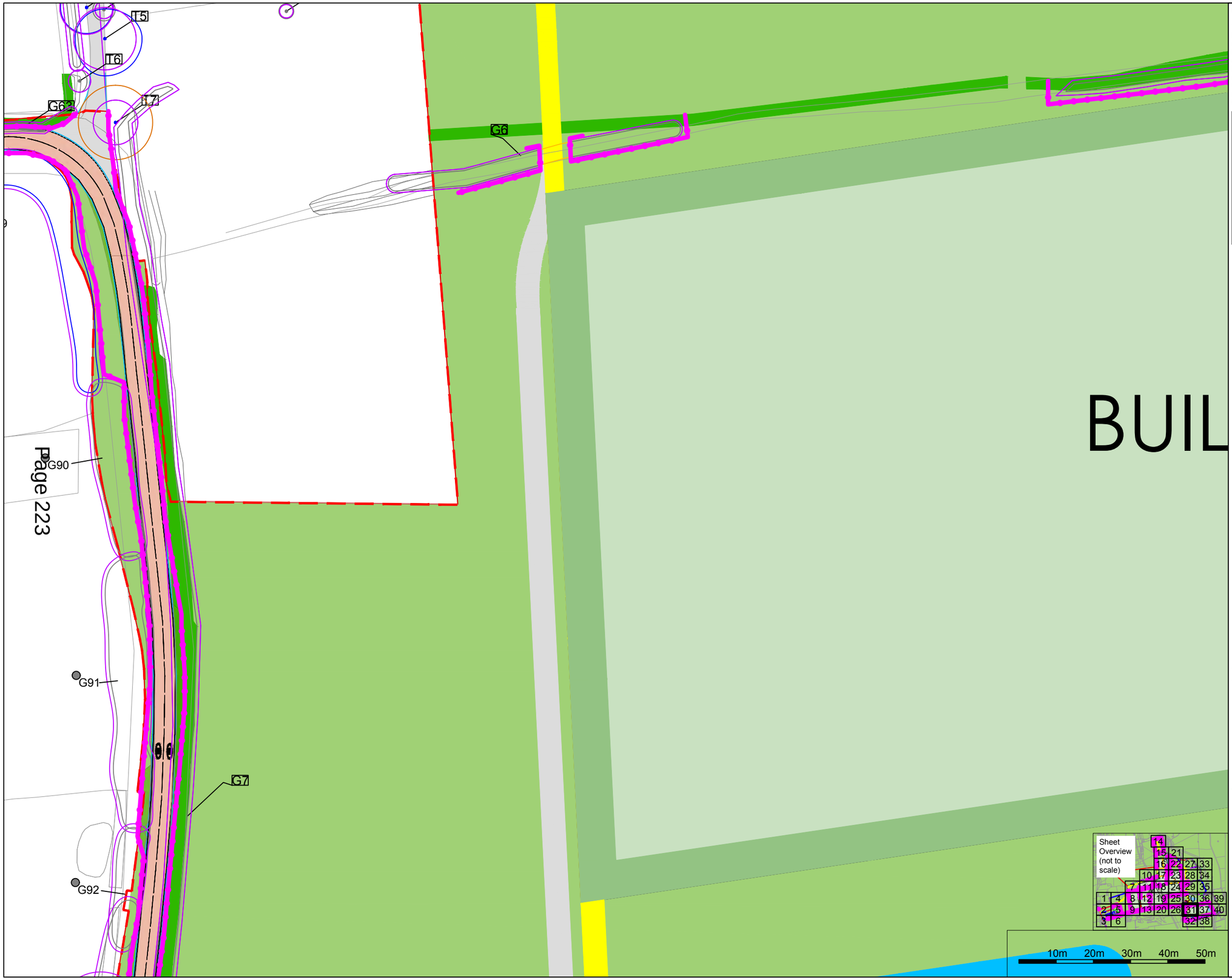
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 30 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

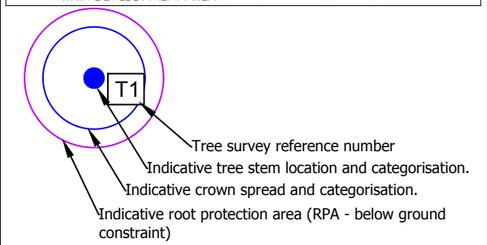


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
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- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

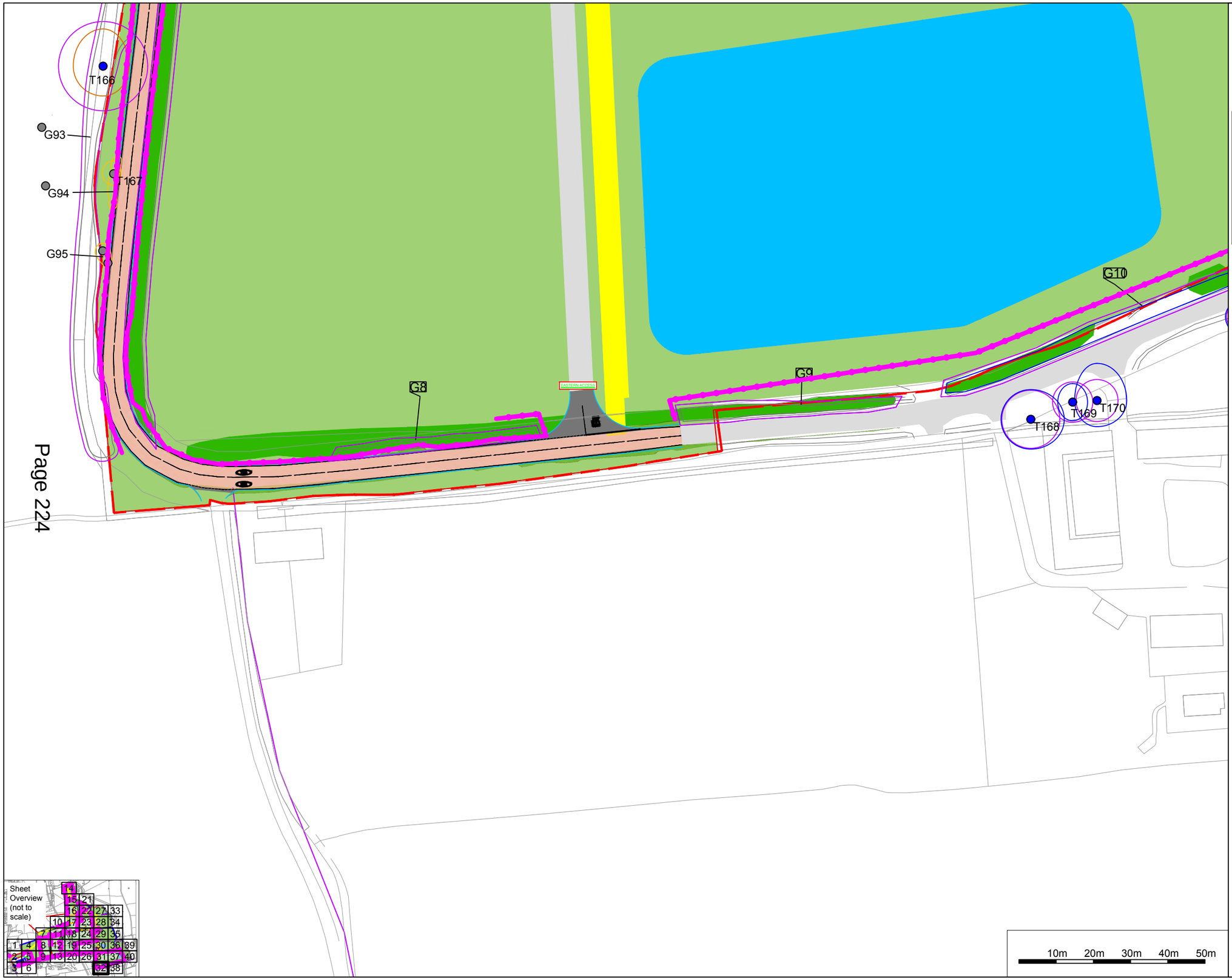
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 31 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

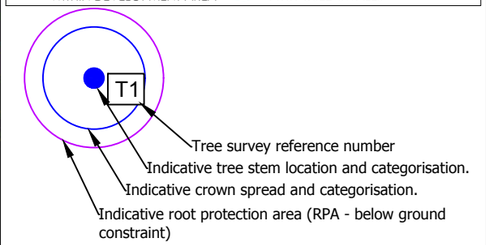


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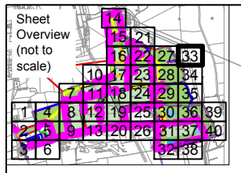
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Tree Protection Plan
A3 Drawing Sheet 32 of 40

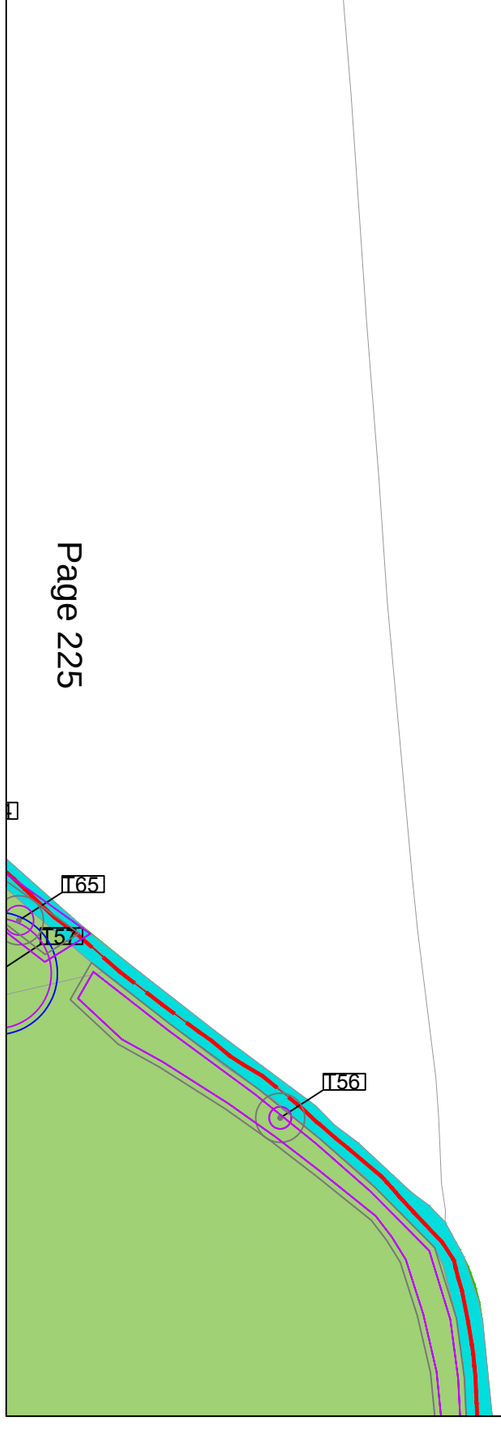
Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

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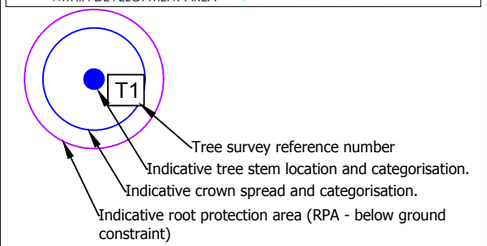


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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 33 of 40

Date: February 2026 Drawn By: DAP

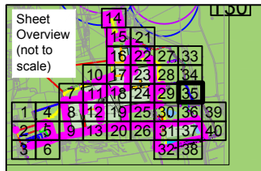
Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m


Sheet Overview (not to scale)

Sheet Overview (not to scale)



T30

Page 227

G20

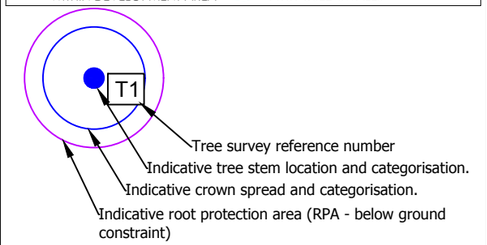
T35

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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 35 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m



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Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 36 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

LD ZONE H

G13

T1

Oak 220
Oak 330
Oak 390
Oak 260
Oak 250
Oak 270
Oak 260
Oak 440
Oak 250
Oak 470
Oak 330
Oak 220
Oak 230
Oak 400
Oak 360
Oak 390
Oak 350

10m 20m 30m 40m 50m

Sheet Overview (not to scale)

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T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
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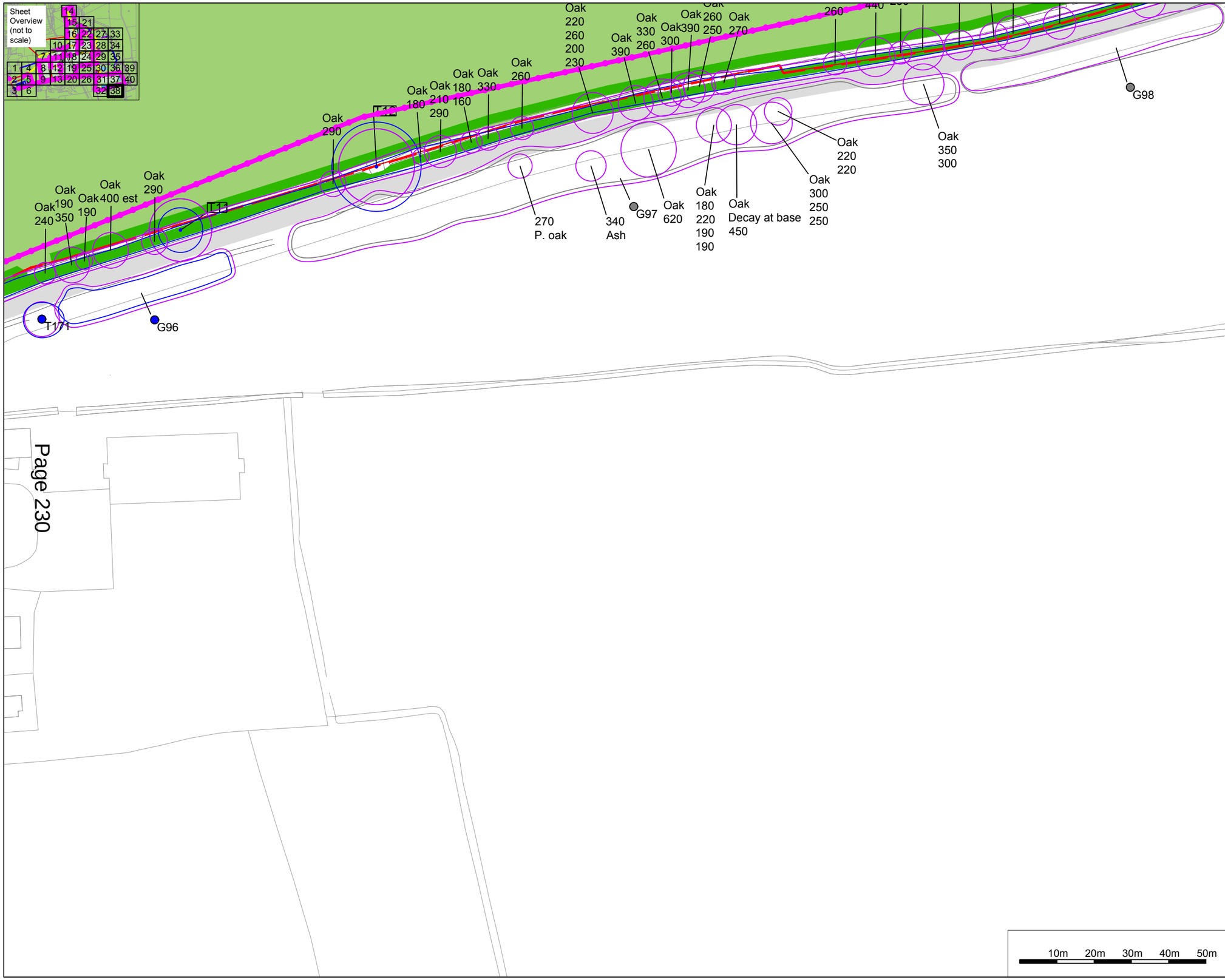
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 37 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

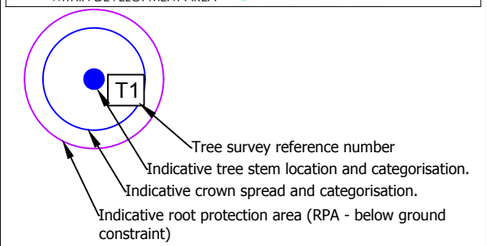


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A3 Drawing Sheet 38 of 40

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Drawing Number: CBA11656.02H TPP Rev. H

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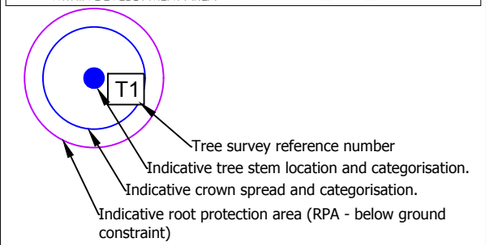


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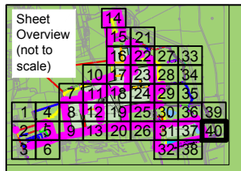
Drawing Title: Tree Protection Plan
A3 Drawing Sheet 39 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Sheet Overview (not to scale)



G24
T14
G12
G23
G11
T38
T37
G22
T36
G21
T13
Oak 300
Oak 400
G99

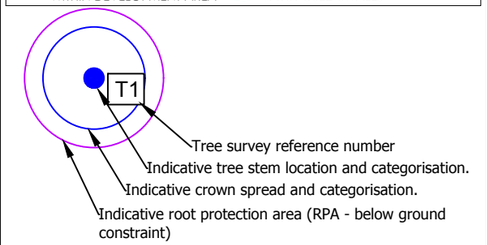
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Drawing Title: Tree Protection Plan
A3 Drawing Sheet 40 of 40

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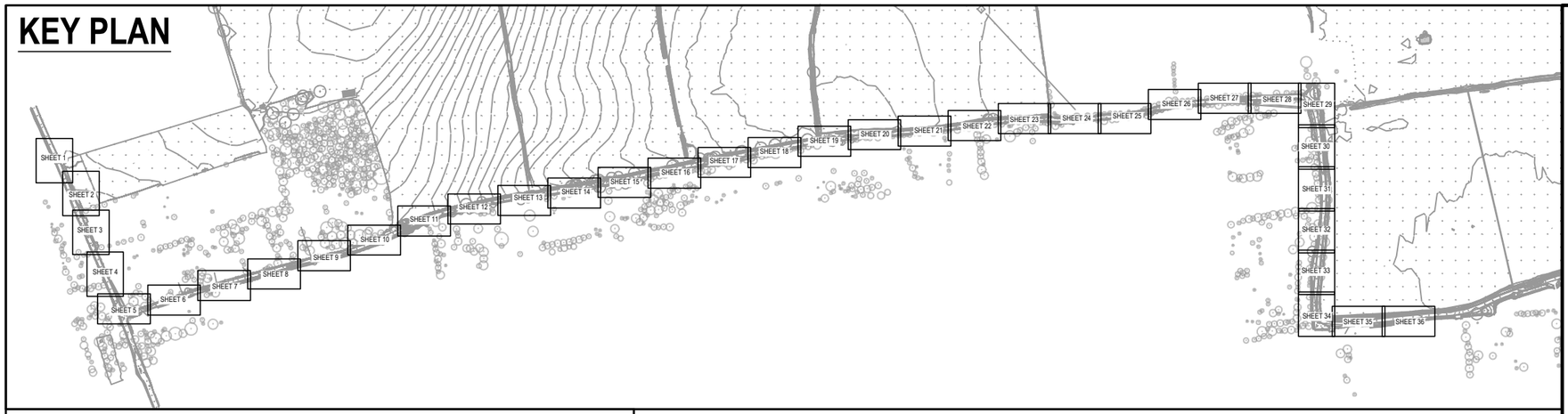
Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Appendix 5: Highway Drawings

Appendix 5a:
Fen Lane and Ockendon Road Drawings

KEY PLAN



GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

TO BE READ IN CONJUNCTION WITH:

1. TOPOGRAPHICAL SURVEY BASED ON SLR CONSULTING TOPOGRAPHICAL SURVEY DRAWING REF: 403.065936.00001.09.0_Havering_Topo_0325-A0L, DATED MARCH 2025
2. REFER TO CBA TREES ARBORCULTURAL CONSULTANCY REPORT FOR AGRICULTURAL IMPLICATIONS ASSESSMENT. REF:11656, DATED JAN 2026

DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

1. TO BE COORDINATED WITH ARBORICULTURALIST.
2. DESIGN SUBJECT TO CONFIRMATION FROM THE LOCAL PLANNING AUTHORITY
3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.

KEY

	DIAGRAM 1065 HEIGHT: 4.3m COLOUR: WHITE
	DIAGRAM 1022 HEIGHT: 2.8m COLOUR: WHITE
	DIAGRAM 1001: JUNCTION STOP LINE WIDTH: 300mm COLOUR: WHITE
	DIAGRAM 1009A: ENTRANCE LINE WIDTH: 100mm LINE: 600mm GAP: 300mm COLOUR: WHITE
	DIAGRAM 1012.1: CARRIAGEWAY EDGE WIDTH: 100mm COLOUR: WHITE
	DIAGRAM 1008: CARRIAGEWAY CENTERLINE WIDTH: 150mm LINE: 2000mm GAP: 4000mm COLOUR: WHITE
	DIAGRAM 1004: JUNCTION CENTRELINE WIDTH: 150mm LINE: 4000mm GAP: 2000mm COLOUR: WHITE
	125x150mm PCC BULLNOSED (BN) KERB (0mm UPSTAND).
	CARRIAGEWAY WIDENING FULL DEPTH CARRIAGEWAY CONSTRUCTION.
	EXISTING CARRIAGEWAY RE-SURFACING WEARING COURSE REPLACEMENT.
	PROPOSED FOOTPATH FULL DEPTH FOOTPATH CONSTRUCTION.
	PROPOSED SOFT LANDSCAPING EMBANKMENT
	LDO BOUNDARY

Rev:	Description:	Date:	By:	Chkd:
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS OVERVIEW

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

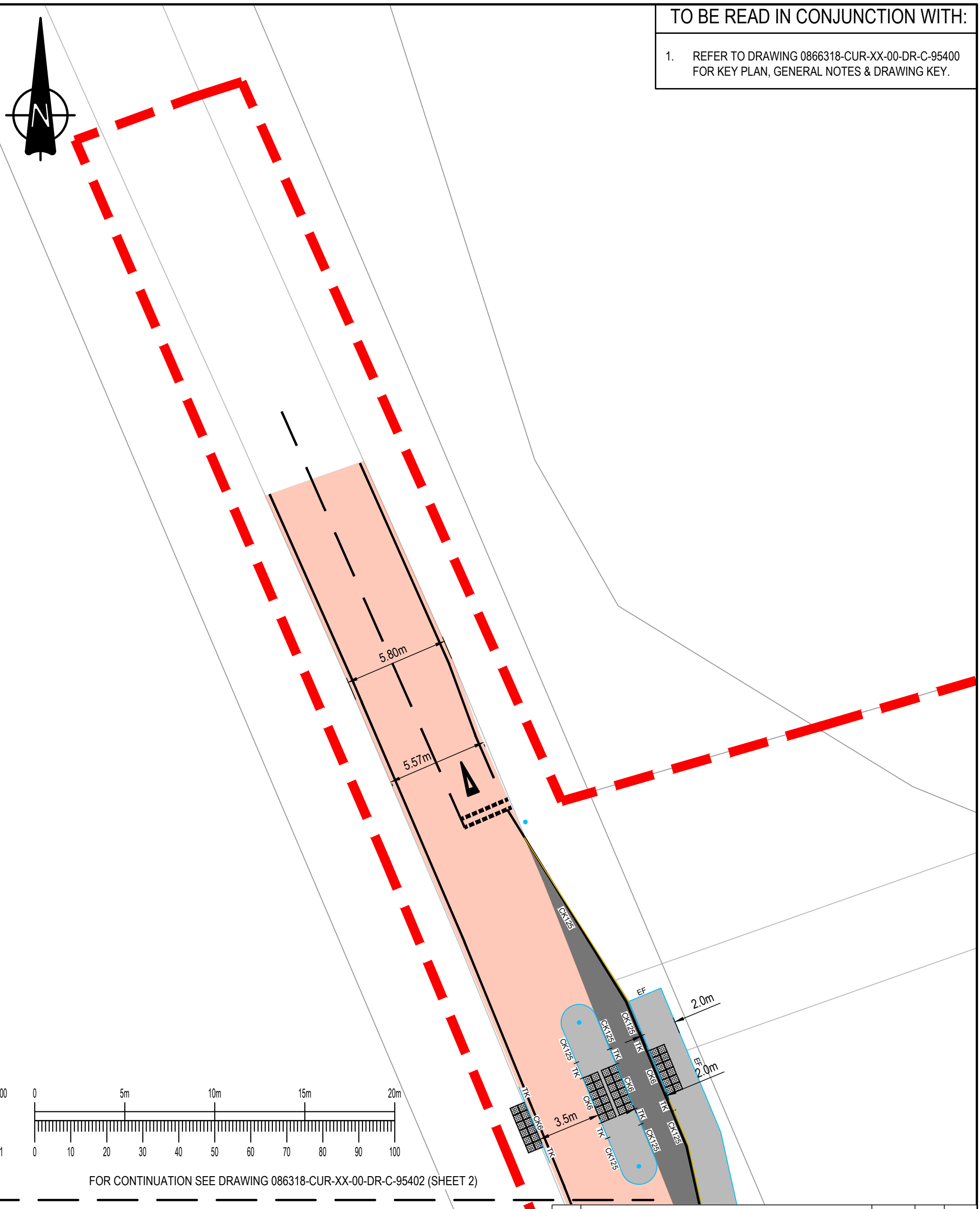
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Revision P02

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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY WORKS ON OCKENDON ROAD (SHEET 1 of 36)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

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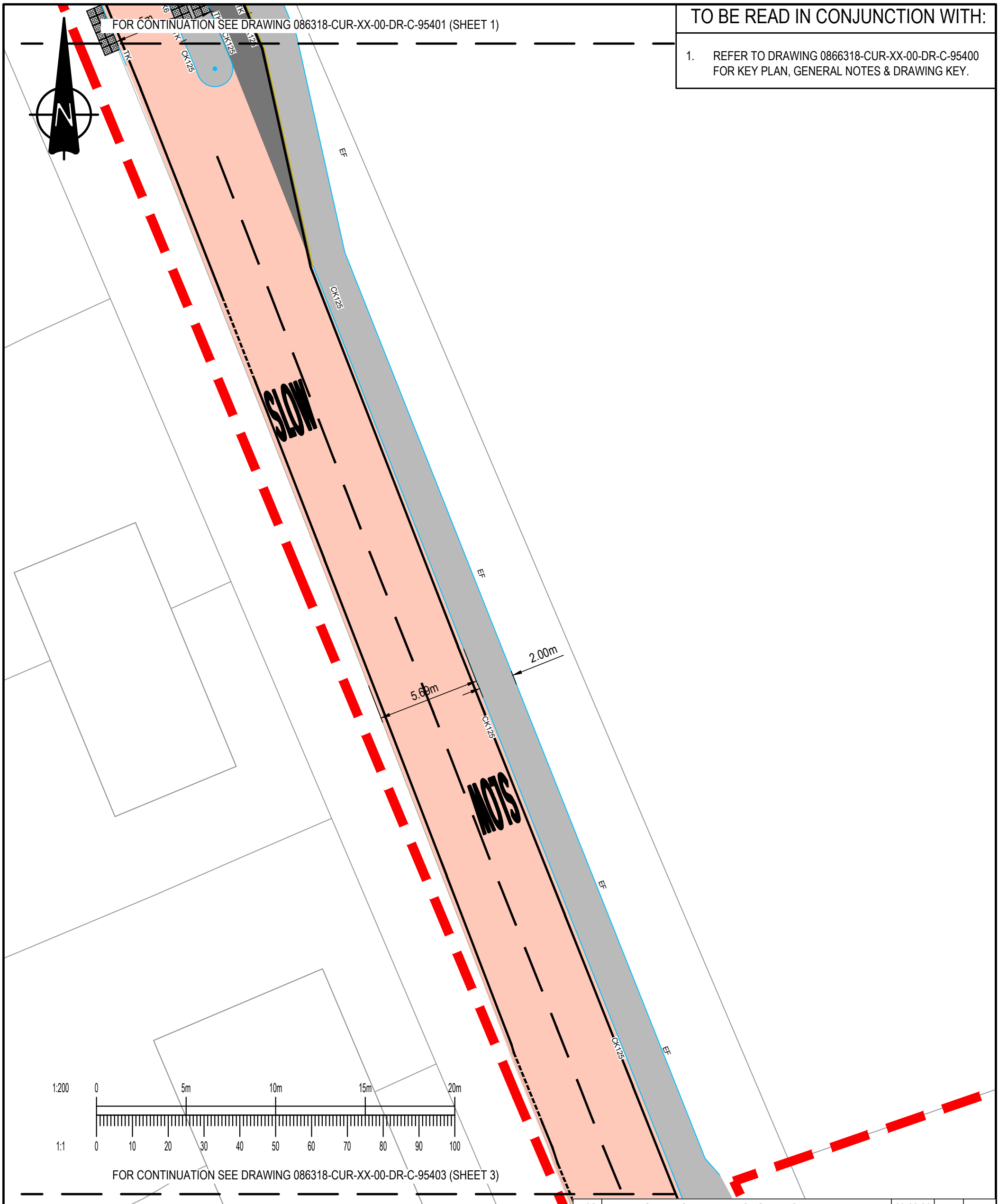
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Revision P02

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FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95401 (SHEET 1)



FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95403 (SHEET 3)

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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY WORKS ON OCKENDON ROAD (SHEET 2 of 36)

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95402

Revision: P02

TO BE READ IN CONJUNCTION WITH:

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FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95402 (SHEET 2)

N

VEHICLE CROSSOVER

CK125 TK

CK6

5.78m

TK CK125

SLOW

MOTS

CK125

CK125 TK

CK6

5.79m

VEHICLE CROSSOVER

TK CK125

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95404 (SHEET 4)

Rev:	Description:	Date:	By:	Chkd:
P03	LABELS ADDED	23.02.26	HWH	TH
P02	EXTENTS ADJUSTED AND TOPO REMOVED	23.02.26	HWH	TH
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Status: S2

Drg Title: HIGHWAY WORKS ON OCKENDON ROAD (SHEET 3 of 36)

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:200

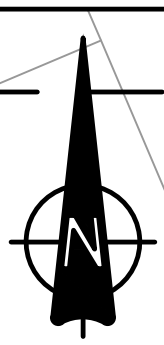
Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95403

Revision: P03

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95403 (SHEET 3)

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.



SLOW

BUS STOP

5.83m

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95405 (SHEET 5)

Rev:	Description:	Date:	By:	Chkd:
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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON OCKENDON ROAD (SHEET 4 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

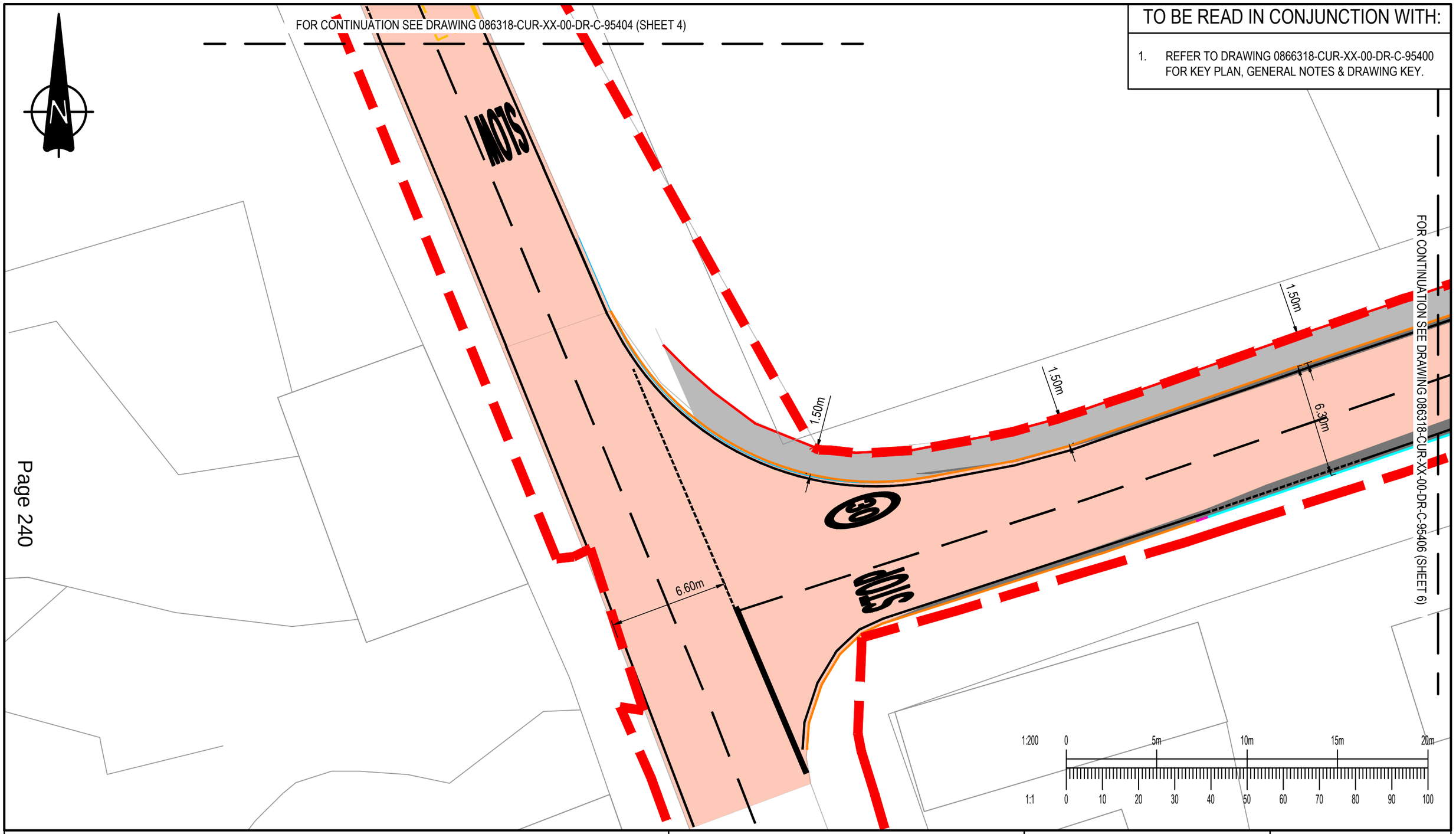
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Revision P02

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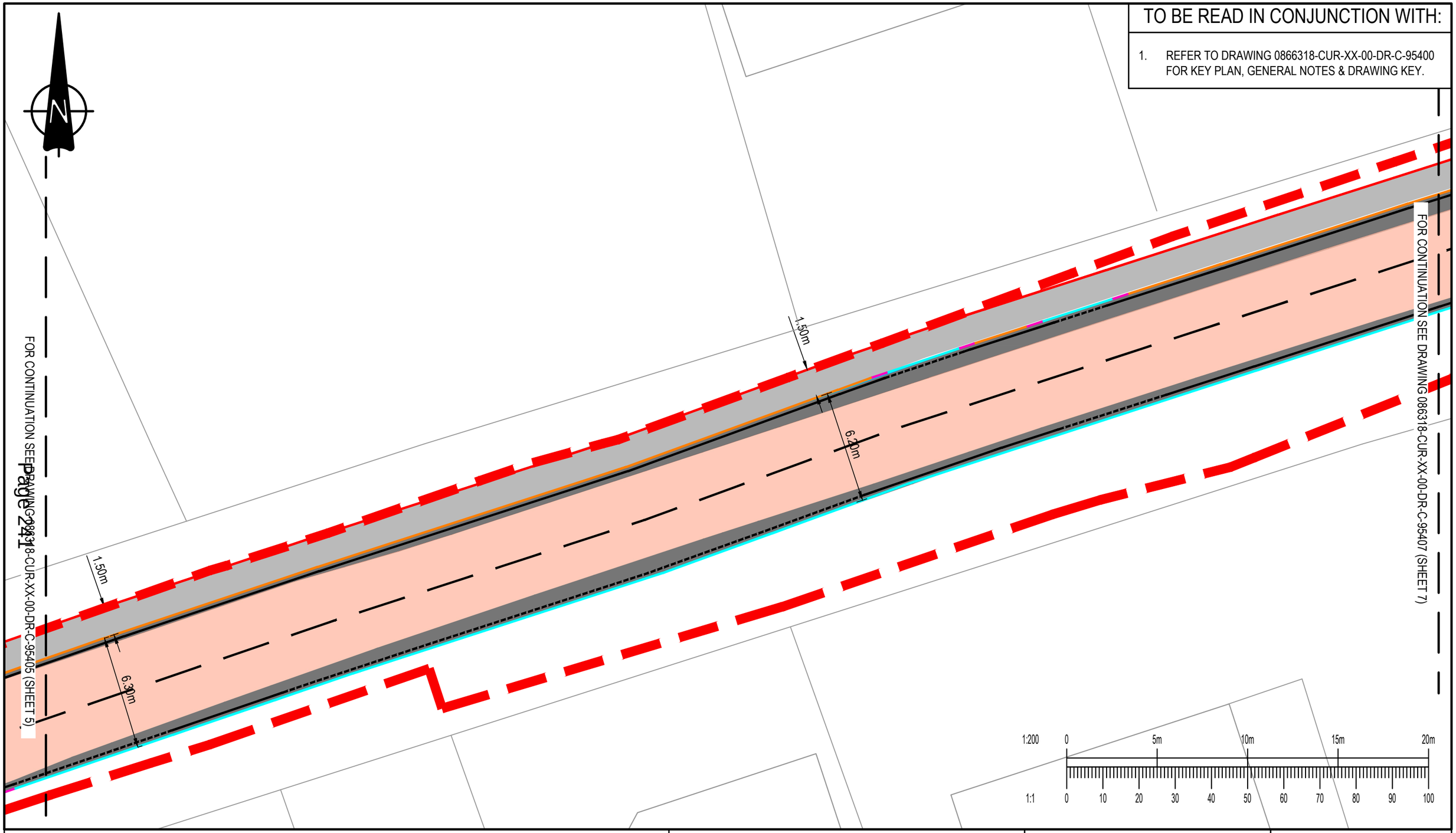
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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON OCKENDON ROAD (SHEET 5 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200
Project No - Originator - Function - Spatial - Form - Discipline - Number	086318 - CUR - XX - 00 - DR - C - 95405
Revision	P02

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.



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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 6 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number

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Revision P02

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

FOOTWAY WIDTH TO BE A MINIMUM 1.2m IF 1.5m IS DEMONSTRATED NOT TO BE FEASIBLE WITHIN THIS AREA

1.50m

6.20m

1.50m

6.20m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95406 (SHEET 6)

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95408 (SHEET 8)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P03	FOOTWAY WIDTH UPDATED	23.02.26	HWH	TH
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 7 of 36)

Status: S2

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Revision P03

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

FOOTWAY WIDTH TO BE A MINIMUM 1.2m IF 1.5m IS DEMONSTRATED NOT TO BE FEASIBLE WITHIN THIS AREA

1.50m
6.20m
1.50m
6.20m
1.50m
6.20m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95407 (SHEET 7)

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95409 (SHEET 9)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P03	FOOTWAY WIDTH UPDATED	23.02.26	HWH	TH
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 8 of 36)

Status: S2

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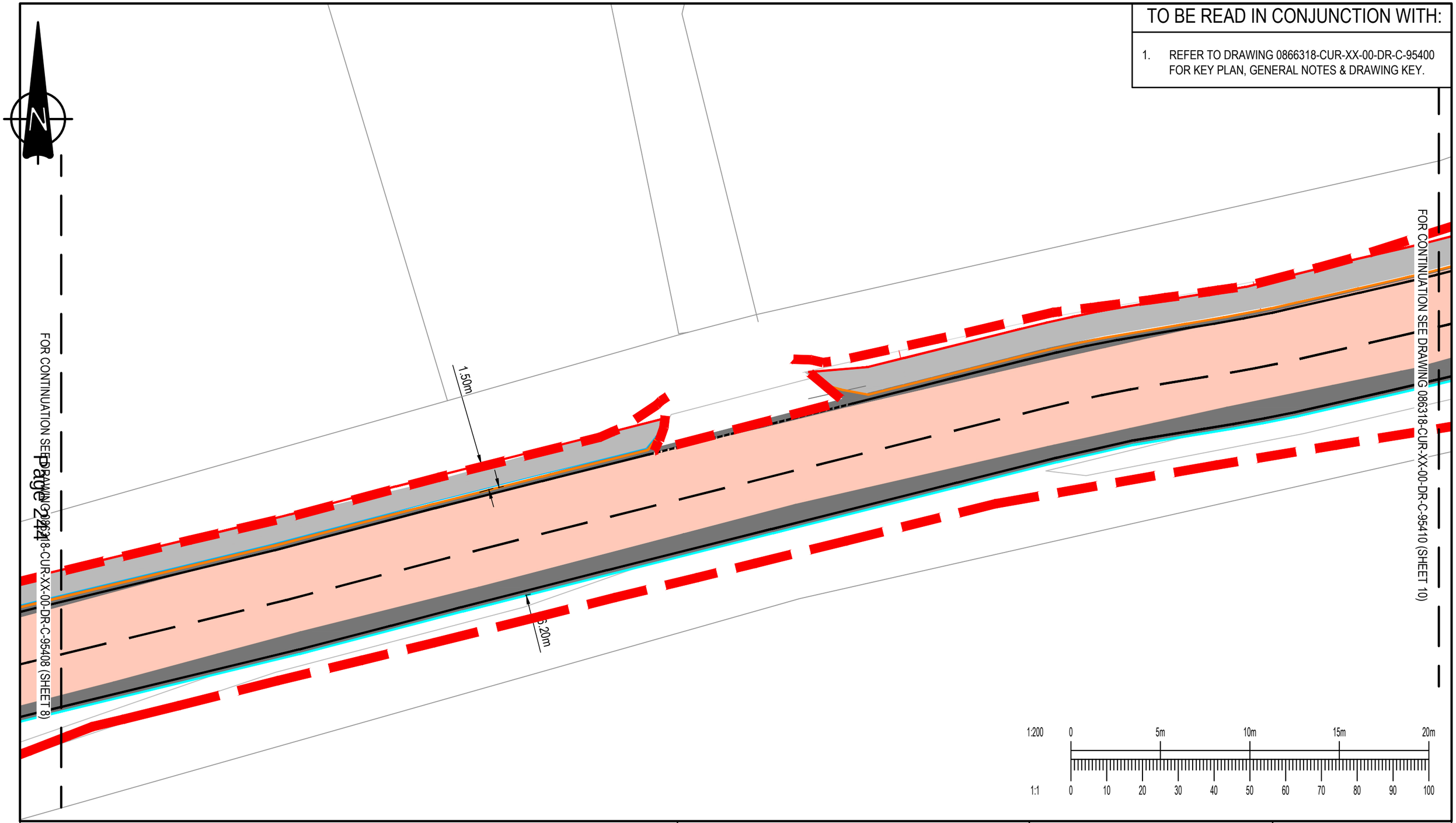
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Revision P03

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 9 of 36)

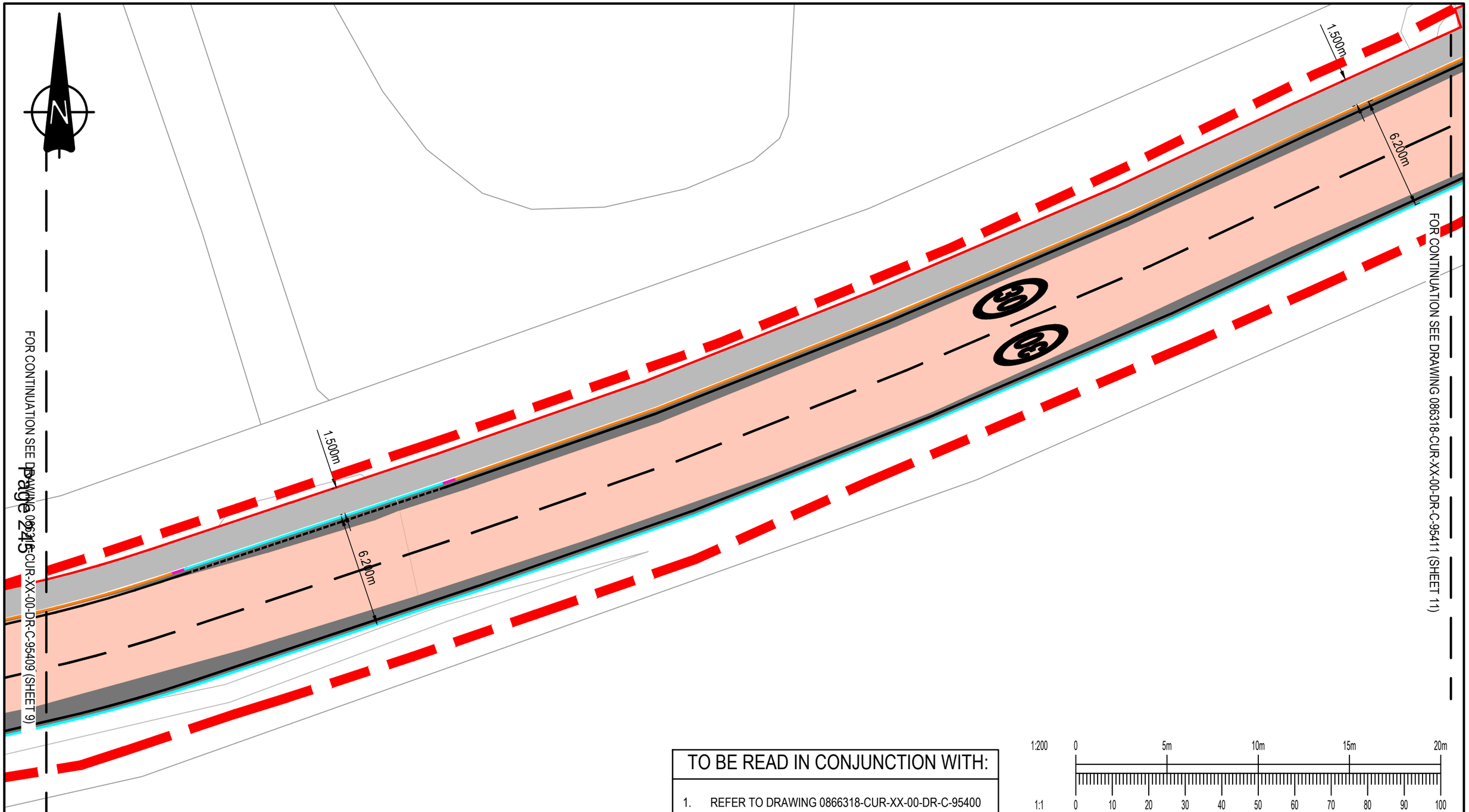
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1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 10 of 36)

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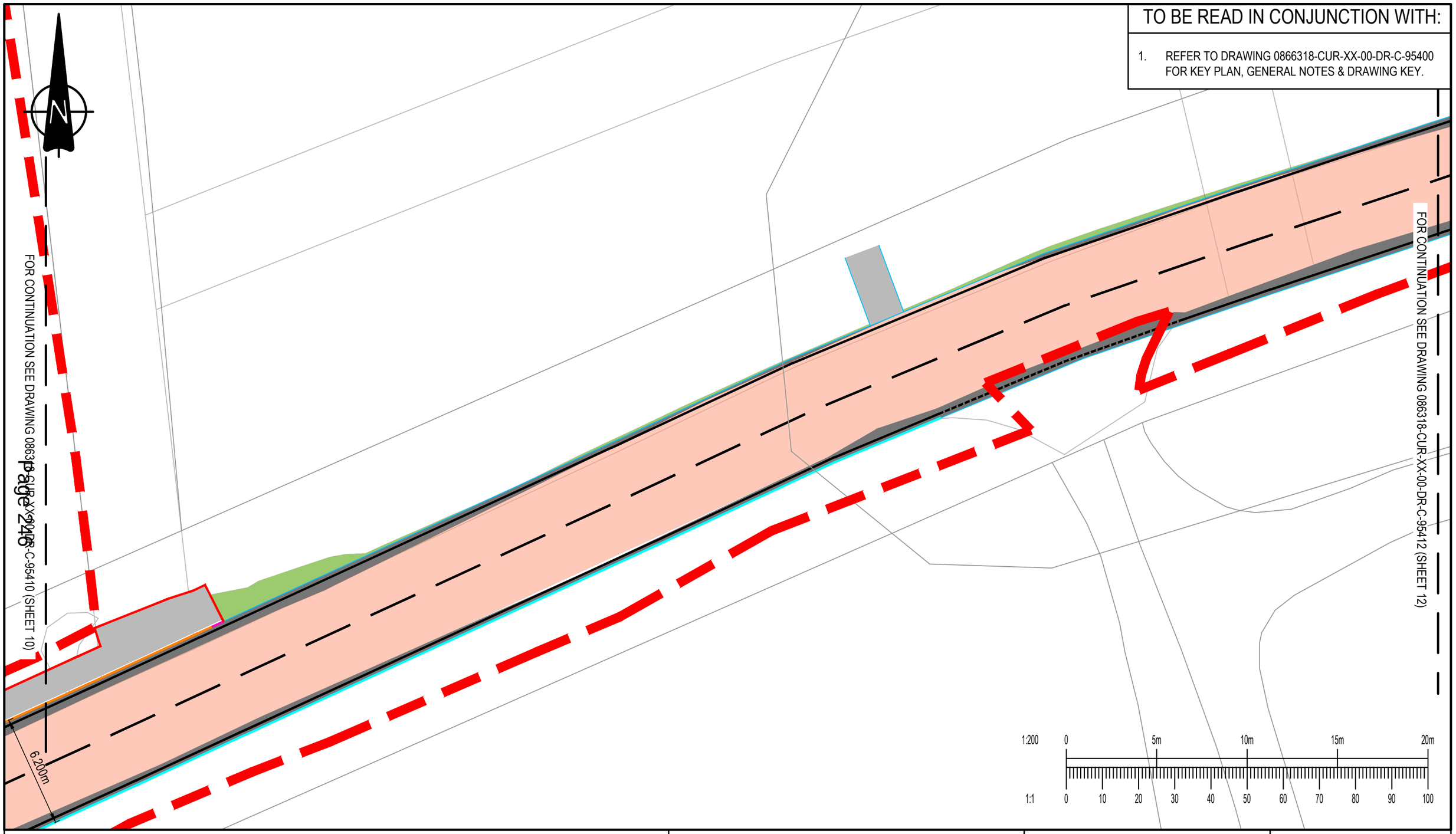
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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 11 of 34)

Status: S2

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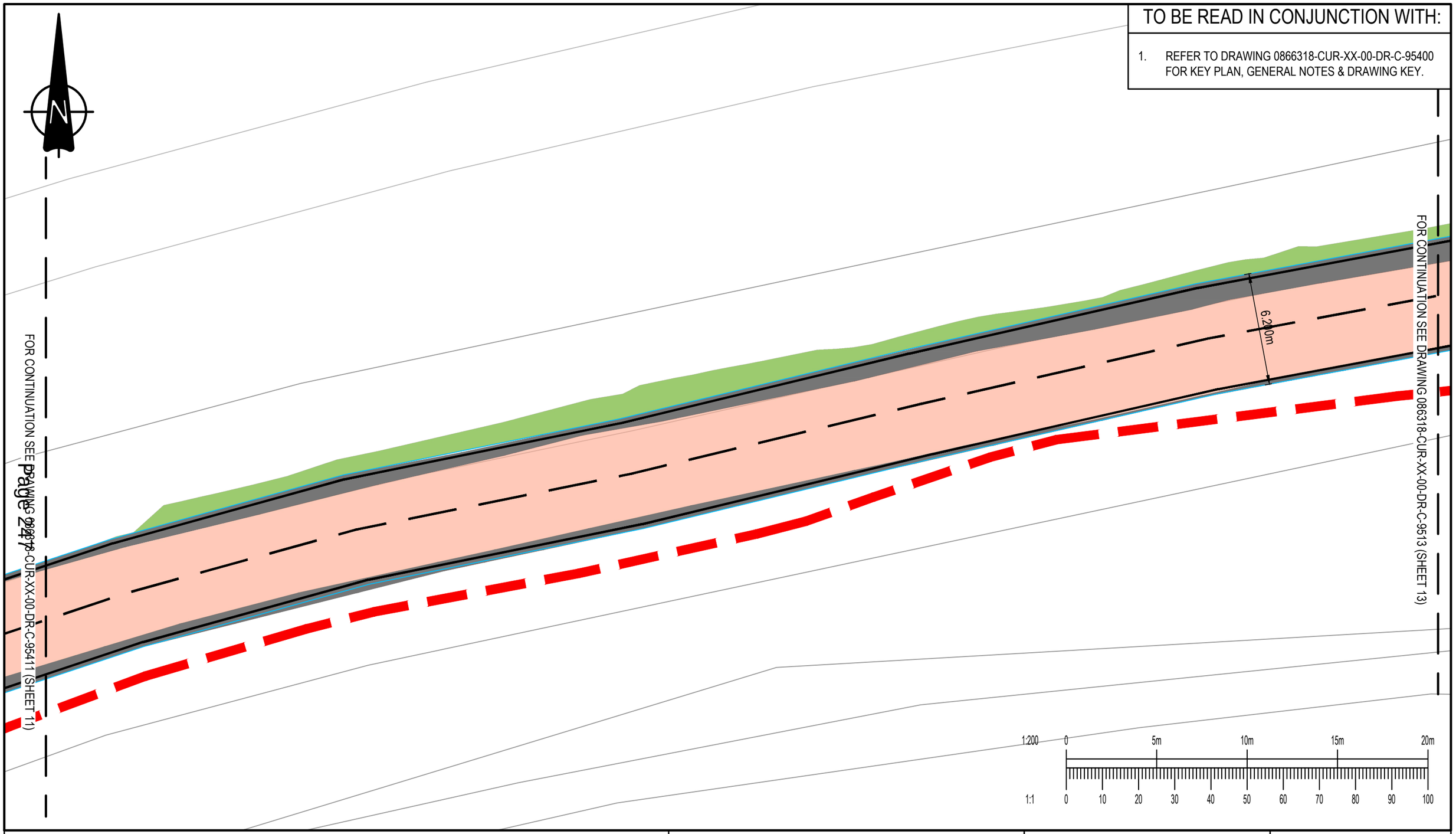
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 12 of 36)

Status: S2

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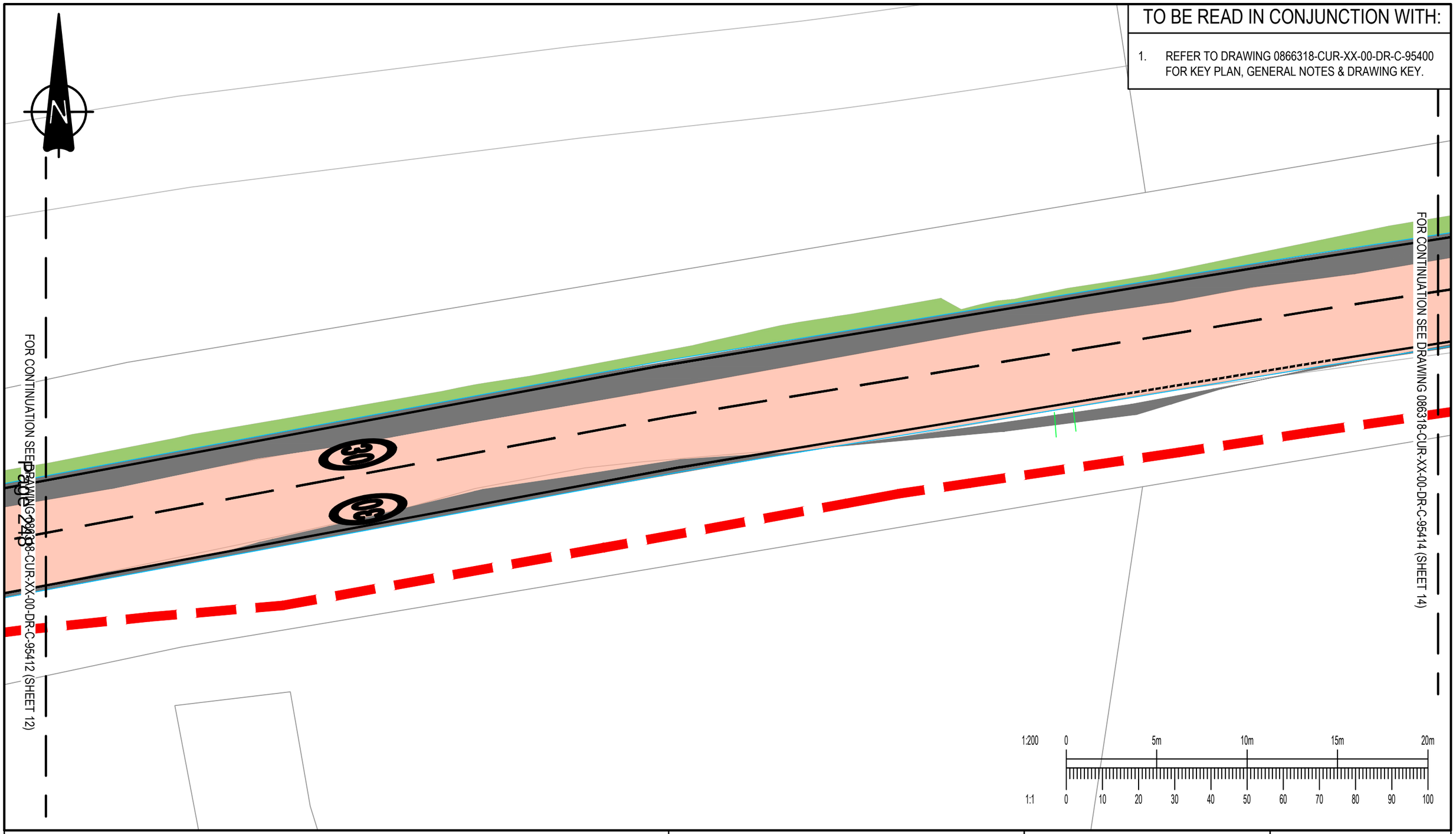
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Revision P02

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 13 of 36)

Status: S2

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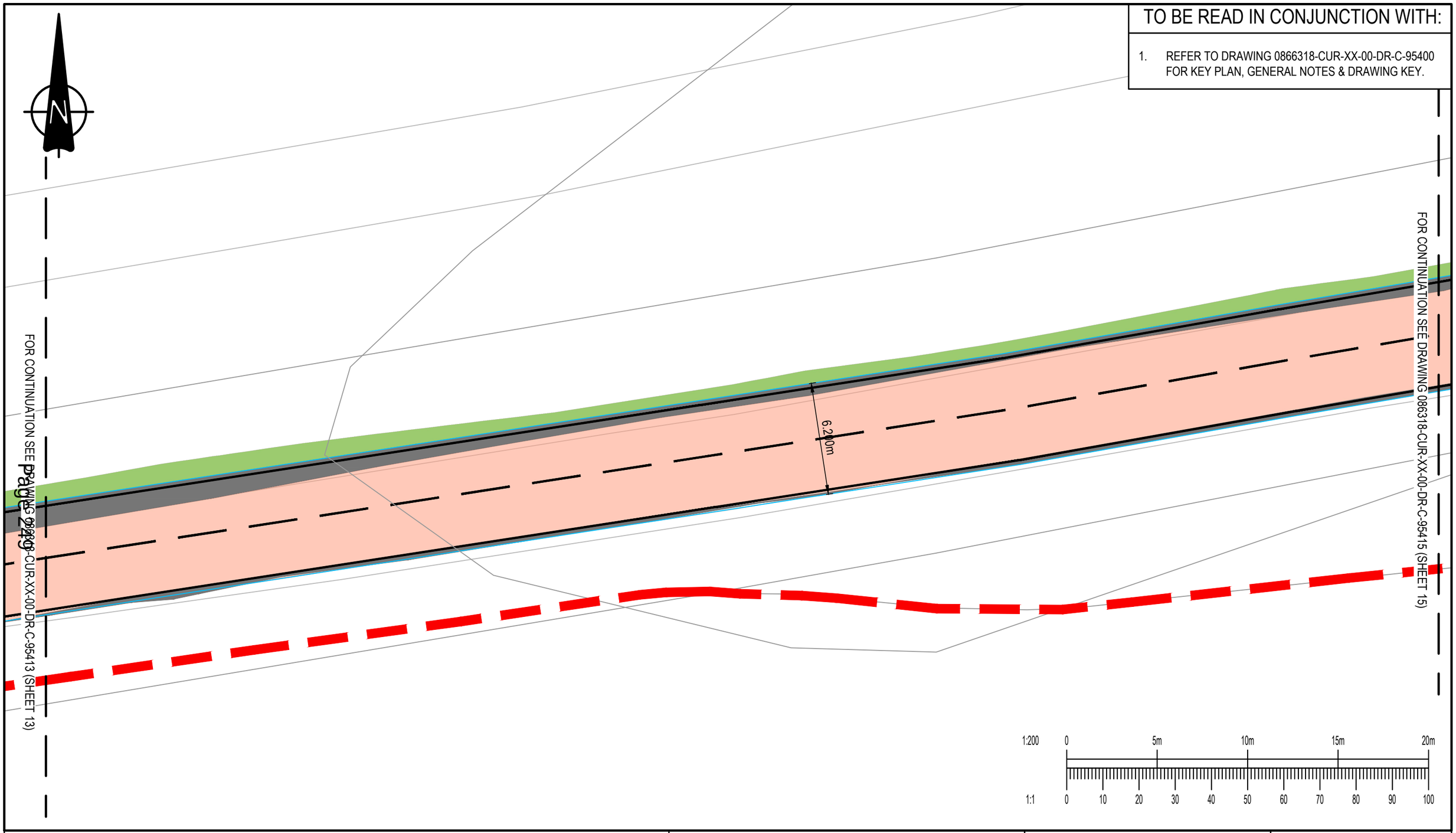
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Revision P02

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 14 of 36)

Status: S2

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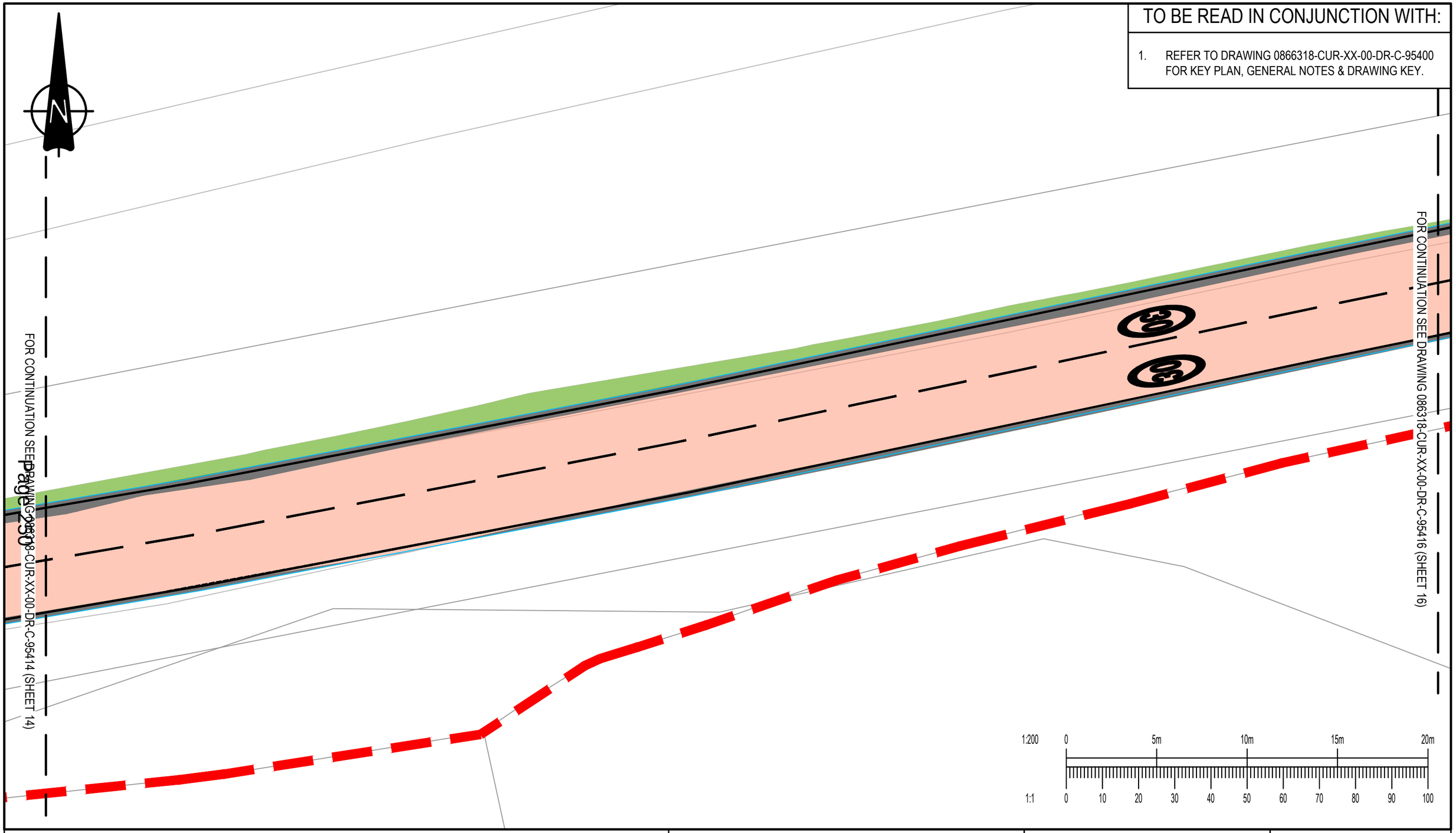
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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 15 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95415

Revision P02

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

WESTERN ACCESS

STOP

6.200m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95415 (SHEET 15)

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95417 (SHEET 17)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 16 of 36)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

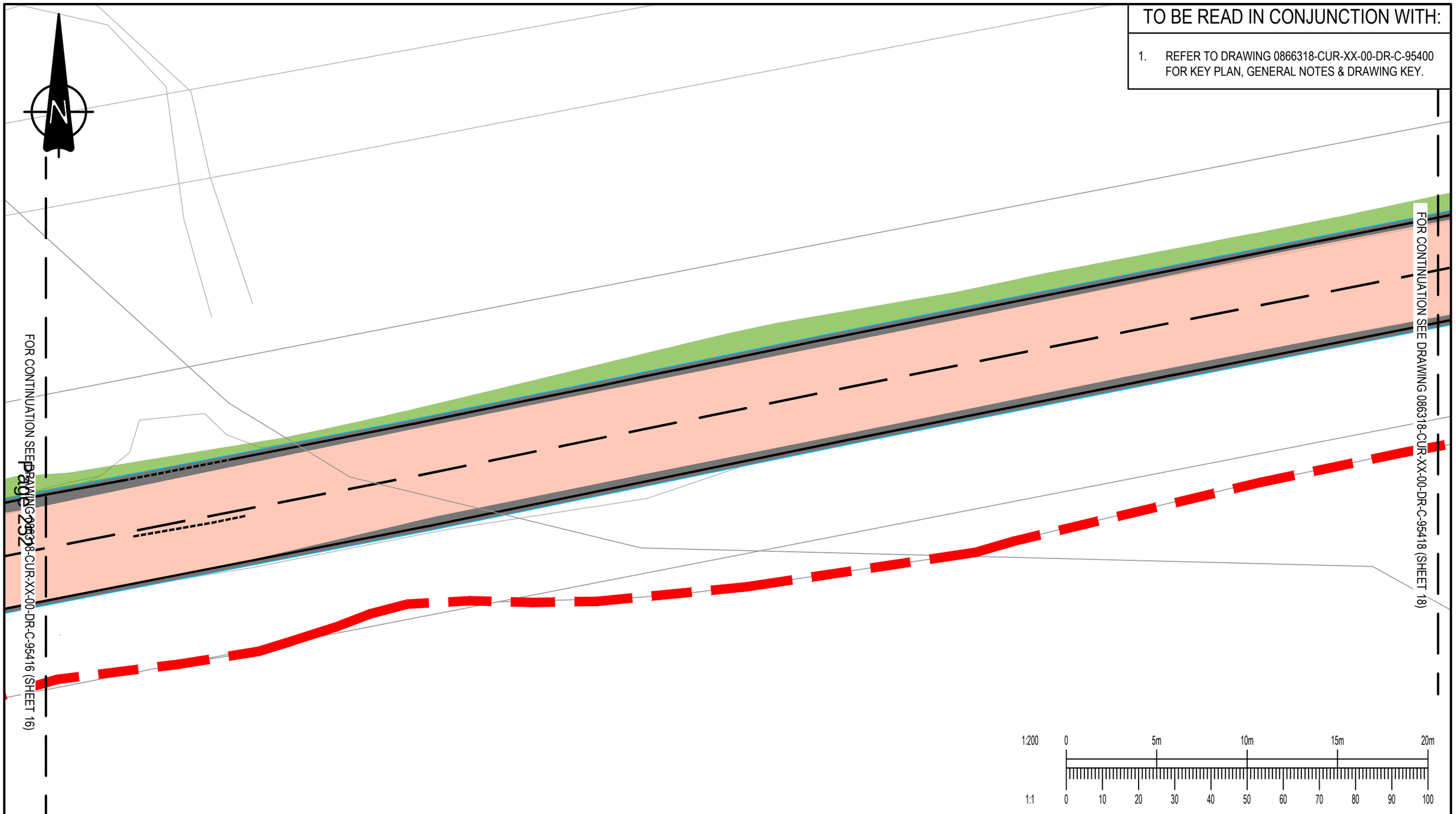
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95416

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 17 of 34)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

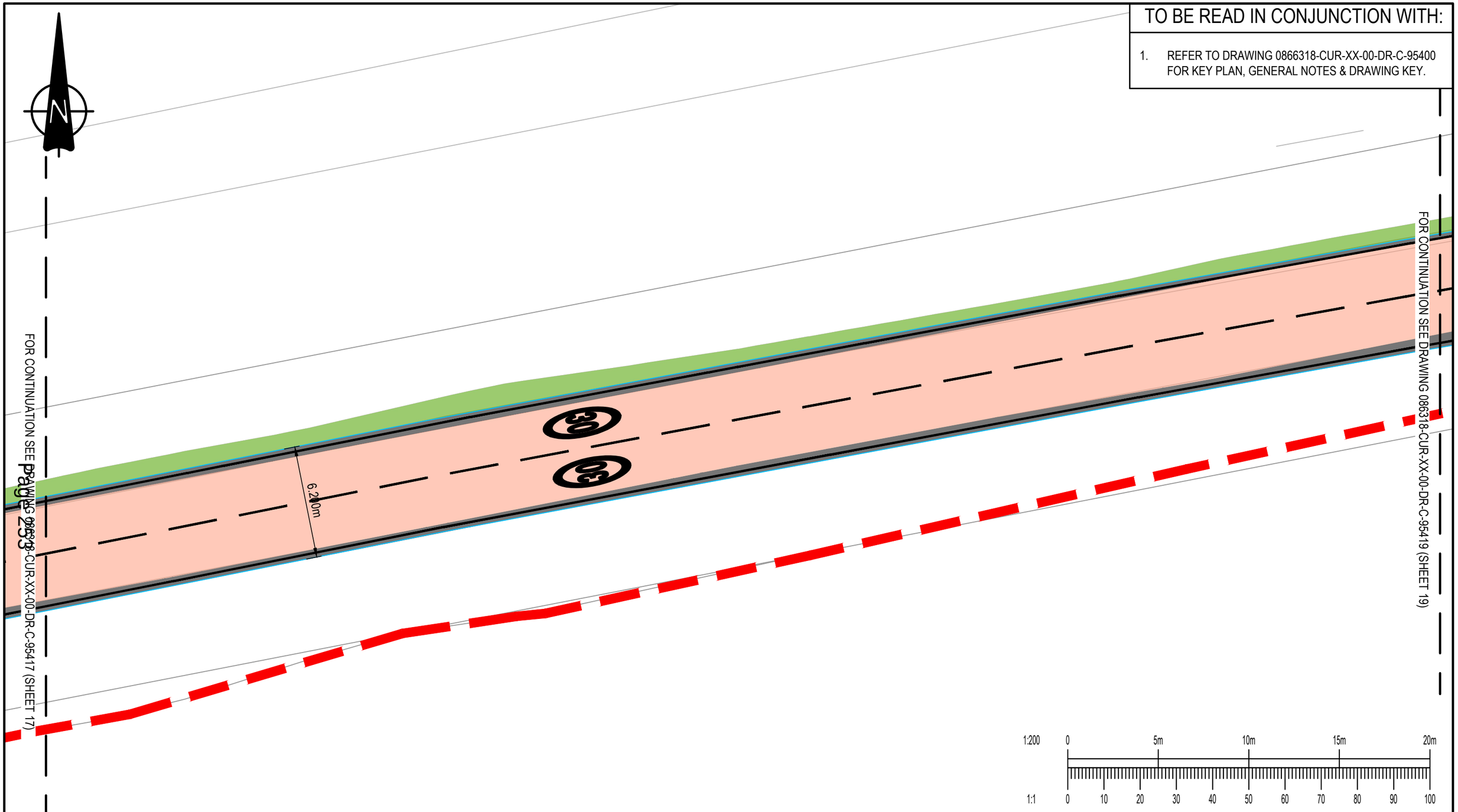
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95417

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 18 of 36)

Status: S2

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:200

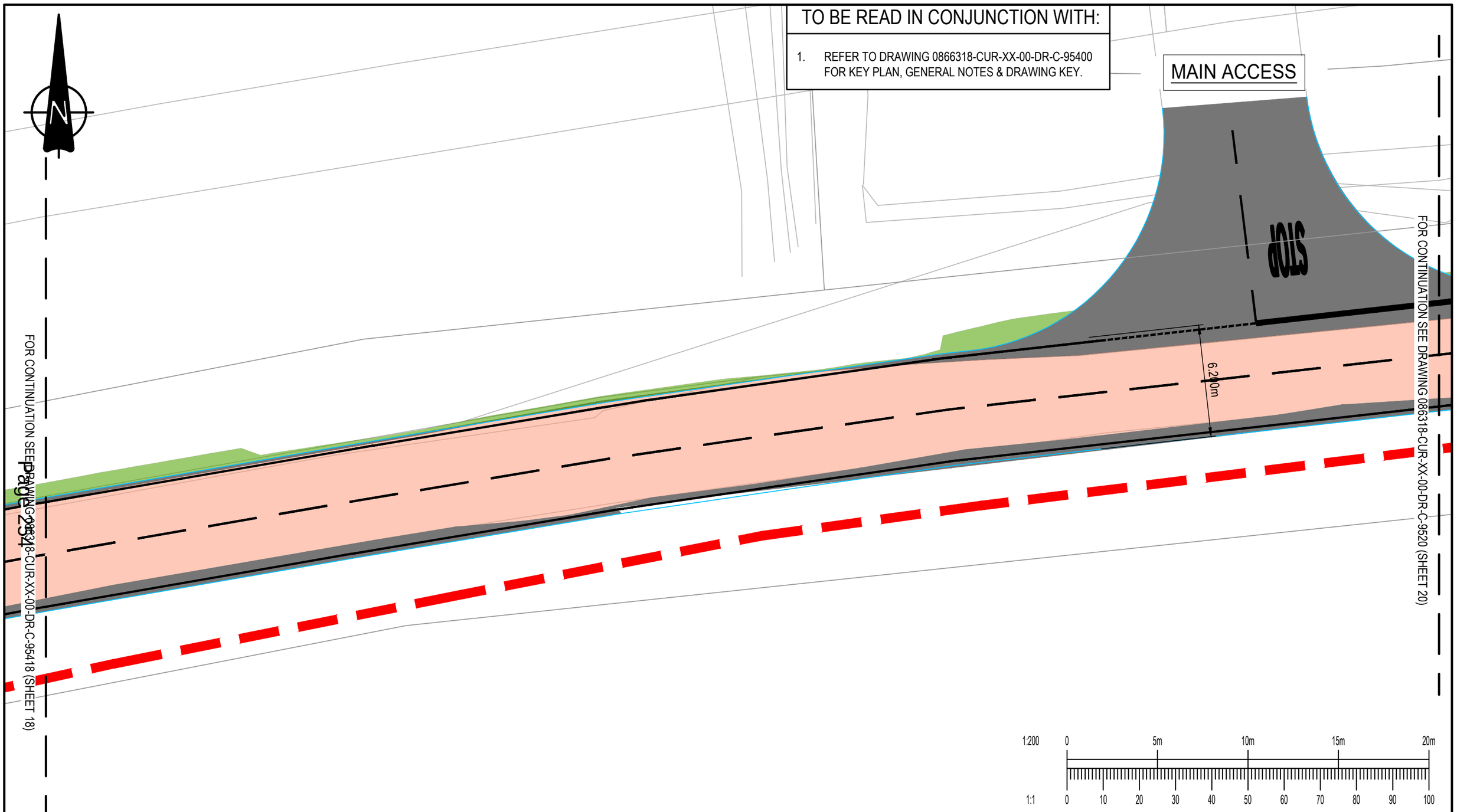
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95418

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 19 of 36)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

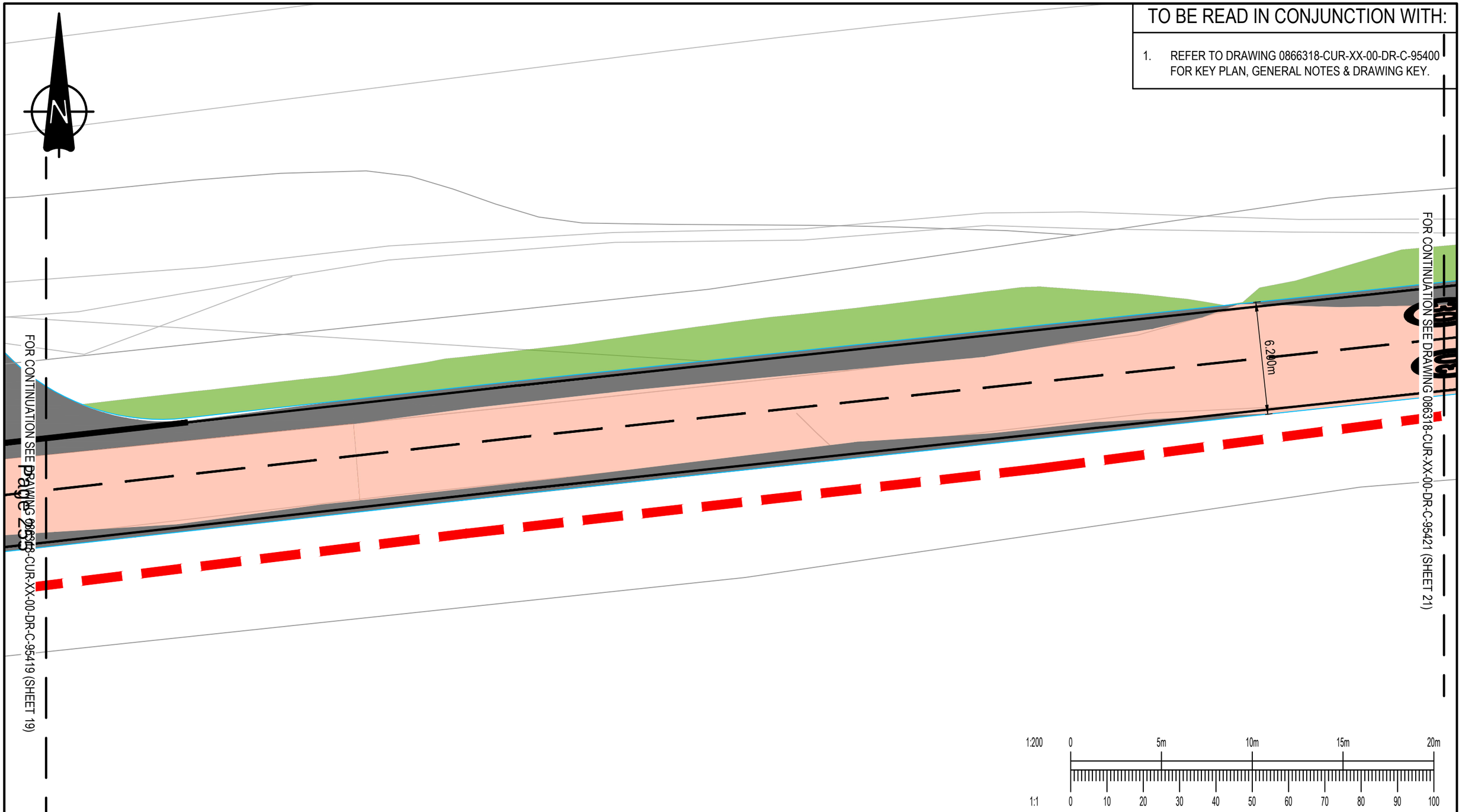
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95419

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 20 of 36)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

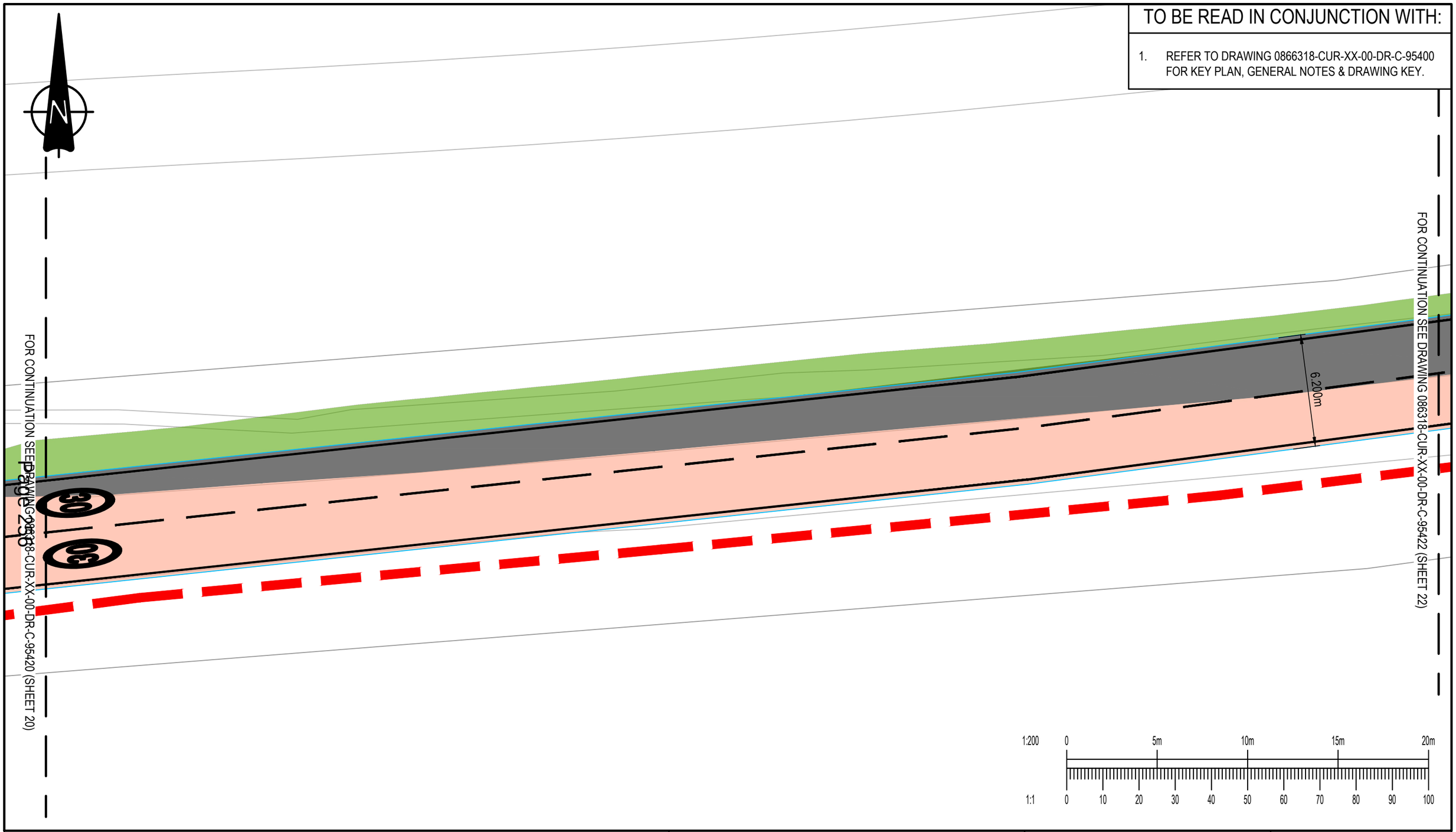
Project No - Originator - Function - Spatial - Form - Discipline - Number

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 21 of 36)

Status: S2

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Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

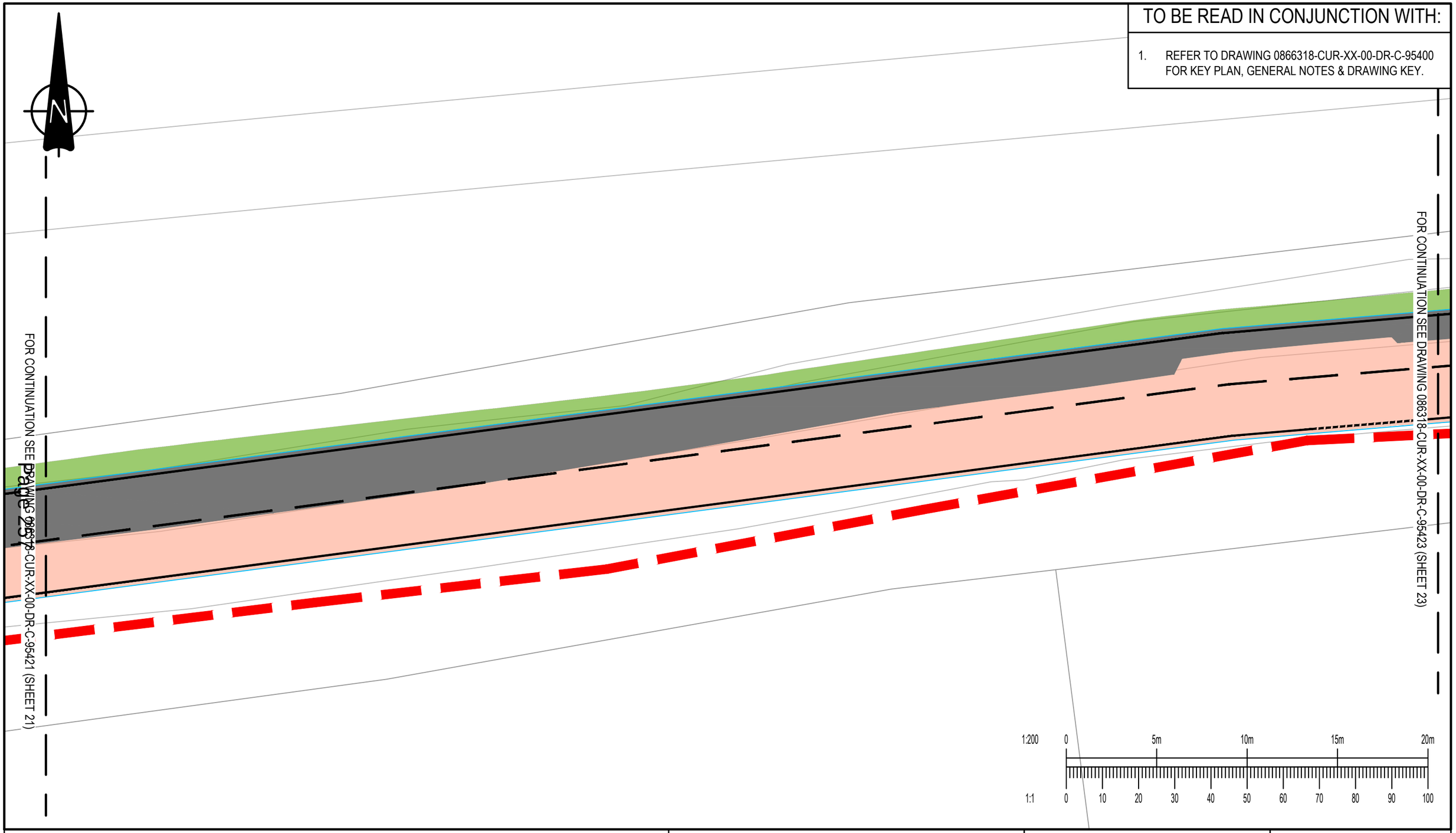
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 22 of 36)

Status: S2

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Designed By NMH | Date 17.02.26

Scales @ A3 1:200

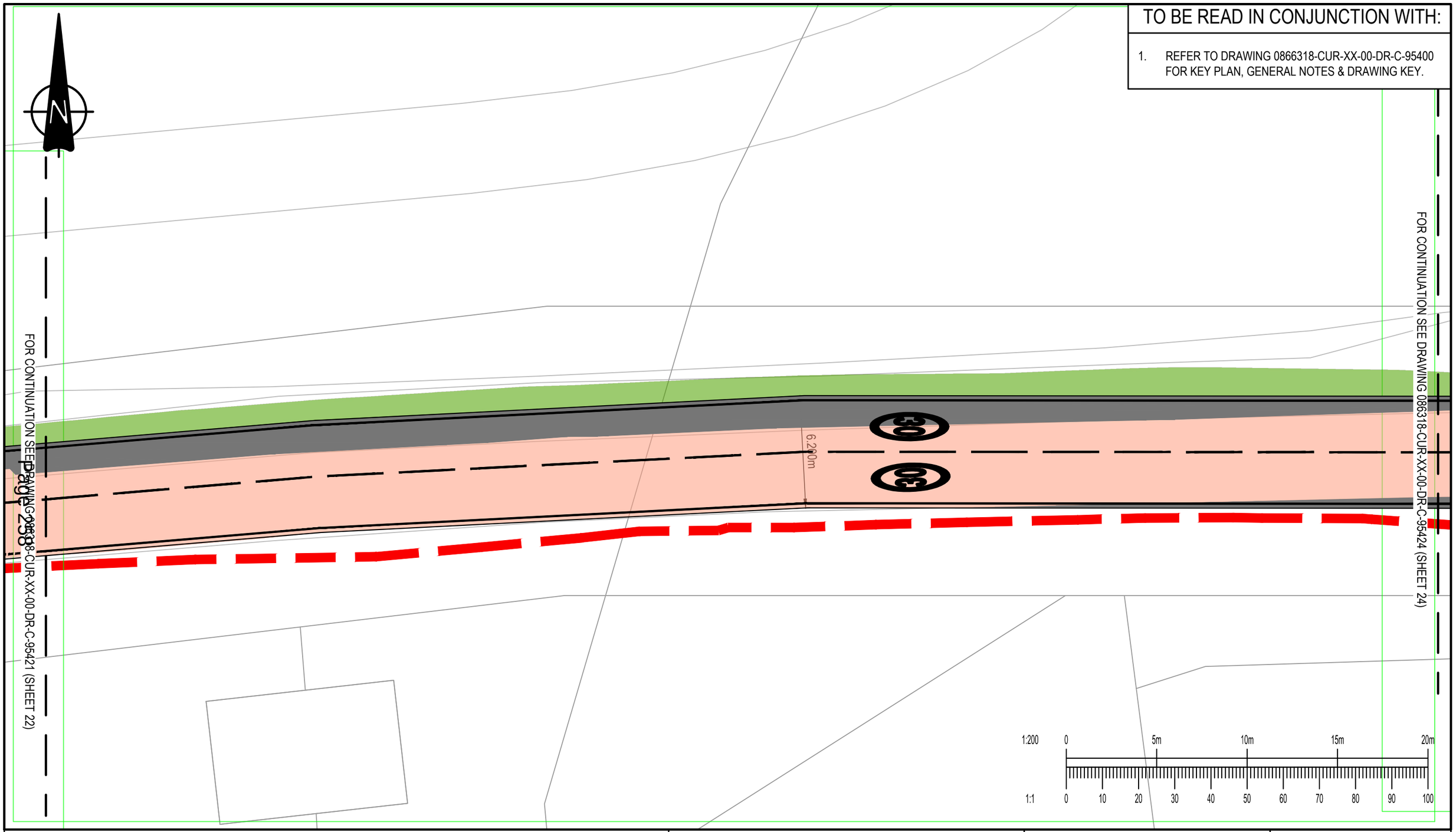
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95422

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 23 of 36)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

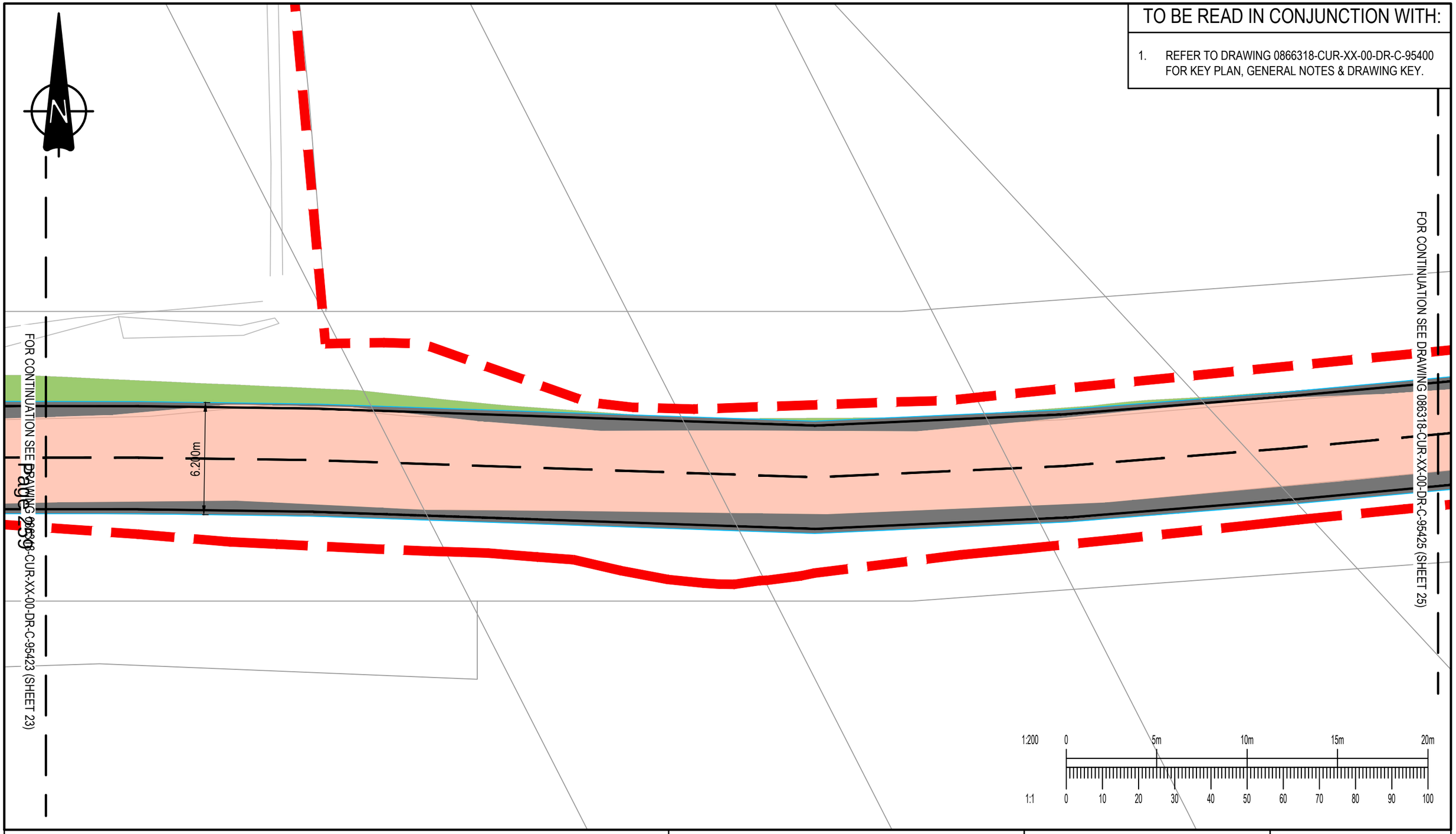
Project No - Originator - Function - Spatial - Form - Discipline - Number

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Revision P02

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 24 of 36)

Status: S2

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Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

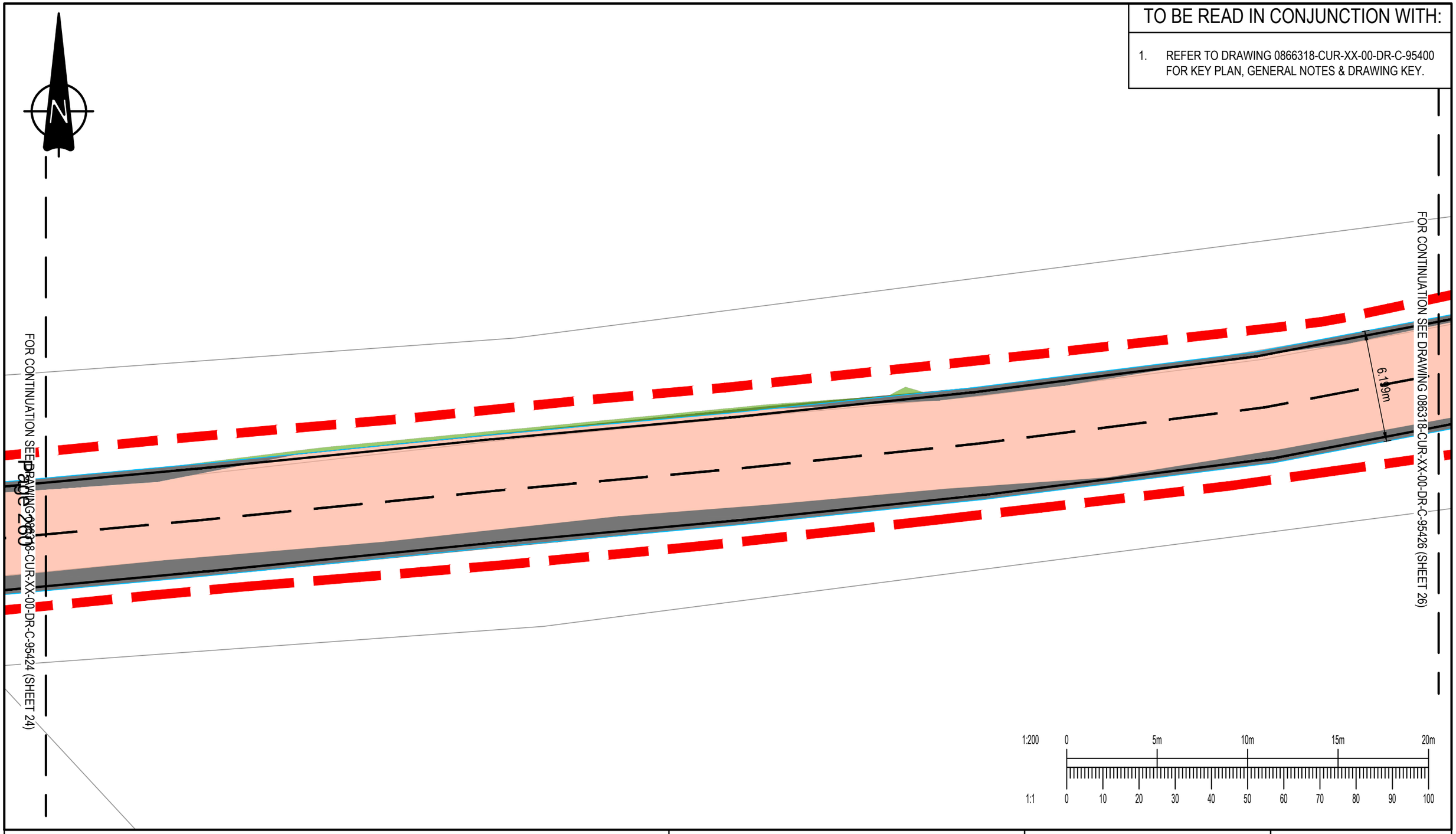
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95424

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 25 of 36)

Status: S2

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Designed By	NMH	Date	17.02.26
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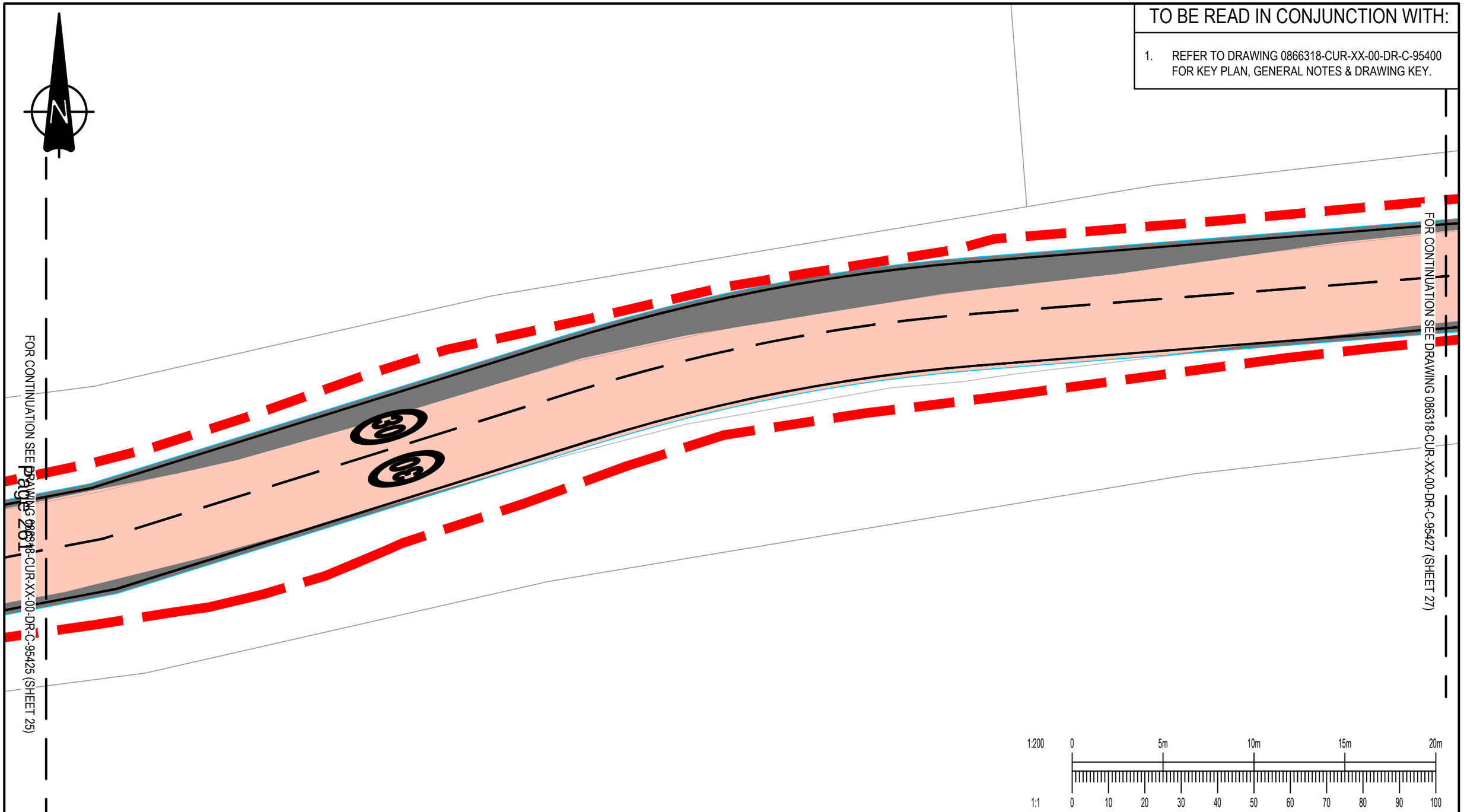
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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 26 of 36)

Status: S2

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Designed By	NMH	Date	17.02.26
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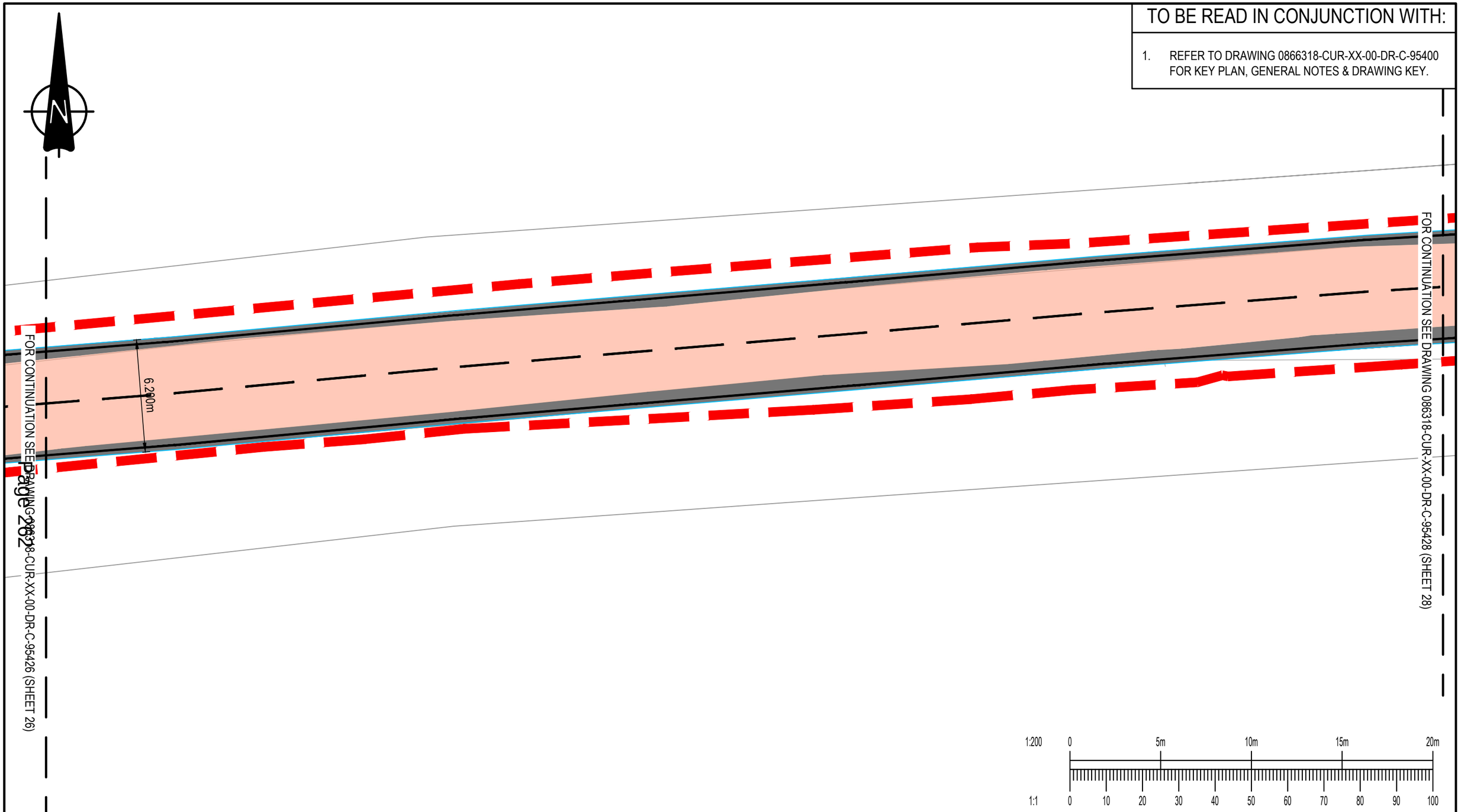
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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 27 of 36)

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

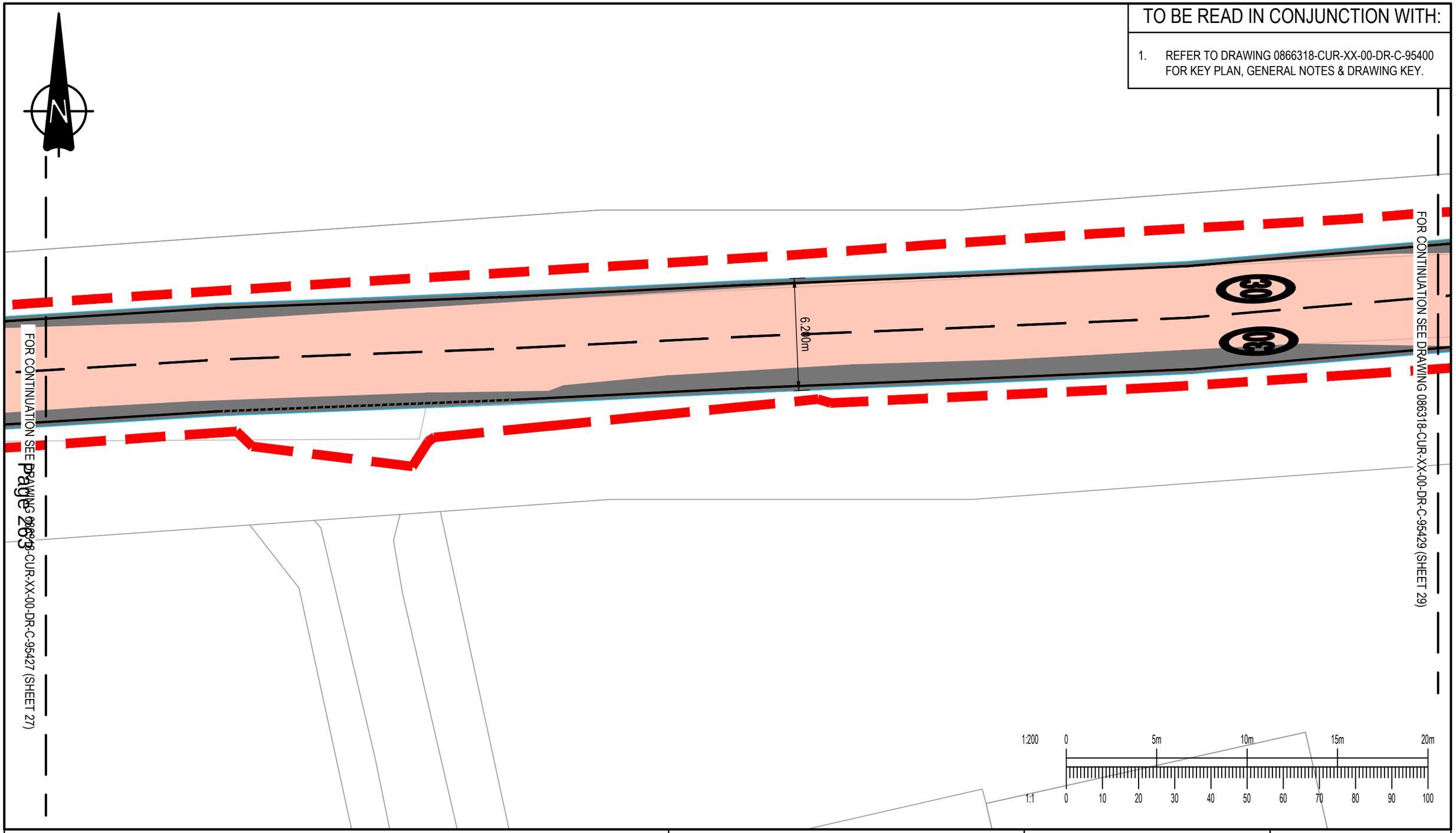
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Revision P02

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Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 28 of 36)

Status: S2

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Scales @ A3	1:200		

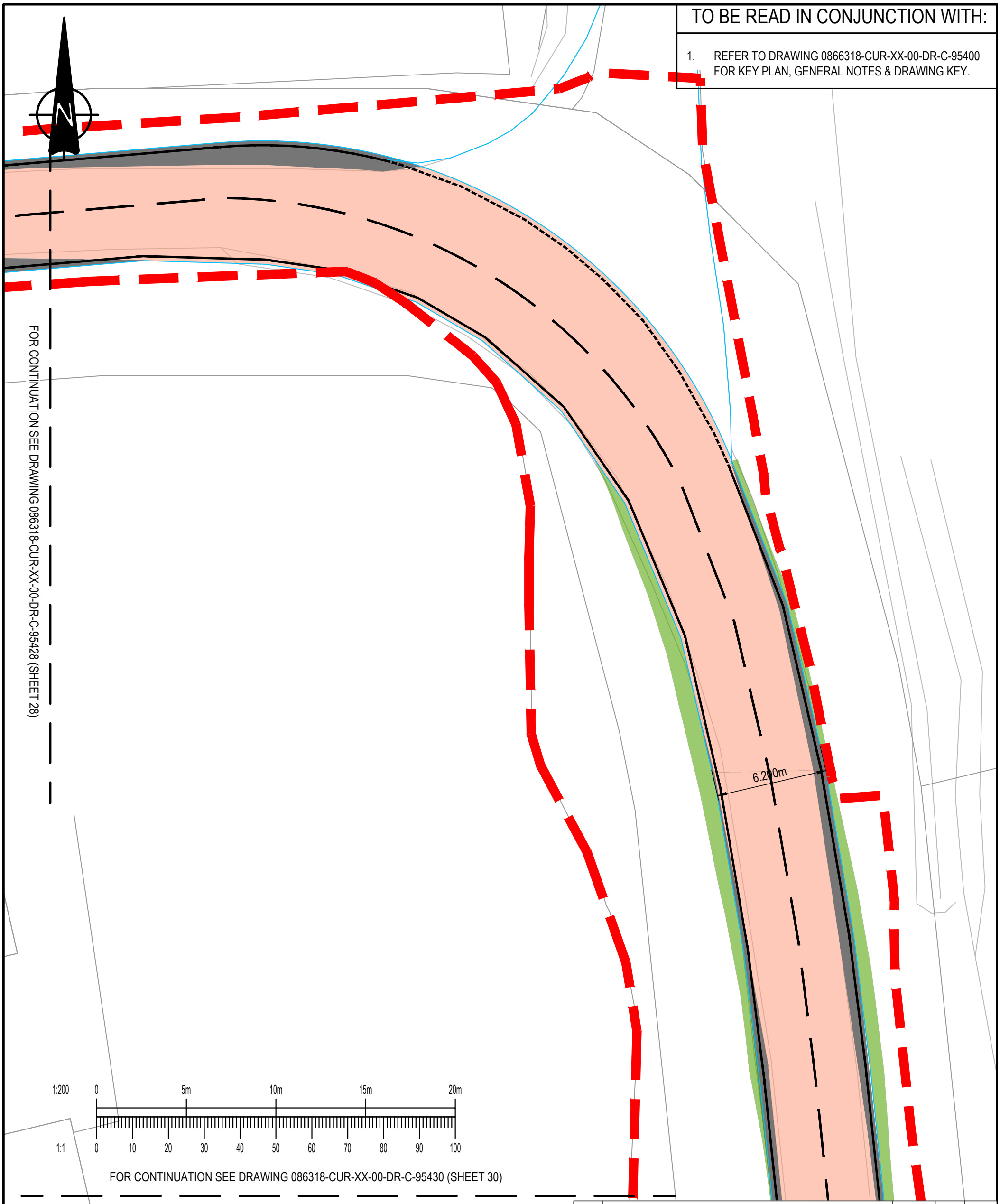
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086318 - CUR - XX - 00 - DR - C - 95428

Revision P02

TO BE READ IN CONJUNCTION WITH:

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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 29 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

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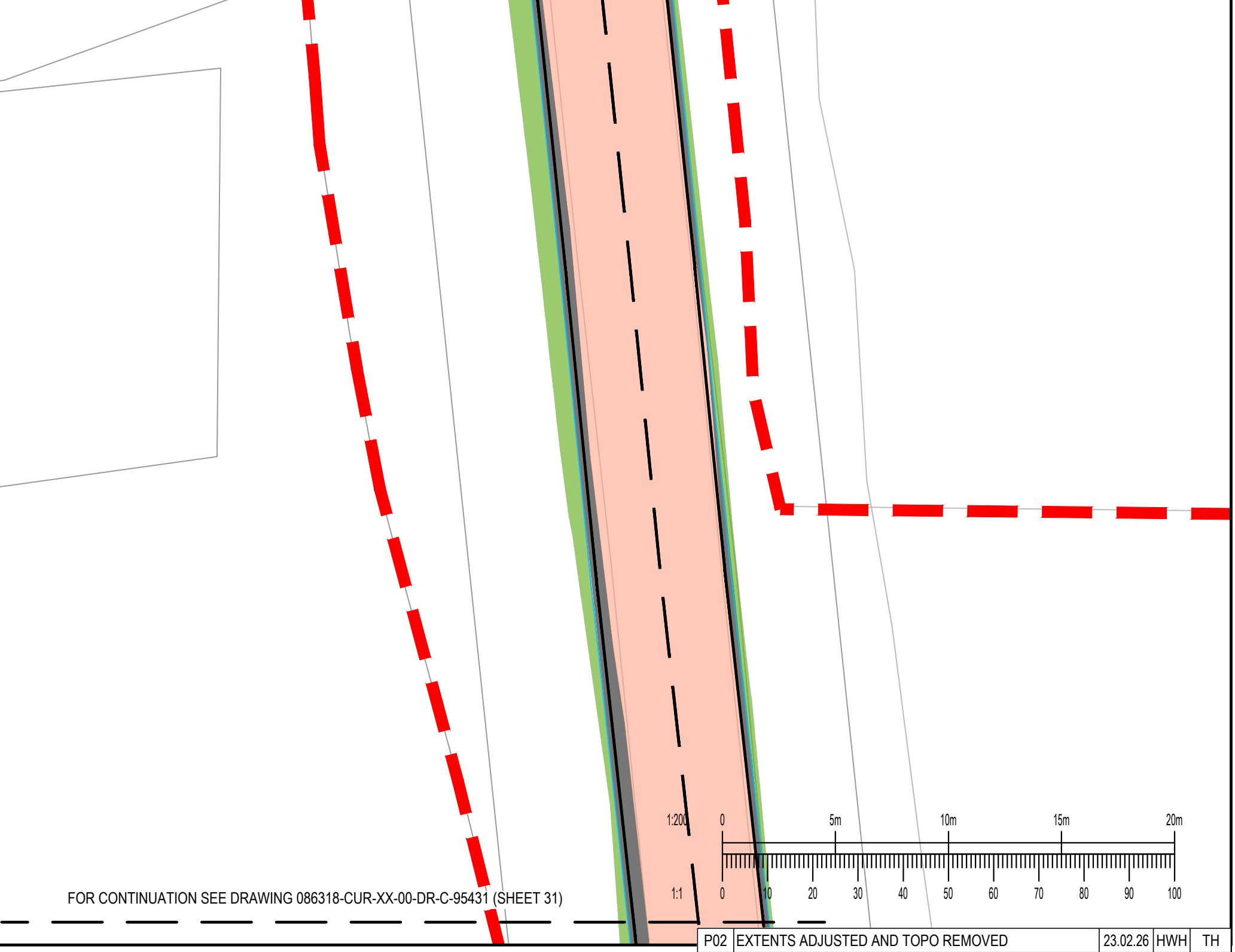
086318 - CUR - XX - 00 - DR - C - 95429

Revision P02

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95429 (SHEET 29)

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FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95431 (SHEET 31)

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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 30 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
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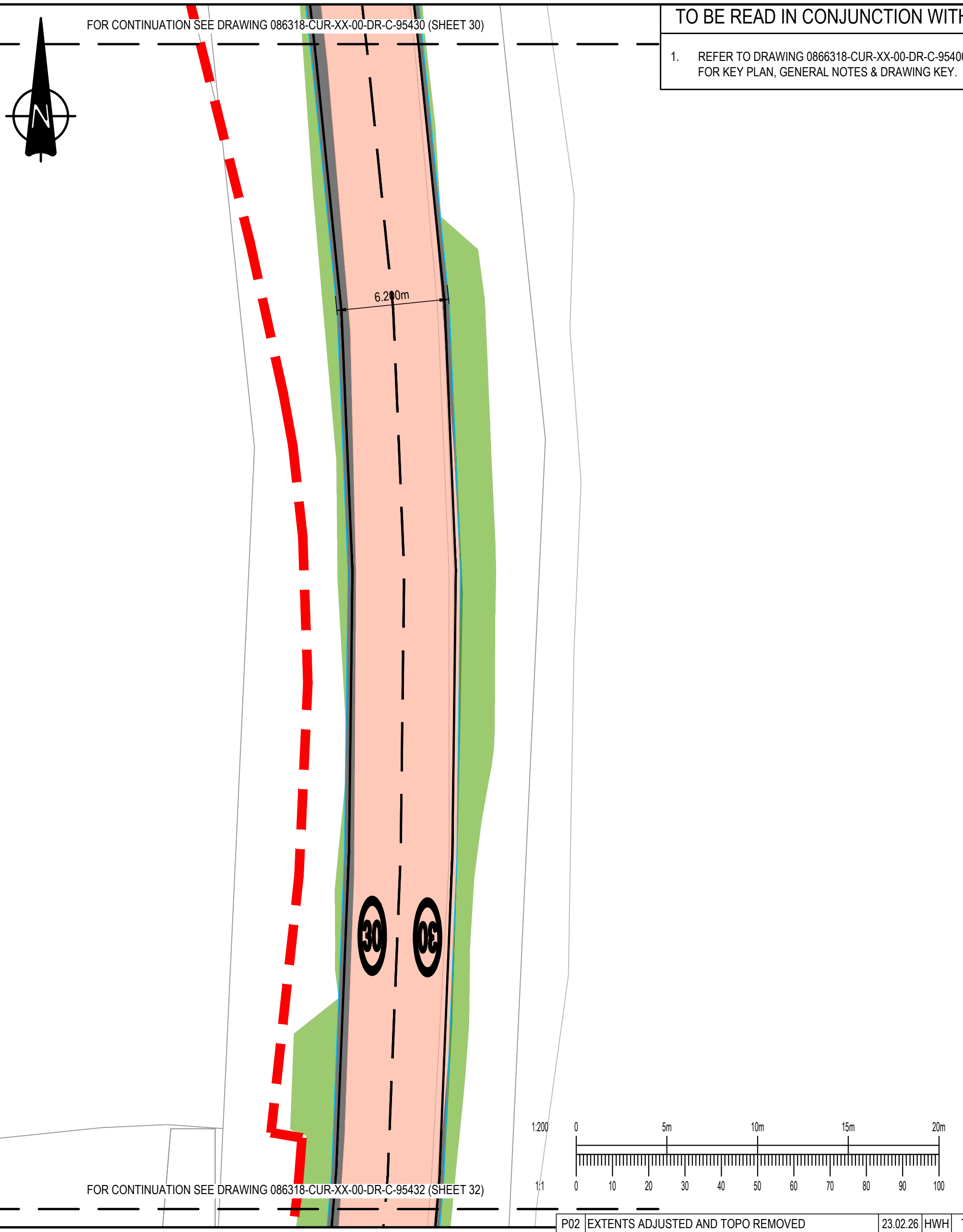
086318 - CUR - XX - 00 - DR - C - 95430

Revision: P02

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95430 (SHEET 30)

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 31 of 36)

Status: S2

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Scales @ A3 1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number

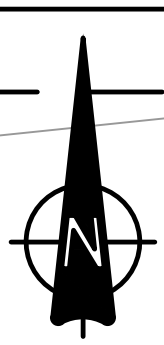
086318 - CUR - XX - 00 - DR - C - 95431

Revision P02

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95431 (SHEET 31)

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.



6.200m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95433 (SHEET 33)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P02	EXTENTS ADJUSTED AND TOPO REMOVED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 32 of 36)

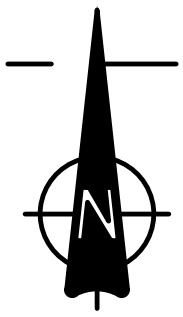
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95432

Revision: P02

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95432 (SHEET 32)



6.200m

6.200m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95434 (SHEET 34)

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P02	EXTENTS ADJUSTED AND TOPO REMOVED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project:	EAST HAVERING
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 33 of 36)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

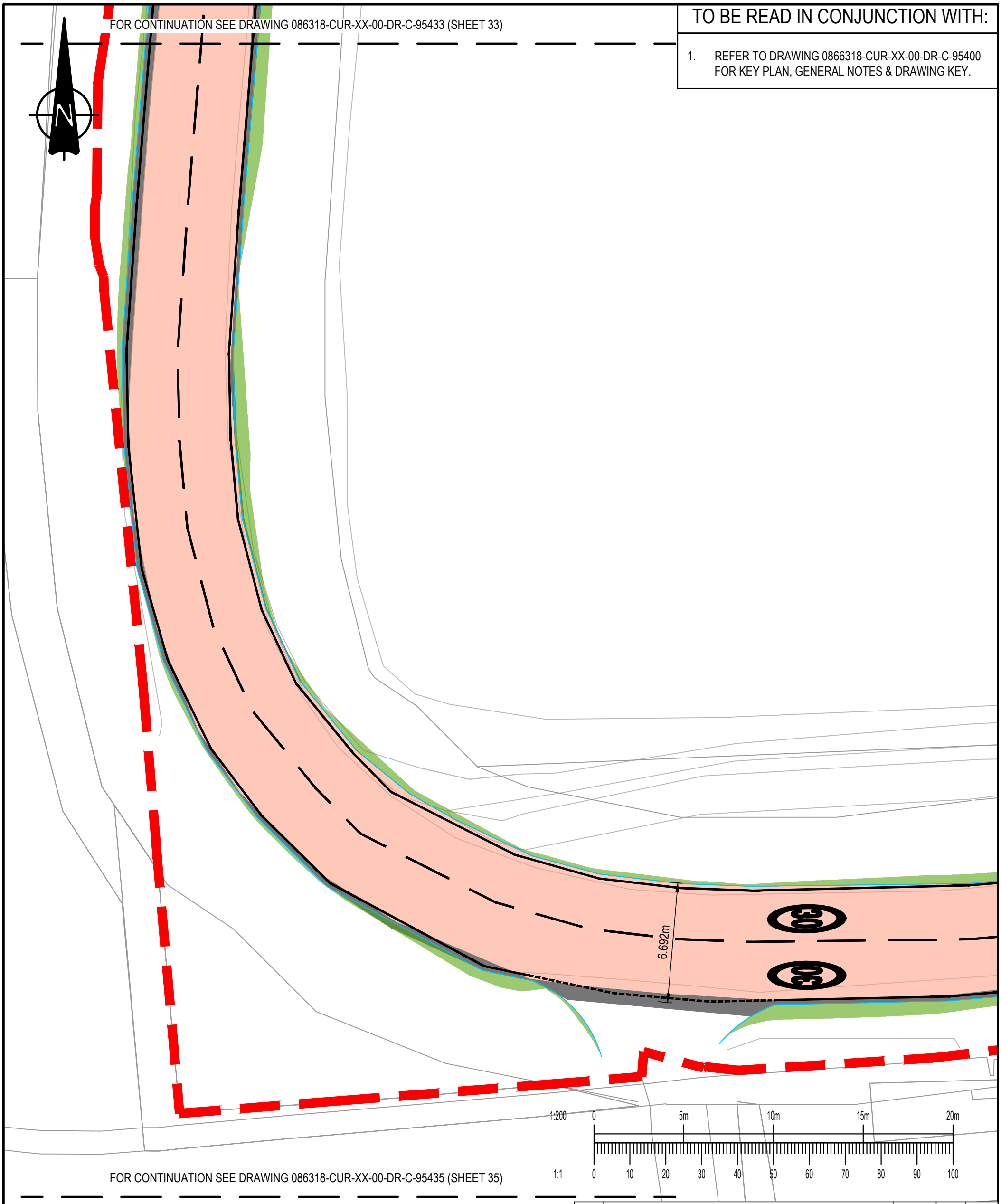
Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95433

Revision: P02

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95433 (SHEET 33)

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.



FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95435 (SHEET 35)

Rev:	Description:	Date:	By:	Chkd:
P02	EXTENTS ADJUSTED AND TOPO REMOVED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 34 of 36)

Status: S2

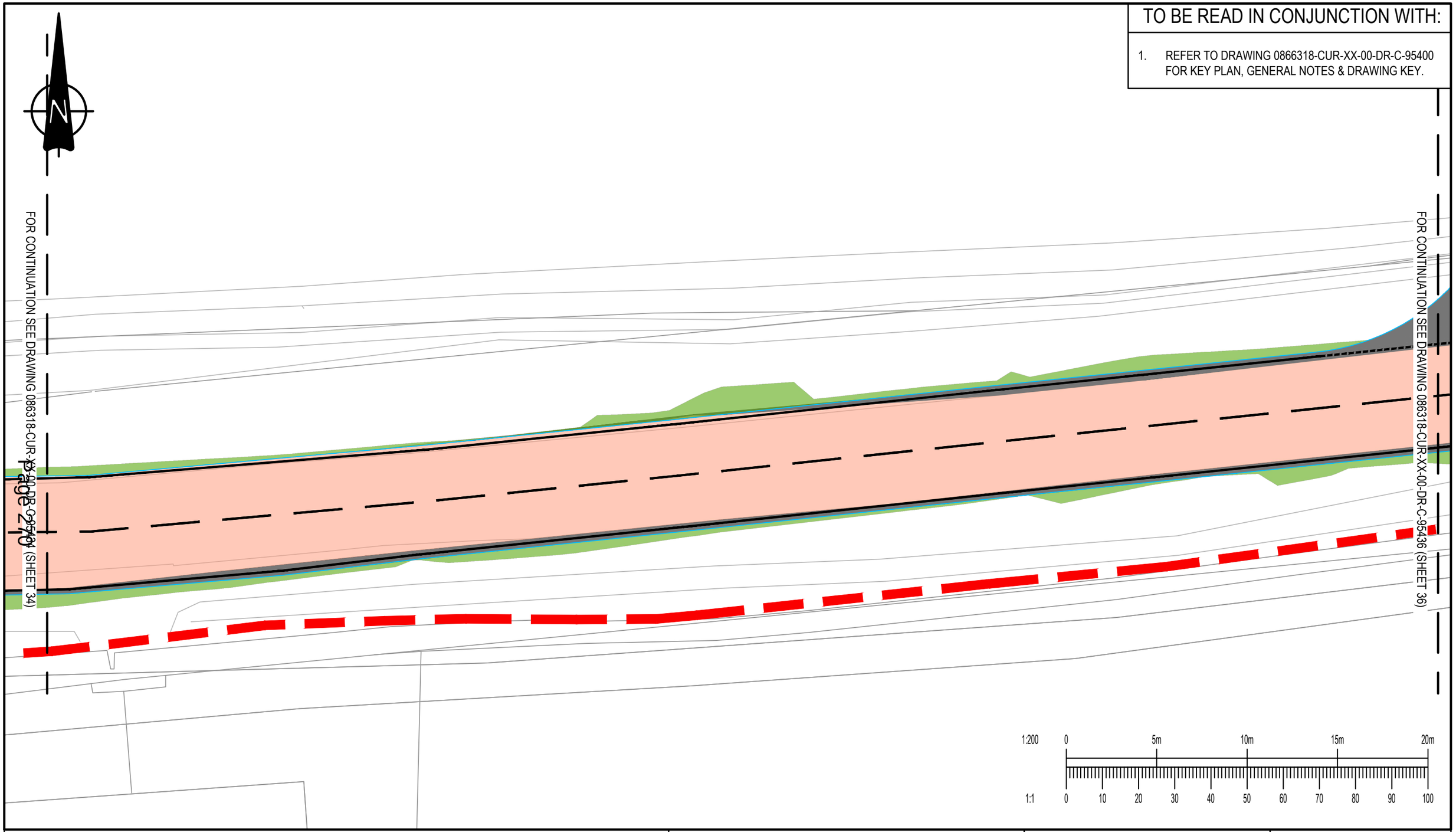
Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95434

Revision: P02

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.



Rev:	Description:	Date:	By:	Chkd:
P01	PRELIMINARY ISSUE	23.02.26	HWH	TH

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Project:	EAST HAVERING	Status:	S2
Drg Title:	HIGHWAY WORKS ON FEN LANE (SHEET 35 of 36)	Drawn By: HWH	Checked By: TH
		Designed By: HWH	Date: 23.02.26
		Scales @ A3	1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95435

Revision: P01

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95400 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

EASTERN ACCESS

STOP

6.200m

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95435 (SHEET 35)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P01	PRELIMINARY ISSUE	23.02.26	HWH	TH

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Project: EAST HAVERING

Drg Title: HIGHWAY WORKS ON FEN LANE (SHEET 36 of 36)

Status: S2

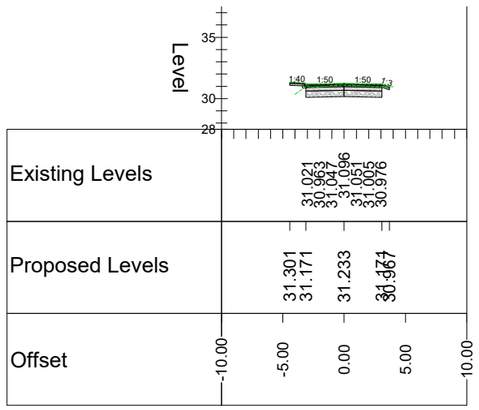
Drawn By	HWH	Checked By	TH
Designed By	HWH	Date	23.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

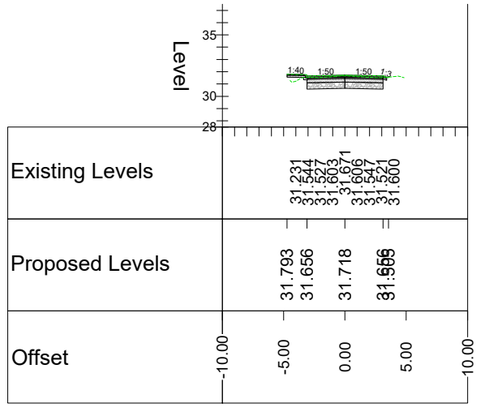
086318 - CUR - XX - 00 - DR - C - 95436

Revision P01

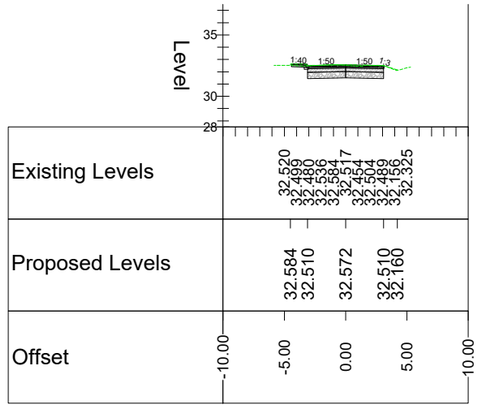
Appendix 5b:
Cross Sections



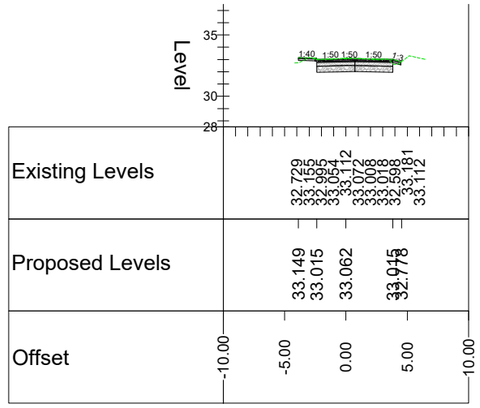
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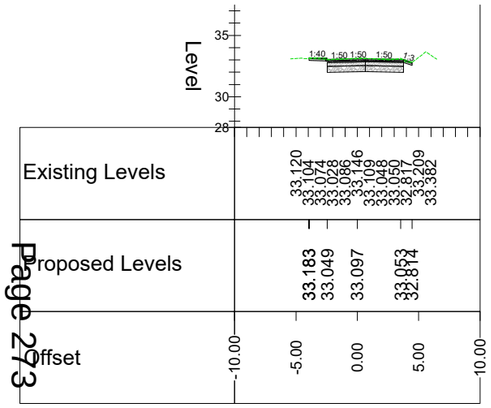
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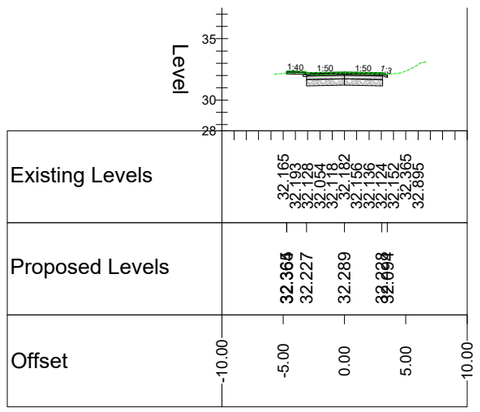
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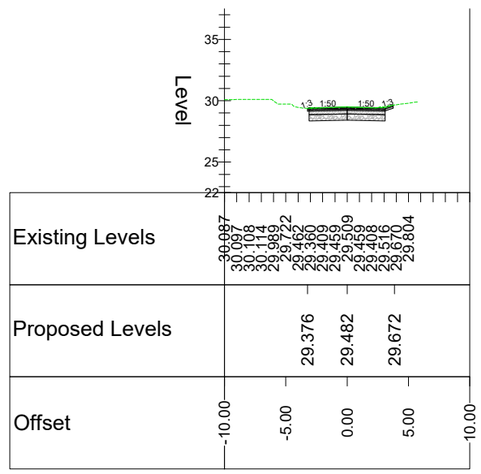
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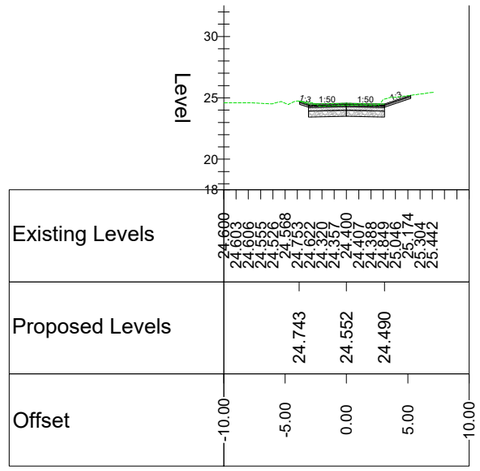
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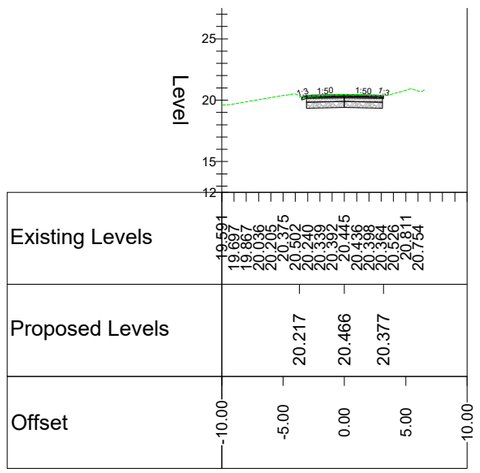
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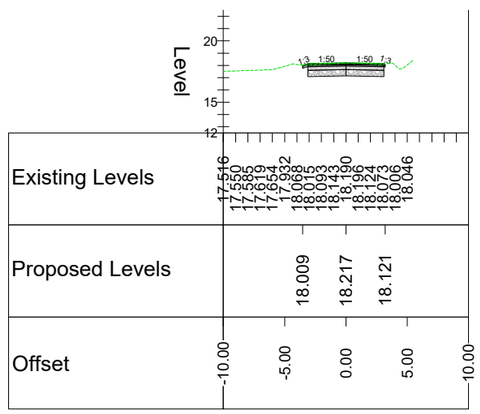
Chainage 500.000



Chainage 600.000



Chainage 700.000



Chainage 800.000

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.
5. FOR CHAINAGES REFER TO DRAWINGS 086318-CUR-XX-00-DR-C-95150 to 95160.

KEY

EXISTING GROUND

HIGHWAY BOUNDARY

DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

1. TO BE COORDINATED WITH ARBORICULTURALIST.
2. DESIGN SUBJECT TO CONFORMATION FROM THE LOCAL PLANNING AUTHORITY
3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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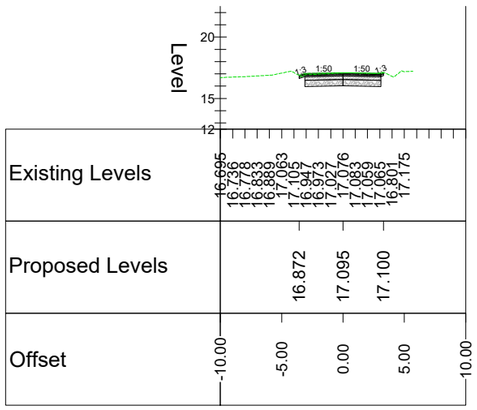
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Project:	EAST HAVERING
Drg Title:	HIGHWAY CROSS SECTIONS (SHEET 1 OF 3)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

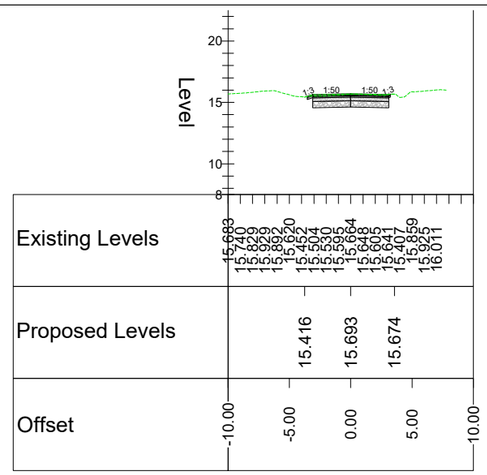
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95850

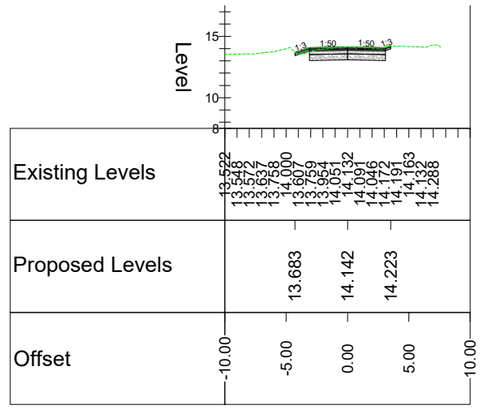
Revision P01



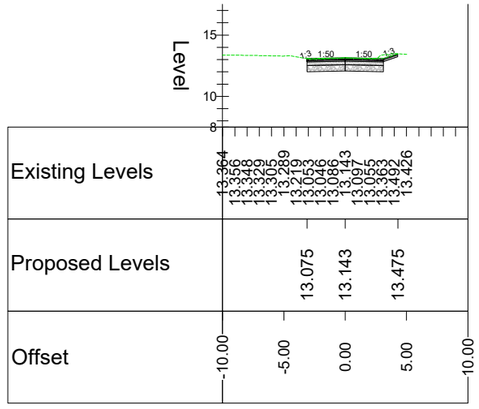
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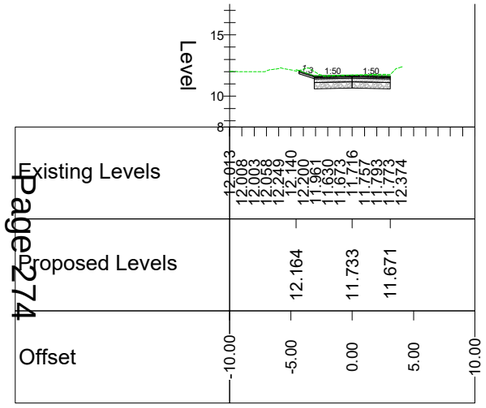
GENERAL NOTES:

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5. FOR CHAINAGES REFER TO DRAWINGS 086318-CUR-XX-00-DR-C-95150 to 95160.

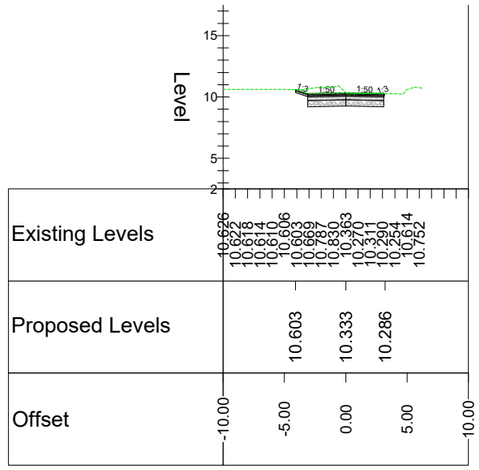
KEY

EXISTING GROUND

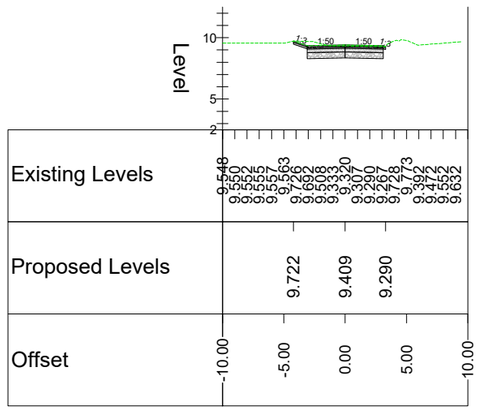
HIGHWAY BOUNDARY



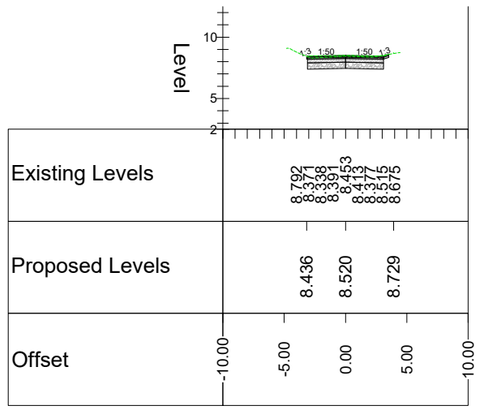
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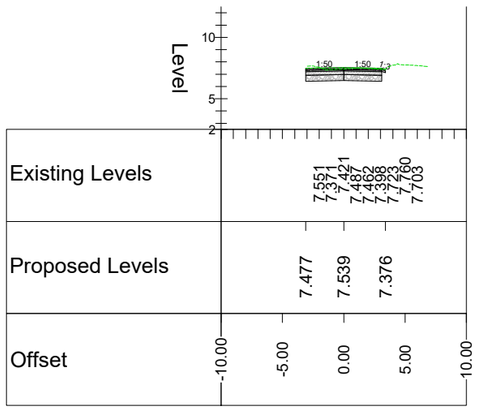
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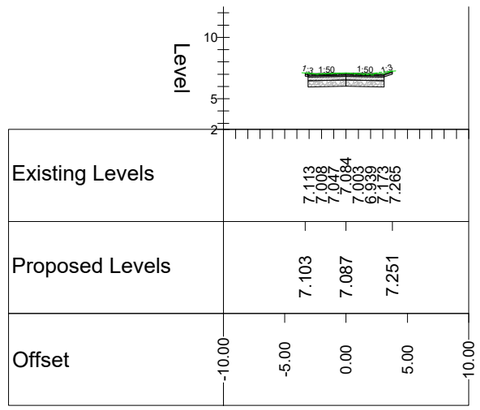
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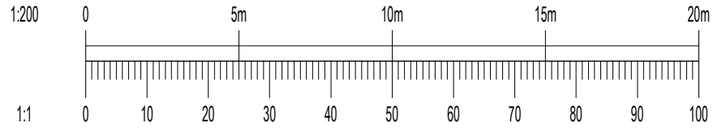


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DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

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2. DESIGN SUBJECT TO CONFORMATION FROM THE LOCAL PLANNING AUTHORITY
3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.



Rev:	Description:	Date:	By:	Chkd:
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

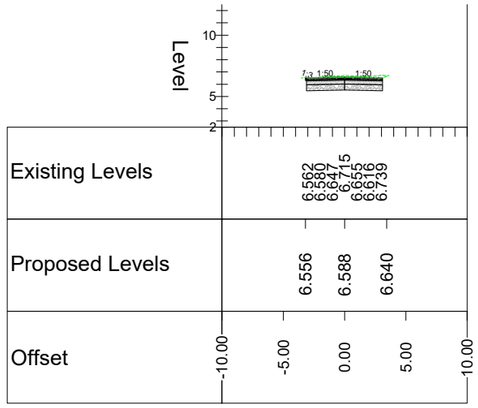
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Project:	EAST HAVERING	Status:	S2
Drg Title:	HIGHWAY CROSS SECTIONS (SHEET 2 OF 3)	Drawn By: NMH	Checked By: TH
		Designed By: NMH	Date: 17.02.26
		Scales @ A3	1:200

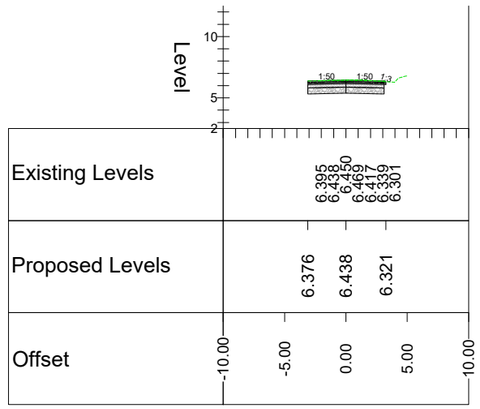
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95851

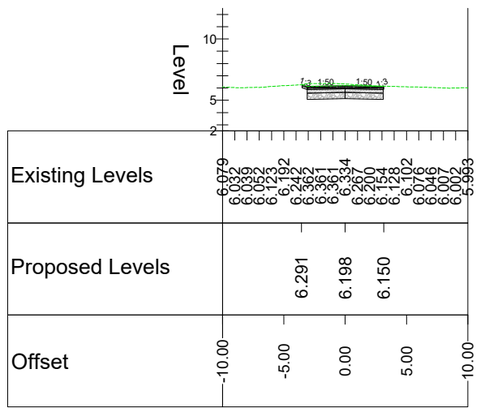
Revision P01



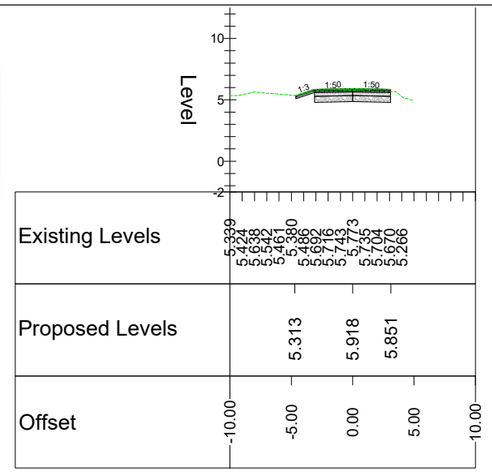
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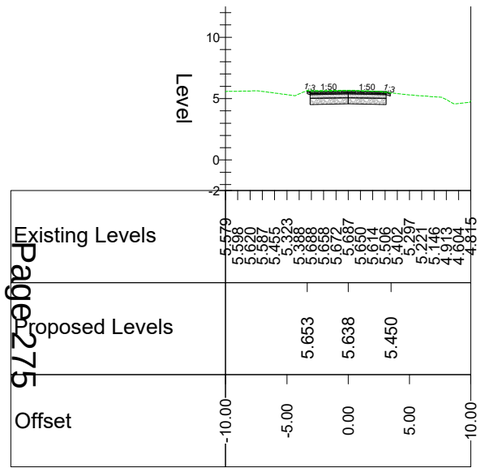
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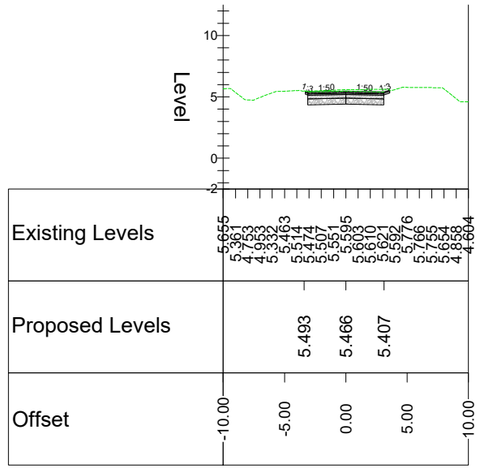
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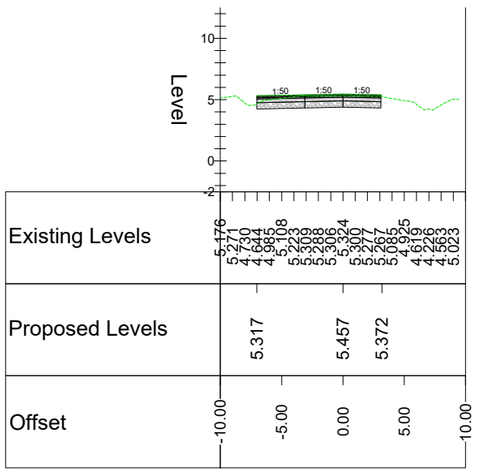
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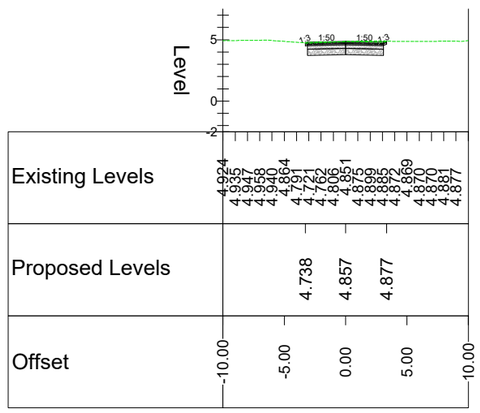
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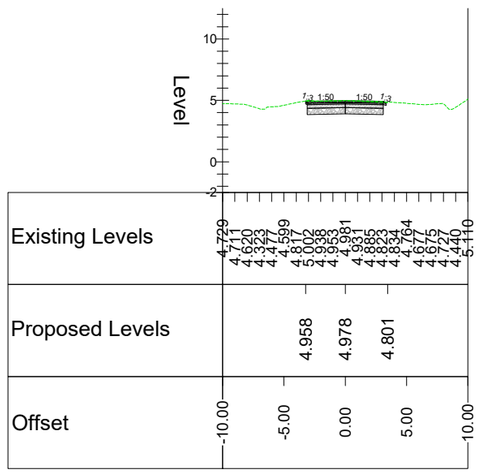
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Chainage 2500.000

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.
5. FOR CHAINAGES REFER TO DRAWINGS 086318-CUR-XX-00-DR-C-95150 to 95160.

KEY

EXISTING GROUND

HIGHWAY BOUNDARY

DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

1. TO BE COORDINATED WITH ARBORICULTURALIST.
2. DESIGN SUBJECT TO CONFORMATION FROM THE LOCAL PLANNING AUTHORITY
3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Status: S2

Drg Title: HIGHWAY CROSS SECTIONS (SHEET 3 OF 3)

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:200

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95852

Revision P01

Appendix 5c:
Long sections

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.

3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

4. FOR GENERAL NOTES REFER TO DRAWING.

5. FOR CHAINAGES REFER TO DRAWINGS 086318-CUR-XX-00-DR-C-95150 to 160.

6. PROPOSED LEVELS SET TO EXISTING LEVELS WHERE POSSIBLE.

KEY

EXISTING GROUND

PROPOSED LEVELS

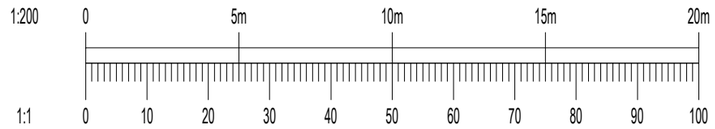
DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

1. TO BE COORDINATED WITH ARBORICULTURALIST.

2. DESIGN SUBJECT TO CONFIRMATION FROM THE LOCAL PLANNING AUTHORITY

3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.



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Project: EAST HAVERING

Status: S2

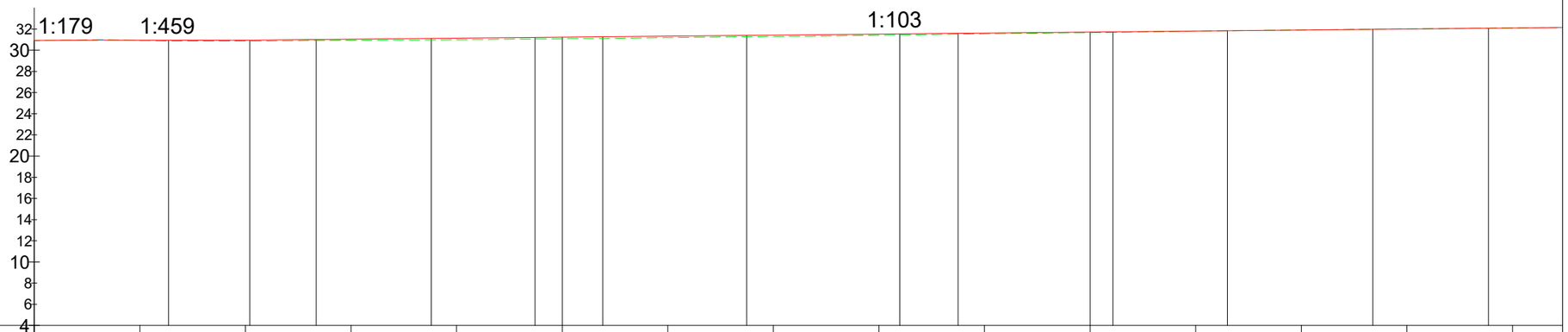
Drg Title: HIGHWAY LONGSECTIONS OVERVIEW

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95950

Revision P01

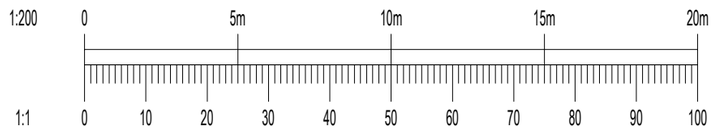


Chainage	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000
Existing Levels	30.921	30.928	30.875	30.935	31.002	31.096	31.196	31.300	31.426	31.562	31.671	31.803	31.918	32.018	32.111
Proposed Levels	30.921	30.949	30.942	31.039	31.136	31.233	31.330	31.427	31.524	31.621	31.718	31.815	31.912	32.009	32.105

Page 278

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.
2. CONTINUED ON 0866318-CUR-XX-00-DR-C-95952



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Project: EAST HAVERING

Drg Title: HIGHWAY LONGSECTIONS (SHEET 1 OF 11)

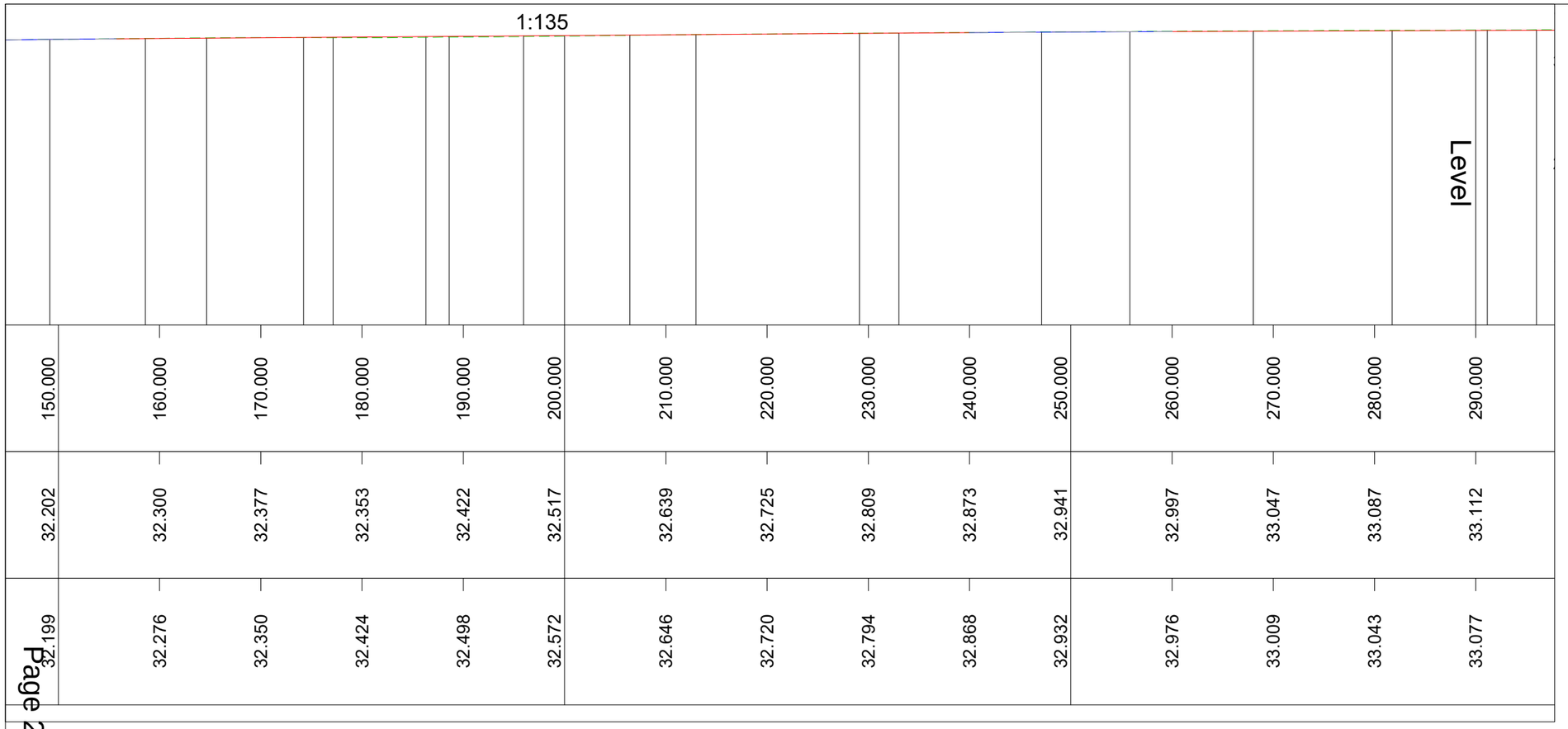
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95951

Revision P01



TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project: EAST HAVERING

Status: S2

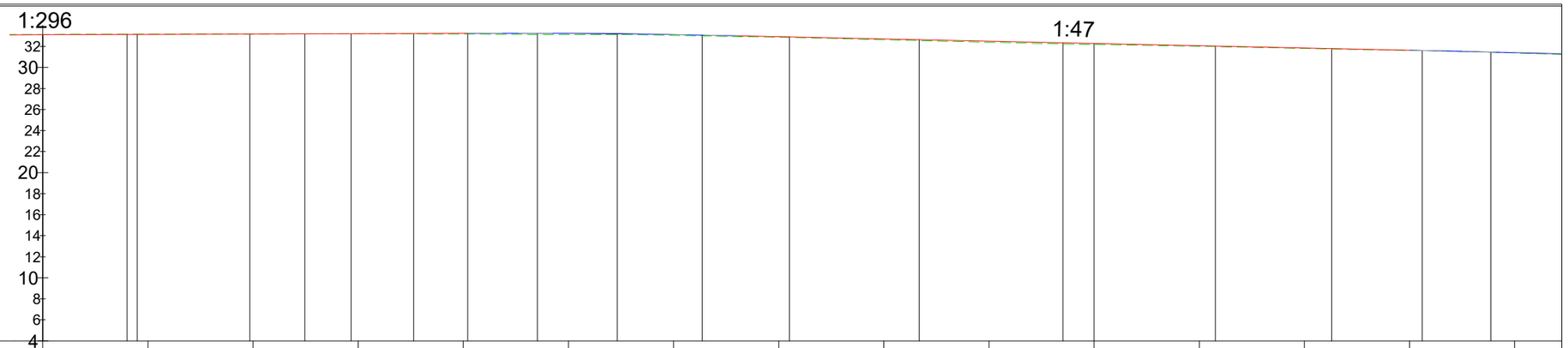
Drg Title: HIGHWAY LONGSECTIONS (SHEET 2 OF 11)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95952

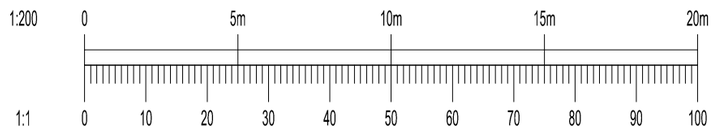
Revision P01



Chainage	300.000	310.000	320.000	330.000	340.000	350.000	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000
Existing Levels	33.146	33.164	33.184	33.202	33.176	33.143	33.049	32.879	32.638	32.397	32.182	32.020	31.810	31.634	31.385
Proposed Levels	33.110	33.144	33.178	33.212	33.245	33.235	33.128	32.932	32.717	32.503	32.289	32.074	31.860	31.645	31.412

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.
2. CONTINUED ON 0866318-CUR-XX-00-DR-C-95954



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Project: EAST HAVERING

Status: S2

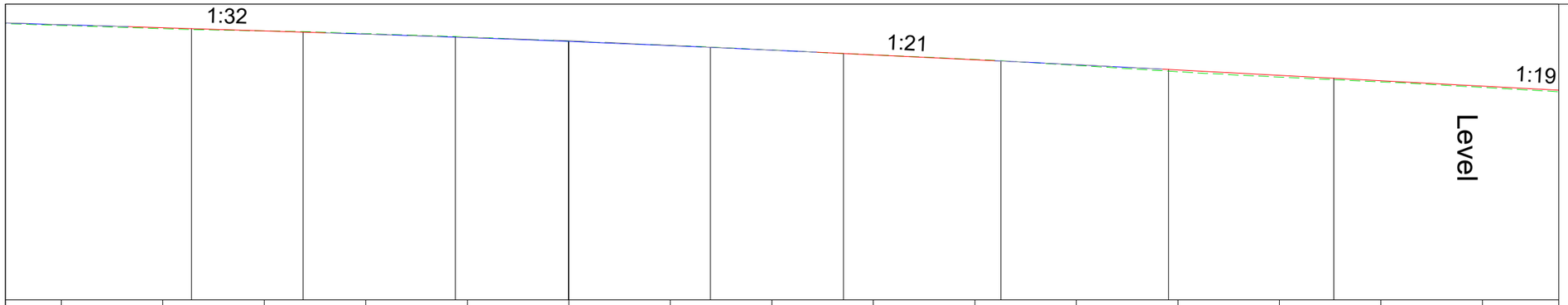
Drg Title: HIGHWAY LONGSECTIONS (SHEET 3 OF 11)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

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086318 - CUR - XX - 00 - DR - C - 95953

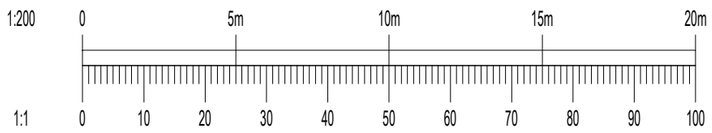
Revision P01



450.000	460.000	470.000	480.000	490.000	500.000	510.000	520.000	530.000	540.000	550.000	560.000	570.000	580.000	590.000						
31.064	30.743	30.523	30.253	29.917	29.509	29.093	28.634	28.159	27.702	27.121	26.500	25.973	25.499	24.953						
31.141	30.835	30.521	30.203	29.859	29.482	29.071	28.626	28.154	27.678	27.192	26.673	26.143	25.612	25.081						

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.



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Project: EAST HAVERING

Drg Title: HIGHWAY LONGSECTIONS (SHEET 4 OF 11)

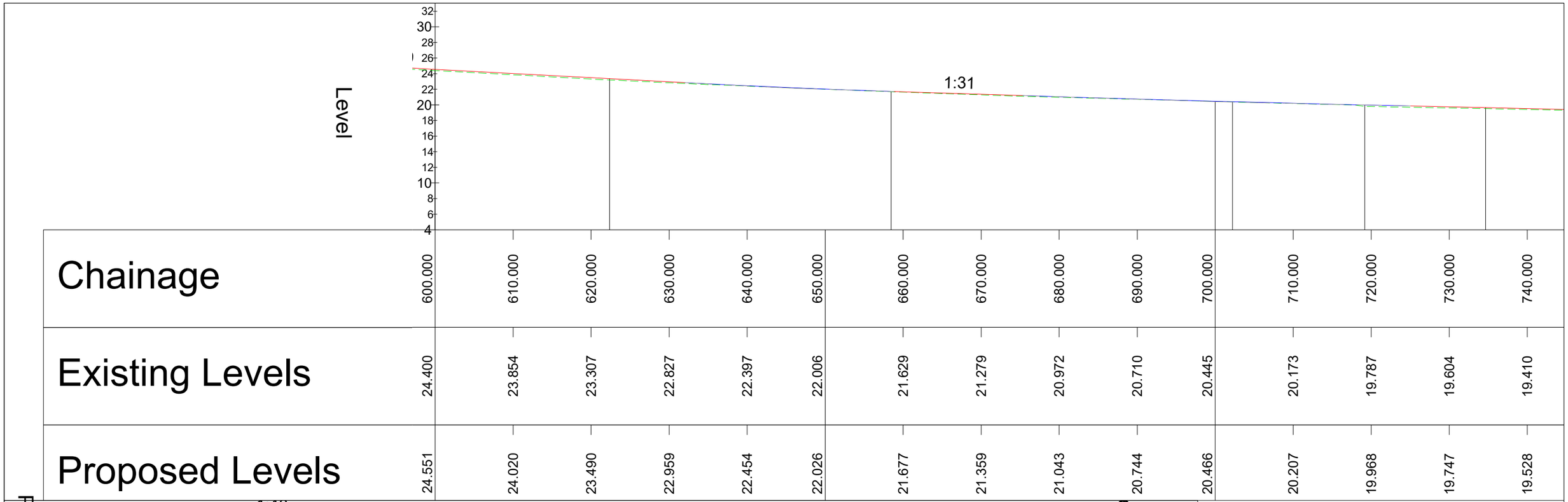
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95954

Revision P01



Chainage	600.000	610.000	620.000	630.000	640.000	650.000	660.000	670.000	680.000	690.000	700.000	710.000	720.000	730.000	740.000
Existing Levels	24.400	23.854	23.307	22.827	22.397	22.006	21.629	21.279	20.972	20.710	20.445	20.173	19.787	19.604	19.410
Proposed Levels	24.551	24.020	23.490	22.959	22.454	22.026	21.677	21.359	21.043	20.744	20.466	20.207	19.968	19.747	19.528

Chainage	750.000	760.000	770.000	780.000	790.000	800.000	810.000	820.000	830.000	840.000	850.000	860.000	870.000	880.000	890.000
Existing Levels	19.206	18.962	18.740	18.558	18.387	18.190	17.946	17.745	17.570	17.325	17.076	16.802	16.507	16.214	15.915
Proposed Levels	19.310	19.091	18.872	18.654	18.435	18.216	17.997	17.779	17.560	17.337	17.094	16.832	16.551	16.265	15.979

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project: EAST HAVERING

Status: S2

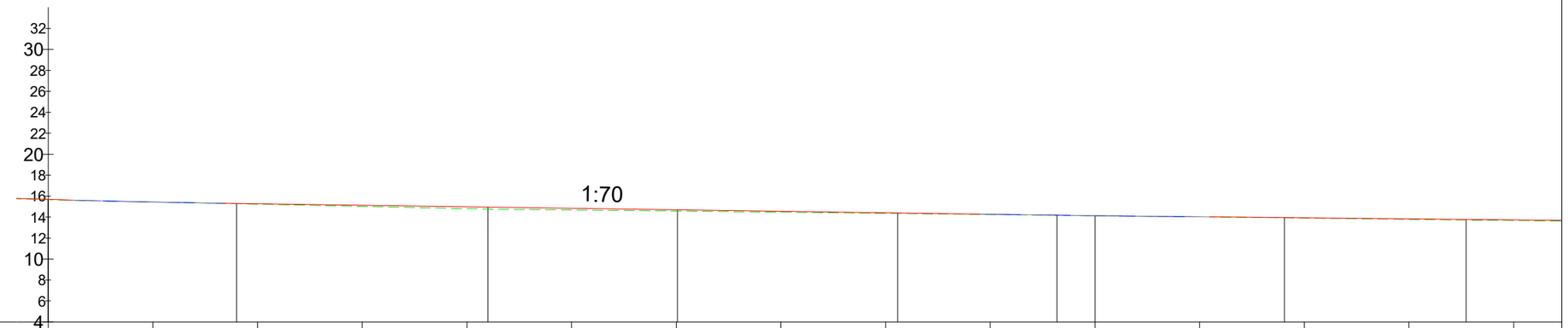
Drg Title: HIGHWAY LONGSECTIONS (SHEET 5 OF 11)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

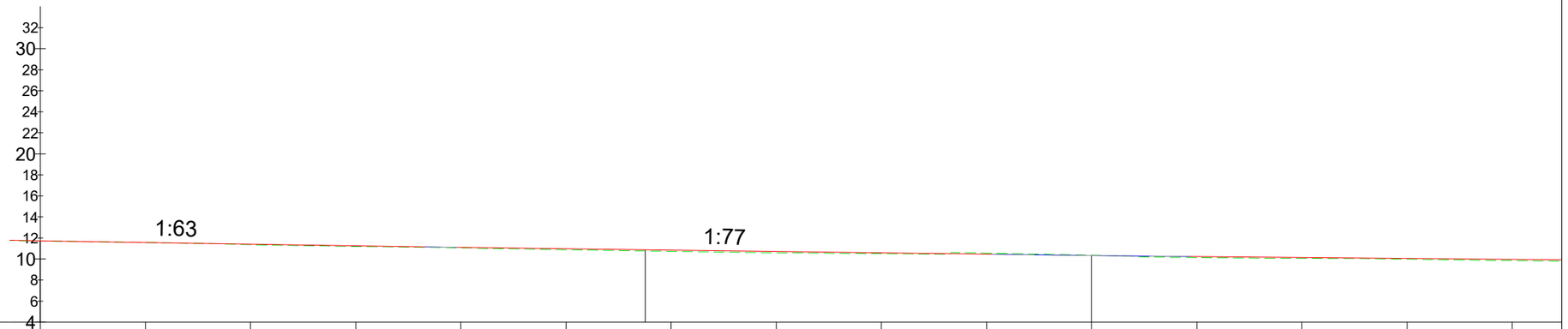
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95955

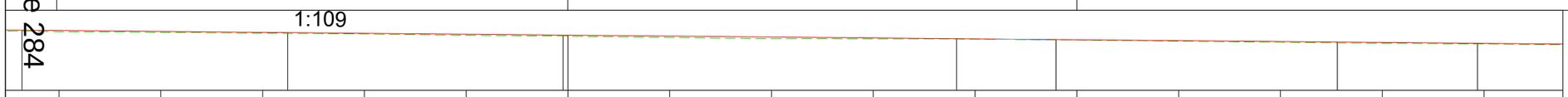
Revision P01


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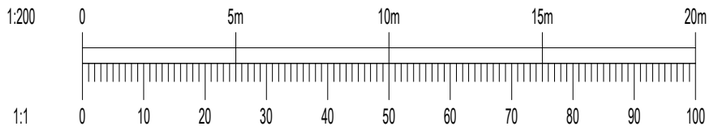
Chainage	1200.000	1210.000	1220.000	1230.000	1240.000	1250.000	1260.000	1270.000	1280.000	1290.000	1300.000	1310.000	1320.000	1330.000	1340.000
Existing Levels	11.716	11.573	11.360	11.196	11.058	10.883	10.731	10.587	10.512	10.552	10.363	10.138	10.068	9.989	9.851
Proposed Levels	11.732	11.573	11.413	11.253	11.099	10.970	10.841	10.711	10.582	10.453	10.333	10.233	10.141	10.049	9.958



Chainage	1350.000	1360.000	1370.000	1380.000	1390.000	1400.000	1410.000	1420.000	1430.000	1440.000	1450.000	1460.000	1470.000	1480.000	1490.000
Existing Levels	9.754	9.690	9.608	9.526	9.405	9.320	9.182	9.073	9.055	9.032	8.936	8.828	8.719	8.622	8.537
Proposed Levels	9.866	9.775	9.683	9.592	9.500	9.409	9.317	9.225	9.134	9.042	8.953	8.867	8.780	8.693	8.606

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.



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Project: EAST HAVERING

Status: S2

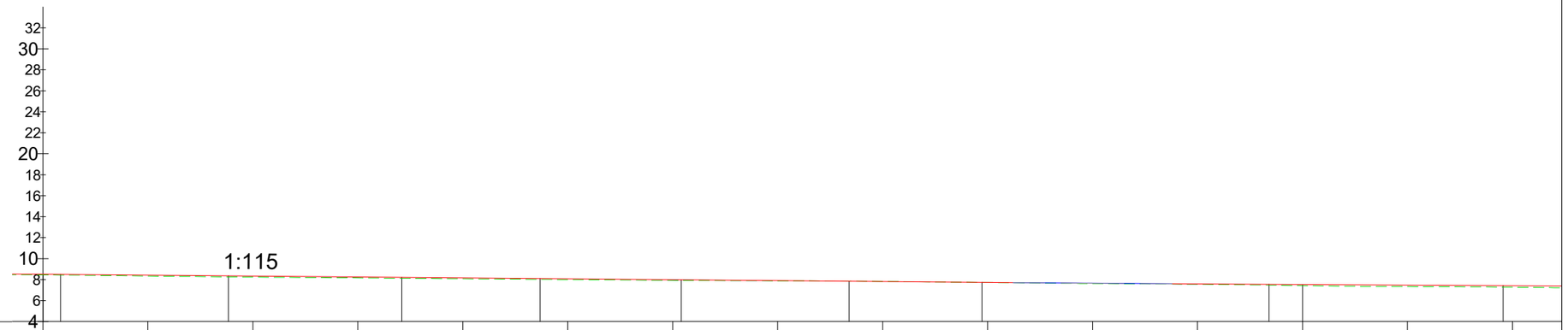
Drg Title: HIGHWAY LONGSECTIONS (SHEET 7 OF 9)

Drawn By	NMH	Checked By	TH
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Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95957

Revision P01



Chainage	1500.000	1510.000	1520.000	1530.000	1540.000	1550.000	1560.000	1570.000	1580.000	1590.000	1600.000	1610.000	1620.000	1630.000	1640.000
Existing Levels	8.453	8.344	8.238	8.160	8.083	8.007	7.934	7.886	7.823	7.725	7.629	7.557	7.421	7.338	7.277
Proposed Levels	8.519	8.433	8.346	8.259	8.172	8.086	7.999	7.912	7.825	7.738	7.657	7.595	7.539	7.482	7.426

1:177 1:200

1650.000	1660.000	1670.000	1680.000	1690.000	1700.000	1710.000	1720.000	1730.000	1740.000	1750.000	1760.000	1770.000	1780.000	1790.000
7.216	7.202	7.169	7.158	7.130	7.084	7.064	7.064	7.057	7.048	7.032	6.960	6.904	6.853	6.748
7.369	7.313	7.256	7.200	7.143	7.087	7.037	6.987	6.937	6.887	6.837	6.787	6.737	6.687	6.637

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project: EAST HAVERING

Drg Title: HIGHWAY LONGSECTIONS (SHEET 8 OF 11)

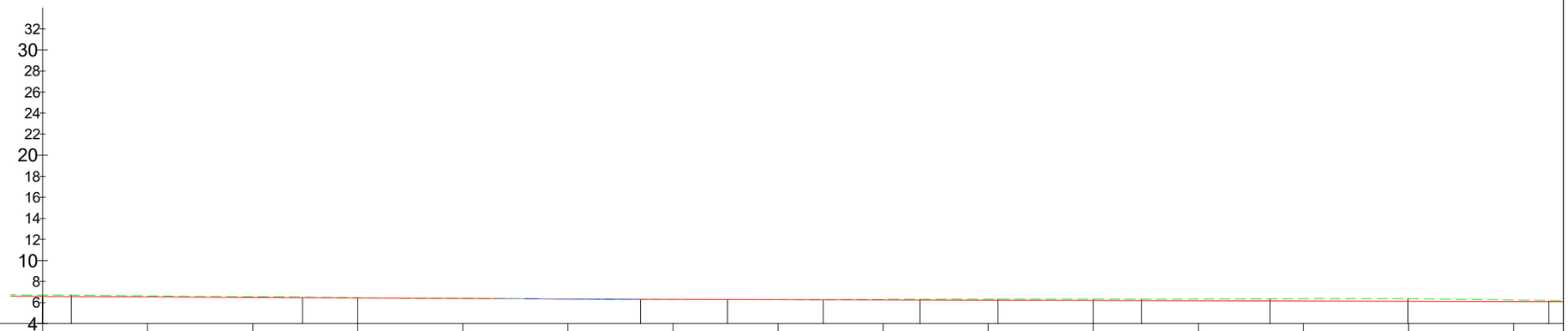
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95958

Revision P01



Chainage	1800.000	1810.000	1820.000	1830.000	1840.000	1850.000	1860.000	1870.000	1880.000	1890.000	1900.000	1910.000	1920.000	1930.000	1940.000
Existing Levels	6.715	6.634	6.564	6.450	6.387	6.346	6.294	6.282	6.298	6.337	6.334	6.343	6.363	6.374	6.238
Proposed Levels	6.588	6.538	6.488	6.438	6.388	6.342	6.310	6.282	6.254	6.226	6.198	6.170	6.142	6.114	6.086

1:357

Chainage	1950.000	1960.000	1970.000	1980.000	1990.000	2000.000	2010.000	2020.000	2030.000	2040.000	2050.000	2060.000	2070.000	2080.000	2090.000
Existing Levels	6.119	6.013	5.928	5.860	5.806	5.773	5.734	5.692	5.689	5.688	5.697	5.697	5.684	5.680	5.679
Proposed Levels	6.058	6.030	6.002	5.974	5.946	5.918	5.890	5.862	5.834	5.806	5.778	5.750	5.722	5.694	5.666

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project: EAST HAVERING

Drg Title: HIGHWAY LONGSECTIONS (SHEET 9 OF 11)

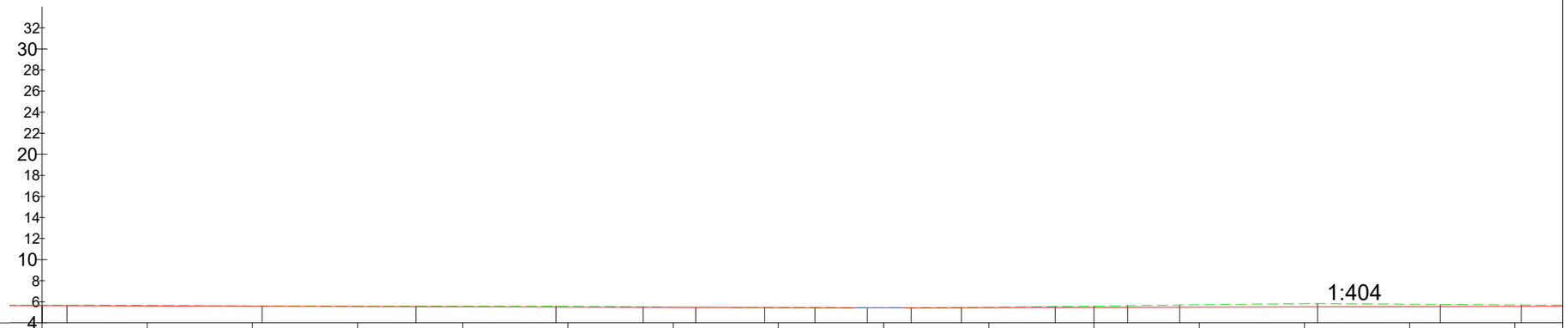
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95959

Revision P01



Chainage	2100.000	2110.000	2120.000	2130.000	2140.000	2150.000	2160.000	2170.000	2180.000	2190.000	2200.000	2210.000	2220.000	2230.000	2240.000
Existing Levels	5.687	5.652	5.604	5.579	5.574	5.577	5.485	5.452	5.426	5.471	5.595	5.718	5.823	5.772	5.698
Proposed Levels	5.638	5.610	5.582	5.554	5.526	5.498	5.470	5.442	5.418	5.441	5.466	5.491	5.515	5.540	5.565

1:158

2250.000	2260.000	2270.000	2280.000	2290.000	2300.000	2310.000	2320.000	2330.000	2340.000	2350.000	2360.000	2370.000	2380.000	2390.000
5.658	5.636	5.633	5.577	5.451	5.324	5.228	5.152	5.085	5.012	4.975	4.970	4.968	4.945	4.893
5.589	5.614	5.635	5.584	5.520	5.457	5.394	5.330	5.267	5.203	5.140	5.076	5.013	4.949	4.886

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Rev:	Description:	Date:	By:	Chkd:
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

Drg Title: HIGHWAY LONGSECTIONS (SHEET 10 OF 11)

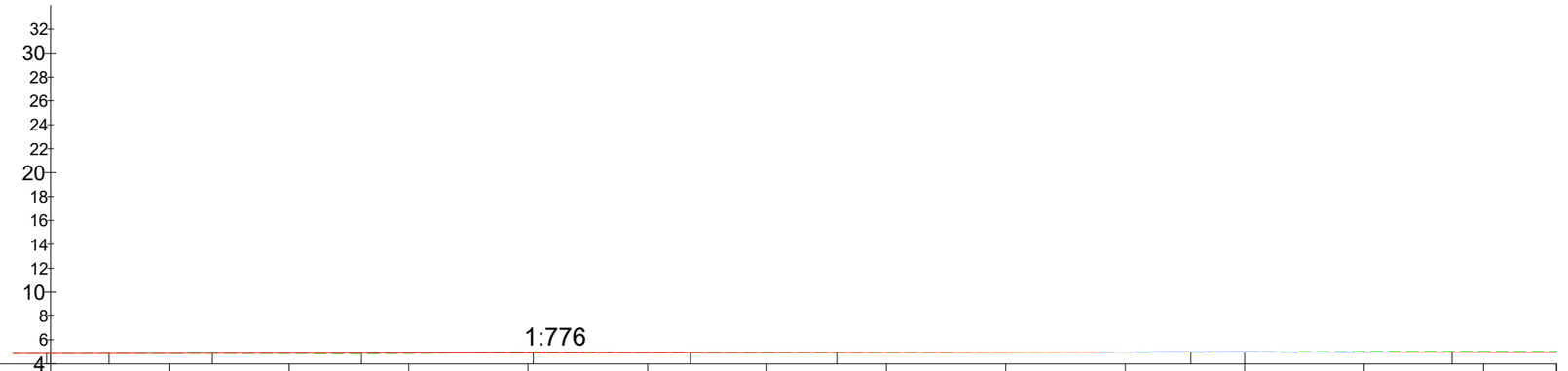
Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95960

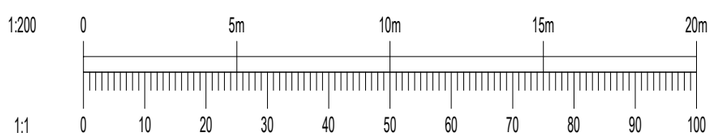
Revision P01



Chainage	2400.000	2410.000	2420.000	2430.000	2440.000	2450.000	2460.000	2470.000	2480.000	2490.000	2500.000	2510.000	2520.000	2526.121
Existing Levels	4.851	4.868	4.854	4.869	4.953	4.924	4.934	4.952	4.957	4.961	4.981	5.019	5.040	5.024
Proposed Levels	4.857	4.870	4.883	4.896	4.909	4.922	4.935	4.948	4.960	4.973	4.978	4.972	4.959	4.950

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95950 FOR GENERAL NOTES & DRAWING KEY.



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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY LONGSECTIONS (SHEET 11 OF 11)

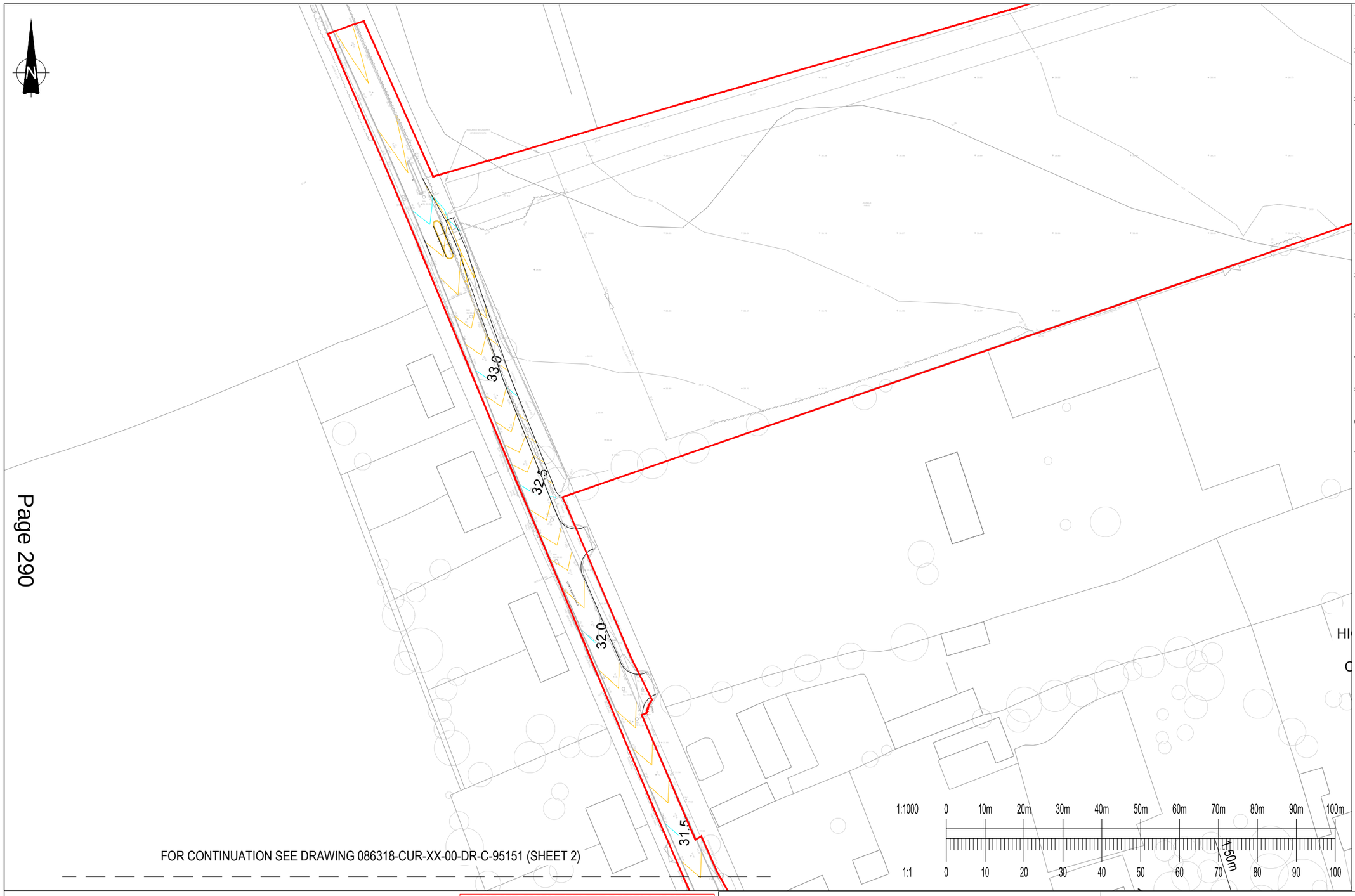
Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95961

Revision P01

Appendix 5d:
Contours Plan



1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

KEY

- HIGHWAY BOUNDARY
- 20.0 MAJOR CONTOUR (0.5m)
- MINOR CONTOUR (0.1m)

1. TOPOGRAPHICAL SURVEY BASED ON SLR CONSULTING TOPOGRAPHICAL SURVEY DRAWING REF: 403.065936.00001.09.0_Havering_Topo_0325-A0L, DATED MARCH 2025
2. REFER TO CBA TREES ARBORCULTURAL CONSULTANCY REPORT FOR AGRICULTURAL IMPLICATIONS ASSESSMENT. REF:11656, DATED JAN 2026
3. FOR FEN LANE ROAD WIDENING DRAWINGS REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95400 TO 086318-CUR-XX-00-DR-C-95436
4. FOR CONSTRUCTION DETAILS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95067 TO 086318-CUR-XX-00-DR-C-95069
5. FOR HIGHWAY LONGSECTIONS REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95950 TO 086318-CUR-XX-00-DR-C-95961
6. FOR HIGHWAY CROSS SECTIONS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95850 TO 086318-CUR-XX-00-DR-C-95852
7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95151 (SHEET 2)

Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
P02	SCALE, REFERENCES AND EXTENTS UPDATED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

DESIGN RISKS AND ASSUMPTIONS

THE FOLLOWING DESIGN NOTES AND ASSUMPTIONS HAVE BEEN MADE IN THE PRODUCTION OF THIS DRAWING:

1. TO BE COORDINATED WITH ARBORICULTURALIST.
2. DESIGN SUBJECT TO CONFIRMATION FROM THE LOCAL PLANNING AUTHORITY
3. DESIGN SUBJECT TO ROAD SAFETY AUDIT.
4. DESIGN SUBJECT TO FURTHER SURVEYS REGARDING THE EXISTING DITCHES. DRAINAGE MAY BE REQUIRED FOLLOWING OUTCOME OF SURVEYS.

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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY CONTOURS SHEET 1 OF 11

Drawn By NMH | Checked By TH

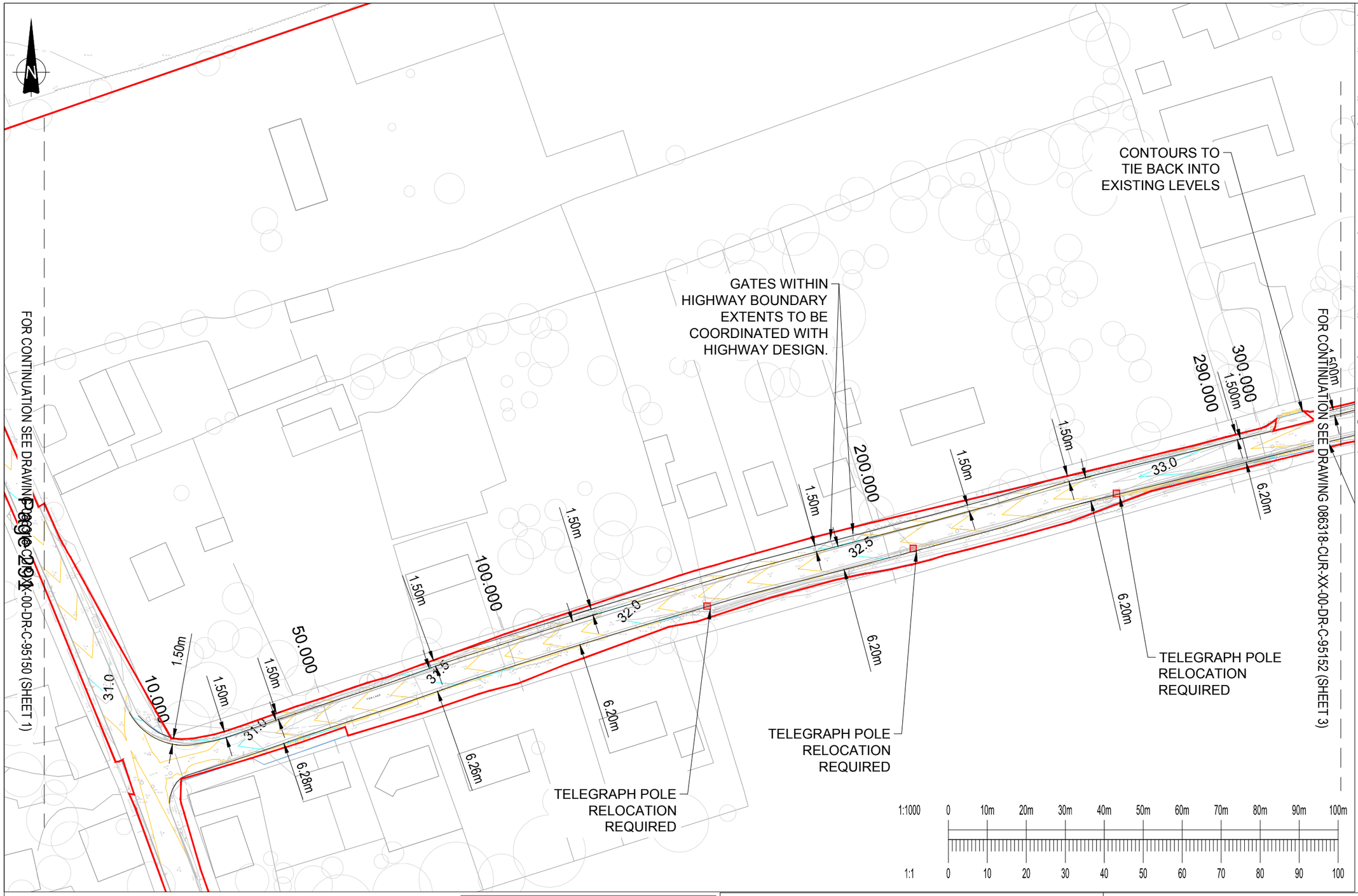
Designed By NMH | Date 17.02.26

Scales @ A3 1:1000

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95150

Revision P03



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5. FOR HIGHWAY LONGSECTIONS REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95950 TO 086318-CUR-XX-00-DR-C-95961
6. FOR HIGHWAY CROSS SECTIONS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95850 TO 086318-CUR-XX-00-DR-C-95852
7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
P02	SCALE, REFERENCES AND EXTENTS UPDATED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

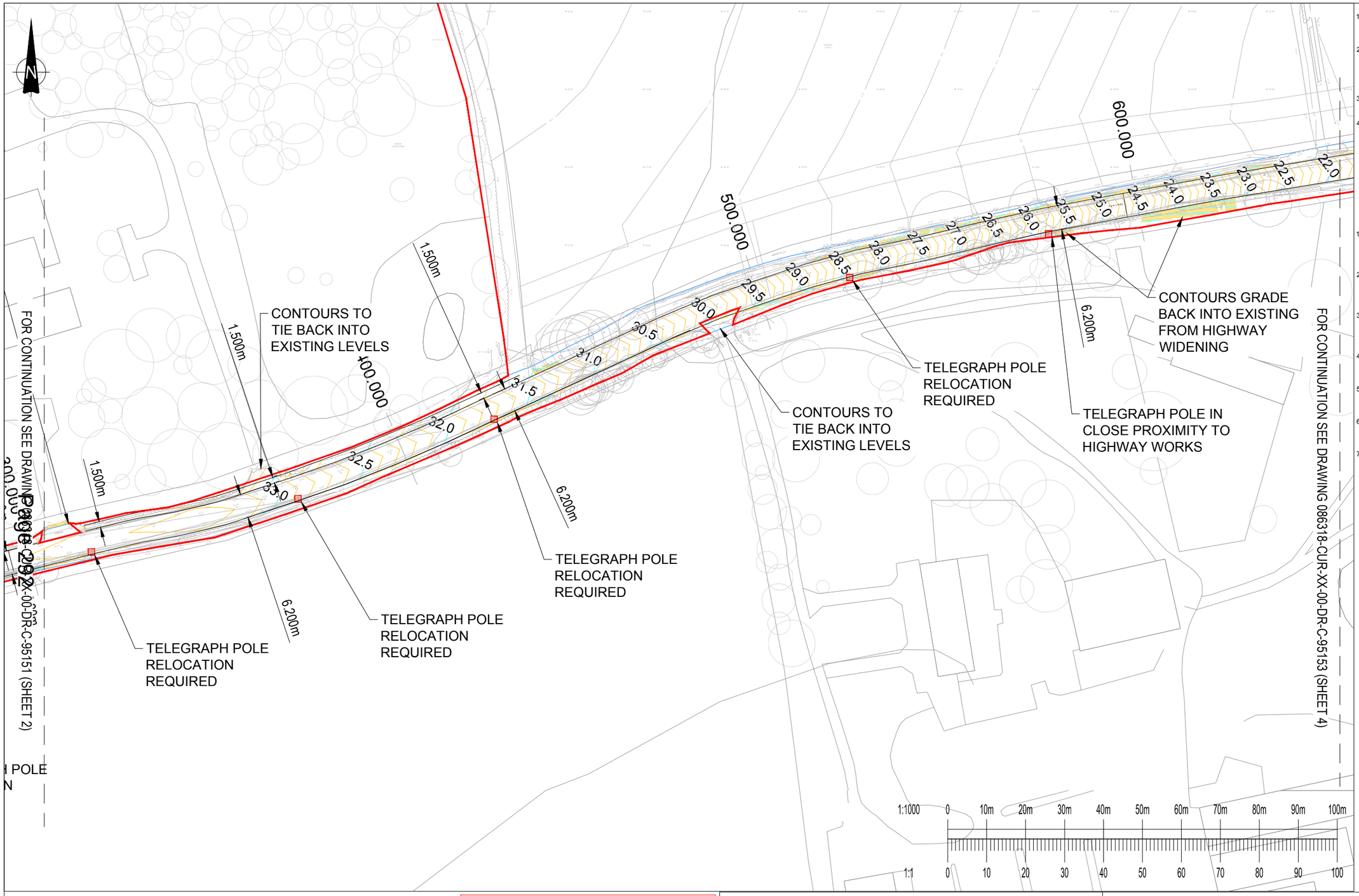
Status: S2

Drg Title: HIGHWAY CONTOURS SHEET 2 OF 11

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:1000		

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95151

Revision: P03



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7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
P02	SCALE, REFERENCES AND EXTENTS UPDATED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

Status: S2

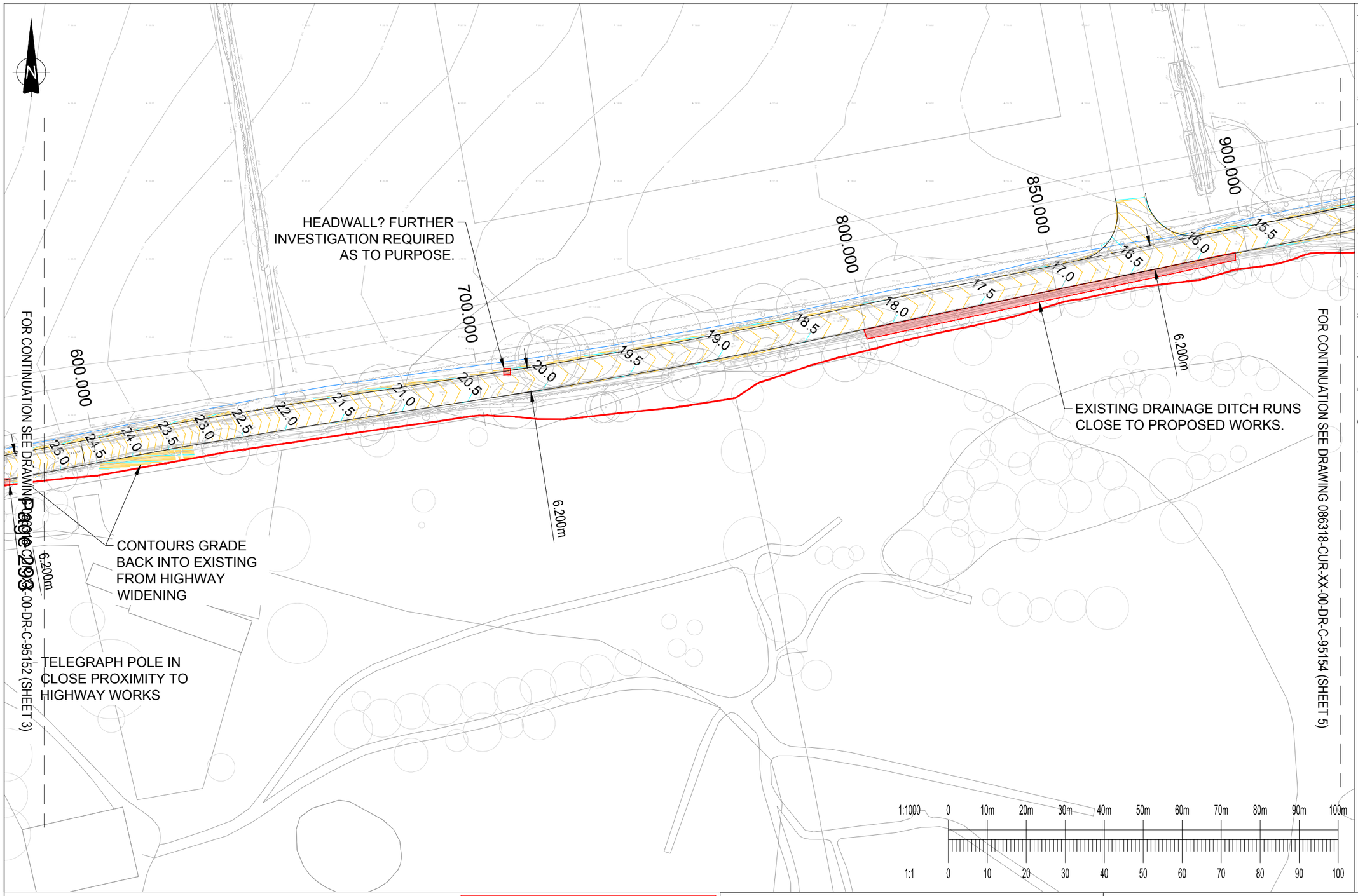
Drg Title: HIGHWAY CONTOURS SHEET 3 OF 11

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:1000		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95152

Revision P03



1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
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6. FOR HIGHWAY CROSS SECTIONS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95850 TO 086318-CUR-XX-00-DR-C-95852
7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
P02	SCALE, REFERENCES AND EXTENTS UPDATED	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

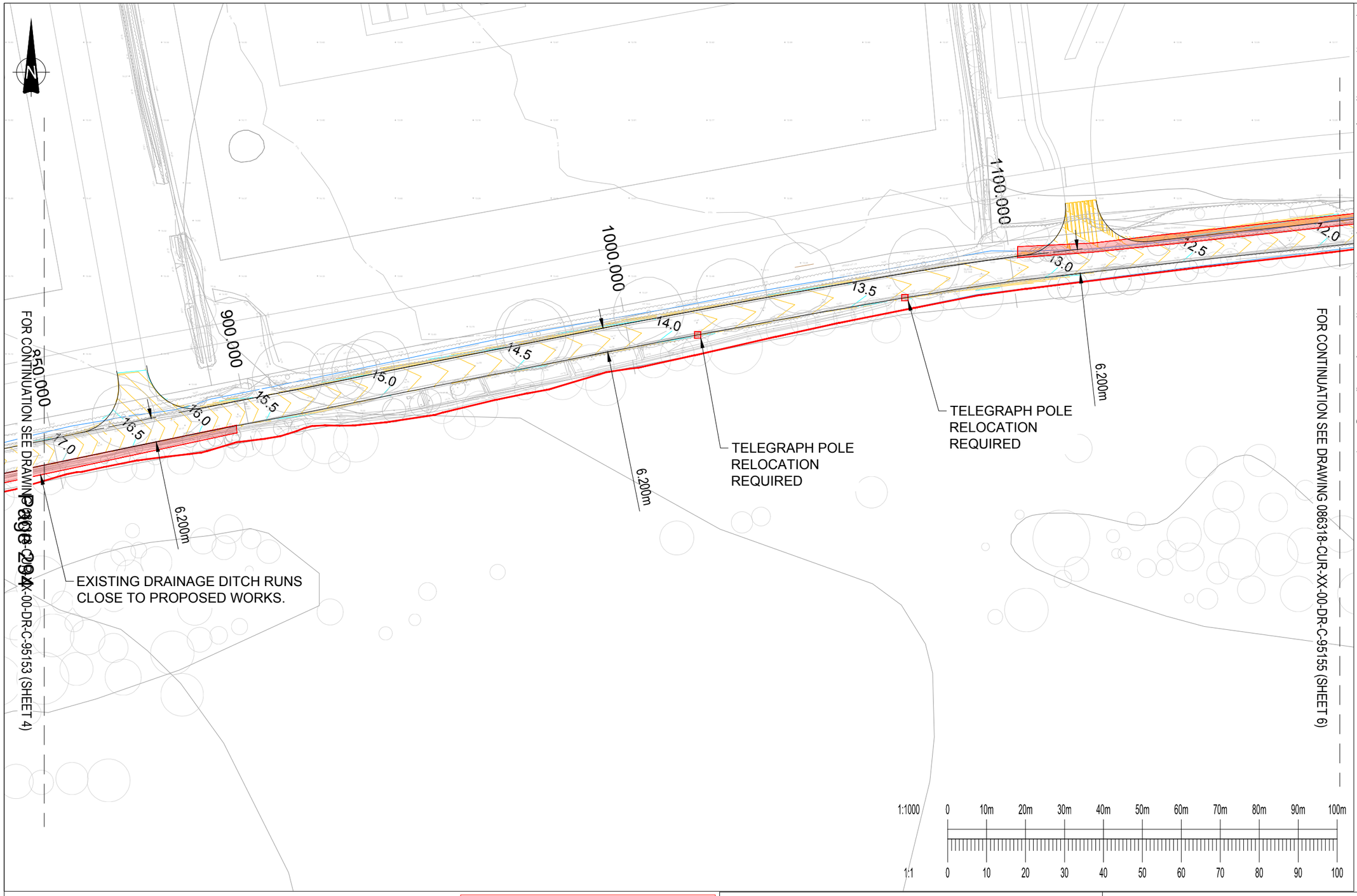
Status: S2

Drg Title: HIGHWAY CONTOURS SHEET 4 OF 11

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:1000		

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95153

Revision: P03



1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
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Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
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P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY CONTOURS SHEET 5 OF 11

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:1000

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95154

Revision P03

ROAD WIDENING OUTSIDE OF HIGHWAY BOUNDARY EXTENTS. TO BE COORDINATED WITH ONSITE DESIGN

1200.000

1300.000

1400.000

1500.000

6.200m

6.200m

6.200m

12.0

11.5

11.0

10.5

10.0

9.5

9.0

8.5

m002.9

TELEGRAPH POLE RELOCATION REQUIRED

ELEC

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95154 (SHEET 5)

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95156 (SHEET 7)

1:1000 0 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

1:1 0 10 20 30 40 50 60 70 80 90 100

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KEY

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- 20.0 MAJOR CONTOUR (0.5m)
- MINOR CONTOUR (0.1m)

1. TOPOGRAPHICAL SURVEY BASED ON SLR CONSULTING TOPOGRAPHICAL SURVEY DRAWING REF: 403.065936.00001.09.0_Havering_Topo_0325-A0L, DATED MARCH 2025
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4. FOR CONSTRUCTION DETAILS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95067 TO 086318-CUR-XX-00-DR-C-95069
5. FOR HIGHWAY LONGSECTIONS REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95950 TO 086318-CUR-XX-00-DR-C-95961
6. FOR HIGHWAY CROSS SECTIONS REFER TO CURTINS DRAWING 086318-CUR-XX-00-DR-C-95850 TO 086318-CUR-XX-00-DR-C-95852
7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

Rev:	Description:	Date:	By:	Chkd:
P03	REFERENCES UPDATED	23.02.26	HWH	TH
P02	SCALE, REFERENCES AND EXTENTS UPDATED	23.02.26	HWH	TH
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Project: EAST HAVERING

Status: S2

Drg Title: HIGHWAY CONTOURS SHEET 6 OF 11

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:1000		

Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95155

Revision P03

ELECTRICITY POLE RELOCATION REQUIRED

TELEGRAPH POLE RELOCATION REQUIRED

ELECTRICITY POLE RELOCATION REQUIRED

1620.000

ACTIVE DRAINAGE IN THIS AREA, GULLY TO BE RELOCATED

TELEGRAPH POLE RELOCATION REQUIRED

1700.000

TELEGRAPH POLE RELOCATION REQUIRED

ACTIVE DRAINAGE IN THIS AREA, GULLY TO BE RELOCATED

1800.000

1830.000

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95155 (SHEET 6)

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95157 (SHEET 8)

8.0

7.5

7.0

6.5

6.200m

6.199m

TELEGRAPH POLE RELOCATION REQUIRED

TELEGRAPH POLE RELOCATION REQUIRED

ACTIVE DRAINAGE IN THIS AREA, GULLY TO BE RELOCATED

ACTIVE DRAINAGE IN THIS AREA, GULLY TO BE RELOCATED

ACTIVE DRAINAGE IN THIS AREA, GULLY TO BE RELOCATED

EXISTING KERBLINE OUTSIDE OF HIGHWAY BOUNDARY

1:1000 0 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

1:1 0 10 20 30 40 50 60 70 80 90 100

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7. FOR FEN LANE DRAINAGE LAYOUT REFER TO CURTINS DRAWINGS 086318-CUR-XX-00-DR-C-95085 TO 086318-CUR-XX-00-DR-C-95093

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Project: EAST HAVERING

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Drg Title: HIGHWAY CONTOURS SHEET 7 OF 11

Drawn By NMH | Checked By TH

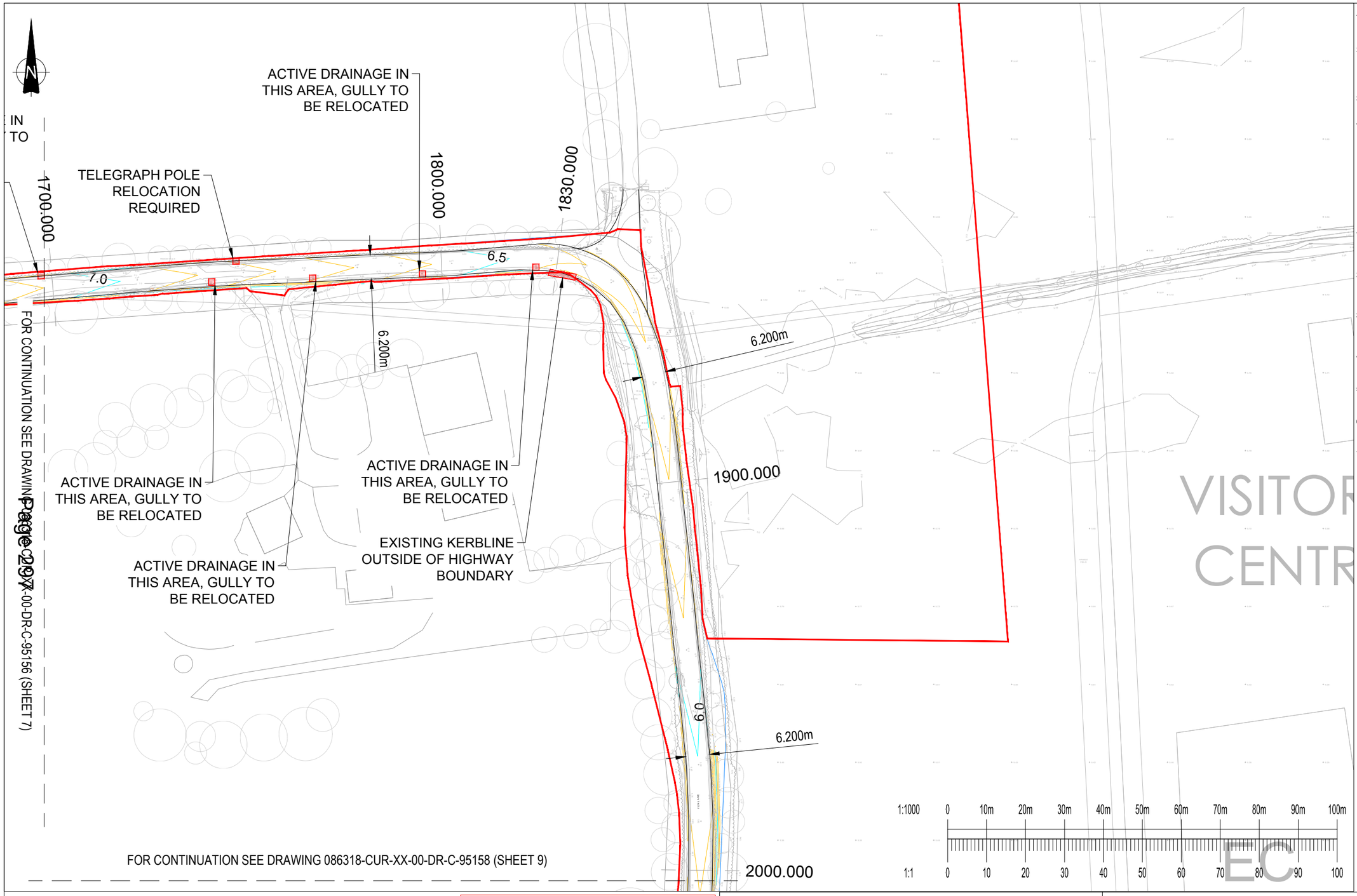
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086318 - CUR - XX - 00 - DR - C - 95156

Revision P03



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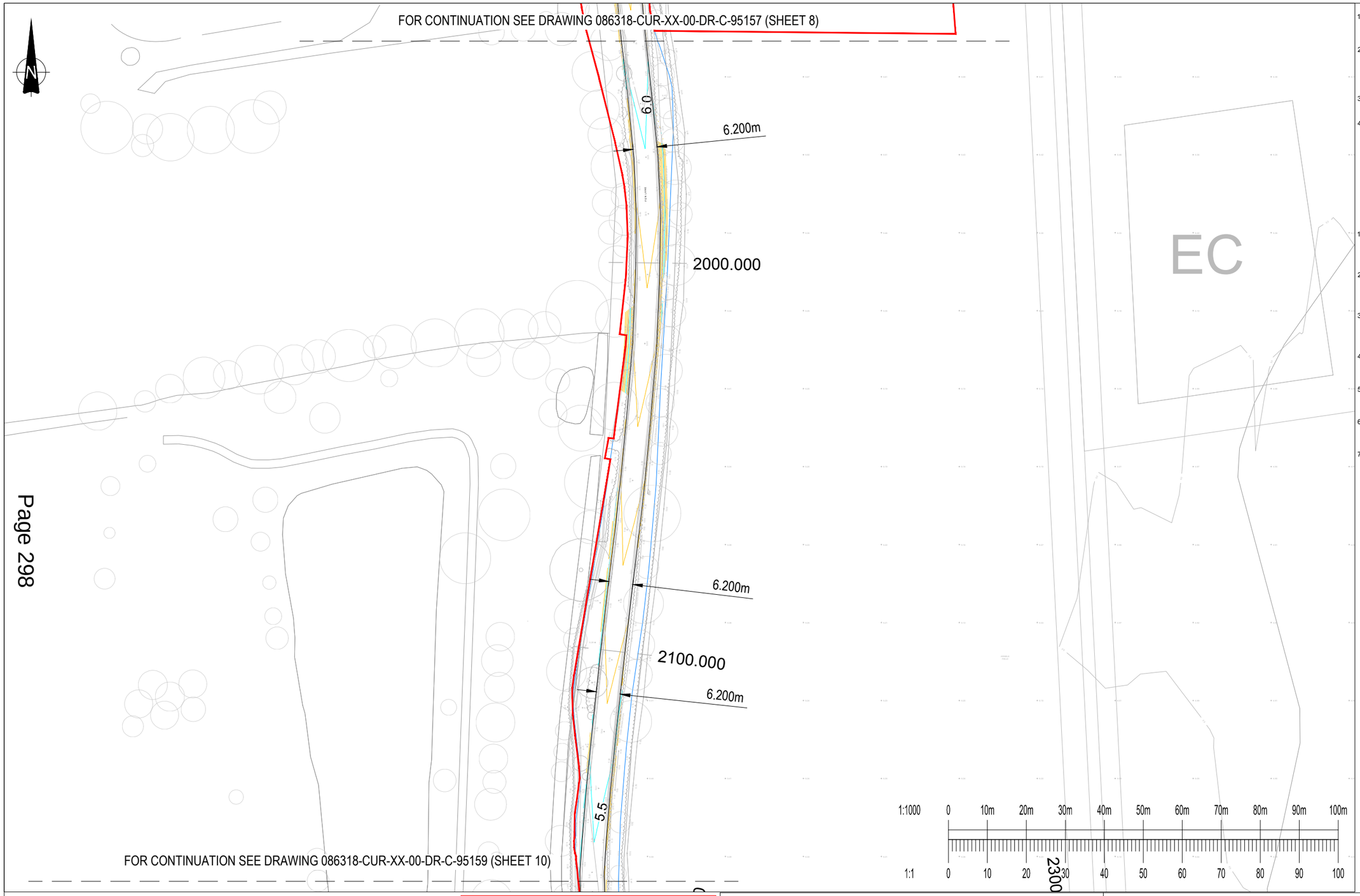
Drg Title: HIGHWAY CONTOURS SHEET 8 OF 11

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Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95157

Revision: P03

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95157 (SHEET 8)



FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95159 (SHEET 10)

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Drg Title: HIGHWAY CONTOURS SHEET 9 OF 11

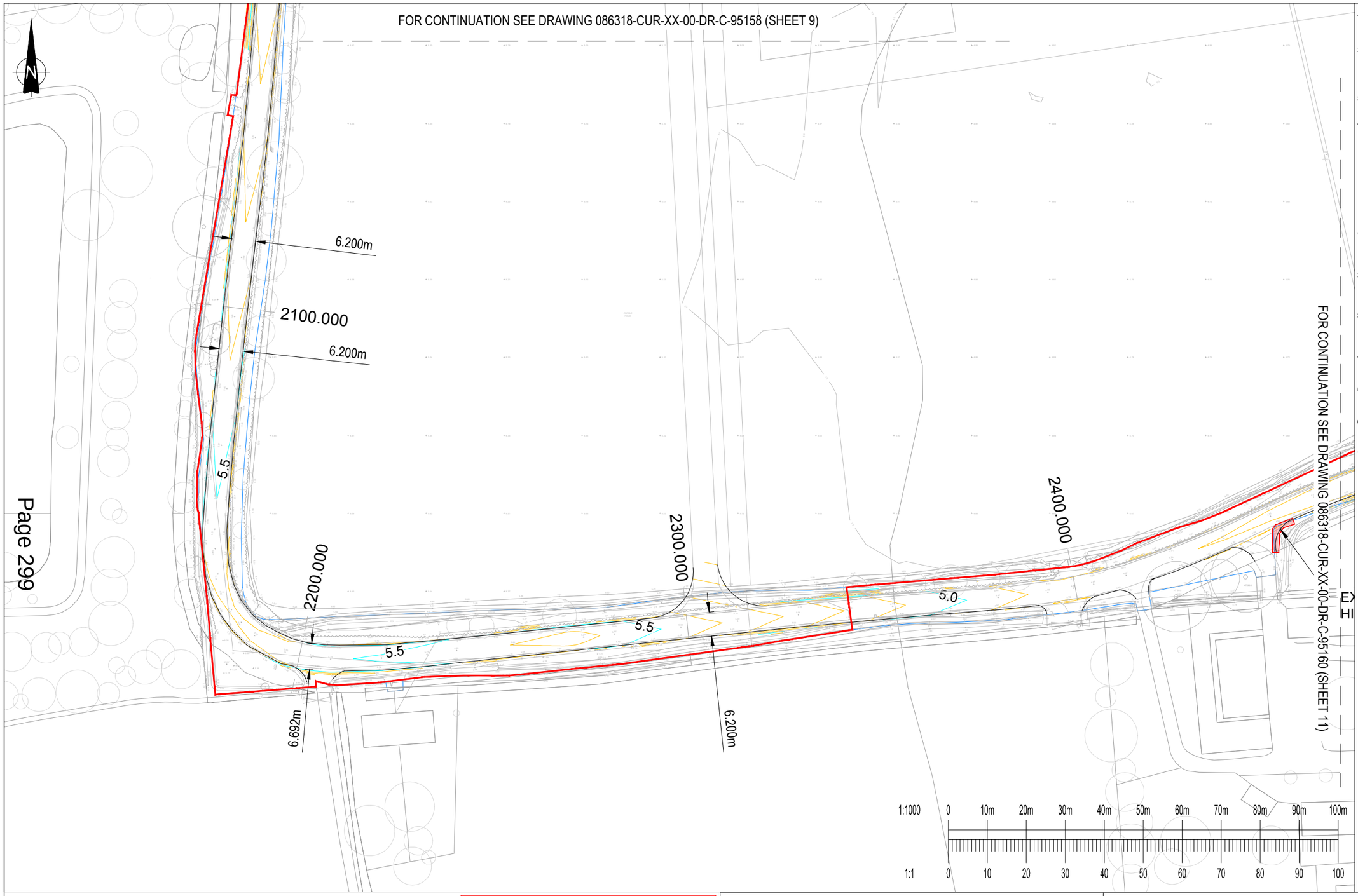
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086318 - CUR - XX - 00 - DR - C - 95158

Revision P03

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95158 (SHEET 9)



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Drg Title: HIGHWAY CONTOURS SHEET 10 OF 11

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Drg Title: HIGHWAY CONTOURS SHEET 11 OF 11

Drawn By NMH | Checked By TH

Designed By NMH | Date 17.02.26

Scales @ A3 1:1000

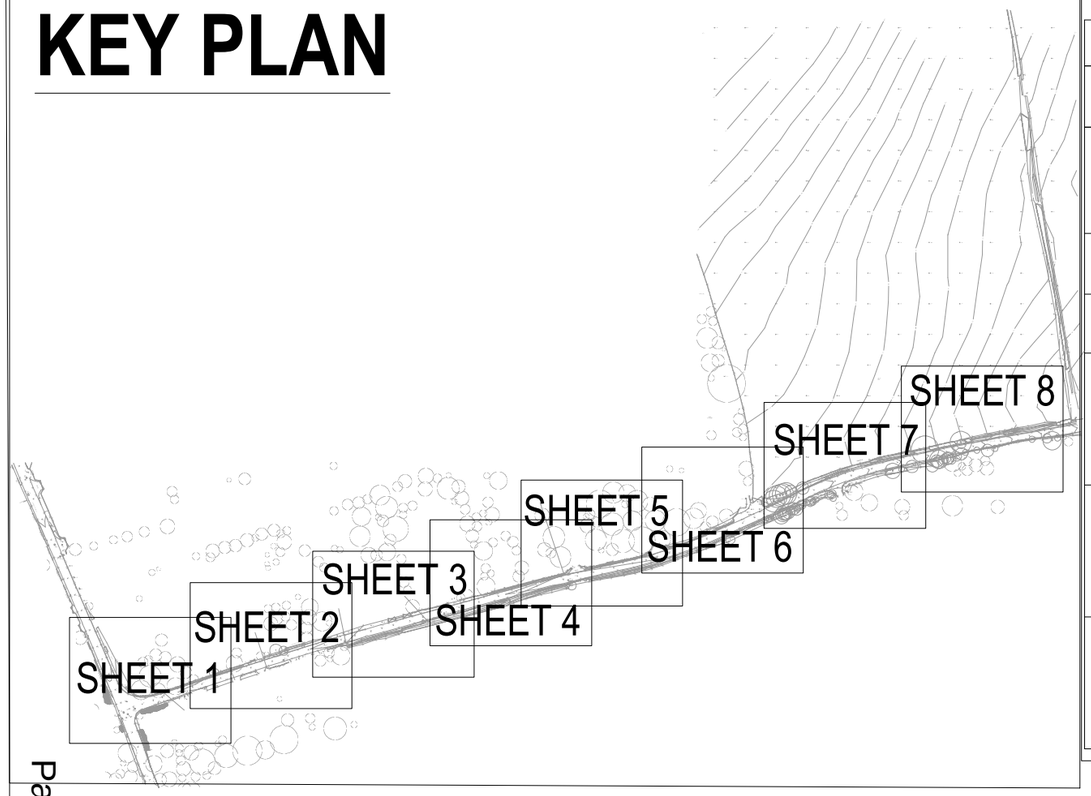
Project No - Originator - Function - Spatial - Form - Discipline - Number

086318 - CUR - XX - 00 - DR - C - 95160

Revision P03

Appendix 5e:
Fen Lane drainage drawings

KEY PLAN



KEY

———	125x150mm PCC BULLNOSED (BN) KERB (0mm UPSTAND).
RG □	ROAD GULLY, 150Ø OUTLET PRECAST ROAD GULLY CHAMBER WITH DOUBLE TRIANGLE GULLY GRATING TYPE EN124/405, D450 TO SEWERS FOR ADOPTION 7th EDITION.
	HYDROROCKK® INFILTRATION BLOCKS WITH 600Ø PPIC WITH D400 ACCESS COVERS.
	PROPOSED WORKS BOUNDARY
	CARRIAGEWAY WIDENING FULL DEPTH CARRIAGEWAY CONSTRUCTION.
	EXISTING CARRIAGEWAY RE-SURFACING WEARING COURSE REPLACEMENT.
	SOFT LANDSCAPING EMBANKMENT

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   086318-CUR-XX-00-DR-C-95850 TO 086318-CUR-XX-00-DR-C-95852
8. HYDROROCK ATTENUATION SIZING BASED ON ATTENUATING THE ADDITIONAL FOOTWAY. HYDROROCK TO DISCHARGE VIA INFILTRATION BASED ON AN ASSUMED INFILTRATION RATE OF 1x10-6m/s. HYDROROCK SIZING WILL BE MODIFIED IF A MINIMUM 1.2M FOOTWAY WIDTH REQUIRED WHERE 1.5M FOOTWAY IS NOT FEASIBLE (SEE SHEET 3 OF 8)

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5. COORDINATION REQUIRED WITH UTILITIES

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Project: EAST HAVERING

Drg Title: FEN LANE ROAD WIDENING DRAINAGE LAYOUT OVERVIEW

Status: S2

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

Project No - Originator - Function - Spatial - Form - Discipline - Number: 086318 - CUR - XX - 00 - DR - C - 95085

Revision: P03

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95085 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

GROUP OF 7 HYDROROCK® BD340 120x30x100mm BLOCKS. REFER TO NOTE 9.

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ALL DITCHES ADJACENT TO HIGHWAY TO BE CLEARED AND REGRADED TO EXISTING LEVELS IF NEEDED

EXISTING GULLY TO BE BROKEN OUT AND REPLACED.

NOTE:
EXISTING "STOP" SIGN TO BE RETAINED.

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95087 (SHEET 2)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project:	EAST HAVERING
Drg Title:	FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 1 of 8)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200
Project No - Originator - Function - Spatial - Form - Discipline - Number	086318 - CUR - XX - 00 - DR - C - 95086
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1.50m

1.20m

6.20m

6.20m

RG

RG

AREA OVERGROWN

DITCH

DITCH

WM

TP

BT

BT

30.72

31.24

31.09

31.21

31.26

31.57

31.44

31.46

31.43

31.65

31.55

31.62

31.58

31.56

31.66

31.67

31.72

31.77

31.84

31.86

31.98

31.88

31.46

31.33

31.37

31.45

31.38

31.35

31.23

31.1

CULVERTED ADJACENT TO HIGHWAY TO BE JETTED AND CLEARED IF NEEDED

ALL DITCHES ADJACENT TO HIGHWAY TO BE CLEARED AND REGRADED TO EXISTING LEVELS IF NEEDED

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95088 (SHEET 3)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

Page 304

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Status: S2

Drg Title: FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 2 of 8)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

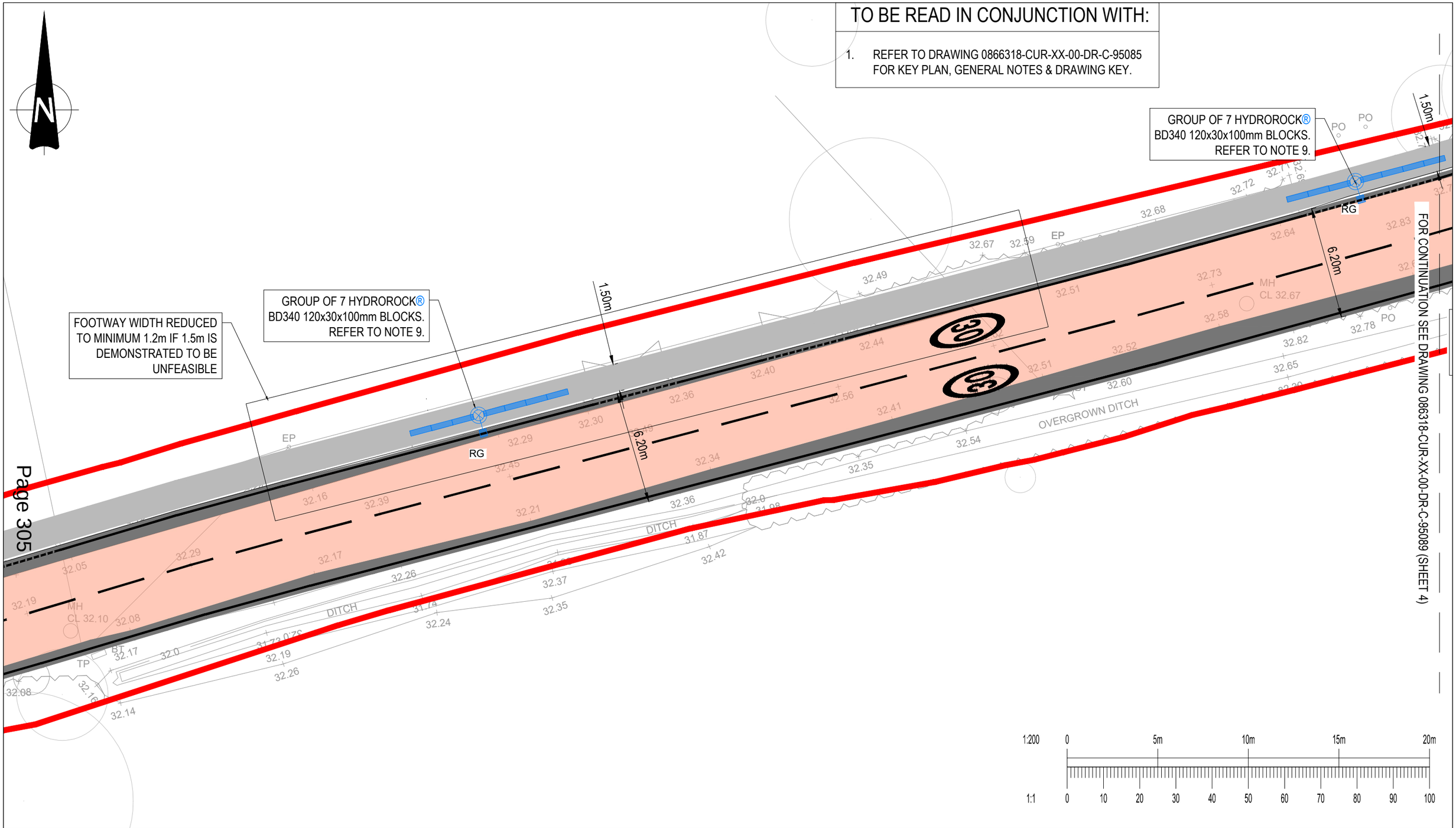
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Rev:	Description:	Date:	By:	Chkd:
P03	FOOTWAY & HYDROCK NLOVKD UPA	23.02.26	HWH	TH
P02	NOTE ADDED REGARDING 1.2m FOOTWAY	23.02.26	HWH	TH
P01	PRELIMINARY ISSUE	17.02.26	ER	TH

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Status: S2

Drg Title: FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 3 of 8)

Drawn By	NMH	Checked By	TH
Designed By	NMH	Date	17.02.26
Scales @ A3	1:200		

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Revision: P03

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1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95085 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

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NOTE: TELEGRAPH POLE TO BE RELOCATED.

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ALL DITCHES ADJACENT TO HIGHWAY TO BE CLEARED AND REGRADED TO EXISTING LEVELS IF NEEDED

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95090 (SHEET 5)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Drg Title:	FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 4 of 8)
Status:	S2
Drawn By	NMH
Checked By	TH
Designed By	NMH
Date	17.02.26
Scales @ A3	1:200

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REFER TO NOTE 9.

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BD340 120x30x100mm BLOCKS.
REFER TO NOTE 9.

NOTE:
TELEGRAPH POLE TO BE RELOCATED.

NOTE:
TELEGRAPH POLE TO BE RELOCATED.

1.500m

6.200m

RG

RG

DITCH

DITCH

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95091 (SHEET 6)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Drg Title: FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 5 of 8)

Status: S2

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1.500m

6.200m

RG

CULVERTED ADJACENT TO HIGHWAY TO BE JETTED AND CLEARED IF NEEDED

ALL DITCHES ADJACENT TO HIGHWAY TO BE CLEARED AND REGRADED TO EXISTING LEVELS IF NEEDED

NOTE:
TELEGRAPH POLE TO BE RELOCATED.

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95092 (SHEET 7)

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Drg Title:	FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 6 of 8)
Status:	S2
Drawn By	NMH
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Date	17.02.26
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Project No - Originator - Function - Spatial - Form - Discipline - Number	Revision
086318 - CUR - XX - 00 - DR - C - 95091	P01

TO BE READ IN CONJUNCTION WITH:

1. REFER TO DRAWING 0866318-CUR-XX-00-DR-C-95085 FOR KEY PLAN, GENERAL NOTES & DRAWING KEY.

NOTE:
EXISTING "30mph" SPEED RESTRICTION SIGN TO BE RETAINED.

NOTE:
TELEGRAPH POLE TO BE RELOCATED.

FOR CONTINUATION SEE DRAWING 086318-CUR-XX-00-DR-C-95093 (SHEET 8)

TO AND

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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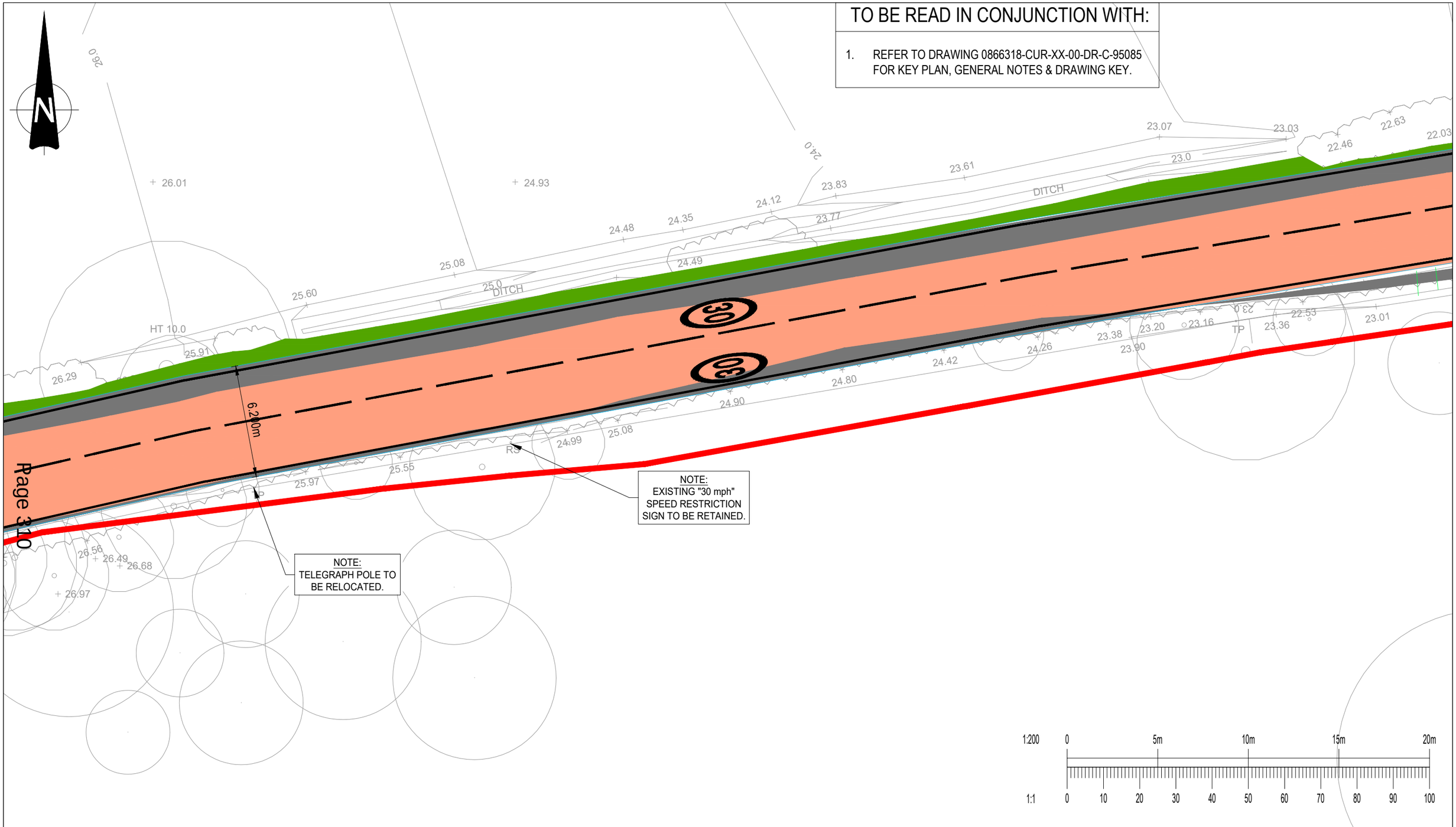
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Project:	EAST HAVERING
Drg Title:	FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 7 of 8)
Status:	S2
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Date	17.02.26
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Project No - Originator - Function - Spatial - Form - Discipline - Number	086318 - CUR - XX - 00 - DR - C - 95092
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1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Drg Title: FEN LANE ROAD WIDENING DRAINAGE LAYOUT (SHEET 8 of 8)

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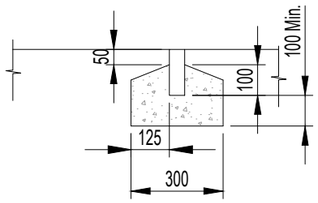
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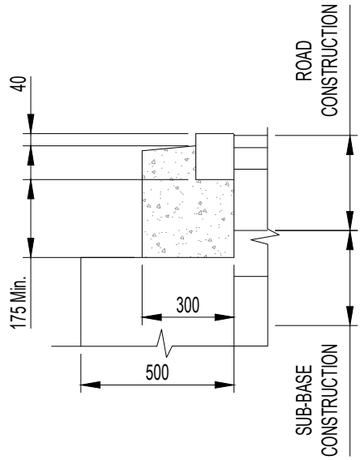
Appendix 5f:
Construction detail drawing

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
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4. FOR GENERAL NOTES REFER TO DRAWING.



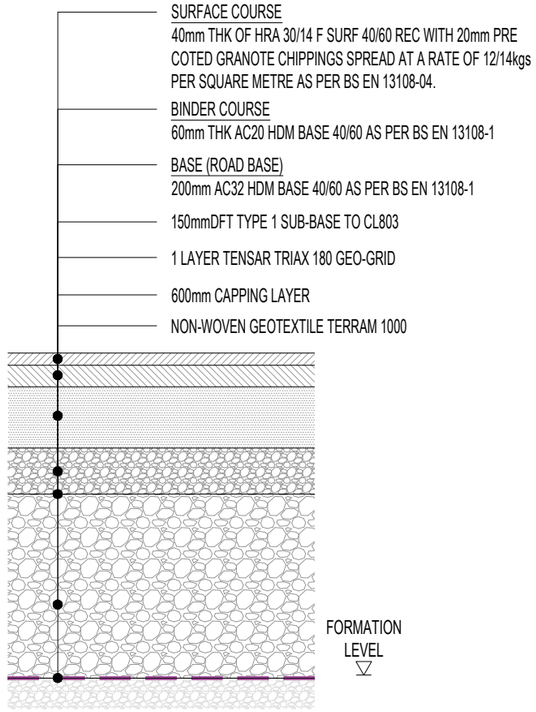
EDGING DETAIL

(SCALE 1:20)



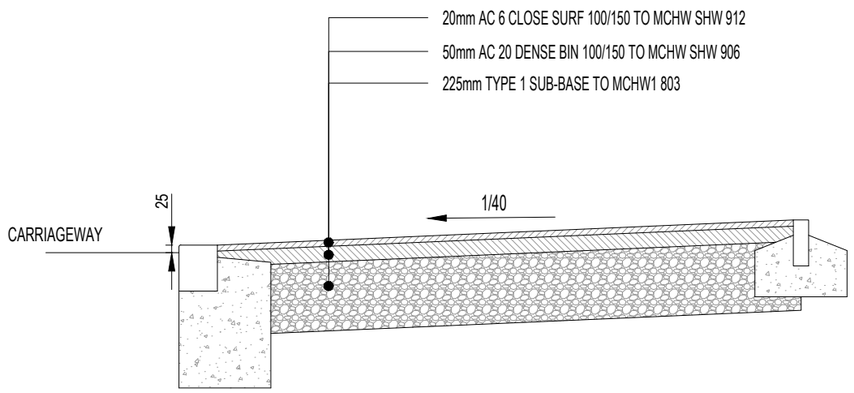
BN DETAIL
125x150 BULLNOSED KERB

(SCALE 1:20)



ROAD TYPE 1 CONSTRUCTION

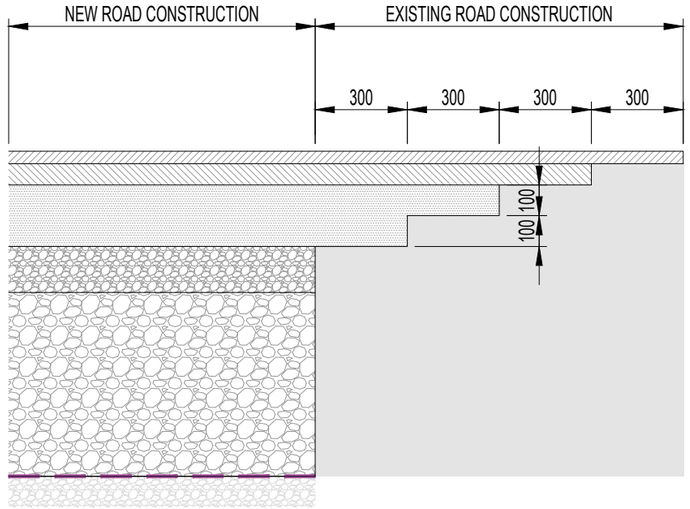
(SCALE 1:20)



TYPICAL VEHICLE CROSSOVER DETAIL

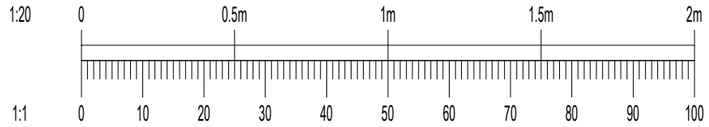
(SCALE 1:20)

CARRIAGEWAY CONSTRUCTION			
	OPTION 1		OPTION 2
CBR% VALUE	FURTHER DISCUSSION NECESSARY		SUB-BASE
<2	CAPPING	SUB-BASE	SUB-BASE
2	600	150	-
3	350	150	300
4	300	150	270
5	250	150	230
8	210	150	190
10	180	150	180
15+	-	150	150



STEPPED ROAD CONSTRUCTION

(SCALE 1:20)



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Drg Title: CONSTRUCTION DETAILS (SHEET 1 OF 3)

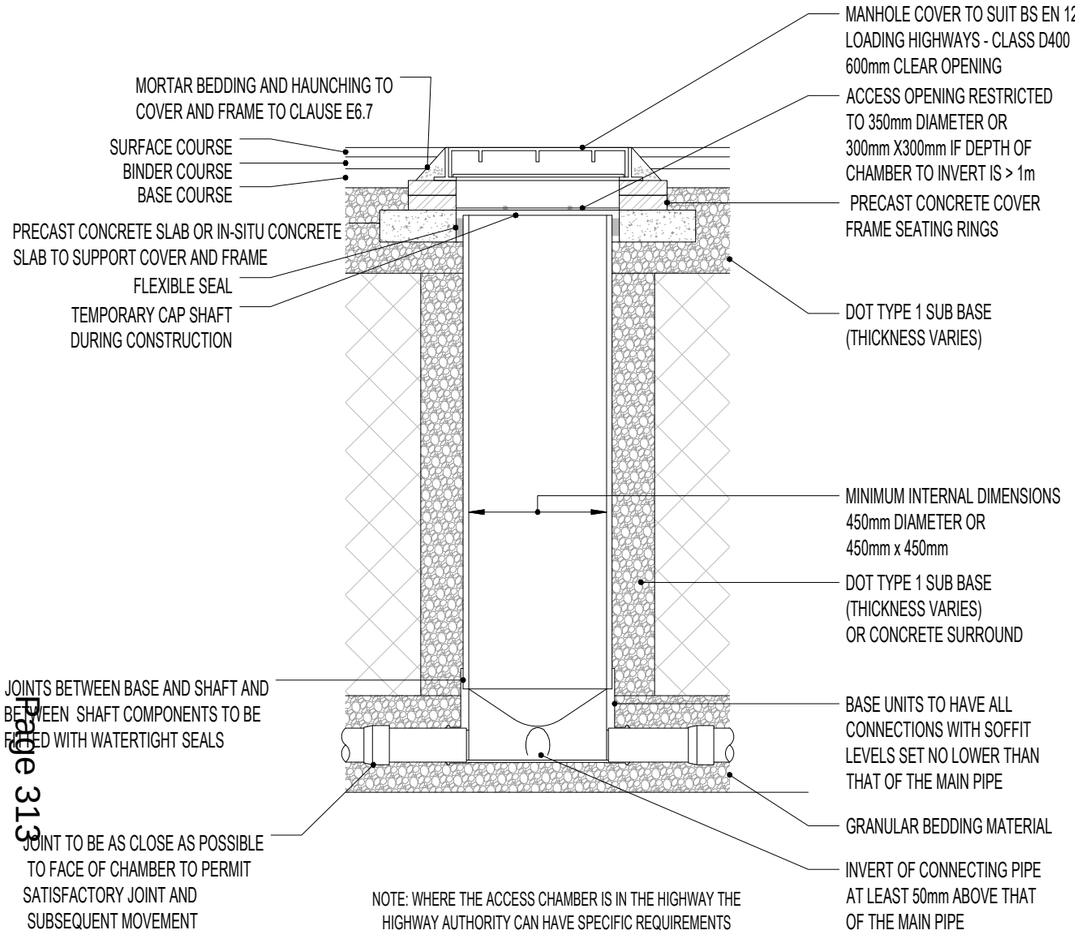
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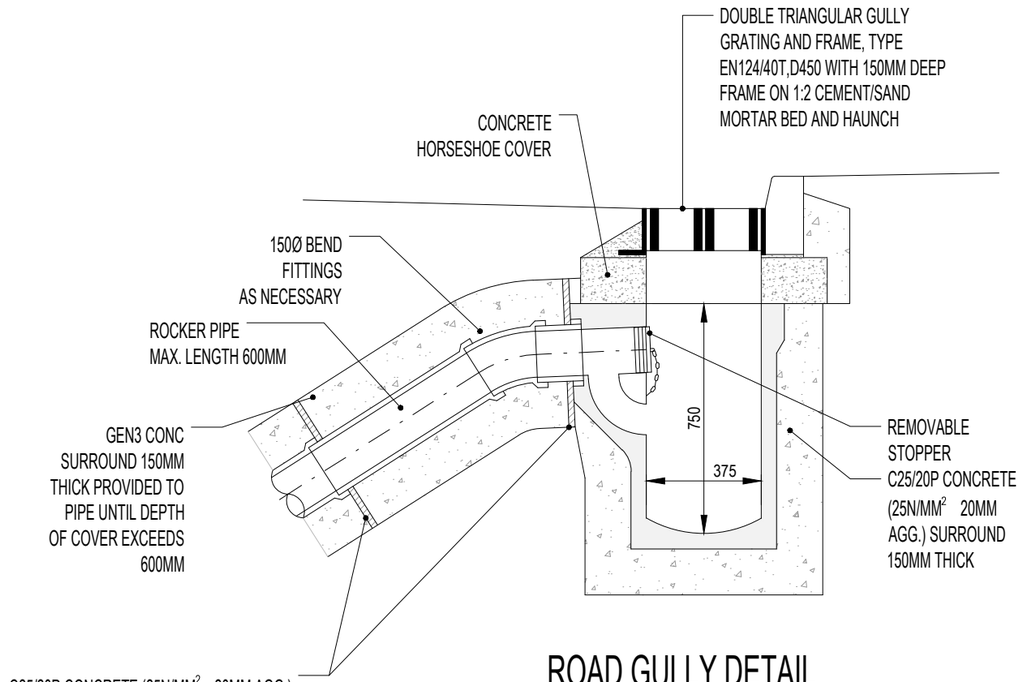
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TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3
(FLEXIBLE MATERIAL DETAIL)
MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3m IN AREAS SUBJECT TO VEHICLE LOADING , NON-ENTRY

(SCALE 1:20)



ROAD GULLY DETAIL

(SCALE 1:20)

1:20 0 0.5m 1m 1.5m 2m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Project:	EAST HAVERING
Status:	S2
Drg Title:	CONSTRUCTION DETAILS (SHEET 2 OF 3)
Drawn By	NMH
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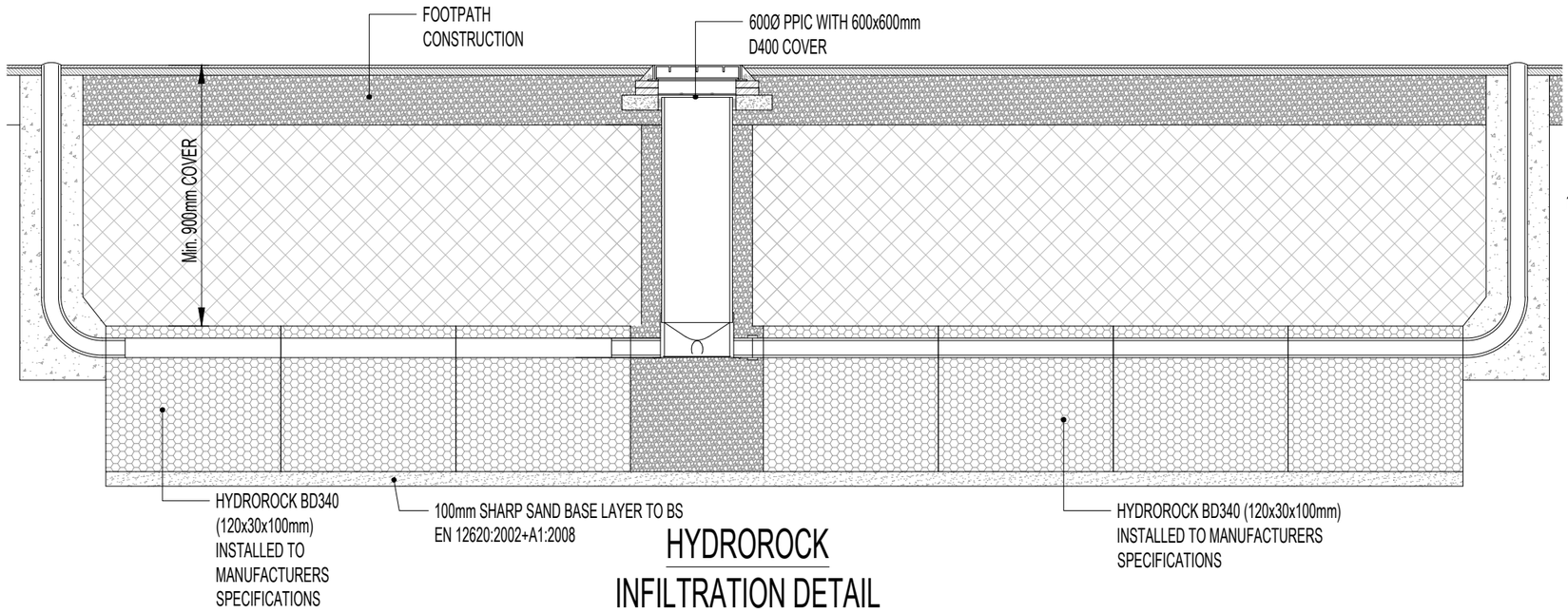
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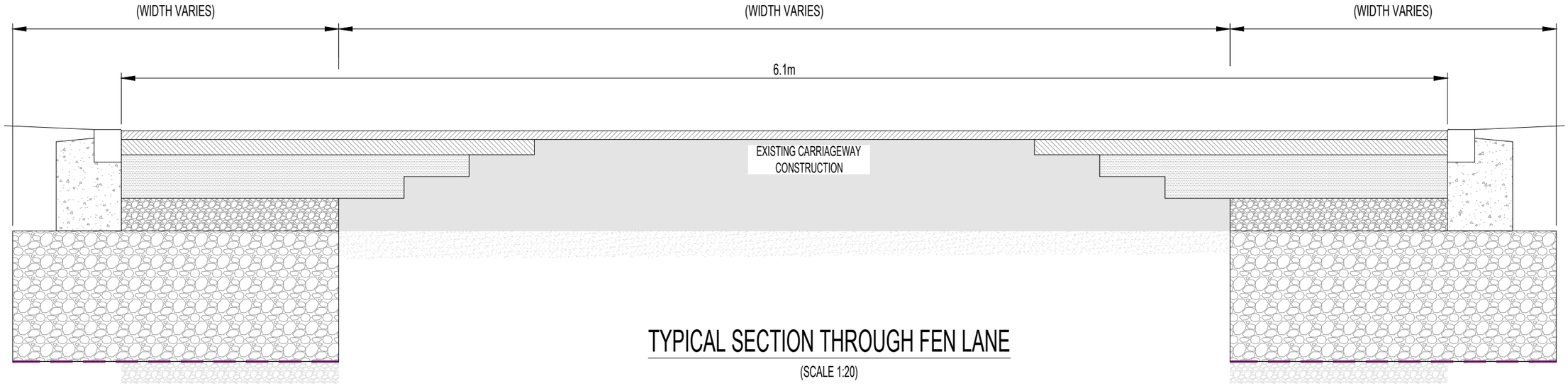


HYDROROCK INFILTRATION DETAIL

(SCALE 1:10)

1:20 0 0.5m 1m 1.5m 2m

1:1 0 10 20 30 40 50 60 70 80 90 100



TYPICAL SECTION THROUGH FEN LANE

(SCALE 1:20)

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Project: EAST HAVERING

Status: S2

Drg Title: CONSTRUCTION DETAILS (SHEET 3 OF 3)

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Scales @ A3	N/A		

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East Havering Data Centre Campus
Local Development Order











APPENDIX 4 - DRAFT CODE OF CONSTRUCTION PRACTICE

March 2026

Havering
LONDON BOROUGH

Contents

		Page
Introduction		3
Part 1: Site Preparation and Construction Standards		5
A	**Construction Logistics**	6
A1	General Compliance Requirements	6
A2	Routing of HGV and LGV Construction Traffic	6
A3	Construction Vehicle Redundancy Access Route	7
A4	Managing Arrival and Departure of Deliveries	8
A5	Abnormal Loads	8
A6	Public Liaison	10
A7	Monitoring	10
B	**Construction Compounds**	11
B1	Construction Compounds	11
B2	Access	12
B3	Delivery and Storage of Materials	12
B4	Parking of Construction Related Vehicles	12
B5	Wheel Cleaning and Wash Facilities	13
B6	Hours of Working	13
C	**Earthworks**	14
C1	Soil Resource Management Requirements	14
C2	Temporary Construction Routes	18
C3	Site Constraints	18
D	**Site Waste Material Management**	21
D1	Waste Streams and Segregation	21
D2	Preventing Escape of Waste	22
D3	Transfer to an Authorised Person	22
D4	Off Site Waste Disposal or Treatment	22
D5	Record Keeping	22
E	**Unexploded Ordnance (UXOs)**	23
Part 2: Environmental Control Measures/Procedure		24
F	**Habitats and Protected Species**	25
F1	Fairplay Farm Site of Importance for Nature Conservation (SINC)	25
F2	Upminster Sewage Works Grass Beds SINC	25
F3	Great Crested Newts (GCN)	26
F4	Reptiles	26
F5	Nesting Birds	26
F6	Bats	26
F7	Badgers	27
F8	Water Vole	28
F9	Other Mammals (Hedgehog, Harvest Mouse, Burrowing Mammals)	28

G	**Water Quality**	29
G1	General Construction Control Measure	29
G2	Drainage Implementation	30
G3	Water Quality Monitoring	31
G4	Drainage Pollution Control Measures	31
G5	Water Demand Management Measures	31
H	**Air Quality**	32
H1	Dust Control Measures	32
H2	Materials Handling and Storage	32
H3	Plant	33
H4	Concrete Batching and Pouring	33
H5	Cutting/Grinding/Grouting/Packing	33
H6	Hot Bitumen Processes	33
H7	Damping Techniques	33
H8	Preventing Emissions and Odours	34
H9	Monitoring	34
I	**Noise and Vibration**	36
I1	Noise and Vibration Control Measures	36
I2	Monitoring	37
J	**Landscape and Visual Characteristics**	40
J1	Arboriculture	40
J2	Lighting	45
Appendix 1: Soil Handling Criteria		47
Appendix 2: Arboriculture – Schedule of Works and Plans		49

Introduction

1. The East Havering Data Campus Code of Construction Practice (CoCP) forms part of the East Havering Data Campus Local Development Order (LDO) and must be read in conjunction with it.

2. This document provides a framework for compliance for all site preparation and construction works and applies to all parties involved in the construction of development permitted under the LDO. It establishes site-wide codes of practice and protocols, detailed work methodologies and provides a framework for the management of environmental impacts including specific control measures for managing noise, and impacts upon air quality, water resources and ecology. All site works shall be undertaken in accordance with the Environment Agency's published guidance or relevant CIRIA construction guidance. The CoCP does not avoid the need to obtain the necessary environmental permits, licences and regulatory notifications.

3. **Development must comply with all aspects of this CoCP in order to benefit from the permitted development rights conferred by the LDO.**

4. Where there is a specific requirement for monitoring set out in this CoCP, records shall be made available for inspection by the local planning authority (LPA) at any time.

5. Where reference is made to adopted guidance, standards or codes that is subsequently updated, the updated guidance, standard or code shall apply.

The CoCP comprises two parts.

6. **Part One** sets out specific **site preparation and construction standards** that shall be followed at all times during the construction period. Matters for control are set out in the following sections:

Section A: Construction Logistics
Section B: Construction Compounds
Section C: Earthworks
Section D: Site Waste Material Management
Section E: Unexploded Ordnance (UXOs)

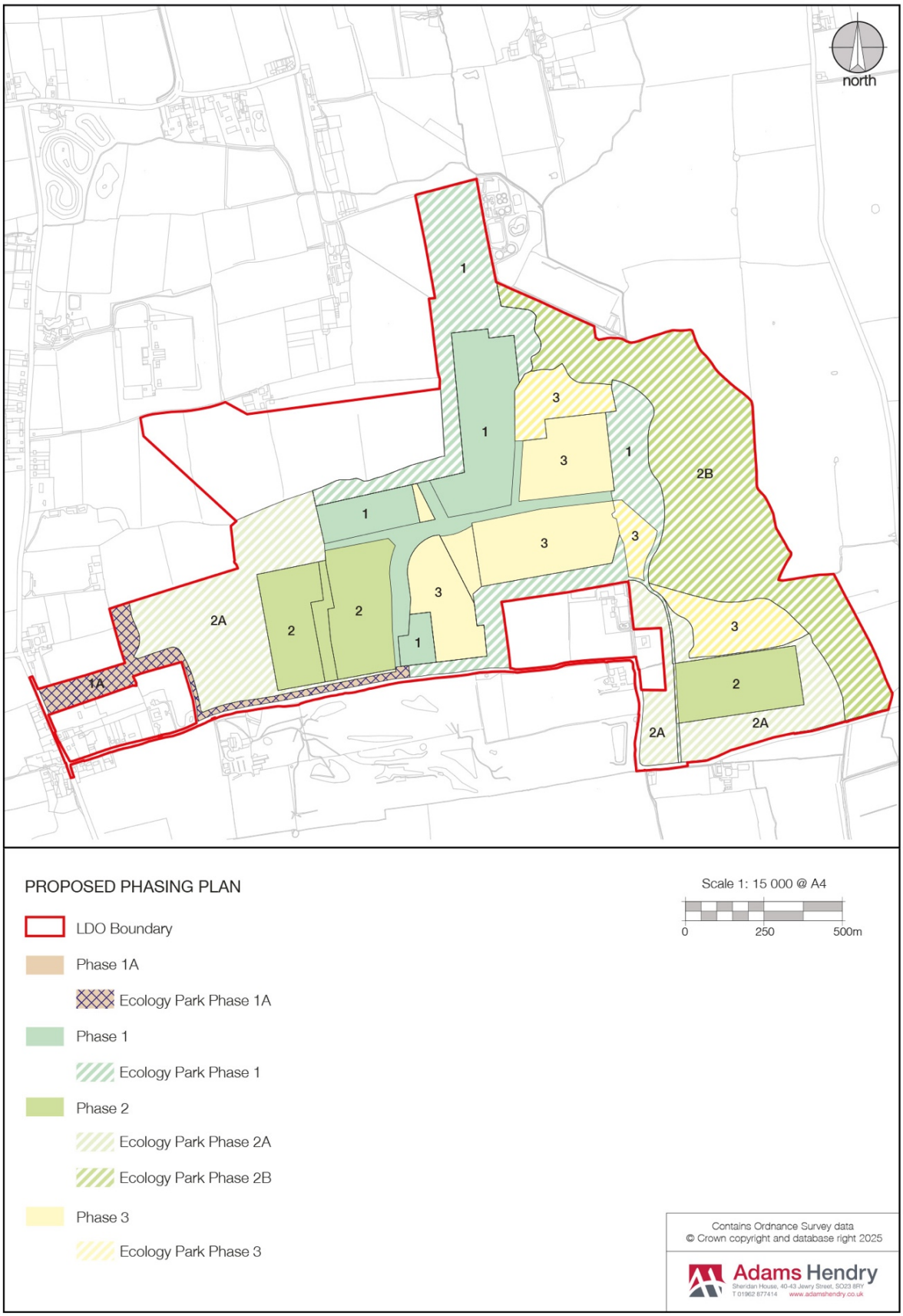
11. **Part Two** sets out the **environmental control measures and procedures** that shall be followed to minimise the environmental impact of construction works.

Section F: Habitats and Protected Species
Section G: Water Quality
Section H: Air Quality
Section I: Noise and Vibration
Section J: Landscape and Visual Characteristics

12. The proposed development will be sequenced over a number of phases as shown on Figure 1.

13. Land shall remain in agricultural use until it is required for development in accordance with the phasing plan.

Figure 1: Phasing Plan



Part 1: Site Preparation and Construction Standards

Part 1: Site Preparation and Construction Standards

A. Construction Logistics

A1 General Compliance Requirements

A1.1 All reasonably practicable measures shall be taken to mitigate the risks and impacts to vulnerable road users from construction logistics activities through adherence to:

- CLOCS (Construction Logistics and Community Safety) standard.
- FORS (Fleet Operator Recognition Scheme) Silver accreditation.
- Work Related Road Risk (WRRR) - managed through requirements of FORS.
- Direct Vision Standard (DVS).

A1.2 All principal contractors and sub-contractors shall be issued with a handbook which as a minimum shall provide:

- site map;
- hours of site operation;
- health and safety information;
- travel plan for contractors, or advice on how to get this information; and
- main contact details.

A2 Routing of HGV and LGV Construction Traffic

A2.1 All construction related Large Goods Vehicles (LGVs) and Heavy Goods Vehicles (HVGs) shall use the route to and from the site as shown on Figure 2.

A2.2 Directional traffic signs notifying drivers of preferred construction routes shall be placed in clear view at all site exits and in construction compounds and shall be highlighted within site inductions.

On Arrival

A2.3 All LGVs and HGVs shall route along the strategic road network via M25 J29 to the A127.

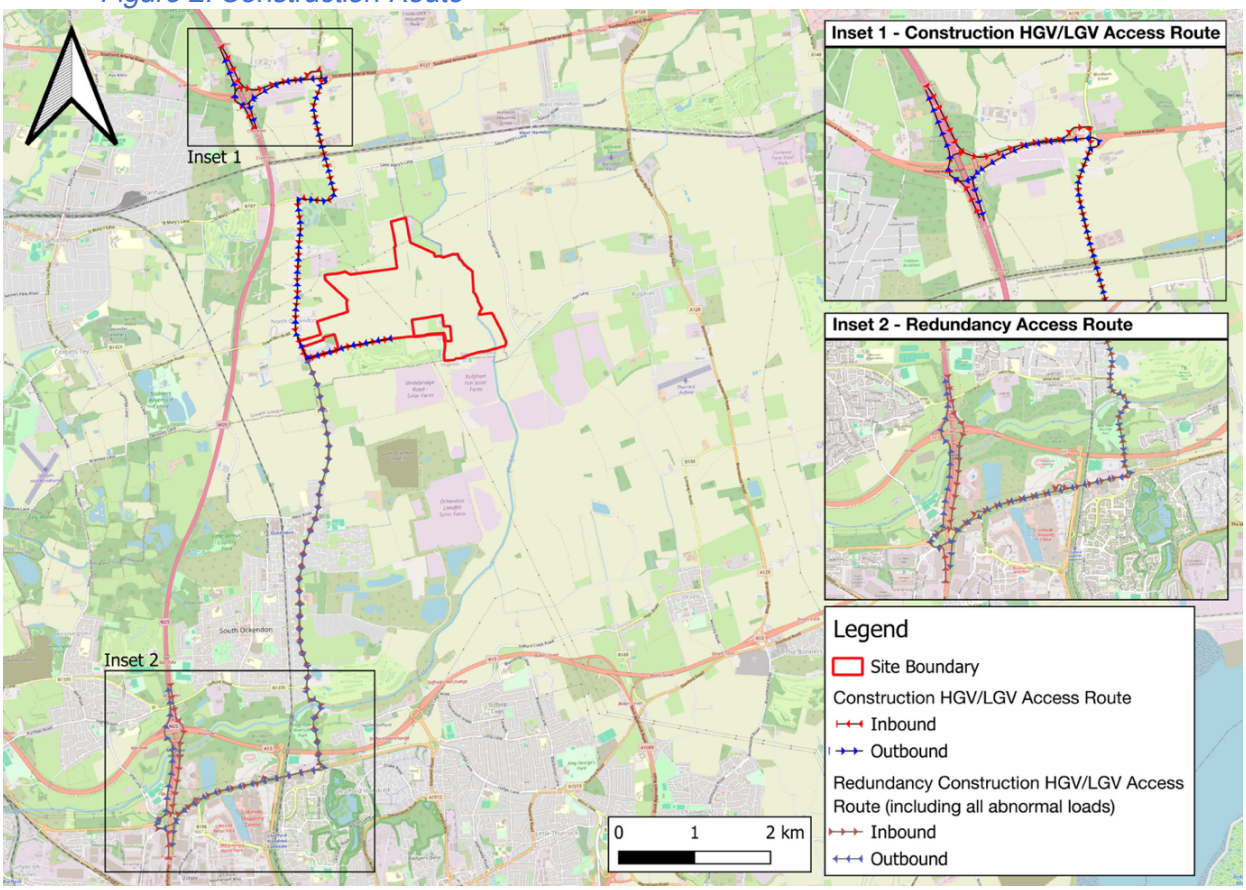
A2.4 Vehicles shall leave the A127 at the junction with the B186, and route south along the B186 to the junction with Fen Lane before turning left into Fen Lane and then left into the construction site.

On Departure

A2.5 All LGVs and HVGs shall turn right from the construction site to Fen Lane before turning right onto B186 Ockendon Road.

A2.6 LGVs and HGVs shall then route north along B186 before joining the A127 westbound and then connect to the strategic road network via M25 J29.

Figure 2: Construction Route



A3 Construction Vehicle Redundancy Access Route

A3.1 A weight restriction of 40 tonnes applies to the Clay Tye Road Bridge. Any construction vehicles over 40 tonnes when laden must use the construction redundancy route as shown on Figure 2.

A3.2 All construction LGVs and HGVs shall use the redundancy vehicle route to and from the site only if the LGV and HGV Construction Vehicle Route is unavailable for any reason.

On Arrival

A3.3 Vehicles shall turn off the M25 at Junction 31 (Purfleet Interchange) for northbound traffic or Junction 30 (Mardyke Junction) for southbound traffic.

A3.4 Vehicles shall then head eastbound on the A1306 Arterial Road West Thurrock before turning left onto the B186 Pilgrims Lane at the Pilgrims Roundabout.

A3.5 Vehicles shall continue north along the B186 through South Ockendon and then turn right into Fen Lane.

On Departure

A3.6 Vehicles shall turn right out of Fen Lane and head southbound on the B186 through South Ockendon before turning right to the A1306 Arterial Road West Thurrock at the Pilgrims Roundabout and connect to the strategic road network via M25 J31 for southbound traffic and M25 J30 for northbound traffic.

A4 Managing Arrival and Departure of Deliveries

A4.1 When transporting materials by road, the following measures shall be considered:

- Use of suppliers in as close proximity to the development site as feasible.
- Use of vehicles with low emissions.
- Optimisation of vehicle loading (using logistics and consolidation centres where appropriate).
- Applying the Design for Manufacture and Assembly (DfMA) approach and off-site manufacturing.

A4.2 Deliveries shall take place only within the core hours of working set out in Section B6. An online delivery management system shall be used to minimise the number of vehicles on-site at any one time and to schedule deliveries outside weekday peak hours (08:00-09:00 and 17:00-18:00) wherever possible.

A4.3 Delivery slots shall be clearly communicated to all contractor and subcontractor delivery vehicle drivers prior to their journey to site. All vehicles shall be logged on entry and exit by the site management team to enable monitoring of arrivals/departures against the agreed delivery schedule.

A4.4 Access to the site is only permitted to pre-booked vehicles via the correct entry gates; checks shall be carried out prior to entry to the site. Sufficient space shall be provided for vehicles to wait off the public highway for such checks to be carried out, and turnaround space shall be provided for refused vehicles.

A4.5 Access points to the site shall be kept free from obstacles at all times. All vehicles shall be loaded/unloaded on site in designated drop-down areas.

A4.6 The principal contractors shall nominate a manager who will act as the Project Environmental Manager (PEM) for each phase of the development (see Section A6). The PEM shall monitor site compliance to the CLOCS Standard throughout the construction programme. Records should be made available for inspection by the local planning authority (LPA) at any time.

A5 Abnormal Loads

A5.1 The Construction Vehicle Redundancy Route described at Section A3 and shown on Figure 2 shall be used for all abnormal loads.

A5.2 Permits for abnormal load movements and road closures, shall be obtained from all relevant highway authorities along the planned route. A permit shall be obtained for each abnormal load movement. The removal of any bollards, street furniture, or kerb works or any other works required to accommodate abnormal loads shall be subject to a s278 legal agreement with the relevant Highway Authority under the Highways Act 1980 prior to commencement of any works on the public highway.

A5.3 The protocols set out in the Highways Agency “Aide memoire for notification requirements for the movement of Abnormal Indivisible Loads or vehicles when not complying with The Road Vehicles (Construction and Use) Regulations 1986” (as amended) shall be adhered to, as shown in Table 1.

Table 1: Notification Requirements for the Movement of Abnormal Loads

Weight	
Gross weight of vehicle carrying the load exceeding C & U limits up to 80,000kgs (78.74 tons)	2 clear days notice* with indemnity to Highway and Bridge Authorities.
Gross weight of vehicles carrying the load exceeding 80,000kgs up to 150,000kgs (147.63 tons)	2 clear days notice* and 5 clear days with indemnity to Highways and Bridge Authorities.
Gross weight of vehicle carrying the load exceeding 80,000kgs up to 150,000kgs (147.63 tons)	HA Special Order** plus 5 clear days notice* to Police and 5 clear days notice with indemnity to Highways and Bridge Authorities.
Width	
Width exceeding 2.9m (for C & U loads) 3.0m (9ft 10ins) up to 5.0m (16ft 5ins) for other loads	2 clear days notice* to Police.
Width exceeding 5.0m (16ft 5ins) up to 6.1m (20ft)	HA form VR1** plus 2 clear days notice* to Police.
Width exceeding 6.1m (20ft)	HA Special Order** plus 5 clear days notice* to Police and 5 clear days notice with indemnity to Highway and Bridge Authorities.
Length	
Length exceeding 18.65m (61ft 2in) up to 30.0m (98ft 5ins) rigid.	2 clear days notice* to Police.
Vehicle combination exceeding 25.9m (85ft)	2 clear days notice* to Police.
Length exceeding 30.0m (98ft 5ins) rigid, NB For some very light loads, such as yacht masts, that are moved on conventional motor vehicles not exceeding 12 tonnes gross weight or trailers not exceeding 10 tonnes gross weight, an HA Special Order will be required if the rigid length exceeds 27.4m (89'11")	HA Special Order** plus 5 clear days notice* to Police and 5 clear days notice* with indemnity to Highway and Bridge Authorities.

* 'Clear days Notice' excludes Saturdays, Sundays or a public holiday in any part of Great Britain in relation to movements authorised by the Special Types General Order only, there being no such exclusion in Special Orders unless specifically stated.

** There is no statutory limit governing the overall height of a load, however, when applying for a Special Order or VR1 it should, wherever possible not exceed 4.95m (16ft 3ins) in order that the maximum use can be made of the motorway and trunk road network.

A6 Public Liaison

A6.1 The Project Environmental Manager (PEM) shall be named and contact telephone number provided at all entrances to the site. The contact number shall be provided to all relevant stakeholders prior to construction works on each phase. All key stakeholders shall be notified of any change to the PEM contact details.

A6.2 The PEM shall have primary responsibility for liaising with the LPA and other stakeholders on environmental matters and shall keep neighbours, and other relevant parties informed of the nature of the on-going works, their duration and programme.

A6.3 The PEM will deal with enquiries from the general public, including any complaints. Any complaints shall be logged and reported to the LPA as soon as practicable. The PEM will coordinate responses to queries and address issues in a timely and satisfactory manner.

A7 Monitoring

A7.1 Construction vehicle movements to/from the site shall be logged. The following data shall be collected:

- Number of construction vehicles arriving at the site, by vehicle type;
- Time of arrival and time of departure (facilitating calculation of time spent on site); and
- Arrival/departure accuracy compared to schedule.

A7.2 The PEM shall maintain a log of any breaches and complaints regarding:

- Deviations from designated vehicle routes and access points;
- Unacceptable parking or queuing on the public highway;
- Adherence to safety & environmental standards (FORS Silver accreditation/CLOCS Standard).

A7.3 Safety breaches against the CLOCS standard requirements shall also be recorded which shall include:

- Any incidents or near-misses during vehicle access, loading/unloading, and egress;
- Collisions and emissions performance for all subcontractors/delivery partners, reported per 100,000km travelled for the most recent formally reported 12-month period including:
    - Collisions reported by fatal / serious injury / minor injury / near miss; and
    - Emissions reported by CO2 / NOX (NO + NO2) / PM10 / PM2.5 (if available).
- Any vehicles and operators breaching safety requirements associated with FORS Silver, WRRR, DVS.

A7.4 All monitoring records shall be made available to the LPA on request.

A7.5 It is the PEM's responsibility to review monitoring records and take action, if required, to ensure that the requirements of the CoCP are being met.

B Construction Compounds

B1 Construction Compounds

B1.1 Each contract for the construction of infrastructure or plot related works may be served by a separate segregated construction compound. The construction compound layout and position shall be dictated by the nature, scale, and location of individual working area.

B1.2 Hoarding (minimum 2.4m high) and/or heras fencing (minimum 2m high) shall be erected around each compound and/or to provide a clear and secure demarcation between operational and construction activities within the Data Centre Campus and/or the ecology park.

B1.3 The hoarding and/or heras fencing shall accord with the requirements of BS 6180:2011: *Barriers in and around buildings*. Regular inspections shall be carried out to check for damage and repairs shall be carried out where required.

B1.4 Clear signage indicating construction zones, safety protocols, emergency exits, and site rules shall be posted throughout the compound.

B1.5 A 'clean site' policy shall be maintained by principal contractors and their sub-contractors.

B1.6 On completion of construction, the security fencing and construction compounds (including temporary surfacing) shall be removed from the site.

Primary Compound

B1.7 A primary compound for the initial site-wide infrastructure works and development during Phase 1A and Phase 1 shall be set up north of Fen Lane in Build Zone E. The primary compound shall be accessed via the main site access.

B1.8 The primary compound shall comprise:

- Temporary office: portable cabins or modular buildings serving as administrative offices for project management, engineers, and support staff.
- Welfare Facilities: portable cabins equipped with toilets, showers, and changing facilities for workers.
- Canteen (if required): portable cabins or modular buildings for temporary dining areas for workers to have meals, equipped with seating, food preparation areas, and vending machines.
- Parking: designated parking areas for construction vehicles, contractor vehicles and site visitors. Clear signage and traffic flow markings shall be provided.
- LGV and HGV Parking: a separate area allocated for parking large delivery trucks and lorries, minimising congestion within the site.
- Laydown and storage: designated zones within the compound for storing construction materials, equipment, and machinery, organised for easy access and inventory management.
- Temporary security hut: manned security checkpoint at the entrance to control access and monitor site activities.
- Wheel washing facilities.

B1.9 Portacabin type accommodation shall be a maximum of three storeys in height and shall not be occupied overnight.

B1.10 The construction compound shall include equipment to prevent and respond to the escape of spilled materials to surface waters or groundwater in accordance with the procedures set out in Section G of the CoCP.

Secondary Compounds

B1.11 Secondary compounds may be provided within Build Zones comprising site offices and welfare facilities, designated parking areas for HVGs/LGVs, contractor vehicles and visitors, a layout area and wheel wash facilities. Portacabin type accommodation shall comply with the requirements of B1.9. The requirements of B1.10 shall also apply.

B2 Access

B2.1 Temporary haul roads constructed of crushed concrete may be used to access development plots within Build Zones. A 20mph vehicle speed limited shall be in force across the site.

B3 Delivery and Storage of Materials

B3.1 An area of impermeable hard standing shall be provided within each construction compound for the delivery and storage of materials. It shall comprise either (a) an impermeable hardstanding or (b) crushed concrete underlain by an impermeable membrane. Drainage shall be provided via temporary filter drains or a Type 3 drainage blanket layer. Any material that may cause contamination shall be bunded in accordance with best practice guidance to contain possible spillages.

B4 Parking of Construction Related Vehicles

B4.1 Parking for construction workers shall be provided either within the primary compound, secondary compounds or within a communal parking area serving more than one works. Parking areas shall be located away from trees and hedgerows to be retained to prevent soil compaction.

B4.2 The construction workforce shall travel to the site in accordance with the Construction Travel Plan, secured by legal agreement. The Construction Travel Plan shall make provision for parking for contractors and visitors and temporary cycle parking within the construction compound(s).

B4.3 Parking shall be prohibited on all temporary internal haul access roads or any areas outside construction compounds unless specifically required as part of the construction or inspection process.

B4.4 Personnel arriving on site shall park within the primary compound to sign in at the security hut before being directed to the appropriate working area.

B4.5 Contractors and site visitors that require induction shall first be directed to the temporary office in the primary compound.

B4.6 Dedicated safe pedestrian routes shall be set up to provide access to all areas of the site. Pedestrian crossing points shall be appropriately positioned where temporary vehicle routes need to be crossed.

B5 Wheel Cleaning and Wash Facilities

B5.1 A wheel wash facility shall be provided.

B5.2 Egress from construction sites or compounds shall be monitored by a banksman. Where the banksman considers potential exists for mud or debris to be tracked onto the public highway, vehicles shall be subject to wheel cleaning before leaving the site.

B5.3 The wheel wash shall recycle water and be cleaned regularly by a vacuum tanker which shall deposit the wastewater periodically to a suitable treatment works. The wheel wash facility shall be subject to regular inspection and maintenance.

B5.4 Whilst construction activities are taking place, a water assisted road sweeper shall be made available to carry out cleaning of permanent internal access roads (i.e. not temporary haul roads).

B6 Hours of Working

B6.1 Core working hours are defined as follows:

- Weekdays: 08:00 to 18:00
- Saturdays: 08:00 to 13:00
- None on Sundays or Public Holidays

B6.2 If any construction activities have to take place outside core working hours these works shall only take place in accordance with a licence provided by the Environmental Health Authority pursuant to Section 61 of the Control of Pollution Act 1974. As part of the application, the contractor shall demonstrate that the proposed works incorporate best practical means of noise control.

C Earthworks

C0.1 Earthworks on each phase of development shall be undertaken in accordance with a Materials Management Plan prepared in accordance with the CL:AIRE Definition of Waste: Code of Practice and signed off by a Qualified Person pursuant to condition 4 in Schedule 1, Part 4 of the LDO.

C0.2 All excavations shall be covered at night or an escape route shall be provided for wildlife such as a 45 degree ramp or slope at one end of the excavation.

C1 Soil Resource Management Requirements

C1.1 The following soil resource management requirements shall be adhered to:

- soil stripping, handling, storage and reinstatement procedures shall conform with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites[1] and the Good Practice Guide for Handling Soils in Mineral Workings[2] or as subsequently updated;
- suitably qualified soil scientists shall be appointed to oversee and define all soil management good practice measures set out in Section C1;
- soil resources shall be identified clearly (usually by texture and/or colour) to avoid mixing of topsoils with subsoils during excavation, storage and reinstatement;
- there shall be no trafficking of vehicles/plant on reinstated soil during construction;
- there shall be no storage of materials on reinstated soils;
- disturbance to soils shall be minimised at all stages e.g. avoiding unnecessary repeated movements over the same ground;
- multiple handling of soils shall be avoided;
- soil handling, including tracking over the soil with machinery, shall only take place in suitable soil moisture and weather conditions (see Appendix 1);
- soils shall only be stored in designated stockpiles;
- records of soil handling operations and stockpiles shall be kept.
- account shall be taken of prevailing wind/sensitive receptors when locating stockpiles to minimise dust generation and impact.

Preparatory Works

C1.2 Before commencing earthworks, the contractor shall ensure that the following areas within the relevant phase of works (see Figure 1) are marked and signposted within the site:

- areas to be retained including hedgerows, ponds, trees and woodland.
- tree protection zones;
- areas from which soils will be stripped;
- locations of topsoil and subsoil stockpiles; and
- access and haul routes.

Topsoil Stripping Method

C1.3 Any areas required temporarily for compounds, haul routes and storage areas shall be first stripped of topsoil in accordance with best practice as set out in the Good Practice

[1] Department for Environment, Food and Rural Affairs, 2009. Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Code of practice for the sustainable use of soils on construction sites - GOV.UK
[2] Institute of Quarrying, 2021. Good Practice Guide for Handling Soils in Mineral Workings. Soils Guidance.

Guide for Handling Soils.

C1.4 Prior to soil stripping, vegetation shall be cut and removed to avoid green waste being incorporated into soil bunds.

C1.5 Plant of appropriate size for the operation shall be used to strip the soils and it shall be placed into storage bunds in accordance with the Good Practice Guide for Handling Soils.

C1.6 Each soil horizon/layer shall be stripped to its natural thickness, identified by colour, avoiding incorporation of subsoil material into the removed topsoil.

C1.7 Topsoil will be stripped to its full thickness before any subsoil stripping is undertaken. The topsoil will be stripped to an average depth of 300mm or to any clear colour change.

Subsoil Stripping

C1.8 Subsoils shall be stripped in accordance with best practice as set out in the Good Practice Guide for Handling Soils.

C1.9 Areas which will be used for subsoil storage shall first have the topsoil stripped to avoid damage and potential mixing.

Soil stockpiling

C1.10 Topsoil shall be stockpiled when in an appropriate condition as determined by the field tests for moisture and consistency set out in Tables 1 and 2 in Appendix 1.

C1.11 Topsoil stockpiles shall have a maximum height of 4m and a maximum gradient of 1 in 3 and be located away from areas that may be at risk of flooding or ponding.

C1.12 Stockpile surfaces shall be compacted and bound.

C1.13 Stockpiles shall be kept damp during dry periods of working to minimise dust. Soil shall only be reinstated in accordance with the soil handling criteria in Tables 1 and 2 in Appendix 1.

C1.14 Appropriate plant shall be used to construct all soil stockpiles following methods sets out in the Good Practice Guide for Handling Soils in Mineral Workings.

C1.15 Dump trucks shall use the stripped haul routes only.

C1.16 Any stockpiles in place for more than 6 months shall be grassed down, with a low-maintenance mix unless otherwise agreed, and kept in a tidy and weed-free condition.

C1.17 For each stockpile a plan must be kept and maintained, detailing:

- material type (topsoil or subsoil);
- date when soil was stockpiled and weather conditions;
- volume of material;
- stockpile location; and
- source location of material.

Soil Reinstatement

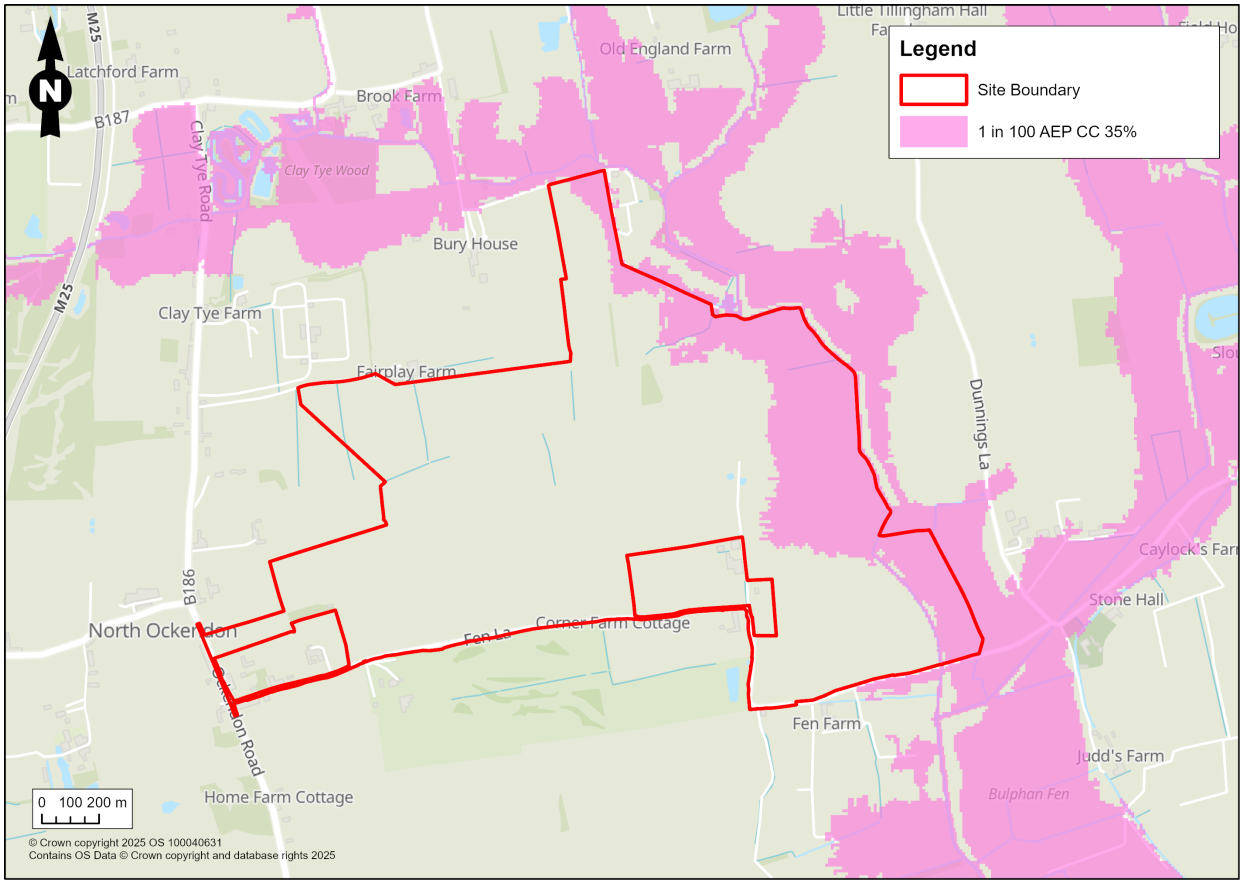
C1.18 Reinstatement of soils within any temporary construction area shall involve excavating and replacing the soil according to the best practice guidance set out in Good Practice Guide for Handling Soils.

C1.19 The receiving subsoil must be de-compacted in order to avoid waterlogging and the development of anaerobic conditions.

C1.20 All soil shall be reused on site to create landscape mounds (in accordance with the LDO Design Code) unless the soil is identified as contaminated via testing in which case it shall be collected and stored in hazardous waste containers prior to transport and treatment at a suitable, licenced facility. No soil stockpiles shall be retained on site after completion of the relevant construction phase.

C1.21 In order to ensure that there is no loss of floodplain volume, no excavated materials or soils shall be deposited with the predicted flood extent during the climate change adjusted 1 in 100 annual probability event as shown in Figure 3.

Figure 3: Environment Agency Modelled Flood Extent - 1 in 100 + CC Model



C1.22 Soils shall be restored in the reverse order to soil stripping i.e. subsoil, topsoil.

C1.23 Any re-instated soil should be loose-tipped into the receiving area and spread using appropriate plant. Table 2 sets out the suitability of the identified soil types and the depths for the proposed habitats on the site.

Table 2: Soil Types and Depth Horizons

Habitat Type	Topsoil horizon depth (mm)	Topsoil type	Upper subsoil horizon depth (mm)	Upper subsoil type
Existing/retained woodland (w1f)	As existing	As existing	As existing	As existing
Broadleaf woodland (w1g)/long term (w1f)	300	1, 2, 3 or 4	300	2, 3 or 4
Wet woodland (w1d)	300	1	300	1
Woodland buffer (w1g)	300	1, 2, 3 or 4	300	2, 3 or 4
Neutral grassland (g3c)	300	1, 2 or 3	150	2 or 3
Meadow (g3c)/long term (g3a)	150-200	1, 2, 3 or 4	250	2, 3 or 4
Existing Mixed Native Hedgerow (h2a)	As existing	As existing	As existing	As existing
New mixed native hedgerow (h2a)	300	1, 2, 3 or 4	300	2, 3 or 4
Seasonally wet grassland (f2f55 and g3c55)	300	1	300	1
Aquatic marginal (f2d)	150	1	450	1
Swales (f2d 848)	0	N/A	400	1

Notes: Depths are horizon depths, not (in the case of subsoil) depth below ground level.
Type 1 – permeable clay/heavy clay loam topsoil; slowly permeable clay upper and lower subsoils; neutral to alkaline.
Type 2 - permeable clay/heavy clay loam topsoil; permeable clay upper subsoil; slowly permeable clay lower subsoil; neutral to alkaline.
Type 3 - permeable clay/heavy clay loam topsoil; permeable clay upper and lower subsoil; neutral to alkaline.
Type 4 - permeable sandy loam or loamy sand topsoil; permeable sandy clay loam or loamy sand subsoil; neutral to acidic.

C1.24 Samples shall be taken (one per 5,000m^3 of soil) to assess the nutrient status, particularly of phosphorus for areas where species-rich meadow habitats are to be created. Phosphorus Indices of 0 and 1 are suitable for establishing a species-rich meadow habitat, but the depth of topsoil should be limited to no more than 200mm and inversely related to the nutrient analysis (the higher the Phosphorus Index, the shallower the topsoil). Soil inversion shall not be undertaken as it will be difficult to establish a seed bed in the clay subsoils.

Monitoring

C1.25 The contractor shall continually monitor soil handling/weather conditions and visual monitoring of ground conditions.

C1.26 Where soils have been reinstated, the restored soil profile shall be assessed and signed off by the contractor as a record that the soils and land are in a suitable condition for their intended purpose and habitat. Any defects shall be addressed by the contractor prior to final sign-off.

C2 Temporary Construction Routes

C2.1 All movement of earth shall be carried out in accordance with Construction (Design and Management) Regulations 2015 and shall take account of the health and safety risks to everyone affected by the work (including members of the public).

C2.2 All working areas within the ecology park shall be protected with construction hoarding to prevent unauthorised access and the risk of hazards.

C2.3 Strict 10mph speed limits shall apply to all traffic movements within the ecology park. Banksmen shall direct vehicular movements in and around the ecology park where PRoW, primary footpath/cycleways in the ecology park are temporarily to be used to gain access to working sites. The PRoW may be crossed by construction traffic but otherwise it must not be used for construction traffic. Any damage to the PRoWs from plant crossing shall be rectified immediately once plant crossings have ceased.

C2.4 The two existing PRoW within the site shall be kept open for as long as possible. A Temporary Traffic Regulation Order (TTRO) under the Road Traffic Regulations 1984 (or as updated) will be required from the Council where a PRoW needs to be temporarily diverted due to planned construction works for a period up to six months. The footpath(s) shall be open as soon as possible after works have been completed.

C2.5 Should any existing hedgerows require removal to facilitate temporary plant crossings, these shall be replanted with a similar mix of plant species once the crossing point is no longer required.

C3 Site Constraints

Gas Mains

C3.1 A 3m easement zone shall be retained either side of the centreline of the Cadent local high pressure (LHP) gas main shown in Figure 4 except where buildings are proposed in which case a 25.24m easement zone either side of the centreline shall be retained.

C3.2 Any proposed changes in ground levels within the 3m easement zone either side of the pipe centreline or proposed crossings of the pipeline shall be in accordance with a construction methodology to be agreed with Cadent prior to works commencing.

C3.3 A quantitative risk assessment shall be required for any buildings within the 25.24m

easement zone either side of the pipe centreline and any works shall be agreed with Cadent prior to commencing.

C3.4 As a precautionary measure heras fencing shall be erected either side of the low pressure gas main to the east of the site (as shown on Figure 4) to mark its position and any permitted crossing points shall be clearly signed. This fencing shall remain in place until Phase 2B of the ecology park as shown in Figure 1 is complete.

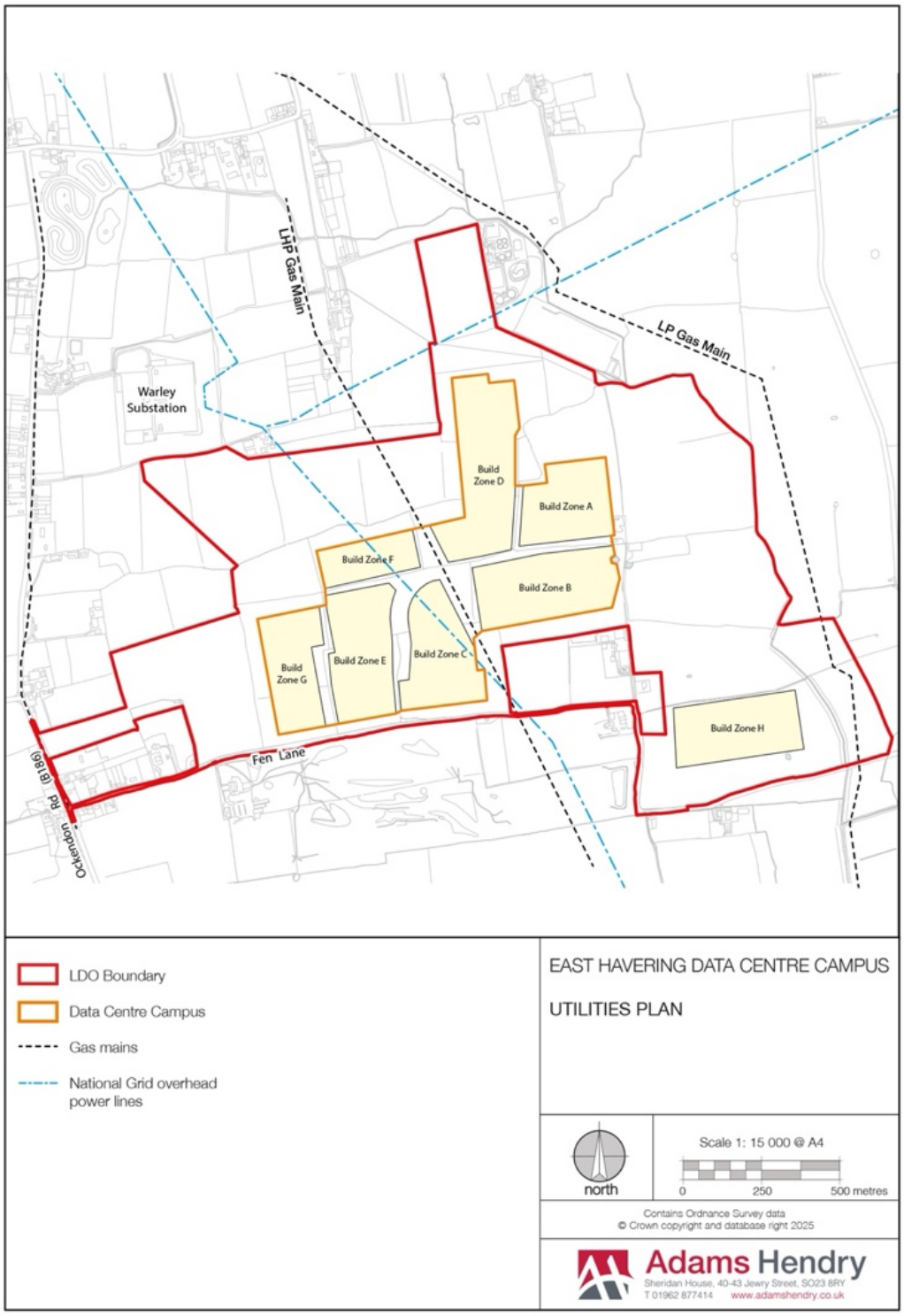
National Grid Infrastructure

C3.5 All works near National Grid electrical assets shall comply with the National Grid's 'Third-party guidance for working near National Grid Electricity Transmission Equipment', Technical Guidance Note 287 or as subsequently amended.

C3.6 Work shall only be carried out in close proximity to live overhead power lines shown on Figure 4 when there is no alternative, and only when the risks are acceptable and can be properly controlled. Where earthworks underneath the National Grid overhead power lines are necessary, the finished ground level shall not exceed the maximum existing levels (mAOD) along its length.

C3.7 Statutory clearances exist which must be maintained, as prescribed by the Electricity Safety, Quality and Continuity Regulations 2002. The minimum clearance between the conductors of an overhead line and the ground is 7.3m at maximum sag. The required clearance from the point where a person can stand to the conductors is 5.3m.

Figure 4: Utilities Plan



Retained Ditches and Mixed Native Hedgerows

C3.8 Existing grounds levels shall remain unaltered along the following features:

- existing ditches located on the detailed drainage layout plan approved pursuant to condition 26 in Schedule 2 of the LDO; and
- existing hedgerows as shown on Figure 3.2 of the Design Code Part 3.

C3.9 Where trenching works have been completed, habitat restoration shall be undertaken, replanting any gaps created in retained mixed native hedgerows and ditch habitats, using species in accordance with the Design Code Part 3.

D Site Waste Material Management

D0.1 All waste material generated on-site during the construction process shall be handled and disposed of in accordance with waste management legislation and the waste hierarchy as follows:

- Waste Prevention
- Material Reuse
- Material Recycling
- Disposal

D0.2 Construction waste shall be managed in line with the construction works phasing.

D0.3 For material reuse, recycling and disposal off site, a review of waste management companies shall be undertaken to assess the capacity for certain materials to be recovered.

D0.4 The following measures shall be considered to ensure that waste is minimised:

- avoidance of waste at the design stage;
- use of materials with recycled content;
- provision of construction material cut to size to reduce waste generated on site;
- just-in-time deliveries;
- safe and secure storage of materials;
- minimisation of packaging;
- reuse or recycling of unwanted packaging e.g. pallets; and
- reuse of waste on site.

D0.5 Waste materials shall be managed efficiently and disposed of legally during the construction works. The re-use and recycling of materials shall be maximised to meet the following targets:

- all excavation waste to be reused on site for beneficial use;
- minimum of 95% of construction waste materials diverted from landfill for reuse, recycling or recovery;
- minimum of 65% of municipal waste recycled by 2030 and thereafter minimum targets shall be in accordance with GLA guidance.

D0.6 The Greater London Authority (GLA) 'Detailed Application Stage – Circular Economy Statement' shall be submitted pursuant to condition 23 in Schedule 2 of the LDO. Post construction stage recycling and waste reporting is secured through condition 24 in Schedule 2 of the LDO.

D0.7 The PEM shall ensure all principal contractors and sub-contractors are provided with information detailing the requirements of the site waste material management as part of their induction process.

D1 Waste Streams and Segregation

D1.1 Different waste types shall be segregated into the following waste streams and shall be stored in separate, secure and weatherproof containers:

- Timber

- Metal
- Cardboard
- Recyclable Office Waste
- Non-Recyclable Office Waste
- Insulation – glass fibre, mineral wool, purlboard, breather paper;
- 'Green waste'
- Plasterboard – all plasterboard waste must be sent to a licensed facility for recycling
- Concrete washout
- Road sweeper arisings (inert waste)
- Hazardous waste
- Other mixed construction/demolition waste

D1.2 Under no circumstances shall mixed demolition and construction waste go straight to landfill.

D2 Preventing Escape of Waste

D2.1 All waste produced on-site shall be appropriately stored to prevent escape or leakage whilst stored on-site or in transit. Waste storage facilities shall be suitable to contain waste and labelled with a description of the waste. Vehicles used for transporting waste shall be suitable to prevent escape during transit.

D2.2 Containment bunds with rain shelters and sealed containers shall be used if there is any likelihood of stored waste contaminating the surrounding area. Liquid waste shall be stored away from drains, boreholes and watercourses.

D2.3 No wastes shall be burnt or disposed of on site.

D3 Transfer to an Authorised Person

D3.1 Waste shall only be transferred to an appropriately licensed waste consignee. A copy of the Waste Carriers Licence or registration shall be retained by the waste consignor.

D4 Off Site Waste Disposal or Treatment

D4.1 The final waste disposal or treatment facility must be authorised to accept specified wastes and hold an appropriate waste management license, environmental permit or waste management license exemption.

D5 Record Keeping

D5.1 Appropriate records for all waste material transported off-site shall be retained. The waste transfer notes and the consignment notes shall be retained for a minimum period required by the Waste (England and Wales) Regulations 2011 (as amended) or as per updated UK waste legislation for two years, and hazardous waste consignment notes shall be retained for a minimum period of three years should hazardous waste be encountered.

D5.2 Smartwaste or a similar system shall be used to measure the waste generated during construction in accordance with the BREEAM target set for each building.

E Unexploded Ordnance (UXO)

E1.1 The risk management process set out in the Construction Industry Research and Information Association (CIRIA) C681 industry guide shall be adhered to manage UXO risks in line with Health and Safety at Work Act 1974 and CDM 2015 regulations, or as updated.

E1.2 Should UXO be discovered on-site, emergency procedures shall be implemented to evacuate the work area and the emergency services contacted.

Part 2:
Environmental Control Measures/ Procedures

Part 2: Environmental Control Measures / Procedures

F Habitats and Protected Species

F0.1 A qualified ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) shall be appointed as Ecological Clerk of Works (ECoW) prior to commencement of the development. The ECoW will oversee the construction works on site and that best practice environmental measures are implemented.

F0.2 As part of an induction process for all phases of construction, all principal contractors and sub-contractors shall be made aware of the potential for protected species to be found on site, areas where no work is permitted and areas of conservation value. In the event that protected species are encountered during construction works, all works shall cease in that area and advice shall be sought from the ECoW having regard to procedures below for the relevant species.

F0.3 Prior to any vegetation clearance, earthworks and/or other enabling or construction work commencing on each phase of development, an ecological walkover survey and supplementary surveys as required must be undertaken to assess the need for further surveys in accordance with condition 31 in Schedule 2 of the LDO.

F0.4 All supplementary surveys shall be undertaken by appropriately experienced (and where appropriate, licensed, ecologist) and overseen by the ECoW. The timing of mitigation works shall be carried out in accordance with a scheme approved by the LPA pursuant to condition 31 in Schedule 2 of the LDO.

F0.5 There shall be a consistent check carried out by the ECoW during the works for any invasive species and appropriate actions shall be taken to remove them if found.

F0.6 The contractor shall ensure that areas to be retained including hedgerows, ponds, trees and woodland within the relevant phase of works (see Figure 1) are marked, fenced off and signposted within the site.

F1 Fairplay Farm Site of Importance for Nature Conservation (SINC)

F1.1 If cable routes are proposed through the Fairplay Farm SINC, an ecological walkover with the cable engineer, overseen by the ECoW, shall be carried out to identify a route which avoids tree removal and root protection areas, avoids or minimises hedgerow removal and limits the number of ditch crossings. The ECoW shall agree the cable route prior to any trenching works.

- The trenching works shall take place between September and February to protect nesting birds i.e. outside of the bird nesting season. Once works have been completed, habitat restoration shall be undertaken, replanting any gaps created in hedgerows, using native species and reinstatement of the ditch habitats.

F2 Upminster Sewage Works Grass Beds Site of Importance for Nature Conservation (SINC)

F2.1 Upminster Sewage Works Grass Beds SINC is designated for Great Crested Newts (GCN). A viable GCN population is assumed to be present here and mitigation

measures set out in Section F3 shall be implemented unless absence can be confirmed following further species surveys.

F3 Great Crested Newts (GCN)

F3.1 Prior to each phase of construction, a resurvey of ponds on and within 250 m of the boundary of the relevant construction phase shall be undertaken in the season prior to work commencing.

F3.2 Where GCNs are identified, the ECoW shall advise if a licence is required for the works from Natural England and what the licence requirements may be. The ECoW (if required) shall prepare the license applications, and the works must then be carried out in accordance with the licence requirements.

F4 Reptiles

F4.1 Areas set for vegetation clearance shall be subject to inspection by an ECoW immediately prior (24 hrs) to stripping. In areas where the ECoW suspects reptile presence, the vegetation shall be cut in two stages in a north and south direction, first down to 20cm then to ground, with an ECoW inspection carried out between each cut.

F4.2 If reptiles are identified, works shall stop until the ECoW has confirmed that the reptiles are no longer present.

F4.3 Following the second cut, the grassland shall be maintained as a short sward until the development works in that area are complete.

F5 Nesting Birds

F5.1 Tree works, vegetation removal and trenching works shall be undertaken outside of the bird nesting season (March to August inclusive). If this is not possible, the works must be carried out under the supervision of the ECoW.

F5.2 If any bird nests are identified, the works shall be immediately halted until the following measures are implemented, overseen by the ECoW:

- A suitably sized no work buffer zone shall be applied. The size of the buffer zone shall be dependent on the species that has created the nest.
- The nest(s) shall then be subject to monitoring, and if deemed active, the buffer zone maintained.
- The nest shall be left undisturbed until the eggs have hatched, and the birds have fledged, then the buffer zone can be removed and work in that area can start/resume.

F5.3 Ground vegetation, and therefore ground nesting birds, can often be overlooked so additional care shall be taken when accessing the work site as this may also cause disturbance or damage to a nesting site.

F6 Bats

F6.1 A tree survey shall be carried out prior to construction of each phase of development to confirm the presence or absence of bats and a scheme of mitigation shall be agreed with the LPA, if required, in accordance with condition 33 in Schedule 2 of the LDO.

F6.2 The survey shall be carried out in the season prior to work commencing, including a resurvey of trees within 50m of the boundary of the relevant construction phase.

F6.3 Where bats are identified, mitigation may include:

- A no-works area: a designated area around the roost tree where no development or construction activity can occur.
- Restricted activities: in a wider zone, certain high-impact activities, such as noisy works or night-time lighting, may be restricted or prohibited.
- Timing of works: work may be timed to avoid sensitive periods like hibernation or maternity seasons.
- Physical demarcation: the designated area may be clearly marked on the ground with barriers, such as rope or fencing, and all site workers shall be briefed on its purpose.
- Habitat retention: retaining dead or dying trees and native climbers like ivy which provide valuable features for bats.

F6.4 Trees identified as active bat roosts for any species of bat, will require a mitigation licence from Natural England prior to any removal or management. The ECoW or a licenced bat ecologist can advise on the type of licence required, and the timing for applying for such a licence. All works shall be carried out in accordance with the licence.

F6.5 Tree T15 as shown on plans in Appendix 2 has a confirmed bat roost and mitigation will be required as set out in F6.3 above.

F6.6 Disturbance of foraging bats, and potentially bat roosts, due to excessive lighting shall be avoided. Measures such as cowling or the angling of light sources away from features such as the woodland edges and hedgerows shall be implemented.

F7 Badgers

F7.1 An updated survey shall be completed no more than 3 months prior to each phase of construction to confirm the presence/absence of active badger setts. The survey shall include the proposed development area plus a 30m buffer for signs of badger and badger setts. Due to the capricious nature of badgers, a final check shall also be carried out immediately prior to the first works.

F7.2 Should any setts be found within the proposed development area or within 30m of it, and where these are in an area where earth works or other direct disturbance is proposed, these setts may need to be closed under a Natural England ‘Licence to Interfere with Setts for Development Purposes’. The ECoW shall advise on licence requirements, and timing of closures, as a sett should only be closed between the months of July and November exclusive.

F7.3 Negative effects on badgers shall be avoided by:

- avoiding artificial lighting around setts;
- retaining vegetation around setts to provide cover;
- avoiding disturbance, including noise and vibration near active setts;
- keeping heavy machinery and excavation work away from setts; and
- avoiding activity between dusk and dawn when badgers are most active.

F8 Water Vole

F8.1 Prior to any works being undertaken to ditches or ponds within the site, a survey shall be undertaken to confirm the presence of water vole.

F8.2 If signs of water vole are found, appropriate action shall be taken in accordance with advice provided by the ECoW.

F9 Other Mammals (Hedgehog, Harvest Mouse, Burrowing Mammals).

F9.1 During site clearance, burrowing mammals such as foxes and rabbits shall be protected from harm under the Wild Mammals (Protection) Act (1996).

F9.2 The ECoW shall oversee checks for signs of harvest mouse and hedgehog prior to vegetation clearance in conjunction with breeding bird or reptile surveys if appropriate.

F9.3 Burrows shall be checked for the presence of mammals in advance of clearance and earthworks. If signs of species are recorded, then the ECoW shall advise on the next steps. This may require removal by hand (hedgehog) or a more phased approach including trapping and relocating (harvest mouse).

G. Water Quality

G0.1 All works shall be undertaken in accordance with standard regulatory practice to prevent pollution as detailed below, or as subsequently updated:

- Water Resources Act, 1991;
- Water Act,2003;
- CIRIA Guidance, C532;
- EA Pollution Prevention for Businesses ('PPB') Guidance;
- Guidance for Pollution Prevention ('GPP') which provide good practice guidance, particularly GPP1 – general guide to the prevention of water pollution, GPP2 – above ground oil storage tanks, GPP5 – works and maintenance in or near water and GPP 6 – working at construction and demolition sites; and
- Control of Pollution (Oil Storage) Regulations, 2001.

G1 General Construction Control Measures

G1.1 The potential for impacts to occur as a result of on-site storage of materials and contamination of water by oil or other liquids shall be minimised by implementing the following measures:

- Storage compounds for fuels, oils or other liquid chemicals shall be located away from surface water drains. They shall have an impermeable base and bunds and shall not drain directly into the surface water drains.
- Fuel storage compounds shall be designed to hold at least 110% of the capacity of the largest tank or 25% of the total volume stored, whichever is greater. Drainage from storage compounds shall be passed through oil interceptors prior to discharge.
- Spill kits shall be located near to watercourses and within the works compound.
- Drums and barrels shall be stored in designated, bunded safe areas within the compound.
- All drums and barrels shall be properly labelled and fitted with flow control taps.
- Small plant such as pumps shall be fitted with drip trays.

G1.2 The potential for impacts to occur as a result of disturbance of silt on land shall be minimised by implementing the following measures:

- All pumped drainage from the construction works, including areas used for temporary storage of construction materials or excavated soils, shall be passed through silt settlement treatment e.g. straw bales, grassland soakaways and silt settlement lagoons. prior to discharge to surface watercourses or drains.
- Any pumping operations shall be carried out on a 'permit to pump' basis.
- Where appropriate, access to watercourses shall be bunded to prevent contamination from surface water run-off.
- All roads and hard-standing shall be kept clean and tidy to prevent the build-up of oil and dirt that may be washed into a watercourse during heavy rainfall.
- The use of water spray to reduce dust or wash down construction areas shall be carefully regulated to avoid washing substantial quantities of silt etc. into the watercourses of surface water drains. Where large quantities of gravel, mud or other such material require cleaning, the area shall be swept clean prior to any subsequent hosing down.

G1.3 Foul water from welfare facilities shall be directed into a sump for disposal at an appropriate facility.

Silt and Suspended Solids

G1.4 The following measures shall be taken to manage silt generation:

- Where possible water shall be prevented from entering excavations using cut off ditches to prevent entry of surface water and groundwater;
- The amount of exposed ground and soil stockpiles shall be minimised;
- Silt fences shall be constructed from a suitable geotextile to reduce silt levels in run-off water;
- Spoil and temporary stockpiles shall be positioned away from watercourses and drainage systems;
- Surface water shall be directed away from the stockpiles to prevent erosion at the base; and
- Surface water should be discharged using a pump of suitable size and at a rate which shall not cause erosion or disturbance to the bed of the watercourse.

Concrete and Cement

G1.5 The following control measures will be put in place:

- Concrete & Cement Operations: Operations shall be carefully controlled and supervised at all times to minimise the risk of any materials entering watercourses.
- Concrete & Cement Washout: Washing out and cleaning of concrete batching plant or ready mix lorries shall be carried out in a contained area as far from watercourses as practicable. The area shall be appropriately bunded and segregated to prevent the escape of contaminated water into a watercourse.
- On-site concrete production: Concrete mixing/batching facilities shall be sited to minimise noise, dust and odour impacts on the surrounding area. A settlement and recirculation system for water reuse shall be provided to minimise the risk of pollution and reduce water usage.

Oil and Chemical Storage and Use

G1.6 The measures in the EA's Pollution Prevention Guidelines for Above Ground Oil Storage Tanks (PPG2) or latest equivalent guidance shall apply. Whilst the PPG previously maintained by the EA has been withdrawn, it remains available on the Government's national archives and is still considered a relevant source of good practice guidance alongside resources under GOV.UK including Oil storage regulations for businesses and Pollution prevention for businesses.

G2. Drainage Implementation

G2.1 The attenuation ponds shall be constructed during Phase 1 to accommodate any increased surface water run off during the construction period.

G2.2 Site-wide drainage shall be provided in accordance with the surface water drainage scheme approved by the LPA pursuant to condition 26 in Schedule 2 of the LDO.

G2.3 During construction of development within a Build Zone, any flow control devices and attenuation features, such as tanked systems, shall be installed prior to any hardstanding so that there will not be an uncontrolled discharge from the Build Zone that is higher than the proposed discharge rates agreed in the approved drainage strategy.

G3 Water Quality Monitoring

G3.1 Watercourses shall be visually inspected at least on a weekly basis to identify whether there have been any changes in the following aspects during construction operations:

- Colour;
- Odour;
- Suspended solids; and
- Presence of oily films and discolouration.

G3.2 Where problems are identified it may be necessary to carry out more detailed scientific tests to determine the extent of the problem and appropriate measures shall be used to treat as necessary.

G4 Drainage Pollution Control Measures

G4.1 The measures in the EA's Pollution Prevention Guidelines for the Use and Design of Oil separators (PPG3) or latest equivalent guidance shall be adopted on-site. Whilst the PPG previously maintained by the EA has been withdrawn, it remains available on the Government's national archives and is still considered a relevant source of good practice guidance.

G4.2 Bunded fuel tanks shall be provided for the storage and transfer of petroleum products to equipment including diggers, dumpers and generators.

G4.3 Contractors shall ensure the ready availability of equipment to contain spillages, including oil booms, drain blockers and dams to contain soluble pollutants and spill kits to deal with any spillages.

G5 Water Demand Management Measures

G4.4 Where temporary accommodation and facilities are required during construction, water-efficient fixtures, fittings and systems should be considered as standard. Contractors are required to:

- Make sure that taps are not left running or dripping.
- Fit controls to existing systems including self-closing taps, flow regulator/ restrictors and trigger-operated spray guns & hoses.
- Investigate opportunities for re-using process water, e.g. from wheel wash area.
- Check equipment and systems.

H. Air Quality

H0.1 Good site management and mitigation techniques shall be employed to reduce emissions of dust and limit dispersion in accordance with 'IAQM Guidance on the assessment of dust from demolition and construction', (2024), or as subsequently updated.

H1 Dust Control Measures

H1.1 The following techniques shall be employed to limit the amount of dust produced as appropriate:

- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Keep site fencing barriers and scaffolding clean using wet methods.
- Minimise emissions from stockpiles by covering, seeding, fencing, or damping down.
- Only use cutting, grinding, or sawing equipment with suitable dust suppression equipment or techniques.
- Ensure adequate water supply for effective dust and particulate matter suppression.
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.

H2 Materials Handling and Storage

H2.1 These requirements apply to the storage of materials on site. Soil resource management requirements are set out in Section C.

- The amount of time materials are stored on site shall be kept to a minimum.
- Waste or excess material shall be removed from the site as soon as practical.
- Long-term stockpiles shall be protected from wind erosion by screens, wind barriers, capping, vegetation or other effective methods.
- Loose stockpiles can be stabilised with binding agents to reduce wind erosion, however consultation with the Environment Agency is necessary in advance of binders being used.
- Dry or fine materials shall be stored and sealed in an appropriate location, such as inside a building or covered/sheeted bay.
- Account shall be taken of prevailing wind/sensitive receptors when locating stockpiles to minimise dust generation and impact.
- Fully enclose the site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Material handling operations shall be kept to a minimum.
- All dust generating materials shall be delivered under tarpaulin covers.
- Spillages shall be cleared away as soon as possible using wet handling methods.
- Methods and equipment for cleaning up spillages shall be in place at all times.
- Vehicles carrying loose materials shall be adequately sheeted or contained during travel along site roads and upon leaving the site.

- Use water assisted dust sweepers at the site entrance and on local roads (Fen Lane and Ockendon Road).

H3 Plant

- Exhausts shall not discharge directly to the ground.
- Avoid use of diesel or petrol generators where possible.
- Where possible, plant and equipment shall be operated away from sensitive receptors.
- Any mobile plant that is used on site shall be appropriately licensed and operated within its design capacity.
- Any mobile crushing plant used on site must have the appropriate environmental permit.

H4 Concrete Batching and Pouring

- Large quantities of concrete or bentonite slurries shall be mixed in enclosed areas.
- Dirt in formwork shall be vacuumed rather than blown out prior to concrete pours.
- Concrete pours shall be kept clean once they have gone off.
- Cement or other powder materials shall be delivered by bulk tanker and transferred to silos fitted with particle filtration systems.
- Silos shall be equipped with filters to remove dust from venting air and fitted with alarm systems to warn of overfilling or the failure of dust arrestment systems.

H5 Cutting/Grinding/Grouting/Packing

- Cutting and grinding on-site shall be kept to a minimum.
- Use enclosed chutes, conveyors, and covered skips.
- Minimise drop heights of materials.
- Ensure suitable cleaning material is available at all times to clean up spills.
- Dust extractors or wet cutting shall be used when using concrete/stone cutters
- and saws.
- Standard angle grinders and disk cutters with no dust control shall not be used on site.

H6 Hot Bitumen Processes

H6.1 If hot bitumen processes are to be used during construction, best-practice measures shall be employed to minimise the production of fugitive black smoke emissions during operations. Such measures should include:

- Avoiding the overheating of bitumen;
- Covering pots and tanks when practical to do so;
- Extinguishing small fires immediately;
- Minimising and clearing up spillages; and
- Care to be taken during 'torching'.

H7 Damping Techniques

H7.1 A fine spray of water shall be used and applied regularly, especially during warm and

sunny weather. The following shall be sprayed:

- Unpaved work areas subject to traffic or wind.
- Sand, spoil and aggregated stockpiles.
- During the loading and unloading of dust generating materials.

H8 Preventing Emissions and Odours

Vehicles & Plant

- Low emission plant and vehicles shall be used.
- Vehicles and plant used on site shall be well maintained and regularly serviced.
- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London non road mobile machinery (NRMM) standards applicable at all time of the construction operations.
- All vehicles shall comply with MOT emission standards at all times.
- Deliveries to site shall be controlled to minimise queuing.
- All engines shall be switched off when not in use.
- Refuelling areas shall be located away from sensitive receptors.

Additional measures

- Waste materials shall not be burnt on site or bonfires started.
- Avoid scabbing if possible.
- Waste shall be enclosed in a covered container and removed frequently.
- Organic waste shall be removed before it begins to decompose.
- Weather conditions shall be accounted for when planning activities that produce any aerosols, fumes, odours and smoke.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exits, wherever site size and layout permits.

H9 Monitoring

H9.1 Construction works shall be actively monitored to ensure the control of dust and emissions. Monitoring shall include daily on- and off- site dust soiling checks (eg. to street furniture, cars and window sills) within 100m of the site boundary where there are sensitive receptors. Cleaning shall be undertaken if necessary to remove dust soiling.

H9.2 Carry out regular inspections to ensure compliance with the detailed Dust Management Plan (DMP) and record results in the site logbook.

H9.3 Extra site monitoring and control measures shall be employed during activities which have a high potential to create dust or in prolonged dry and windy conditions.

H9.4 Dust flux, or real-time PM_{10} continuous monitoring of the baseline (minimum of three months before onsite work commences) shall be undertaken. Thereafter dust flux, or real-time PM_{10} continuous monitoring for the duration of an earthworks activity that

occurs within 250 m of sensitive receptors shall be undertaken.

H9.5 A dust monitoring log book and any record of any exceptional dust incidents on- or off-site shall be kept on site.

H9.6 A record of all dust complaints shall be maintained and responded to as soon as possible. The log of complaints and action taken shall be made available to the LPA on request.

I Noise and Vibration

I0.1 Best practicable means of noise and vibration control (BPM, as defined in the Control of Pollution Act 1974) shall be employed, and guidance on noise and vibration control within BS5228-1 and -2:2009+A1:2014 and 'The Control of Dust and Emissions During Construction and Demolition supplementary planning guidance' (Greater London Authority, July 2014) shall be followed.

I0.2 Monitoring of noise and vibration shall be carried out at a position representing the closest receptors to the works, as detailed in Section I2.

I1 Noise and Vibration Control Measures

I1.1 On-site good practice procedures shall be followed where feasible in order to mitigate noise and vibration:

- All plant shall conform to relevant standards and directives for noise emissions in accordance with the above code of practice and procedures.
- Noise control equipment, such as enclosures, shrouds and silencers on plant shall be fitted and used properly when in use.
- Electrically powered plant shall be used rather than diesel or petrol driven plant where possible.
- All plant shall be operated correctly.
- All plant shall be turned off when not in use.
- All plant shall be regularly inspected and maintained.
- Rotating, impacting or percussive machinery shall be fixed on anti-vibration mountings.
- Wherever practicable, noisy plant or processes shall be substituted with less noisy alternatives and shall be carefully sited to minimise noise propagation to the nearest noise-sensitive receptors.
- Temporary acoustic screens shall be used to reduce noise propagation to the nearest noise-sensitive receptors as detailed below. All temporary acoustic screens shall have a minimum mass per unit area of 10 kg/m^2 and be imperforate.

I1.2 On Build Zones B, C, G and H, substructure works shall be carried out without the use of impact driven piling. Piling using augured or vibratory methods shall be implemented, or an alternative means of mitigating noise from impact piling shall be employed such as with the drive system enclosed within an acoustic shroud.

I1.3 On Build Zone C, the following control measures shall be implemented:

- Cutting of steel shall be carried out off-site where feasible. If on-site cutting is necessary, it shall be carried out within the northern half of the build zone furthest from Corner Farm Cottage.

- Temporary acoustic screening shall be provided at the boundary of works associated with a proposed building where the proposed building footprint encroaches into the southern 100 m part of this build zone. The acoustic screening shall be a minimum height of 2.4m and shall be erected prior to commencement of these works.

I1.4 Temporary acoustic screening shall be erected prior to commencement of earthworks and mound works which are within 100m of Home Farm, Bolyngtons (near Home Farm Estate), Fen Farm, Fen Farm Cottages or Corner Farm Cottage and where these works

are programmed for a duration of two weeks or more. The acoustic screening shall be a minimum height of 2m (and not more than 3m high) and shall be positioned and selected to a height that completely hides surface level works from view at the nearest of the above named dwellings.

- Temporary acoustic screening shall be erected prior to commencement of highway works (comprising excavation, widening and road foundation construction) on Fen Lane or Ockenden Road within 100 m of residential properties where work is programmed for a duration of two weeks or more. The acoustic screening shall be a minimum height of 2m (and not more than 3m high) and shall be positioned and selected to a height that screens surface level works from views from overlooking windows as far as practicable.

I1.5 Where vibration levels from compaction works associated with the construction of mounds are expected to be 1 mm/s or more at Corner Farm Cottage and at the dwellings on Fen Lane or Ockendon Road from highway works, the contractors shall:

- Carry these works out on weekdays during core working hours 08:00 – 19:00;
- Provide prior notification to the occupiers of the affected receptor building of the type of works, the reason for the works, the likely times and duration of works; and
- Offer to carry out a building condition survey prior to the works to ensure the current status of the receptor building is recorded, and carry this out if consent is given by landowner.

I2 Monitoring

I2.1 Construction noise and vibration levels shall be monitored by a suitably qualified person appointed specifically for the purpose.

I2.2 As a minimum, construction noise and vibration monitoring shall be carried at the locations as detailed in Table 3. Monitoring shall be carried out throughout the specified works using monitoring instrumentation that will provide the contractor(s) with real-time alerts when noise or vibration levels approach or exceed the thresholds as set out in Table 4 and Table 5.

Table 3: Monitoring Locations

Monitoring Location	Works
Corner Farm Cottage	Substructure at Build Zone C and mound works within 100m of monitoring location.
Bolyngtons (near Home Farm Estate)	Mound works within 100m of monitoring location.
Fen Lane and dwellings adjacent to B186 (north of Fen Lane)	Highway works.

I2.3 When noise or vibration levels exceed the thresholds as set out in Table 4 and Table 5, action shall be taken to reduce the likelihood of significant effects (e.g. complaints) occurring or a further breach, by using measures such as the following:

- the contractor shall carry out checks that BPM is being applied effectively;
- the contractor adjusts methods of work to reduce the level of construction activity noise generated by the works, or reduces the propagation of noise to the nearest dwellings, as far as practicable;
- For construction vibration, the contractor shall carry out vibration-generating work sensitively where these works would occur within 20 m of dwellings. Where feasible, plant/equipment settings shall be adjusted to reduce vibration generated at source, and the occupants of the affected dwellings shall be kept informed of the timing of the works.

I2.4 If complaints are received, then these shall be investigated by the relevant works contractor and actioned appropriately, which may include noise and vibration monitoring at additional positions to ensure compliance with the limits set out in Table 4 and Table 5.

Table 4: Construction Activity Noise Limits

Receptor Name	**Construction noise limit, day dB $L_{Aeq,10hr}$**
Home Farm	65
Fen Farm	65
Ladyville Lodge Care home	65
Top Meadow Golf Club & Top Meadow Dwellings	65
Bolyngtons	65
Corner Farm Cottage	65
Corner Farm	65
Fen Farm Cottages	70
Other Dwellings on Fen Lane (West)	65
Dwellings adjacent to B186 (north of Fen Lane)	75
Dwellings adjacent to B186 (south of Fen Lane)	75
These limits apply at 1m from the dwelling window in façade conditions (including sound reflection from the receptor building). These limits shall be lowered by 3 dB where monitoring is carried out in free-field conditions.	

Table 5: Construction Activity Vibration Limits

Receptor Name	**"Amber" warning threshold, mm/s**	**"Red" stop work threshold, mm/s**
All residential receptors	1.0	5.0
These limits apply at a position representing the closest point of the receptor building structure to the works. These limits assume that the occupants of the closest receptor buildings have been provided with prior notification of the works.		

J Landscape and Visual Characteristics

J1 Arboriculture

J1.1 An Arboricultural Supervisor who is suitably qualified and experienced in arboriculture shall be appointed to oversee works relating to the protection of trees.

J1.2 All works to trees shall be carried out by a suitably qualified person in accordance with BS 3998:2010 Tree Work – Recommendations.

J1.3 Only works detailed in the Tree Protection Schedule and Tree Protection Plans (Appendix 2) is permitted unless otherwise agreed with the Local Planning Authority pursuant to condition 41 in Schedule 2 of the LDO.

J1.4 The Tree Protection Plan shall be kept in the site office as an immediate reference for all site operatives to review before the start of each phase or area of works. All principal contractors and sub-contractors shall be briefed on protocols for working in close proximity to retained trees and hedgerows.

J1.5 All works to trees shall be carried out during the dormant period from November to February and again between June and August unless otherwise agreed by the Ecological Clerk of Works (ECoW).

Trees for Retention

J1.6 Existing mature trees and hedgerows to be retained as detailed in the Tree Protection Schedule and Tree Protection Plans in Appendix 2 shall be protected in accordance with BS 5837:2012 Trees in relation to Design, Demolition and Construction- Recommendations.

J1.7 All site operations shall be planned, implemented and supervised to prevent the following:

- unplanned root severance;
- damage to the bark, branches and trunks;
- compaction of the soil within the areas shown for protection on Tree Protection Plans;
- alterations in soil level;
- soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives.

J1.8 Tree protection measures shall be in place prior to any below ground works within specific areas of the site and shall be retained for the duration of the work in those areas.

Protective Barriers

J1.9 The root protection area (RPA) of retained trees or groups of trees shall be protected in accordance with BS 5837:2012 – '*Trees in relation to design, demolition and construction- Recommendations.'*

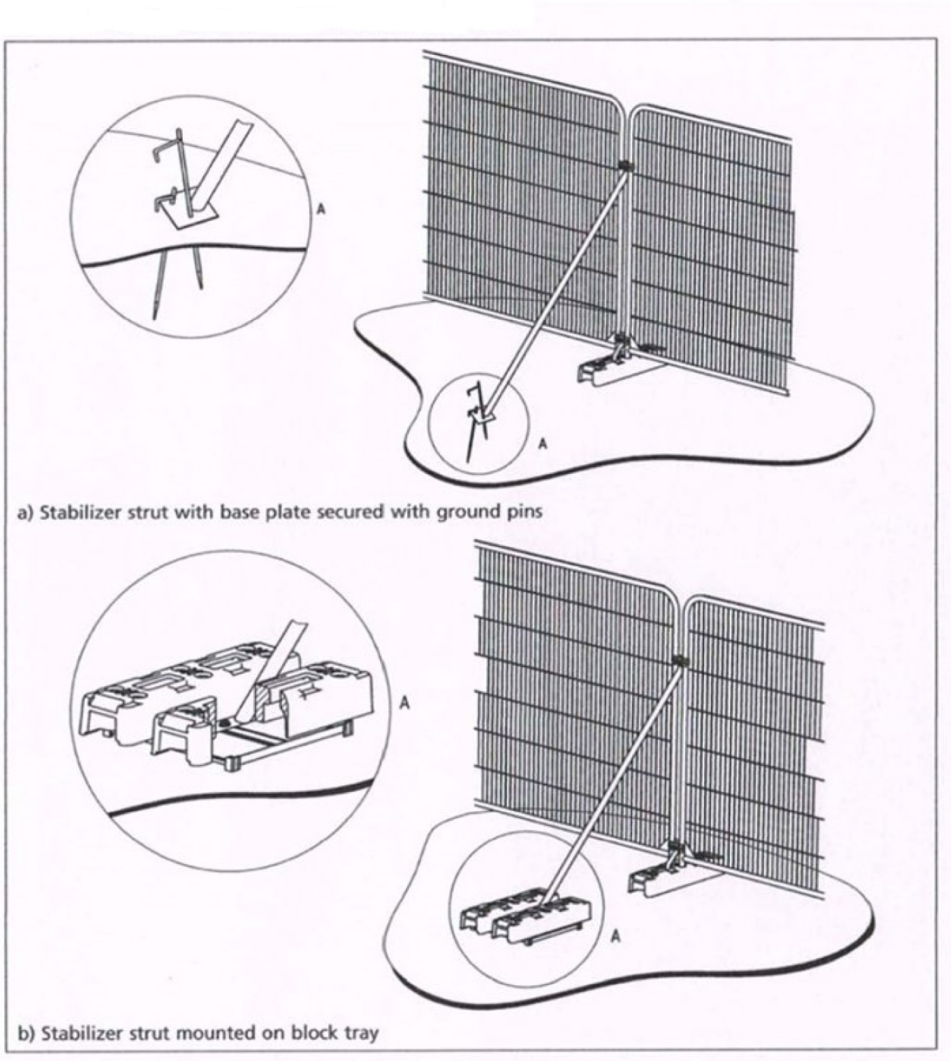
J1.10 For veteran trees, the RPA shall be a minimum of 15 times larger than the diameter of the tree or 5 meters from the edge of the tree's canopy, whichever is larger.

J1.11 Standard guidance in BS 5837:2012 for working within RPAs, including procedures to follow in the event that roots are uncovered during works shall be adhered to. Any

incursions into a designated tree root protection area by any operative shall be approved by the arboricultural supervisor before it occurs.

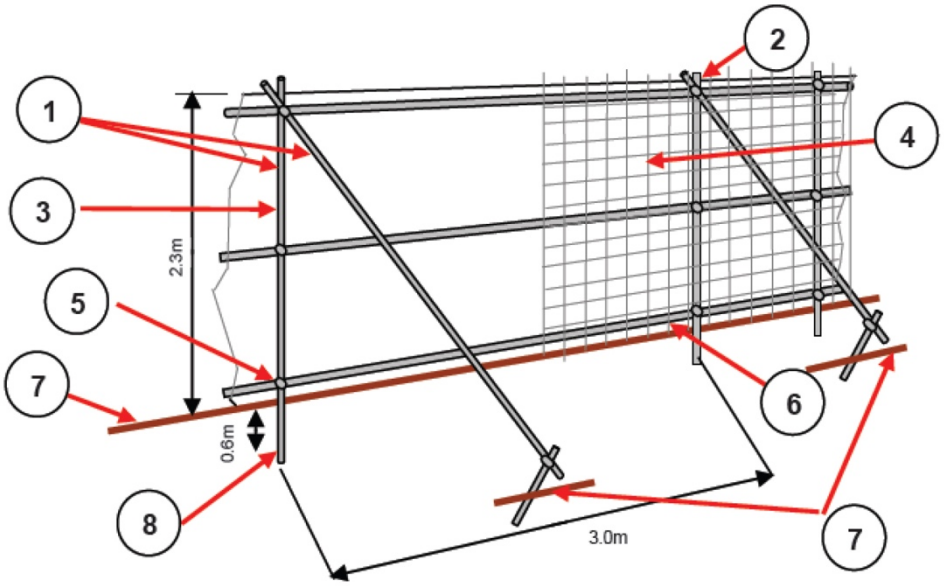
J1.12 Purposely erected barriers shall comprise weldmesh panels securely fixed together with wire or scaffold clamps in rubber or concrete feet that are pinned into position. Each weldmesh panel shall be supported by struts to prevent panels being able to be pushed over easily as shown in Figure 5.

Figure 5: Example of Above Ground Stabilising System



J1.13 Trees, groups of trees and hedges adjacent to build zones where significant construction activity will take place, shall be protected by a protective fence in the locations indicated on the Tree Protection Plan. The protective fence shall comprise a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m to which weldmesh panels shall be securely fixed with wire or scaffold clamps as shown in Figure 6 below.

Figure 6: Protective barrier



1. Standard scaffold poles
2. Uprights to be driven into the ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4. Weldmesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of barrier s to avoid easy dismantling
7. Ground level
8. Approximately 0.6m driven into the ground

J1.14 Barriers shall also be erected to prevent access to areas which are not under construction.

Installation of Hard Surfaces in RPAs

J1.15 Where hard surfaces are proposed in RPAs of retained trees, a detailed arboricultural method statement bespoke to the task at hand shall be agreed with the arboricultural supervisor and the Council's Arboricultural Officer prior to works commencing. The works must comply with the following requirements:

- Where ground levels are to be raised, a granular material shall be used which does not inhibit gaseous exchange.
- Sub-bases shall not be dug into the ground except where they include loose vegetative material and turf to be removed. The sub base shall consist of a non-binding, no fines granular material which does not inhibit water percolation or gaseous exchange.
- Foundations shall be designed to account for tree roots, to minimise excavations without compromising the structural integrity of the proposed development.
- If a substantial area of fill is to be installed, provision shall be made for the installation of an irrigation and aeration system. The distance between pipes shall not exceed 400mm and irrigation pipes shall be connected to the surface

water drainage system. Aeration pipes shall be installed in between and protected by paving mounted grills.

- For footpaths and cycleways, it may be necessary to incorporate a load suspension layer such as a 3 dimensional cellular confinement system dependent on the design and the load-bearing capacity of the soil which shall be determined through engineering testing. This layer must allow gaseous exchange both vertically and horizontally.
- If the area of no-dig hard surfacing is greater than 3m wide on one side of a tree or more than 20% of the RPA, it shall be treated with a surface material that is permeable to gaseous and water movements.
- If water logging is likely to be a concern on the site, any proposed no-dig hard surfacing should be designed to direct water away from the base of the tree or provision made for the inclusion of surface water drainage.
- All new surfacing shall be set back from trunks and buttress roots by at least 50cm to allow space for future growth and minimise the risk of distortion.

J1.16 If edge supports are required, they shall be designed so as not to require any excavation of the existing soil surface and should either be wooden or other edging materials, approved by a structural engineer and the Arboricultural Supervisor. Edgings shall be pinned in place, and the location of the pins should avoid exposed surface or structural roots exceeding 25mm diameter.

J1.17 Construction of the surface shall be completed, either from an existing hard surface, or as a rolling construction, working from the finished hard surface to avoid the need for additional ground protection.

J1.18 The Tree Protection plans in Appendix 2 indicate where no-dig hard surfaces are likely to be required.

Temporary Ground Protection

J1.19 Where temporary protection of the ground is required during construction works, such as where footways and cycle paths are close to or within a RPA, the method of ground protection shall be fit for purpose as advised by a suitably qualified engineer.

J1.20 A compressible layer shall be incorporated into the design to minimise the compaction of root protection areas comprising a thick layer of composted wood chip or preparatory neoprene mats such as:

- Hardwood Eki mats suitable for rubber tyre vehicles, lain to form a single track of either 3m, capable of supporting weights evenly distributed of up to 21 tonne, or 5m wide capable of supporting weights evenly distributed of up to 35 tonne depending on ground conditions on the site.
- Aluminium preparatory Trackway system e.g. Eve Trackway consisting of extruded aluminium planks that are connected to create a high-capacity panel that has a corrugated surface to aid vehicle traction. Interconnecting panels in any combination of widths and layers, provides guaranteed access for any load, up to 1000 tonnes.
- Track Mats and 18mm thick OSB or Plyboard sheets may also be used as an alternative.

J1.21 Ground protection matting shall be interlinked to prevent the materials from separating when vehicles, pedestrians and/or plant move across them.

Soft Landscaping Works

J1.22 Any soft landscaping works shall be in accordance with the Design Code and the following requirements:

- Where landscaping works are to be carried out within the RPA areas of trees, groups of trees and hedges, the line of barriers shall be altered as necessary or may be removed to facilitate the landscaping works.
- The root protection areas shall remain off limits for all site plant and machinery unless fit for purpose ground protection agreed with the arboricultural supervisor has been installed. Pedestrian traffic shall be kept to an absolute minimum and is only permitted for the ground preparation and landscape installation works.

J1.23 No level changes, deep digging or mechanical rotovating shall occur within an RPA unless a detailed method statement has been agreed with the arboricultural supervisor.

J1.24 No planting pits shall be installed within the RPA of retained trees.

J1.25 Any surface mulch shall consist of well-composted material such as bark or wood chips to avoid potential nutrient loss from the soil, such as nitrogen, which can be detrimental to the health and longevity of retained trees.

Highway Works on Fen Lane and Ockendon Road

J1.26 The principle works within a Root Protection Area (RPA) shall be undertaken under full arboricultural supervision. All work shall be done by hand excavation with assistance of a soil vac machine or (only where strictly necessary) from a small 360 machine. The 360 machines shall only be used to remove the existing surface course of the footway/highway and any kerbs (under arboricultural supervision) that are unable to be removed by hand due to their physical size and weight.

J1.27 If surface roots are encountered during the works, then works shall stop and the appointed Arboricultural Supervisor shall ensure the roots are adequately protected before the contractor returns to a hand dig methodology, or if required an air spade could be utilised. Retained surface rooting shall be protected during new surface treatment with a suitable geotextile membrane.

J1.28 To ensure damage to the RPA is avoided, the contractor shall either ensure all machinery is positioned outside of the RPA's and shall work from the existing road surface or if required, utilise track mats/ground protection sheets under the machine to evenly distribute the weight to avoid compaction.

J1.29 Where existing kerbs stones are removed, the existing haunching shall be broken up by pneumatic drill or pecker to reduce the extent of ground disturbance and allow for new haunching to be laid to set the replacement kerb stones.

J1.30 No materials or machinery shall be stored on the soft ground at any time.

J1.31 Prior to any ground works commencing and following the erection of tree protection barriers, the work area shall be set out and marked on the ground with spray paint or similar so that it is clear where the initial excavation is required and only the immediate footprint of the work shall be dug out (under arboricultural supervision).

J1.32 Initial excavation to remove soft ground shall be completed by handheld tools, soil vac or air lance with a crack oil filter attached to prevent noxious gases and oils from entering the surrounding environment, including roots or vegetation.

J1.33 Initial works to dig to foundation depth along the back edge of the works shall be done under arboricultural supervision no wider than the width of a fork/spade. The supervising arborist shall review and assess any tree roots that maybe present prior to further works commencing and shall seek to retain as many tree roots as practical with particular attention to roots over 10mm in diameter or clusters of fibrous roots.

J1.34 If tree roots are discovered, the supervising arborist shall record and assess the roots present and prune them as required where the impact is not considered to have a long term detrimental impact on the health of the trees. If significant roots are exposed, the roots shall be photographed and then covered in a wet hessian material and covered in sand (not builders sand) to retain their moisture content and the Council's Arboricultural Officer shall be informed and shall advise on how to proceed.

J1.35 Where trees are recommended to be felled by the Council's Arboricultural Officer this will require the prior approval of the Local Planning Authority pursuant to condition 41 in Schedule 2 of the LDO.

J1.36 Where roots are assessed as being acceptable to prune, they should be cut back cleanly using secateurs or a sharp pruning saw by the supervising arborist.

Monitoring

J1.37 The effectiveness of the tree protection measures throughout the construction period shall be monitored and documented in a site diary by the Arboricultural Supervisor.

J1.38 The Arboricultural Supervisor shall inform the Council's Arboricultural Officer when protection measures for each phase of construction are in place so that they can be inspected. The protective works must be deemed appropriate by the Council's Arboricultural Officer before works on each phase commences. The tree protective barriers shall not be taken down or relocated at any time without the prior written approval of the Council's Arboricultural Officer.

J2 Lighting

J2.1 The type and level of lighting provided will be dependent on the particular construction activities in progress. Lighting shall be in general compliance with: BS EN 12464-2:2024 (BSI, 2024) *'Light and lighting. Lighting of work places. Outdoor work places' and* shall adopt the mitigation principles outlined in ILP GN01 Guidance Note 1 for the reduction of obtrusive light (2021), or as subsequently updated, to avoid excessive glare and minimise spill of light.

J2.2 Task lighting shall be provided in line with the CAA (2021) guidance – CAP 1096.

J2.3 Temporary lighting may be installed on posts around the construction compounds, along temporary access roads, in storage areas, parking areas and on the perimeter heras fencing to ensure enhanced visibility and security for the safe movement of vehicles and personnel. High-bay lights may be suspended from overhead structures or mounted on poles.

J2.4 As a minimum, lighting will be likely to be required during the winter months and may also be required outside the permitted hours of working depending on construction activities, programme and permitted working hours.

J2.5 Illuminance levels shall be designed in accordance with BS EN 12464-2:2014 Lighting of Workplaces and the areas shall not be overlit.

J2.6 Consideration shall be given to the location and angle of site lighting to minimise the potential for obtrusive light to impact upon sensitive receptors.

J2.7 Lights shall where practicable, be positioned facing away from sensitive receptors. Where this is not possible lighting units shall be placed in such a way that obtrusive light is minimised.

J2.8 Where necessary glare shields, baffles and cowls shall be used to control and minimise light distribution.

J2.9 Low-glare, full-cut-off LED fixtures that direct light downward (below the horizontal) to prevent unwanted upward light and reduce light spillage beyond the construction site boundaries shall be installed. LED floodlights and high-bay lights shall be used due to their energy efficiency, durability, and brightness and all installations shall meet UK safety standards (BS EN 60598). Lighting coverage shall be distributed evenly across the construction area to minimise shadows and dark spots.

J2.10 Monitoring of the temporary lighting installations shall be undertaken to ensure correct aiming angles are being achieved, and appropriate modifications made where necessary, should undue light spill or glare on human or ecological receptors be identified.

J2.11 The following best practice measures shall be implemented:

- All luminaires shall be mounted so that the main photometric distribution of the luminaire will be towards site works preventing artificial light spilling outside of this.
- Where appropriate, timer switches shall be used to automate lighting control, turning lights on and off at scheduled times to optimise energy usage and security.
- Motion sensors in areas with intermittent use, such as storage areas shall be used to activate lighting only when movement is detected.
- Lighting shall be minimised to low levels for security only or infra-red CCTV cameras may be used.
- Checks shall be made each evening to ensure no lights are left on in error.
- Any complaints relating to obtrusive light shall be fully investigated by the site management company.

Appendix 1: Soil Handling Criteria

1. The Contractor shall carry out site assessments of soil wetness condition prior to the start of operations to test that soils are in a suitably dry condition for handling.
2. The tests shall be undertaken in the field, with samples taken from at least five locations in the soil handling area and at each soil horizon to the full depth of the horizon to be stripped.
3. The tests comprise visual examination of the soil and physical assessment of the soil consistency. The criteria are set out below in Tables 1 and 2, and apply to soil stripping, forming soil stockpiles and reinstating soils.

Table 1: Visual examination test for suitably dry soils

Visual examination	Action
If the soil is wet, films of water are visible on the surface of soil particles or aggregates (e.g. clods or peds)	No soil handling to take place
If a clod or ped is squeezed in the hand and readily deforms into a cohesive 'ball'	No soil handling to take place
If the sample is moist (i.e. there is a slight dampness when squeezed in the hand) but it does not significantly change colour (darken) on further wetting, and clods break up/crumble readily when squeezed in the hand rather than forming into a ball	Soil handling can take place
If the sample is dry, it looks dry and changes colour (darkens) if water is added, and it is brittle	Soil handling can take place

Table 2: Consistency tests for suitably dry soil

Consistency tests (not applicable to sands and coarse loams)	**Action**
First test: Attempt to mould soil sample into a ball by hand:	
Impossible because soil is too dry and hard	Soil handling can take place
Impossible because soil is too loose and dry	Soil handling can take place
Impossible because the soil is too loose and wet	No soil handling to take place
Possible	Go to second test
Second test: Attempt to roll ball into a 3mm diameter thread by hand:	
Impossible because soil crumbles or collapses	Soil handling can take place
Possible	No soil handling to take place

4. The Contractor shall also include a rainfall protocol for stopping and restarting soil handling operations. The following guidelines shall be used, assuming that the soils are in a suitably dry condition before the rainfall event:
    - in light drizzle, soil handling may continue for up to four hours unless the soils are already at/near to their moisture limit (determined by field tests);
    - in light rain, soil handling must cease after 15 minutes;
    - in heavy rain and intense showers, soil handling shall cease immediately.
5. Once the rainfall event has passed, the visual examination and consistency tests shall be applied to determine if soil handling operations can restart, provided that the ground is free from ponding and ground conditions are safe to do so.

Appendix 2: Arboriculture – Tree Works Schedule and Tree Protection Plans

	TREE WORKS SCHEDULE	
	Site:	East Havering Data Centre Campus
	Date:	February 2026
	Consultant:	Stefan Rose *BSc (Hons), TechCert (Arbor A), TechArbor.A*

THE FOLLOWING TREES WERE SURVEYED IN AUGUST 2022: T1 TO T165 AND G1 TO G88
THE FOLLOWING TREES WERE SURVEYED IN APRIL 2025: T166 TO T185, G89 TO G115 AND H1 TO H2

Tree No	Unique Combined Reference	Species	Permitted Works
T1	0.T1.0	White Poplar *Populus alba*	No works required, retain
T2	0.T2.0	Lombardy Poplar *Populus nigra 'Italica'*	No works required, retain
T3	0.T3.0	Lombardy Poplar *Populus nigra 'Italica'*	No works required, retain
T4	0.T4.0	Crab Apple *Malus sylvestris*	No works required, retain
T5	0.T5.0	Common Ash *Fraxinus excelsior*	No works required, retain
T6	0.T6.0	Crab Apple *Malus sylvestris*	No works required, retain
T7	0.T7.0	White Poplar *Populus alba*	No works required, retain
T8	0.T8.0	Common Walnut *Juglans regia*	No works required, retain
T9	0.T9.0	Silver Birch *Betula pendula*	No works required, retain
T10	0.T10.0	Oak *Quercus sp.*	No works required, retain
T11	0.T11.0	Oak *Quercus sp.*	No works required, retain
T12	3.T12.11	Oak *Quercus sp.*	No works required, retain
T13	0.T13.0	Oak *Quercus sp.*	No works required, retain
T14	4.T14.9	White Willow *Salix alba*	No works required, retain
T15	0.T15.0	White Willow *Salix alba*	No works required, retain
T16	0.T16.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T17	0.T17.0	Willow *Salix sp.*	No works required, retain
T18	0.T18.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T19	146.T19.0	White Willow *Salix alba*	No works required, retain
T20	7.T20.12	White Willow *Salix alba*	No works required, retain
T21	0.T21.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T22	72.T22.24	White Willow *Salix alba*	No works required, retain
T23	0.T23.0	White Willow *Salix alba*	No works required, retain
T24	0.T24.0	Oak *Quercus sp.*	No works required, retain
T25	0.T25.0	Oak *Quercus sp.*	No works required, retain
T26	15.T26.17	Oak *Quercus sp.*	No works required, retain
T27	0.T27.0	Oak *Quercus sp.*	No works required, retain
T28	0.T28.0	Oak *Quercus sp.*	No works required, retain
T29	0.T29.0	Oak *Quercus sp.*	No works required, retain
T30	0.T30.0	Oak *Quercus sp.*	No works required, retain
T31	0.T31.0	Oak *Quercus sp.*	No works required, retain
T32	0.T32.0	Oak *Quercus sp.*	Fell to ground level and remove stump
T33	11.T33.18	Oak *Quercus sp.*	No works required, retain
T34	0.T34.0	Oak *Quercus sp.*	No works required, retain
T35	5.T35.13	White Willow *Salix alba*	No works required, retain
T36	0.T36.0	Oak *Quercus sp.*	No works required, retain
T37	0.T37.0	Oak *Quercus sp.*	No works required, retain
T38	0.T38.0	Oak *Quercus sp.*	No works required, retain
T39	149.T39.0	Oak *Quercus sp.*	No works required, retain
T40	150.T40.0	Oak *Quercus sp.*	No works required, retain
T41	0.T41.0	Oak *Quercus sp.*	No works required, retain
T42	0.T42.0	Oak *Quercus sp.*	No works required, retain
T43	151.T43.0	Oak *Quercus sp.*	No works required, retain
T44	152.T44.0	Oak *Quercus sp.*	No works required, retain
T45	1.T45.2	Oak *Quercus sp.*	No works required, retain
T46	2.T46.1	Oak *Quercus sp.*	No works required, retain
T47	80.T47.106	Oak *Quercus sp.*	No works required, retain
T48	16.T48.107	Oak *Quercus sp.*	No works required, retain
T49	106.T49.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T50	105.T50.0	Oak *Quercus sp.*	No works required, retain
T51	96.T51.0	Oak *Quercus sp.*	No works required, retain
T52	79.T52.0	Oak *Quercus sp.*	No works required, retain
T53	0.T53.0	Oak *Quercus sp.*	No works required, retain
T54	0.T54.0	Oak *Quercus sp.*	No works required, retain
T55	145.T55.0	Oak *Quercus sp.*	No works required, retain
T56	0.T56.0	Oak *Quercus sp.*	No works required, retain
T57	14.T57.23	Oak *Quercus sp.*	No works required, retain
T58	0.T58.0	Oak *Quercus sp.*	No works required, retain
T59	0.T59.0	Oak *Quercus sp.*	No works required, retain
T60	0.T60.0	Oak *Quercus sp.*	No works required, retain
T61	10.T61.22	Oak *Quercus sp.*	No works required, retain
T62	78.T62.21	Oak *Quercus sp.*	No works required, retain
T63	144.T63.0	Oak *Quercus sp.*	No works required, retain
T64	0.T64.0	Oak *Quercus sp.*	No works required, retain
T65	0.T65.0	Oak *Quercus sp.*	No works required, retain
T66	0.T66.0	White Willow *Salix alba*	Make safe as part of good management of site for ecological habitat
T67	94.T67.48	White Willow *Salix alba*	Make safe as part of good management of site for ecological habitat
T68	67.T68.47	Oak *Quercus sp.*	No works required, retain
T69	0.T69.0	Oak *Quercus sp.*	No works required, retain
T70	95.T70.36	Oak *Quercus sp.*	No works required, retain
T71	0.T71.0	Oak *Quercus sp.*	No works required, retain
T72	75.T72.37	Oak *Quercus sp.*	No works required, retain
T73	73.T73.39	Oak *Quercus sp.*	No works required, retain
T74	69.T74.46	Oak *Quercus sp.*	Crown lift to provide 3m ground level clearance over footpath
T75	68.T75.50	Oak *Quercus sp.*	No works required, retain
T76	0.T76.0	Oak *Quercus sp.*	No works required, retain
T77	61.T77.51	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T78	57.T78.122	Oak *Quercus sp.*	Make safe as part of good management of site for ecological habitat
T79	81.T79.323	Oak *Quercus sp.*	No works required, retain
T80	82.T80.321	Oak *Quercus sp.*	No works required, retain
T81	0.T81.0	Common Ash *Fraxinus excelsior*	No works required, retain
T82	0.T82.0	Oak *Quercus sp.*	No works required, retain
T83	25.T83.312	Common Ash *Fraxinus excelsior*	No works required, retain
T84	29.T84.310	Common Ash *Fraxinus excelsior*	No works required, retain
T85	18.T85.114	Oak *Quercus sp.*	Make safe as part of good management of site for ecological habitat
T86	0.T86.0	Oak *Quercus sp.*	No works required, retain
T87	17.T87.115	Oak *Quercus sp.*	No works required, retain
T88	84.T88.307	Oak *Quercus sp.*	No works required, retain
T89	36.T89.305	Oak *Quercus sp.*	No works required, retain
T90	31.T90.301	Oak *Quercus sp.*	No works required, retain
T91	0.T91.0	English Elm *Ulmus procera*	Make safe as part of good management of site for ecological habitat
T92	89.T92.52	Oak *Quercus sp.*	No works required, retain
T93	58.T93.53	Oak *Quercus sp.*	No works required, retain
T94	62.T94.54	Oak *Quercus sp.*	No works required, retain
T95	123.T95.0	Oak *Quercus sp.*	No works required, retain
T96	63.T96.55	White Willow *Salix alba*	No works required, retain
T97	0.T97.0	Crack Willow *Salix fragilis*	No works required, retain
T98	0.T98.0	Common Ash *Fraxinus excelsior*	No works required, retain
T99	124.T99.0	Oak *Quercus sp.*	Crown lift to provide 3m ground level clearance over footpath
T100	66.T100.70	Oak *Quercus sp.*	No works required, retain
T101	64.T101.69	Oak *Quercus sp.*	No works required, retain
T102	91.T102.56	White Willow *Salix alba*	No works required, retain
T103	136.T103.0	Oak *Quercus sp.*	No works required, retain
T104	135.T104.0	Oak *Quercus sp.*	No works required, retain
T105	134.T105.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T106	133.T106.0	Oak *Quercus sp.*	No works required, retain
T107	132.T107.0	Oak *Quercus sp.*	No works required, retain
T108	131.T108.0	Oak *Quercus sp.*	No works required, retain
T109	130.T109.0	Oak *Quercus sp.*	No works required, retain
T110	129.T110.0	Oak *Quercus sp.*	No works required, retain
T111	0.T111.0	Oak *Quercus sp.*	No works required, retain
T112	127.T112.0	Oak *Quercus sp.*	No works required, retain
T113	128.T113.0	Oak *Quercus sp.*	No works required, retain
T114	125.T114.0	Oak *Quercus sp.*	No works required, retain
T115	0.T115.0	Oak *Quercus sp.*	No works required, retain
T116	0.T116.0	Oak *Quercus sp.*	No works required, retain
T117	0.T117.0	Oak *Quercus sp.*	No works required, retain
T118	92.T118.67	Oak *Quercus sp.*	No works required, retain
T119	0.T119.0	Oak *Quercus sp.*	No works required, retain
T120	65.T120.68	Oak *Quercus sp.*	No works required, retain
T121	0.T121.0	Oak *Quercus sp.*	No works required, retain
T122	55.T122.74	Oak *Quercus sp.*	No works required, retain
T123	52.T123.75	Oak *Quercus sp.*	No works required, retain
T124	0.T124.0	Oak *Quercus sp.*	No works required, retain
T125	41.T125.76	Oak *Quercus sp.*	No works required, retain
T126	51.T126.0	Oak *Quercus sp.*	No works required, retain
T127	0.T127.0	Oak *Quercus sp.*	No works required, retain
T128	54.T128.78	Oak *Quercus sp.*	No works required, retain
T129	53.T129.79	Oak *Quercus sp.*	No works required, retain
T130	0.T130.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
T131	49.T131.80	Oak *Quercus sp.*	No works required, retain
T132	50.T132.81	Oak *Quercus sp.*	No works required, retain
T133	0.T133.0	Common Hawthorn *Crataegus monogyna*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T134	48.T134.82	Oak *Quercus sp.*	No works required, retain
T135	0.T135.0	Crab Apple *Malus sylvestris*	No works required, retain
T136	102.T136.0	Oak *Quercus sp.*	No works required, retain
T137	0.T137.0	Oak *Quercus sp.*	No works required, retain
T138	47.T138.29	Oak *Quercus sp.*	No works required, retain
T139	45.T139.30	Oak *Quercus sp.*	No works required, retain
T140	42.T140.31	Oak *Quercus sp.*	No works required, retain
T141	142.T141.0	Oak *Quercus sp.*	No works required, retain
T142	43.T142.33	Oak *Quercus sp.*	No works required, retain
T143	44.T143.34	Oak *Quercus sp.*	No works required, retain
T144	0.T144.0	Oak *Quercus sp.*	No works required, retain
T145	40.T145.35	Oak *Quercus sp.*	No works required, retain
T146	87.T146.25	Oak *Quercus sp.*	Fell and remove stump
T147	153.T147.0	Oak *Quercus sp.*	No works required, retain
T148	143.T148.0	Oak *Quercus sp.*	No works required, retain
T149	0.T149.0	Oak *Quercus sp.*	Fell and remove stump
T150	109.T150.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T151	0.T151.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T152	0.T152.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T153	0.T153.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T154	0.T154.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T155	0.T155.0	Oak *Quercus sp.*	No works required, retain
T156	0.T156.0	Oak *Quercus sp.*	Fell and remove stump
T157	39.T157.27	Oak *Quercus sp.*	No works required, retain
T158	117.T158.0	Oak *Quercus sp.*	No works required, retain
T159	116.T159.0	Oak *Quercus sp.*	No works required, retain
T160	0.T160.0	Oak *Quercus sp.*	No works required, retain
T161	0.T161.0	Oak *Quercus sp.*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
T162	115.T162.0	Oak *Quercus sp.*	No works required, retain
T163	0.T163.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T164	0.T164.0	Common Hawthorn *Crataegus monogyna*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T165	113.T165.0	Oak *Quercus sp.*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T166	0.T166.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T167	0.T167.0	Common Hawthorn *Crataegus monogyna*	Fell to ground level
T168	0.T168.0	Weeping Willow *Salix x chrysocoma*	No works required, retain
T169	0.T169.0	Common Alder *Alnus glutinosa*	No works required, retain
T170	0.T170.0	Weeping Willow *Salix x chrysocoma*	No works required, retain
T171	0.T171.0	Pedunculate Oak *Quercus robur*	No works required, retain
T172	0.T172.0	Apple *Malus spp*	Fell to ground level
T173	0.T173.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T174	0.T174.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T175	0.T175.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T176	0.T176.0	Pedunculate Oak *Quercus robur*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T177	0.T177.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T178	0.T178.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T179	0.T179.0	Common Ash *Fraxinus excelsior*	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
T180	0.T180.0	Willow *Salix spp*	No works required, retain
T181	0.T181.0	Pedunculate Oak *Quercus robur*	Fell to ground level
T182	0.T182.0	Common Sycamore *Acer pseudoplatanus*	Fell to ground level and remove stump
T183	0.T183.0	Common Ash *Fraxinus excelsior*	No works required, retain
T184	0.T184.0	Flowering Cherry x2 *Prunus spp*	No works required, retain
T185	0.T185.0	Norway Maple *Acer platanoides*	No works required, retain
G1	0.G1.0	English Elm *Ulmus procera*	No works required, retain
G2	0.G2.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G3	0.G3.0	Willow *Salix sp.*	No works required, retain
G4	0.G4.0	English Elm *Ulmus procera*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G5	0.G5.0	Willow *Salix sp.*	No works required, retain
G6	0.G6.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G7	0.G7.0	English Elm *Ulmus procera*	No works required, retain
G8	0.G8.0	Common Hawthorn *Crataegus monogyna*	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance/visibility splay
G9	0.G9.0	Common Hawthorn *Crataegus monogyna*	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance/visibility splay
G10	0.G10.0	Oak *Quercus sp.*	No works required, retain
G11	0.G11.0	Willow *Salix sp.*	No works required, retain
G12	147.G12.0	Willow *Salix sp.*	No works required, retain
G13	0.G13.0	English Elm *Ulmus procera*	No works required, retain
G14	0.G14.0	Oak *Quercus sp.*	Fell and remove stumps
G15	0.G15.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G16	0.G16.0	Willow *Salix sp.*	No works required, retain
G17	0.G17.0	Common Hazel *Corylus avellana*	No works required, retain
G18	76.G18.105 77.G18.121 107.G18.0 108.G18.0	Oak *Quercus sp.*	No works required, retain
G19	12.G19.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond footpath edge
G20	6.G20.325 8.G20.326 9.G20.14 13.G20.16 141.G20.0	White Willow *Salix alba*	No works required, retain
G21	0.G21.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G22	0.G22.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G23	148.G23.0	English Elm *Ulmus procera*	No works required, retain
G24	0.G24.0	Hawthorn *Crataegus sp.*	No works required, retain
G25	0.G25.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G26	0.G26.0	English Elm *Ulmus procera*	Fell and remove stumps
G27	0.G27.0	English Elm *Ulmus procera*	Fell and remove stumps
G28	0.G28.0	English Elm *Ulmus procera*	Fell and remove stumps
G29	104.G29.0	Willow *Salix sp.*	Fell and remove stumps
G30	0.G30.0	Common Elder *Sambucas nigra*	Fell and remove stumps in section of group up to 1m beyond footpath edge

Tree No	Unique Combined Reference	Species	Permitted Works
G31	0.G31.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G32	0.G32.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G33	0.G33.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G34	0.G34.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G35	0.G35.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G36	0.G36.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G37	70.G37.45 71.G37.44 74.G37.38 137.G37.0 138.G37.0 139.G37.0 140.G37.0	Oak *Quercus sp.*	Fell and remove stumps in section of group up to 1m beyond footpath edge 70.G37.45 – Retain, may require pruning to provide 3m ground level clearance over footpath
G38	93.G38.49	White Willow *Salix alba*	No works required, retain
G39	0.G39.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G40	0.G40.0	Blackthorn *Prunus spinosa*	No works required, retain
G41	0.G41.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G42	19.G42.322 20.G42.320 21.G42.317 22.G42.319 23.G42.316 24.G42.315 26.G42.314 27.G42.311 28.G42.313 30.G42.306 32.G42.302 34.G42.309 35.G42.308 83.G42.318 85.G42.304 86.G45.303 103.G42.0	Oak *Quercus sp.*	No works required, retain
G43	0.G43.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G44	0.G44.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G45	0.G45.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in sections of group up to 1m beyond footpath edges
G46	0.G46.0	Hawthorn *Crataegus sp.*	No works required, retain
G47	0.G47.0	Blackthorn *Prunus spinosa*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G48	0.G48.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G49	0.G49.0	Common Hawthorn *Crataegus monogyna*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G50	0.G50.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G51	126.G51.0	English Elm *Ulmus procera*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G52	0.G52.0	Blackthorn *Prunus spinosa*	No works required, retain
G53	0.G53.0	Blackthorn *Prunus spinosa*	No works required, retain
G54	0.G54.0	Blackthorn *Prunus spinosa*	Fell and remove stumps
G55	56.G55.0 59.G55.125 60.G55.124 88.G55.101 90.G55.123 154.G55.0	Oak *Quercus sp.*	Fell and remove stumps
G56	122.G56.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G57	0.G57.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G58	121.G58.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G59	46.G59.28	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group for swale and up to 1m beyond footpath edges and up to 1m beyond security fence 46.G59.28 – Retain (proposed works for swale, footpath and security fence do not impact this tree)
G60	0.G60.0	Willow *Salix sp.*	No works required, retain
G61	0.G61.0	Wych Elm *Ulmus glabra*	No works required, retain
G62	0.G62.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps of trees
G63	0.G63.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G64	0.G64.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section of group up to 1m beyond junction splay
G65	38.G65.0	Wych Elm *Ulmus glabra*	No works required, retain
G66	0.G66.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in section of group up to 1m beyond junction splay and for visibility splay
G67	0.G67.0	Wych Elm *Ulmus glabra*	Fell and remove stumps
G68	0.G68.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section beneath Build Zone E and up to 1m beyond security fence
G69	0.G69.0	Wych Elm *Ulmus glabra*	Fell and remove stumps in section of group up to 1m beyond footpath edges
G70	0.G70.0	Wych Elm *Ulmus glabra*	No works required, retain
G71	0.G71.0	Wych Elm *Ulmus glabra*	No works required, retain
G72	118.G72.0 119.G72.0 120.G72.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G73	0.G73.0	Wych Elm *Ulmus glabra*	No works required, retain

Tree No	Unique Combined Reference	Species	Permitted Works
G74	0.G74.0	Common Ash *Fraxinus excelsior*	Clip and cut back as required to back edge of new footpath edge Crown lift to provide 3m ground level clearance over footpath as required
G75	33.G75.88 37.G75.126	Wych Elm *Ulmus glabra*	Fell to ground level
G76	0.G76.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps
G77	97.G77.0 98.G77.0 99.G77.0 100.G77.0 101.G77.0 111.G77.0 112.G77.0	Oak *Quercus sp.*	Fell and remove stumps of trees in section of group under footprint of development and up to 1m beyond footpath edges, for the remainder of the group fell to ground level ONLY after onsite investigation works for road widening/footway and removal confirmed as necessary
G78	0.G78.0	Wych Elm *Ulmus glabra*	No works required, retain
G79	0.G79.0	Norway Maple *Acer platanoides*	Clip and cut back as required to back edge of new road edge
G80	0.G80.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G81	0.G81.0	Common Ash *Fraxinus excelsior*	Fell and remove stumps of section of trees on highways land
G82	0.G82.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps of trees
G83	0.G83.0	Sycamore *Acer pseudoplatanus*	No works required, retain
G84	0.G84.0	Cherry Laurel *Prunus laurocerasus*	Clip and cut back as required to back edge of new road edge
G85	0.G85.0	Common Hawthorn *Crataegus monogyna*	No works required, retain
G86	0.G86.0	Common Hawthorn *Crataegus monogyna*	Fell and remove stumps in southern section of group up to 1m beyond footpath edges
G87	0.G87.0	Wild Cherry *Prunus avium*	No works required, retain
G88	0.G88.0	Wych Elm *Ulmus glabra*	No works required, retain
G89	0.G89.0	Elm Hawthorn Wild Cherry	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G90	0.G90.0	Elm Pedunculate Oak	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G91	0.G91.0	Common Hawthorn Blackthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G92	0.G92.0	Elm Pedunculate Oak Goat Willow	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G93	0.G93.0	Common Hawthorn Silver Birch Pedunculate Oak Sycamore	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G94	0.G94.0	Elm	Fell to ground level and remove stumps
G95	0.G95.0	Elder x1 Elm x2	Fell to ground level and remove stumps
G96	0.G96.0	Blackthorn Hawthorn	No works required, retain

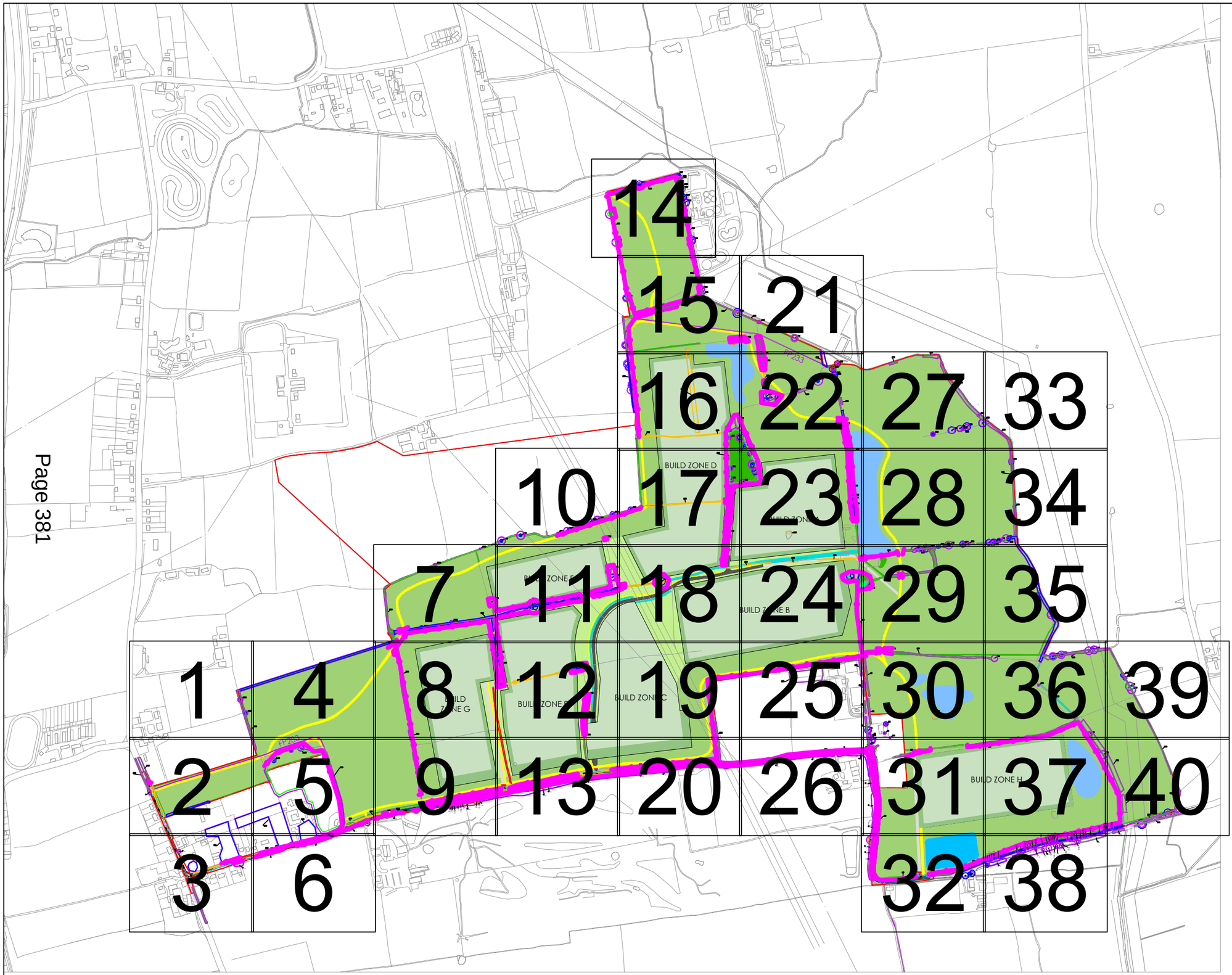
Tree No	Unique Combined Reference	Species	Permitted Works
G97	0.G97.0	Blackthorn Hawthorn Pedunculate Oak	No works required, retain
G98	0.G98.0	Common Ash Blackthorn Hawthorn	No works required, retain
G99	0.G99.0	Common Hawthorn Elder Blackthorn Field Maple	No works required, retain
G100	0.G100.0	Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G101	0.G101.0	Common Hawthorn Field Maple Elm Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G102	0.G102.0	Elm Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G103	0.G103.0	Hawthorn Blackthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G104	0.G104.0	Hawthorn Apple	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G105	0.G105.0	Blackthorn Hawthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G106	0.G106.0	Blackthorn Hawthorn Elm	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G107	0.G107.0	Leyland Cypress Hawthorn Ash Blackthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G108	110.G108.0	Blackthorn Hawthorn	Potential localised tree removals on roadside and/or Clip and trim group edge as required for road clearance
G109	0.G109.0	Common Ash Pedunculate Oak	Fell to ground level ONLY the larger trees in group after onsite investigation works for road widening and removal confirmed as necessary
G110	114.G110.0	Common Ash Hawthorn Elm	Fell to ground level ONLY after onsite investigation works for road widening and removal confirmed as necessary
G111	0.G111.0	Elm	Retain but fell dead Elm within group to ground level adjacent to highway works
G112	0.G112.0	Common Hawthorn Leyland Cypress	Clip and trim group on roadside as required for clearance
G113	0.G113.0	Common Yew x2	No works required, retain
G114	0.G114.0	Pear x2	No works required, retain
G115	0.G115.0	Apple x2	No works required, retain
H1	0.H1.0	Elm Hawthorn Field Maple	Retain but remove dead Elm Clip and cut back as required to back edge of new road edge
H2	0.H2.0	Elm	No works required, retain

- All tree works are advised to be carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.

- All tree works should be carried out in accordance with current best practice guidelines and BS3998:2010 – Tree Work Recommendations.

- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker that is suitably insured and experienced to carry out the tree works.


CB3

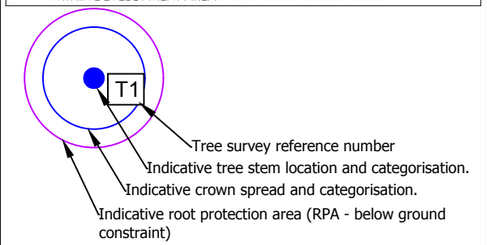


NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

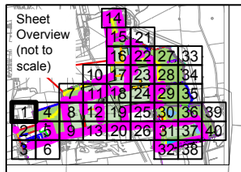
Drawing Title: Tree Protection Plan
Overview of A3 Drawing Sheets

Date: February 2026 Drawn By: DAP

Scale: 1-10,000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Sheet Overview (not to scale)





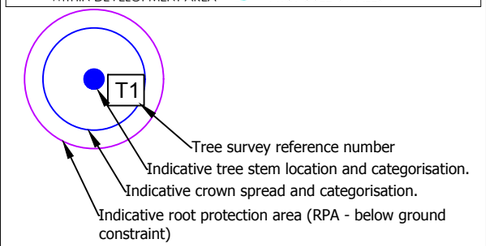
10m 20m 30m 40m 50m

NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
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- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 1 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

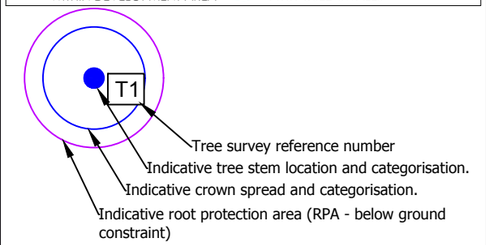


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Rev.	Description.	Date.

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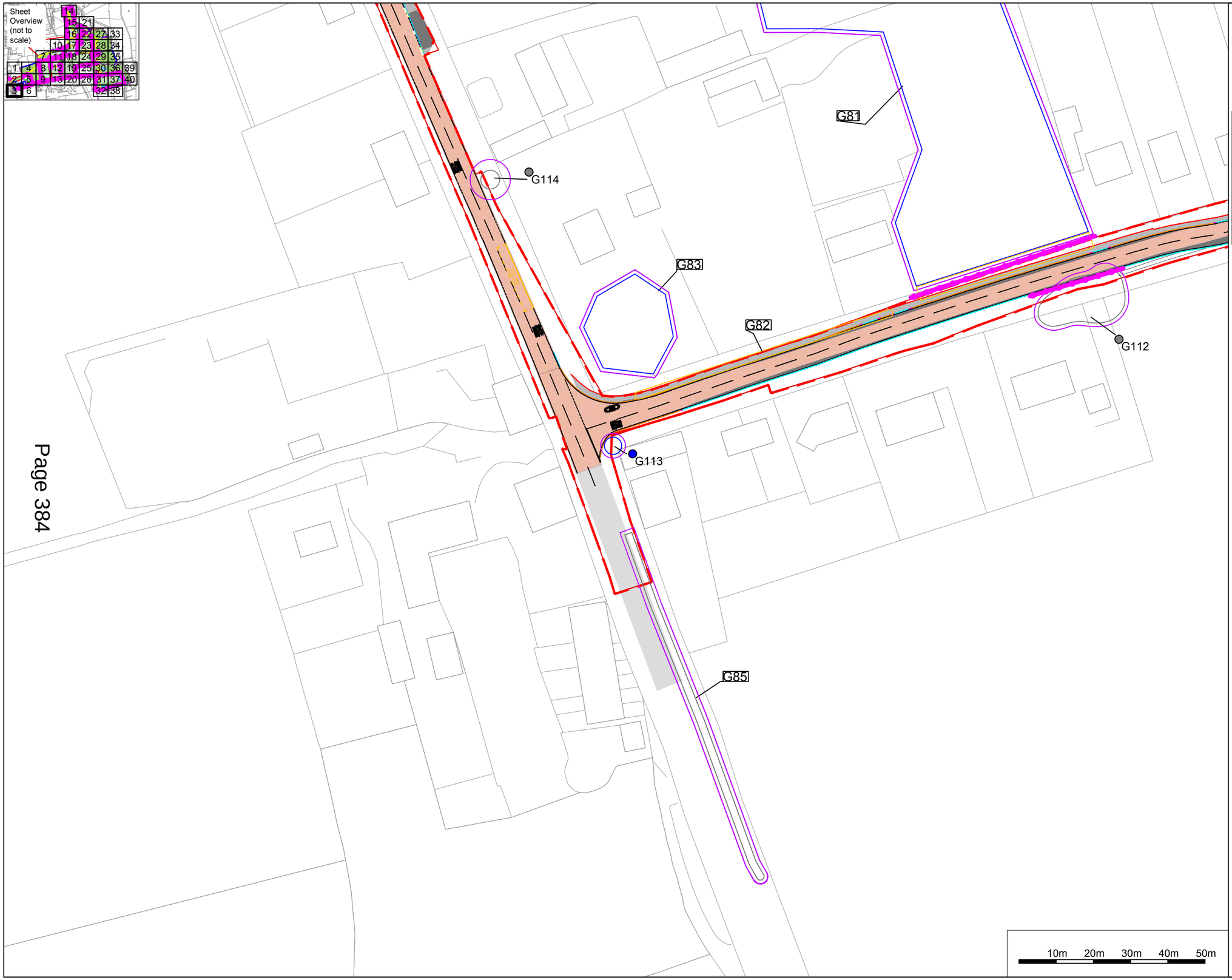
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 2 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

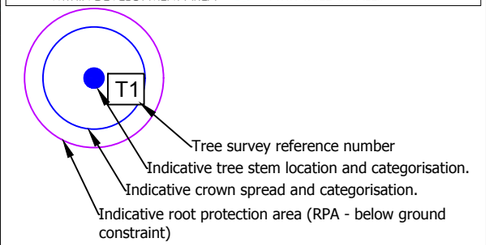


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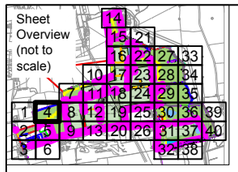
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 3 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

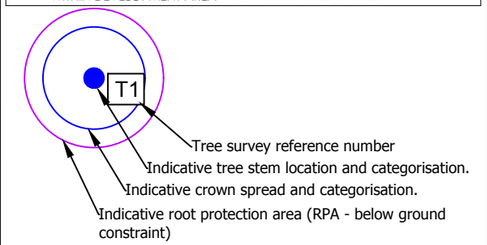


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Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 4 of 40

Date: February 2026 Drawn By: DAP

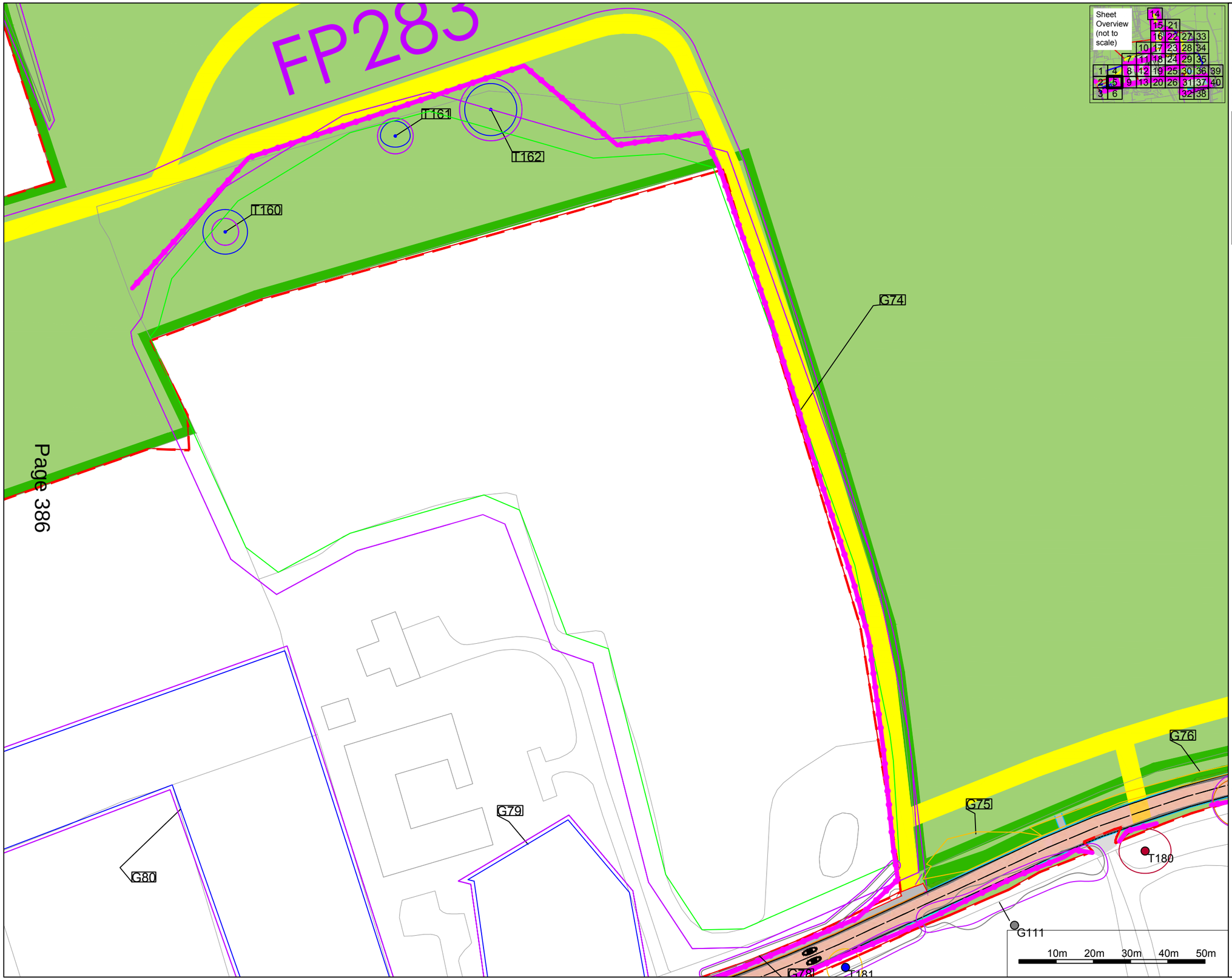
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Drawing Number: CBA11656.02H TPP Rev. H

G72

G73

10m 20m 30m 40m 50m

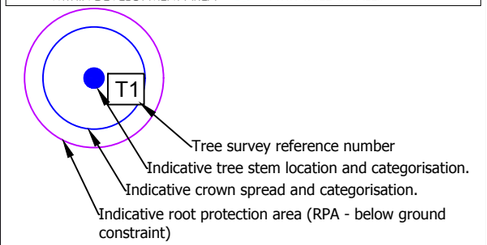


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Client: Digital Reef London

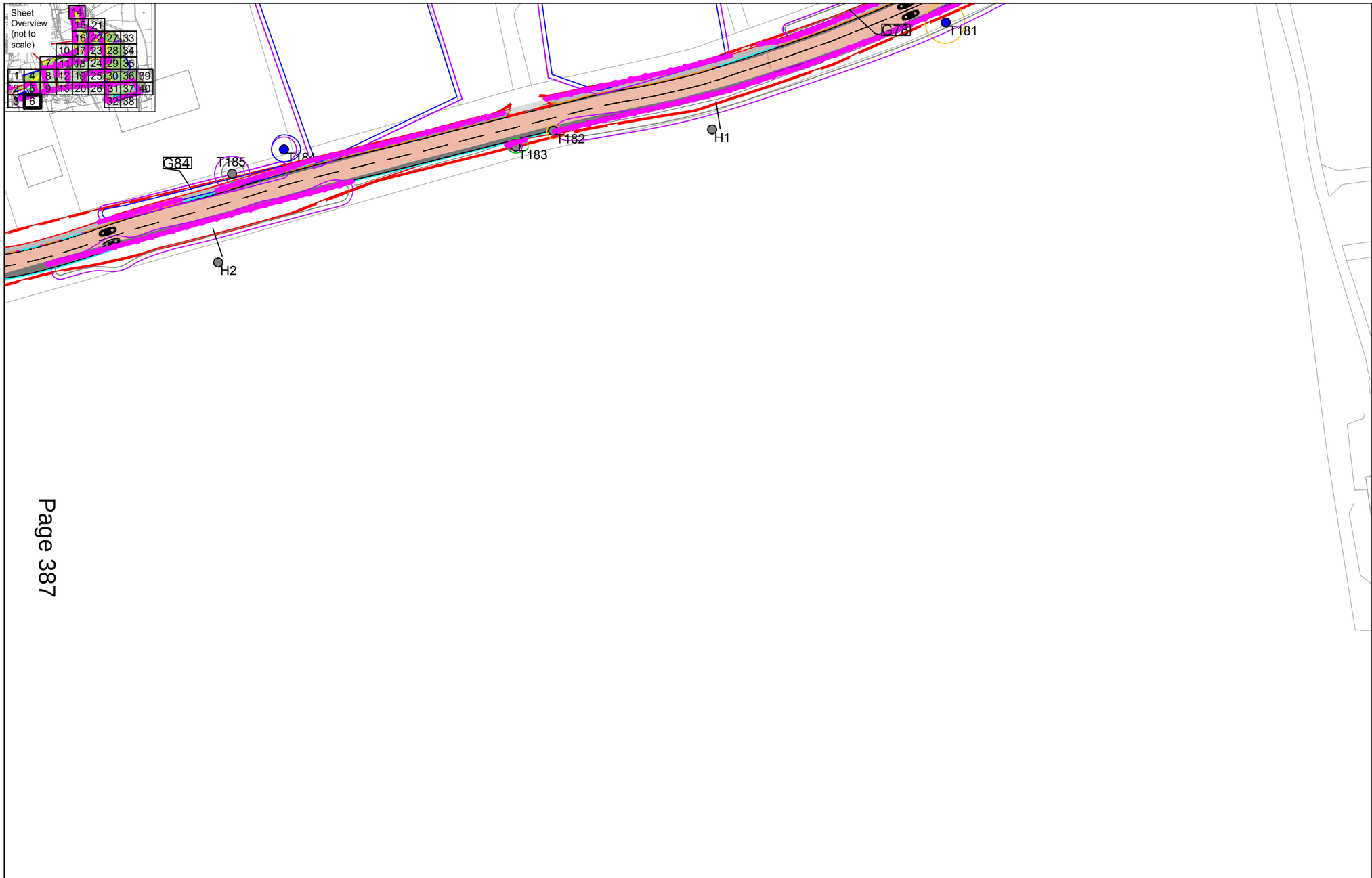
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 5 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

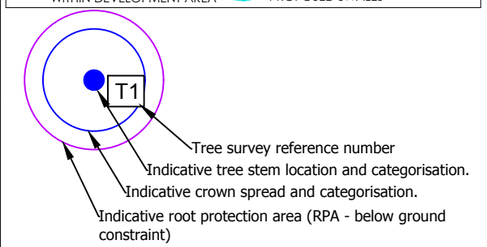


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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

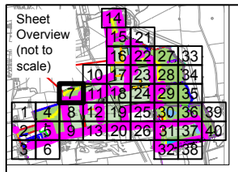
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 6 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m



T135

T133

G58

G59

T137

T136

T134

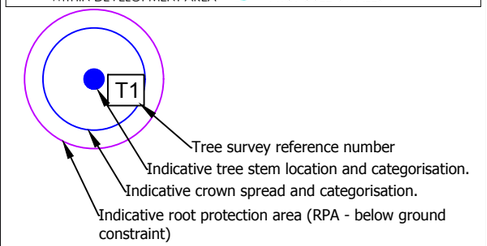
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Rev.	Description.	Date.

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Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

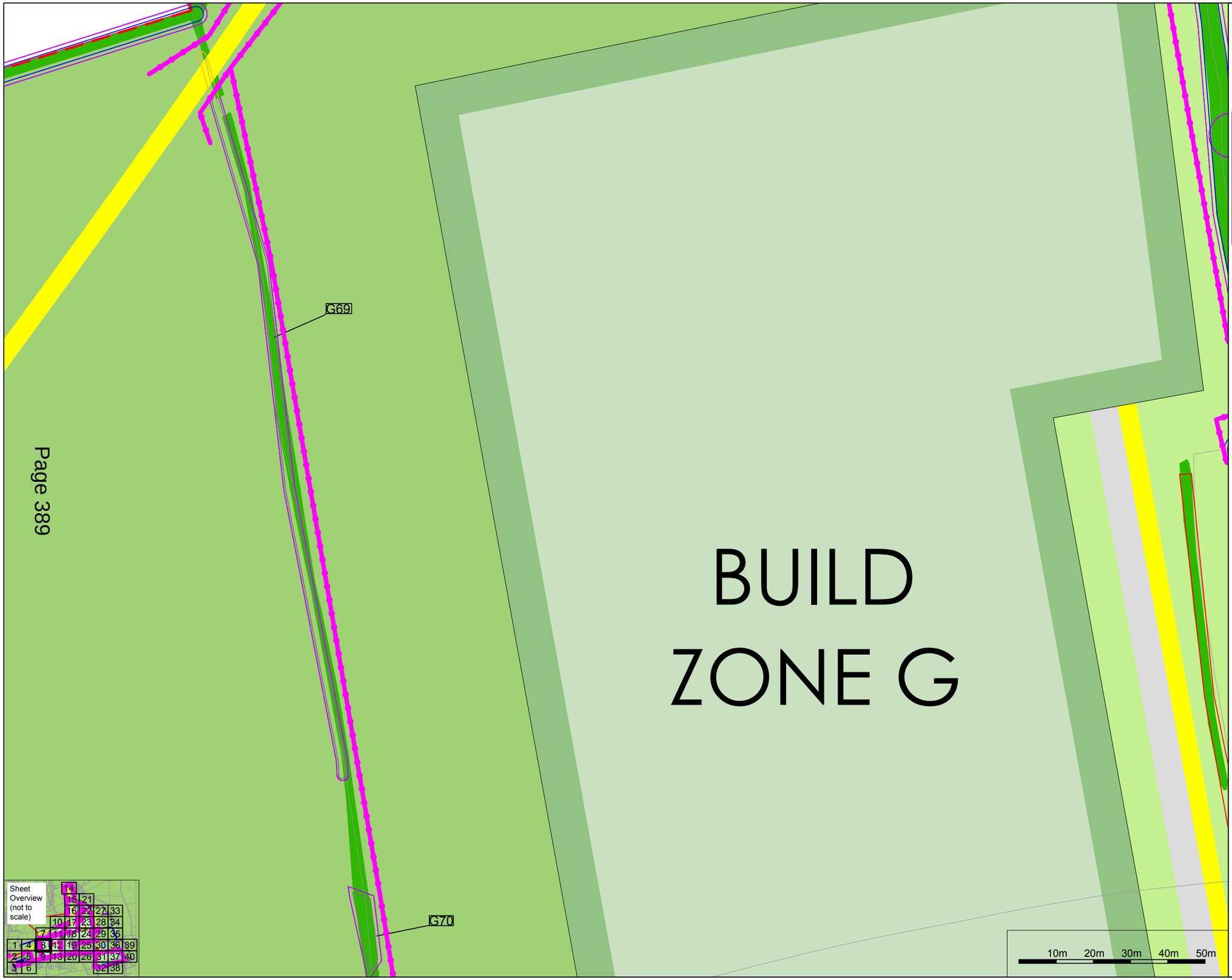
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 7 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

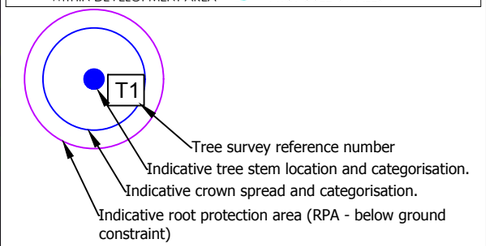


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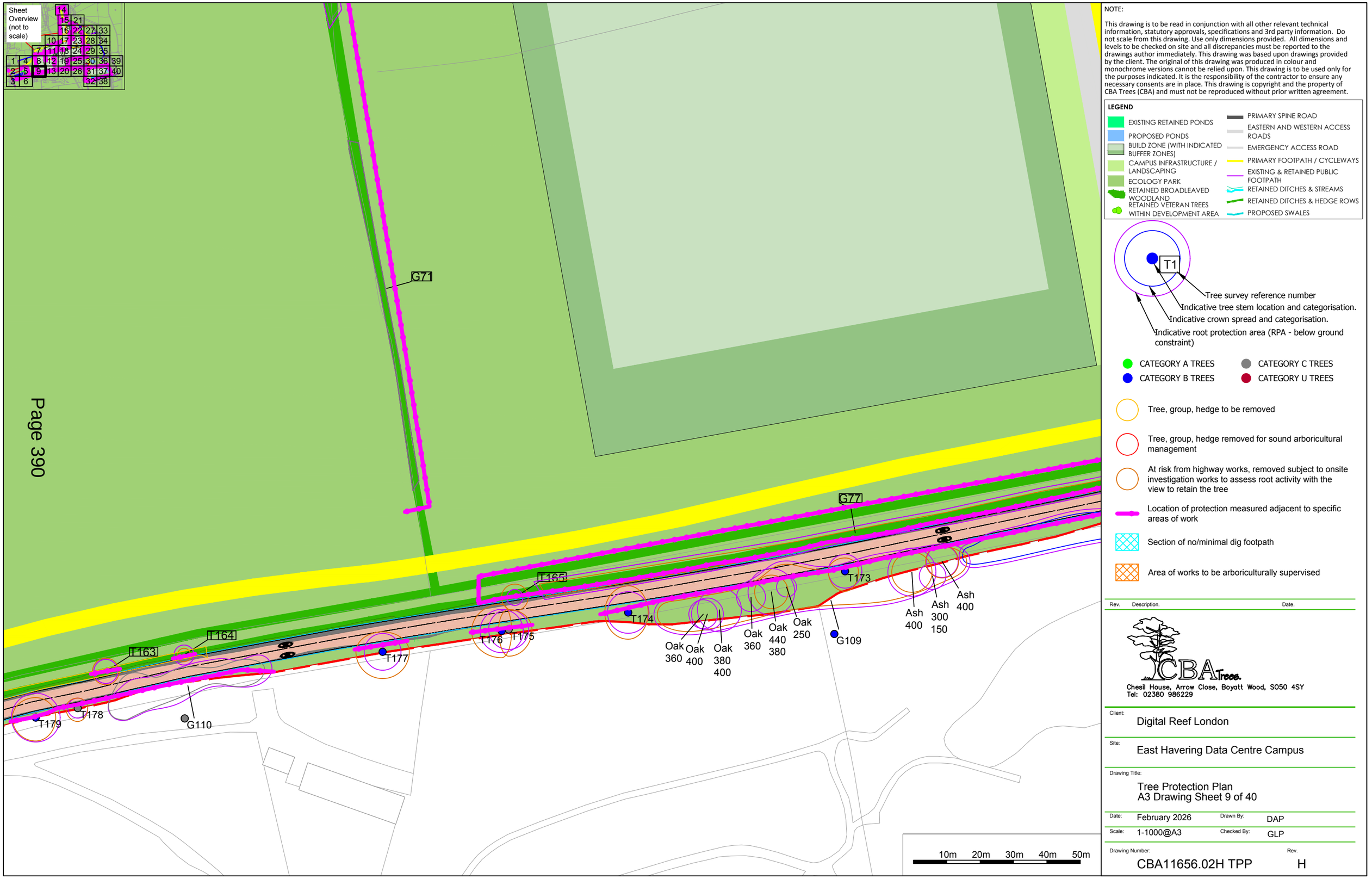
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 8 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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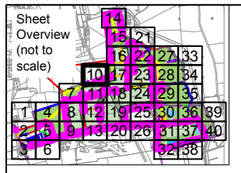
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 9 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



T122
T123
T126
T127
T128
T129
T130
T131
T132
T124

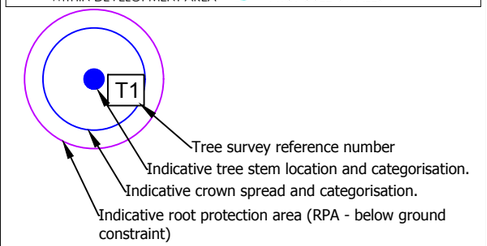
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- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

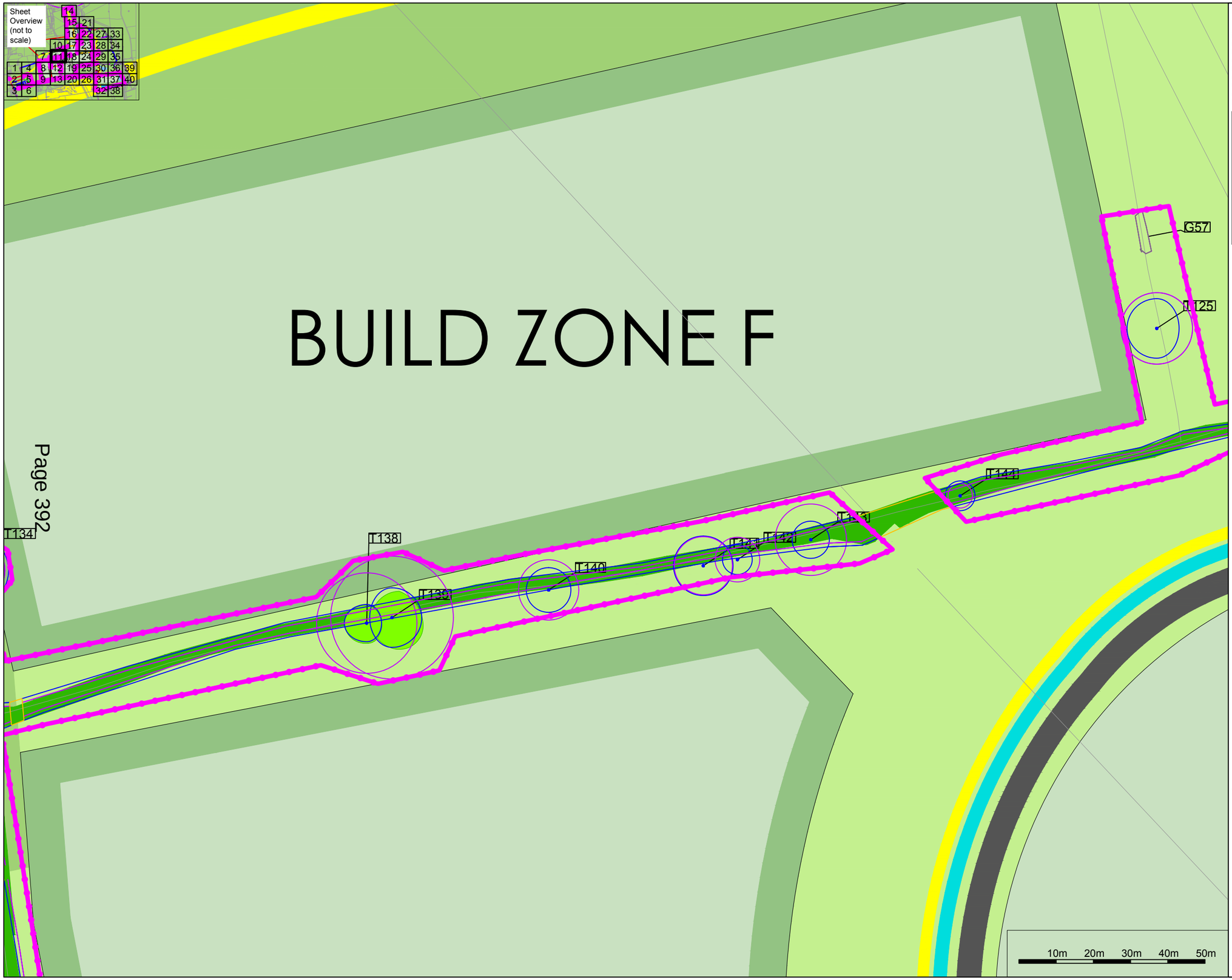
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 10 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

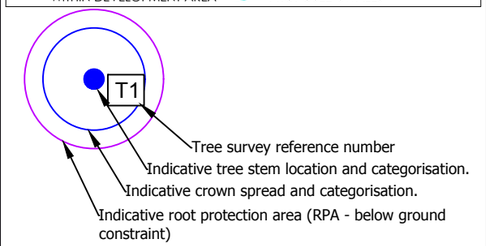


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
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- CATEGORY C TREES
- CATEGORY U TREES

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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 11 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

T157

G68

T156

T151

T148

T147

G65

T146

BUILD ZONE E

B

Page 393

Sheet Overview (not to scale)

10m 20m 30m 40m 50m

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- PROPOSED PONDS
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- EXISTING & RETAINED PUBLIC FOOTPATH
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- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number

Indicative tree stem location and categorisation.

Indicative crown spread and categorisation.

Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

Tree, group, hedge to be removed

Tree, group, hedge removed for sound arboricultural management

At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree

Location of protection measured adjacent to specific areas of work

Section of no/minimal dig footpath

Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

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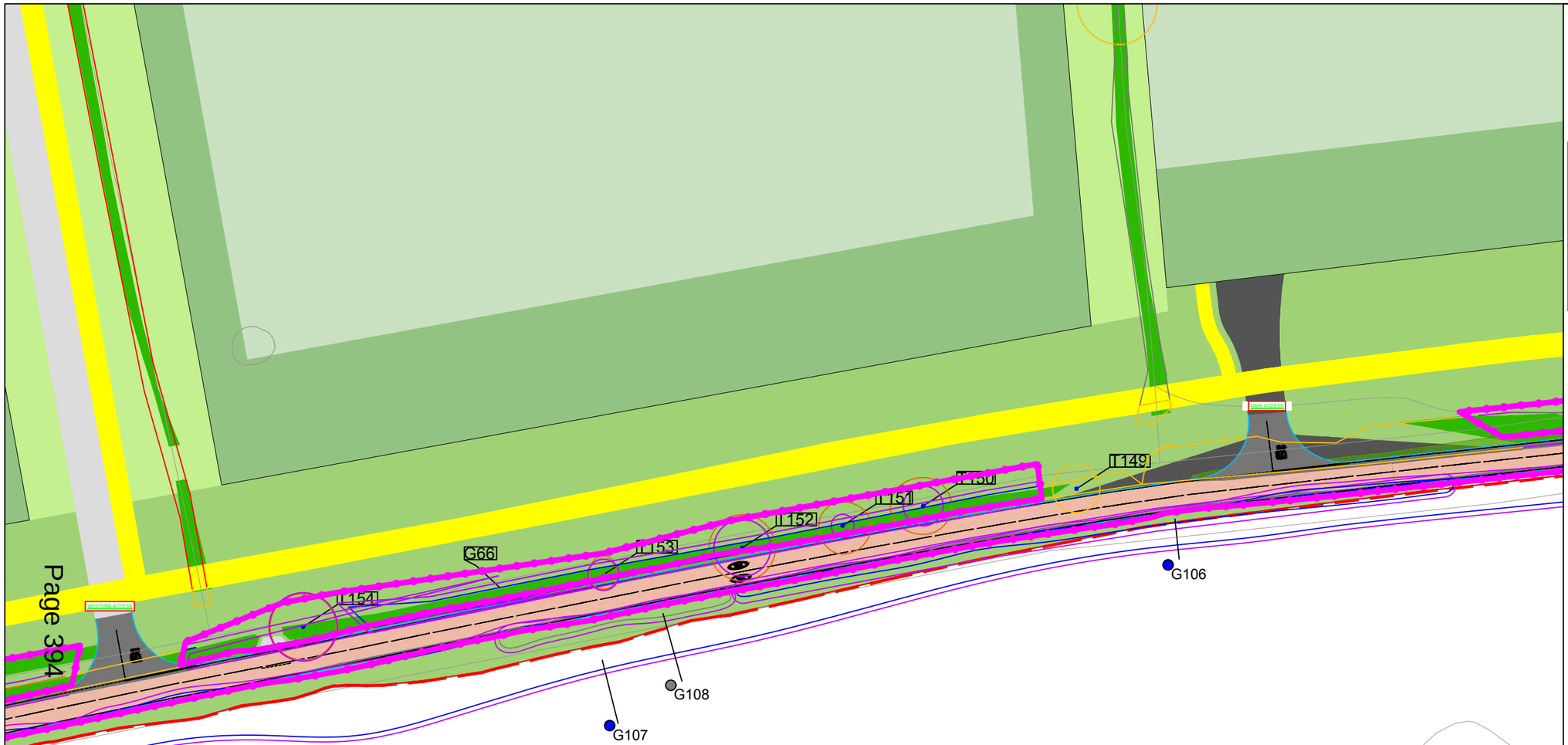
Site: East Havering Data Centre Campus

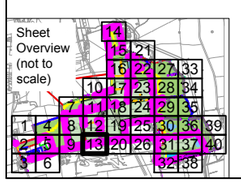
Drawing Title: Tree Protection Plan
A3 Drawing Sheet 12 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



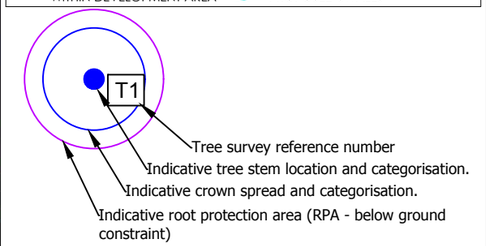


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LEGEND

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- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

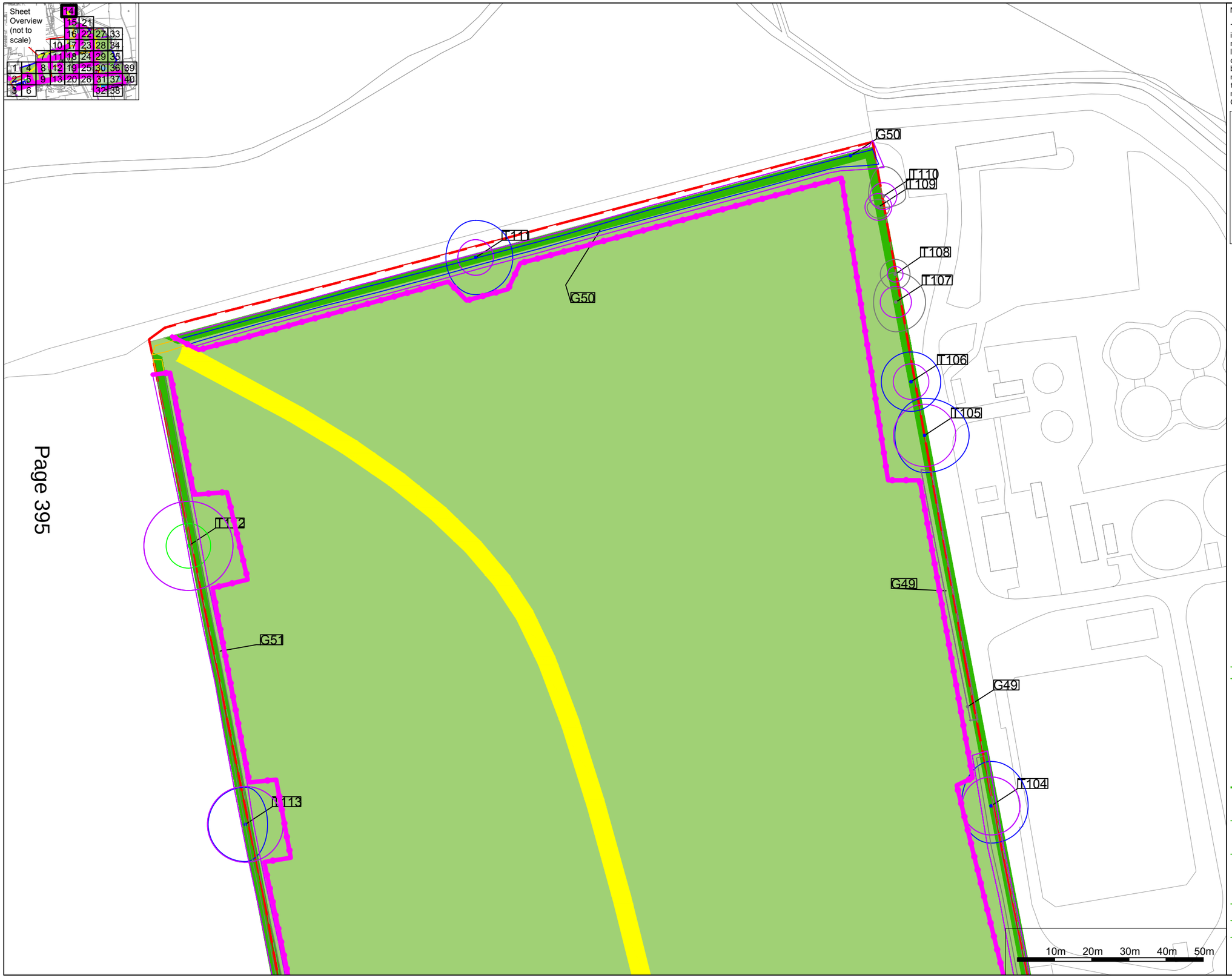
Drawing Title: Tree Protection Plan
A3 Drawing Sheet 13 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m

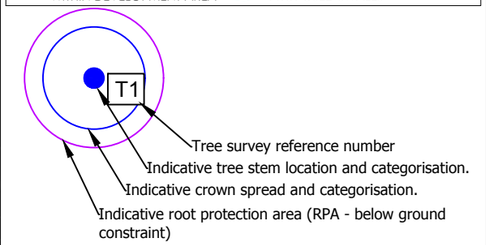


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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 14 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



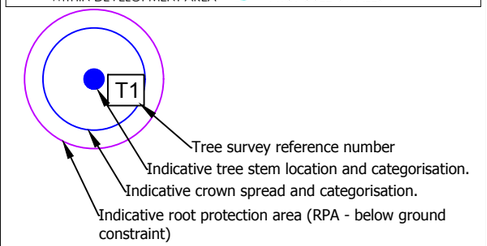
Page 396

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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 15 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H

T1 16
T1 17
G53
T1 18
T1 19
T1 20
G55
G54
G43
T91
T90

Sheet Overview (not to scale)

NOTE:

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- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

- Tree survey reference number
- Indicative tree stem location and categorisation.
- Indicative crown spread and categorisation.
- Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
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CBA Trees.
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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

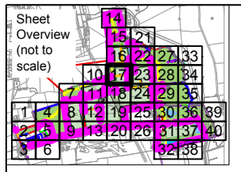
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 16 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m



BUILD ZONE D

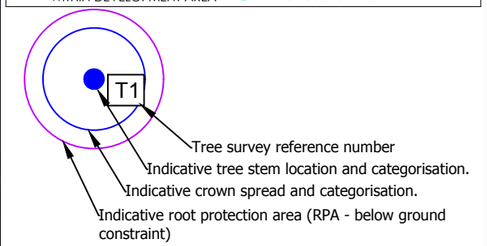
G42
T89
T88
T87
T86
T85
G56
T121
G41

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LEGEND

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- RETAINED BROADLEAVED WOODLAND
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

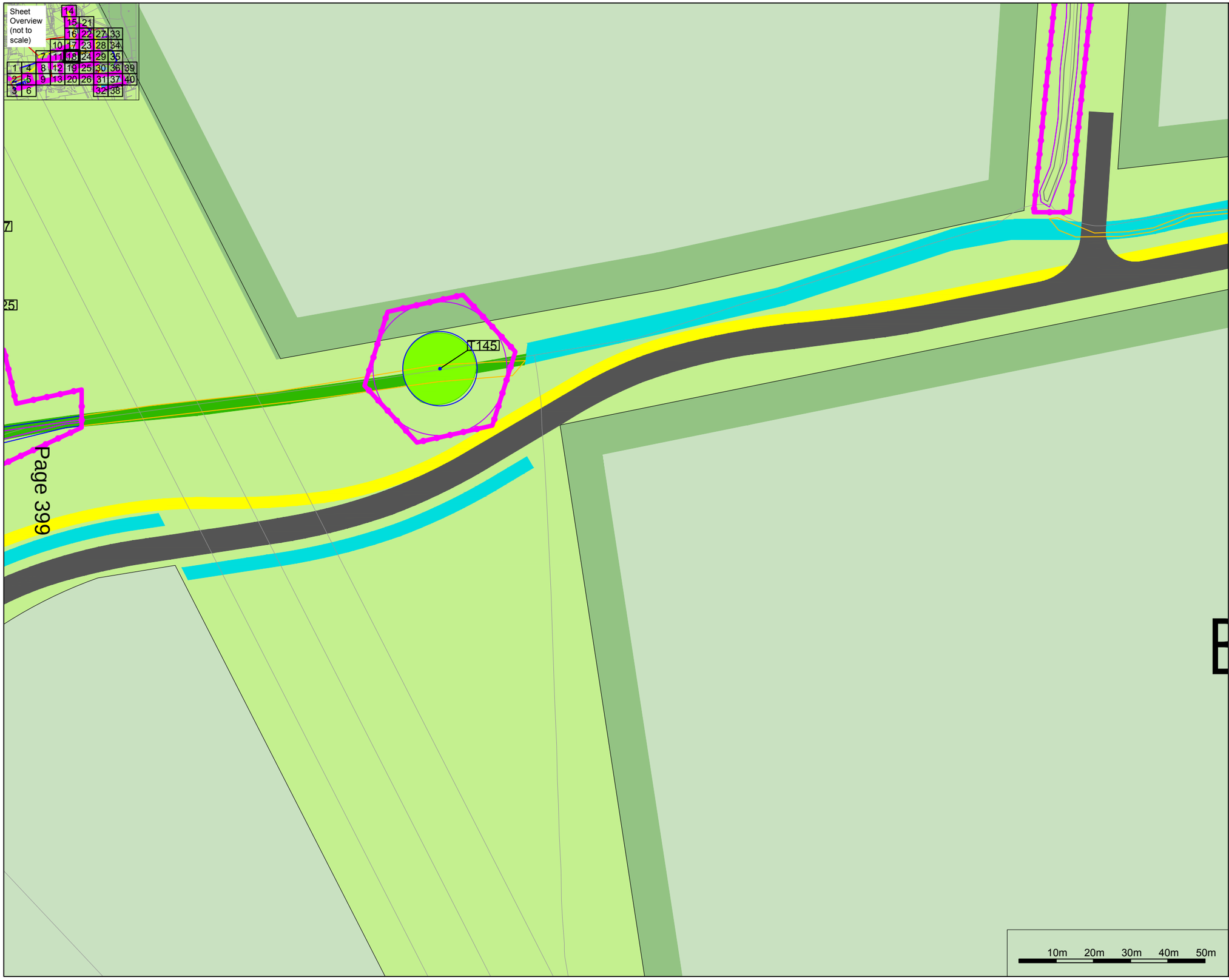
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 17 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m

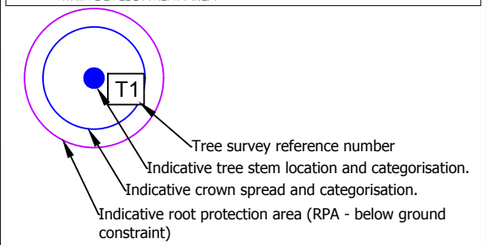


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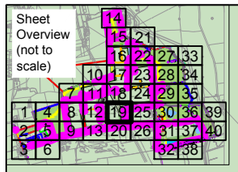
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 18 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m



BUILD ZONE C

G62

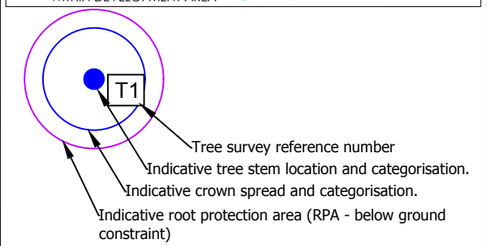
10m 20m 30m 40m 50m

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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
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Tel: 02380 986229

Client: Digital Reef London

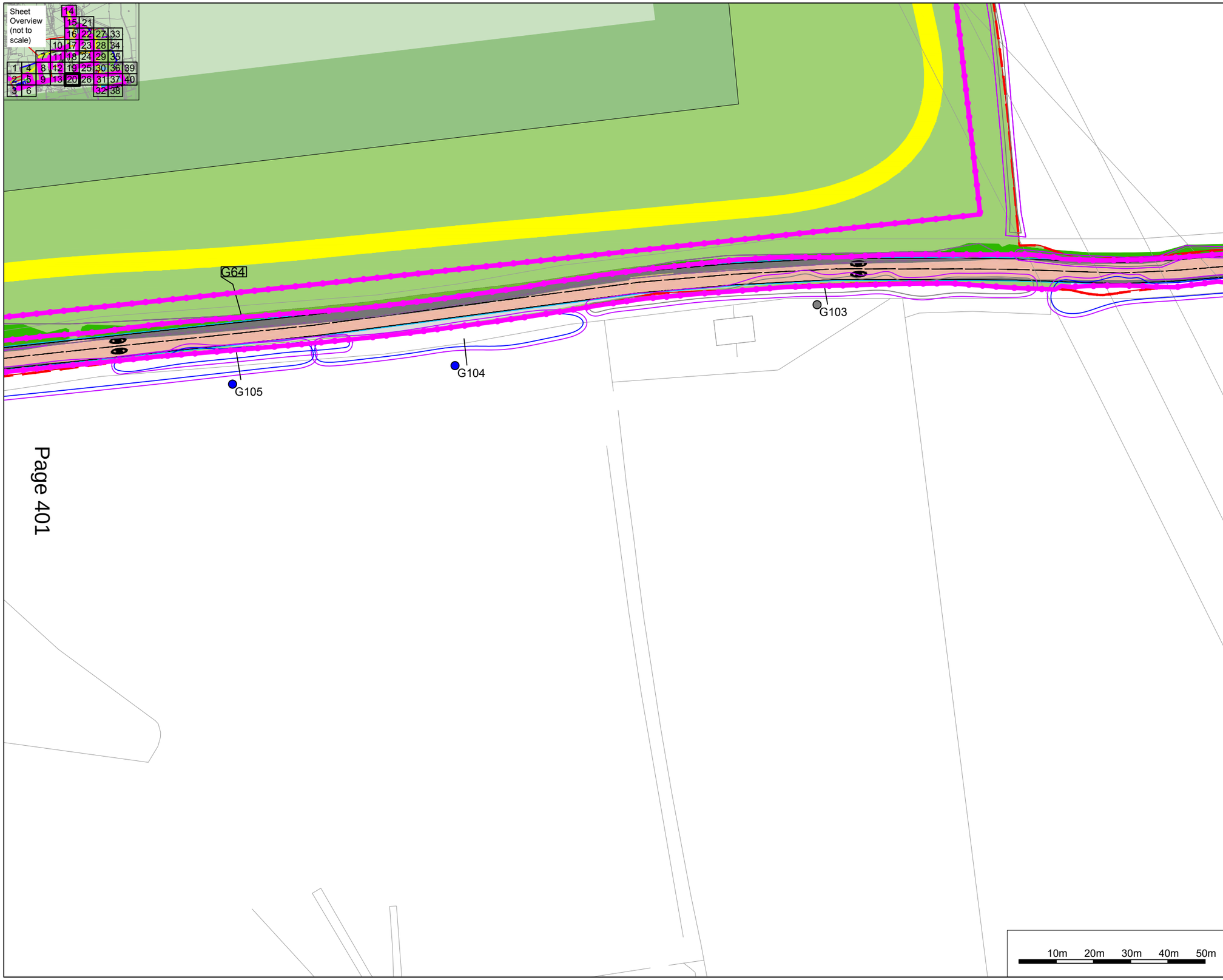
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 19 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

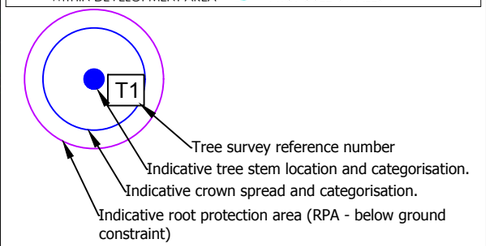


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

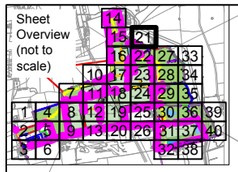
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 20 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



Page 402

T102
G46
T96
T98
T97
T99
T100
T95

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

10m 20m 30m 40m 50m

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 21 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title: Tree Protection Plan
A3 Drawing Sheet 22 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

T81
T82
T83
T84
G37
T73
T72
T71
T70
G29

BUILD ZONE A

Sheet Overview (not to scale)

10m 20m 30m 40m 50m

NOTE:

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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

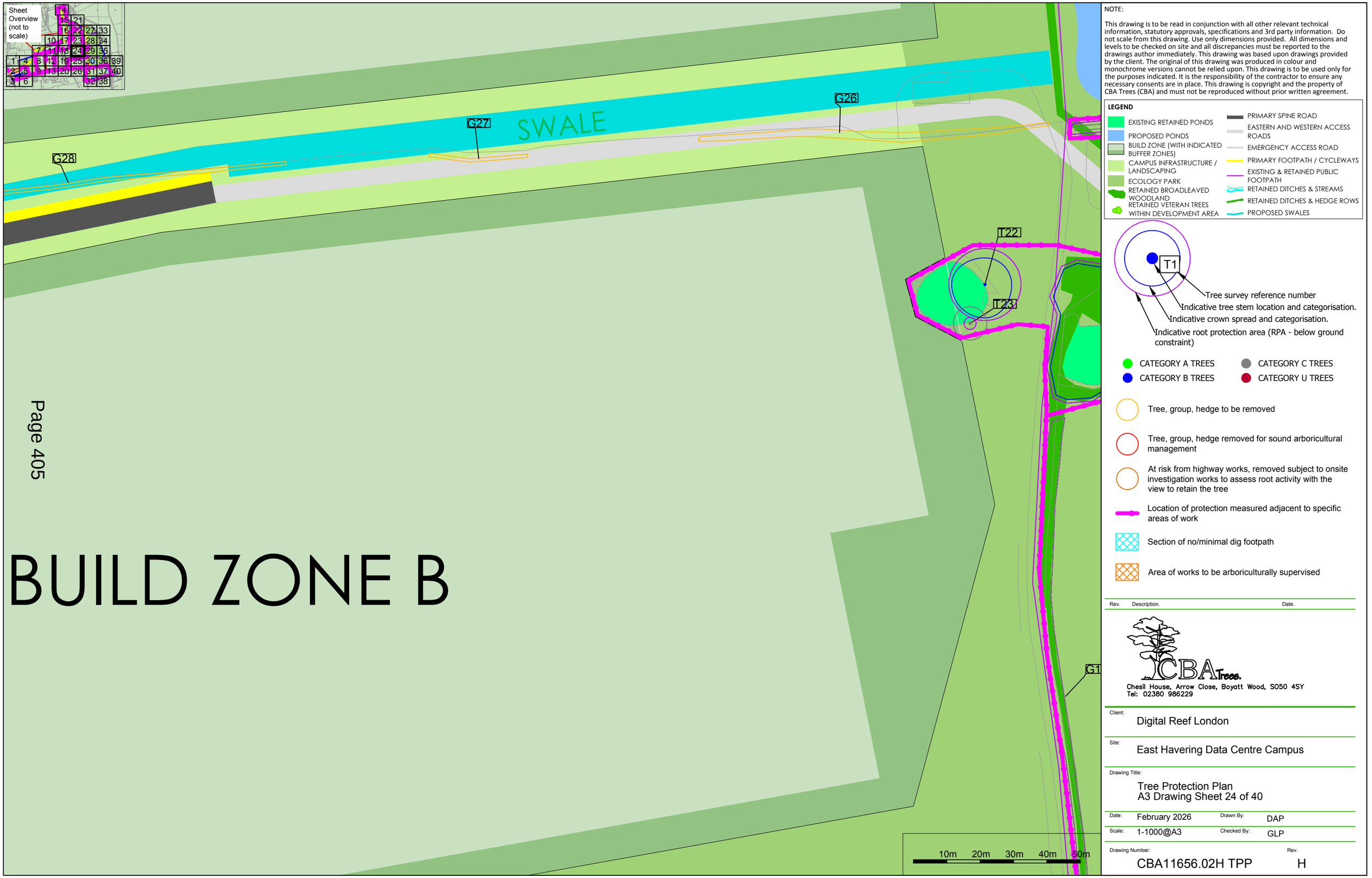
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 23 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
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- EMERGENCY ACCESS ROAD
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- RETAINED DITCHES & HEDGE ROWS
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- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

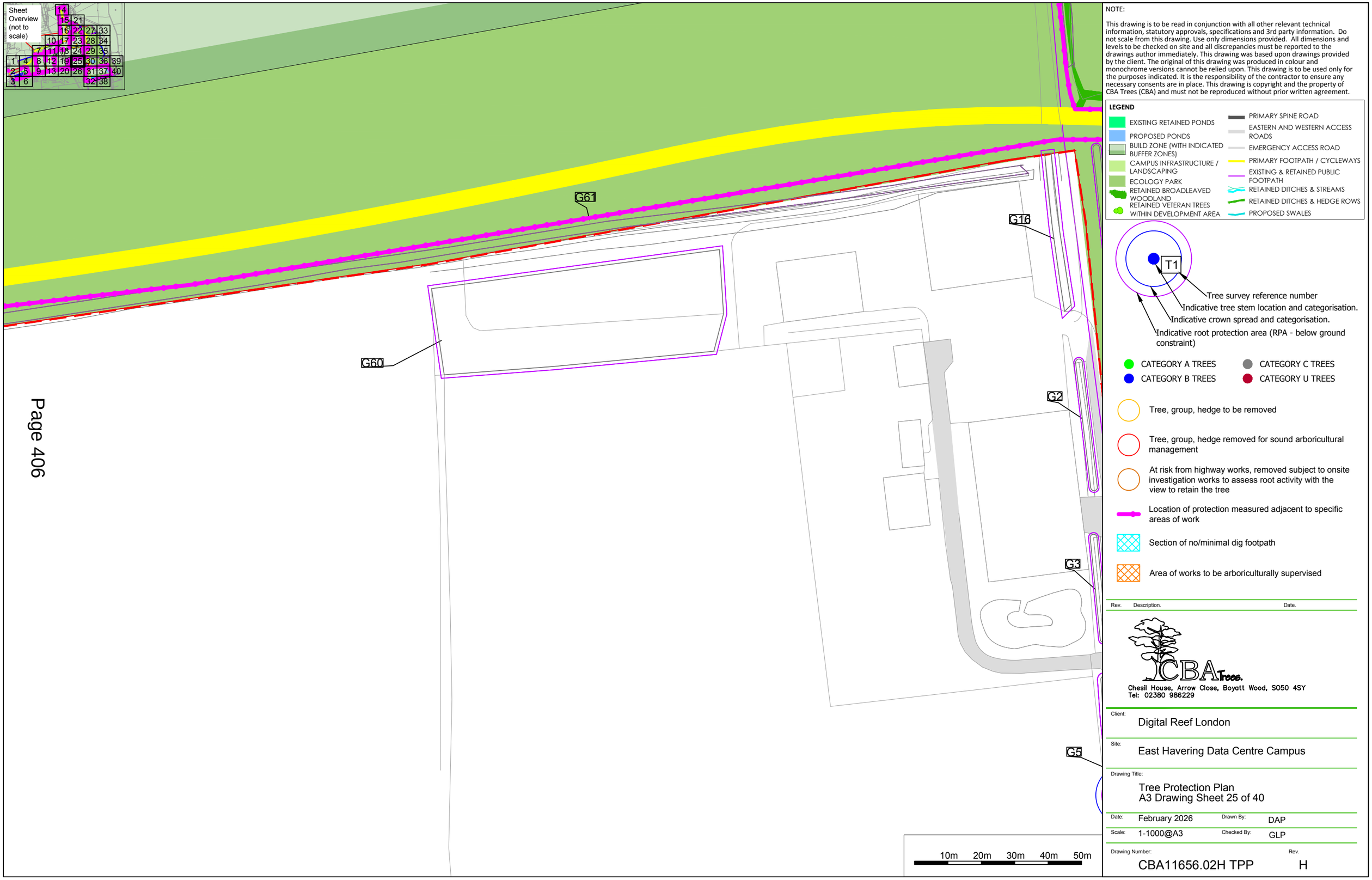
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 24 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
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- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

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Tel: 02380 986229

Client: Digital Reef London

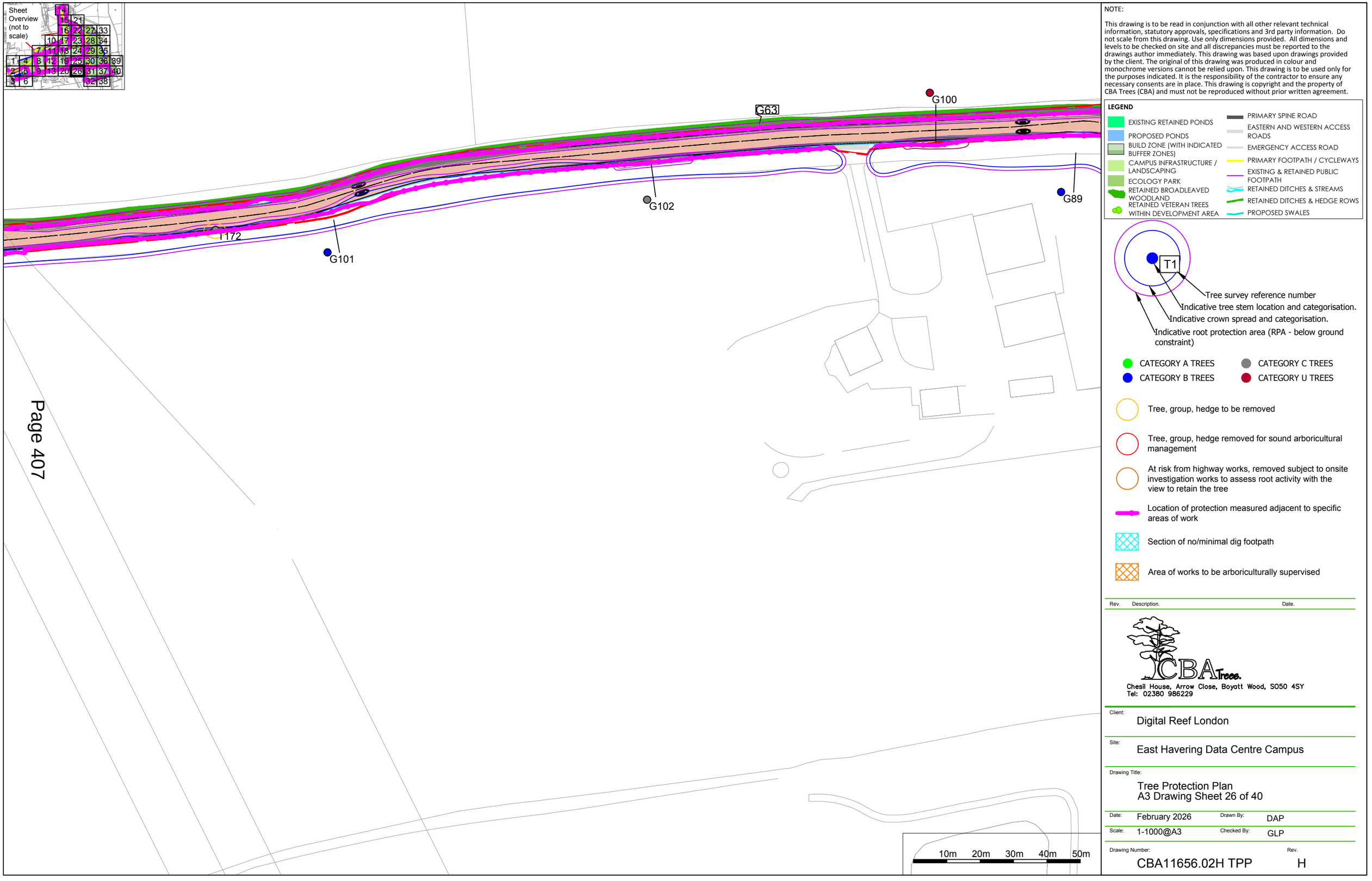
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 25 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 26 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H



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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
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- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

- Tree, group, hedge to be removed
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

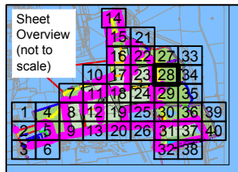
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 27 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP

Rev. H

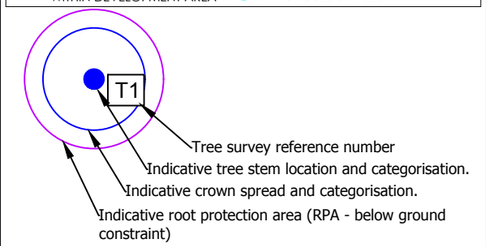


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
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- CATEGORY A TREES
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Rev.	Description.	Date.

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Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

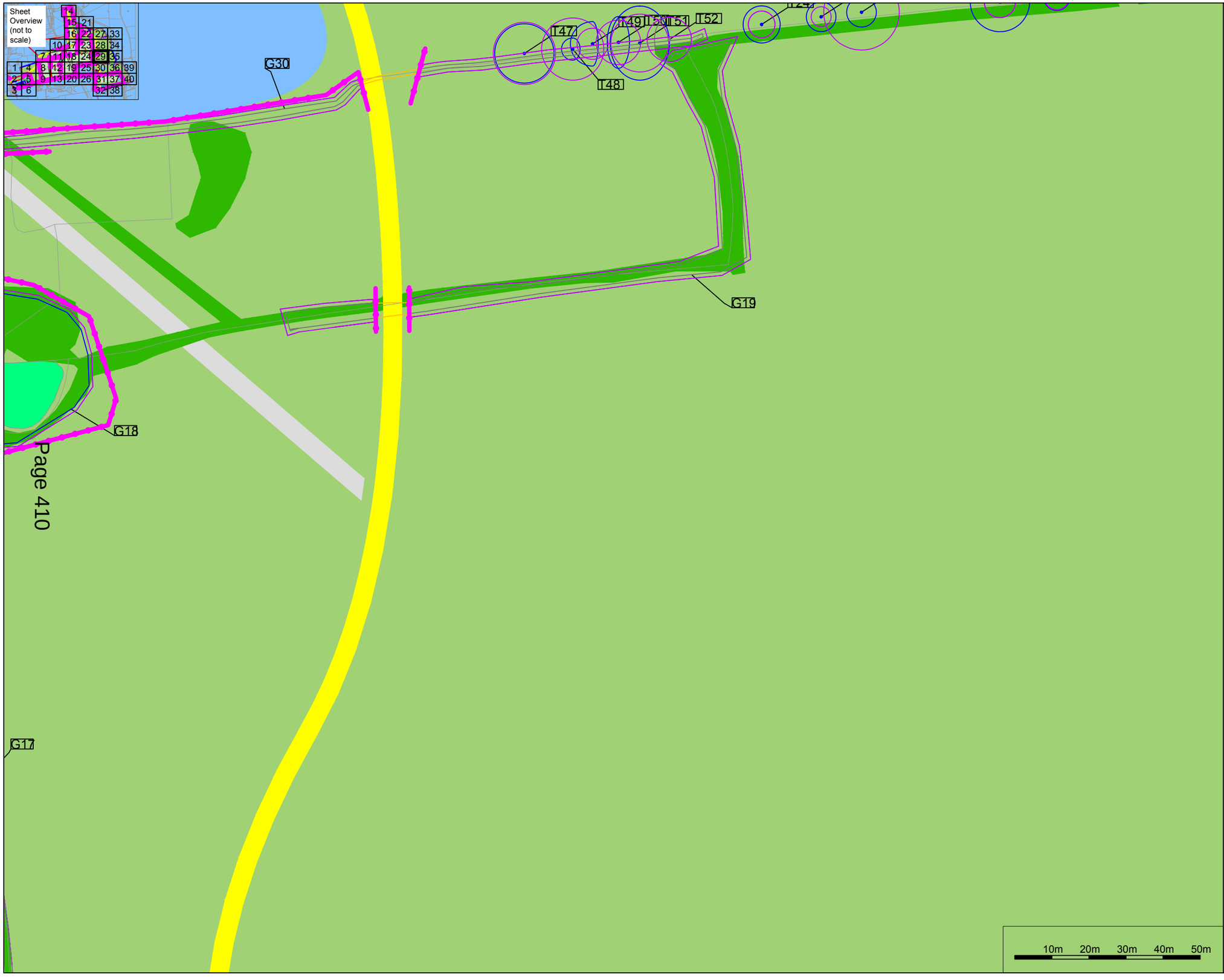
Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 28 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H



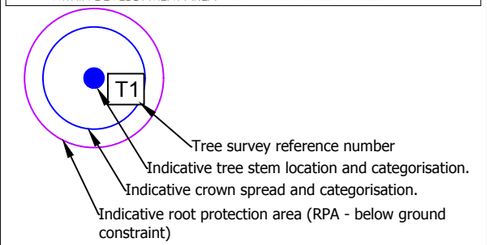


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LEGEND

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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
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- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
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- PROPOSED SWALES



- CATEGORY A TREES
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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 29 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP

Rev. H

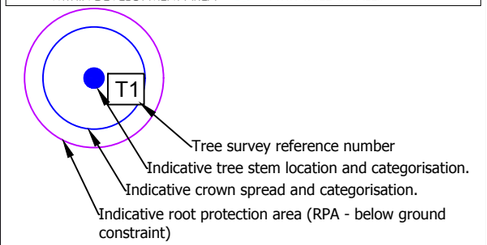


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LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 30 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

T5
T6
T7
G6
G6
G90
G91
G92
G7
BUIL
Page 412

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LEGEND

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- PROPOSED PONDS
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- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES

T1

Tree survey reference number
Indicative tree stem location and categorisation.
Indicative crown spread and categorisation.
Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

Tree, group, hedge to be removed

Tree, group, hedge removed for sound arboricultural management

At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree

Location of protection measured adjacent to specific areas of work

Section of no/minimal dig footpath

Area of works to be arboriculturally supervised

Sheet Overview (not to scale)

10m 20m 30m 40m 50m

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

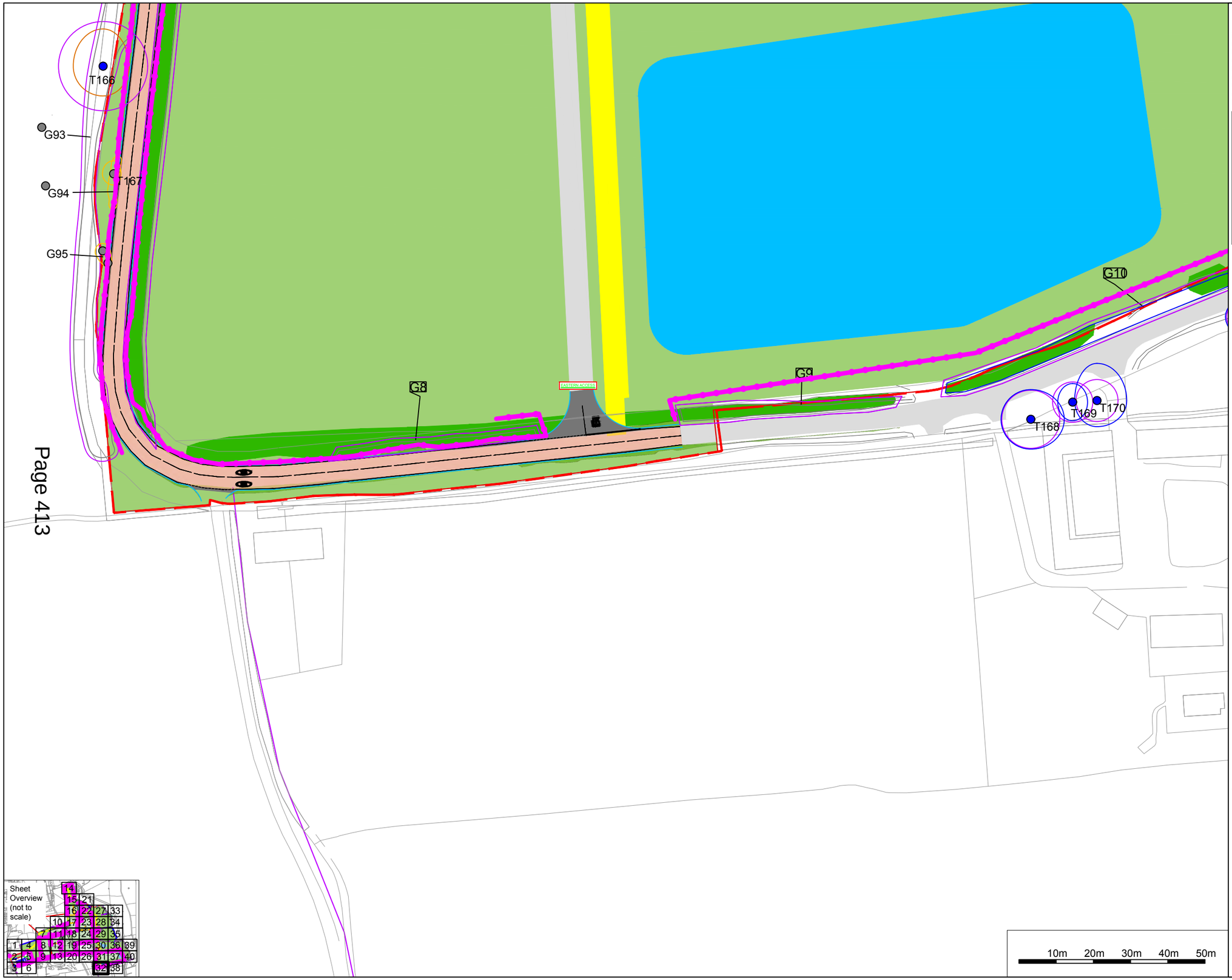
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 31 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

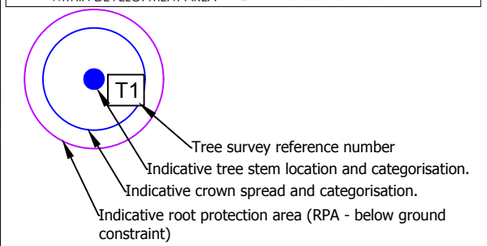


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10m 20m 30m 40m 50m

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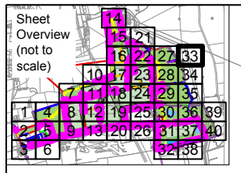
Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 32 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H



T65

T57

T56

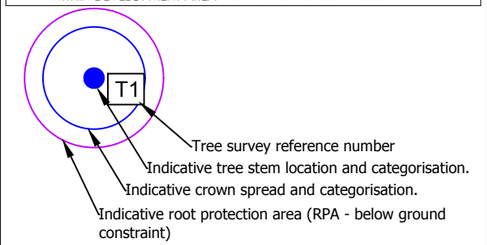
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- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
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CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 33 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Sheet Overview (not to scale)

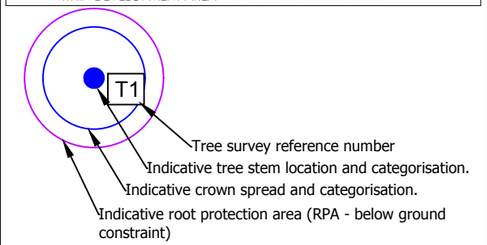


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Client: Digital Reef London

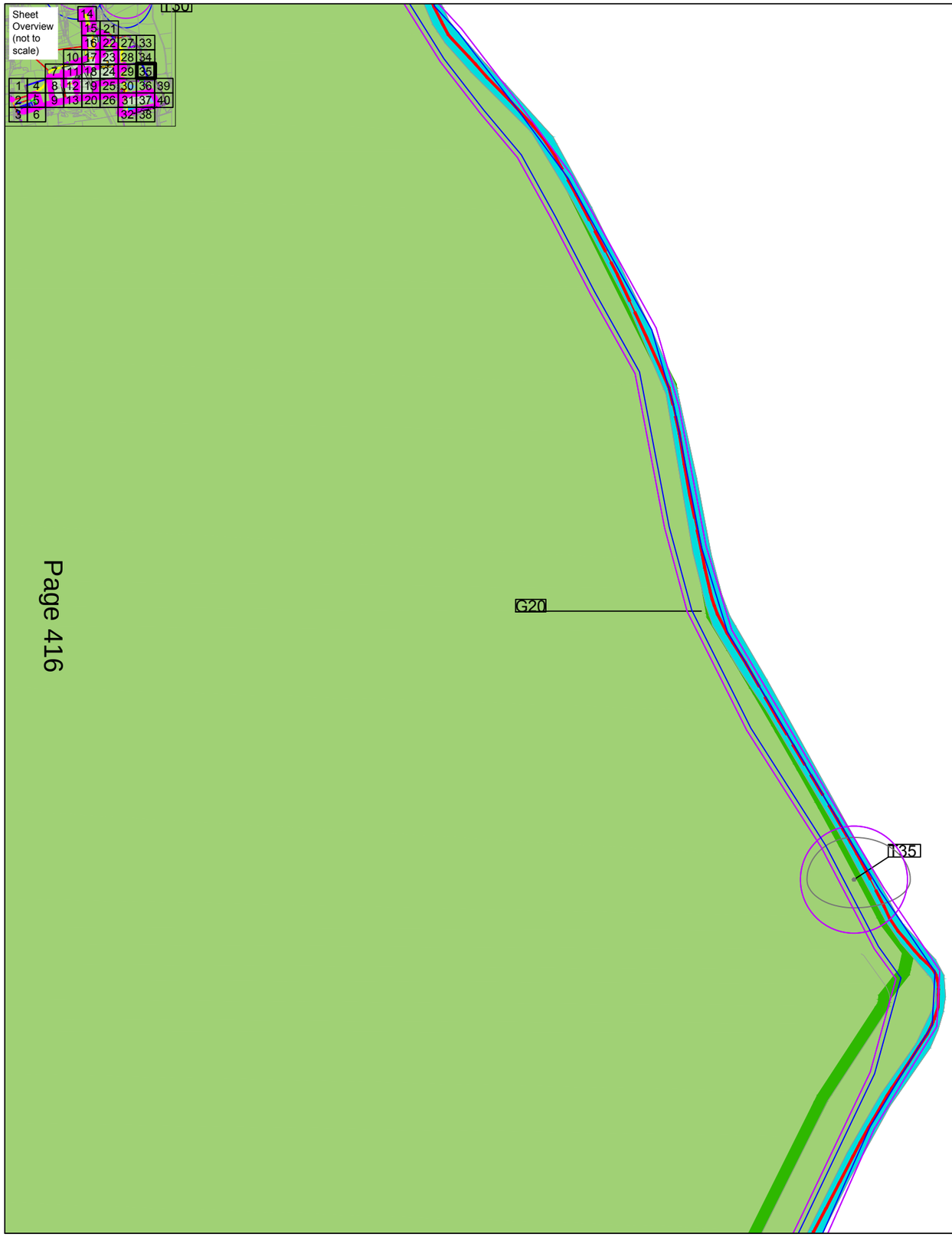
Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 34 of 40

Date:	February 2026	Drawn By:	DAP
Scale:	1-1000@A3	Checked By:	GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m

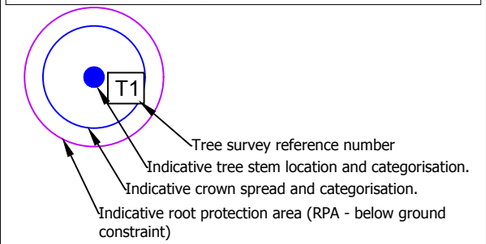


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CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 35 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

10m 20m 30m 40m 50m

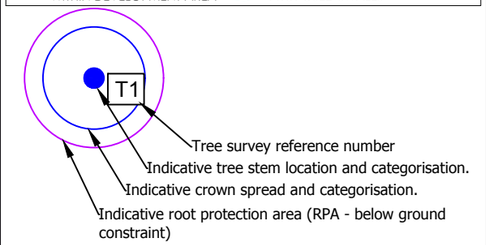


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Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
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Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 36 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

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- PROPOSED SWALES

T1

Tree survey reference number

Indicative tree stem location and categorisation.

Indicative crown spread and categorisation.

Indicative root protection area (RPA - below ground constraint)

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

Tree, group, hedge to be removed

Tree, group, hedge removed for sound arboricultural management

At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree

Location of protection measured adjacent to specific areas of work

Section of no/minimal dig footpath

Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 37 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

G13

T1

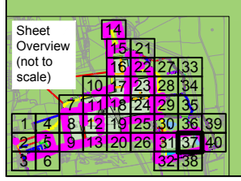
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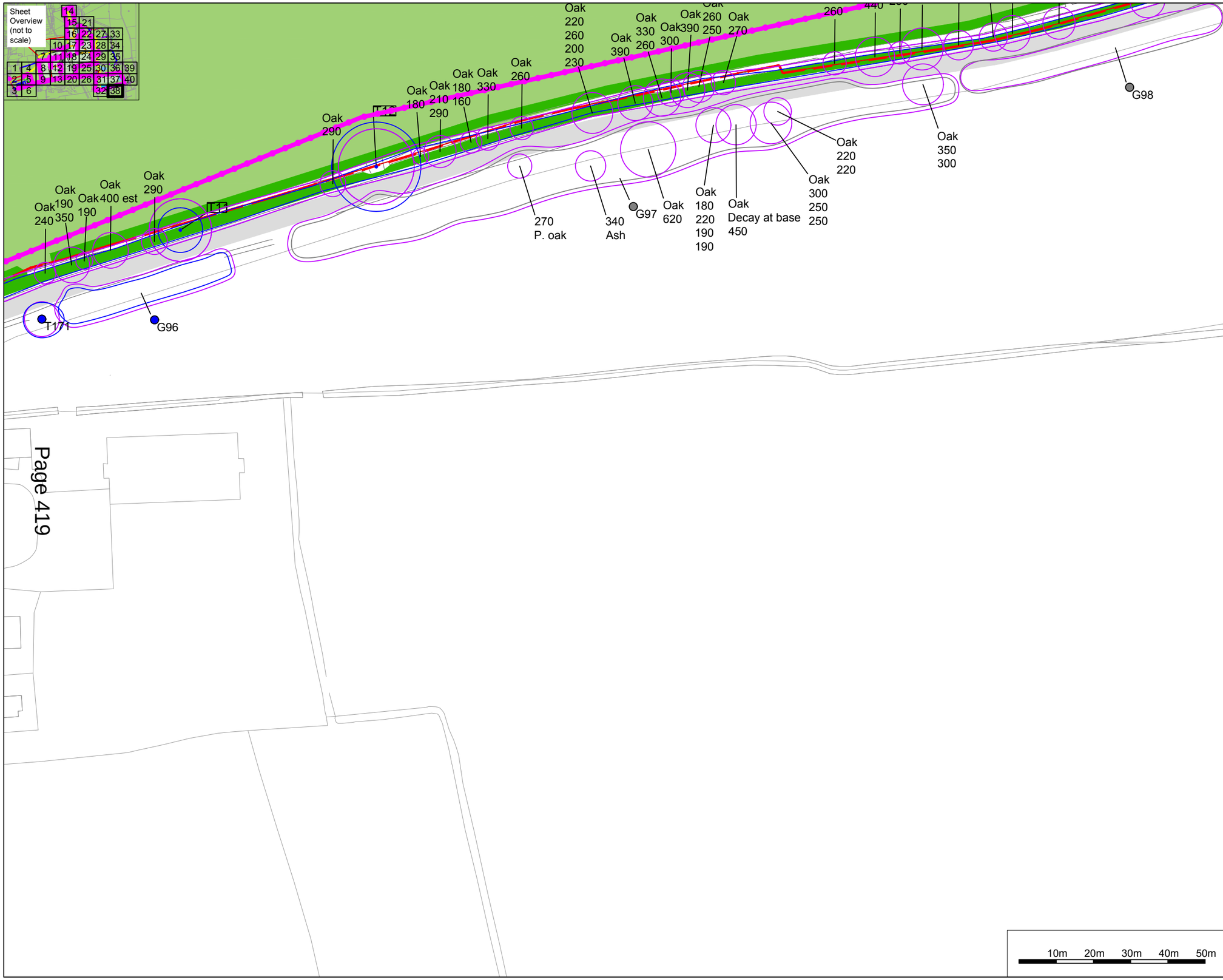
Page 418

Oak 220 Oak 260 Oak 440 Oak 250 Oak 470 Oak 330 Oak 220 Oak 400 Oak 360 Oak 390 Oak 350

10m 20m 30m 40m 50m

Sheet Overview (not to scale)



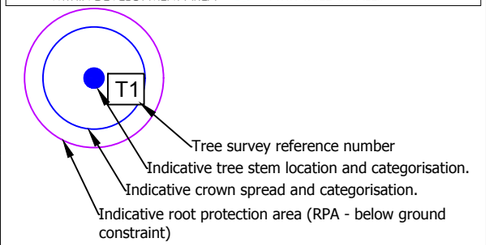


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Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title:
Tree Protection Plan
A3 Drawing Sheet 38 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

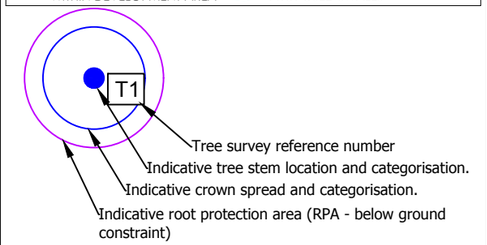


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Client: Digital Reef London

Site: East Havering Data Centre Campus

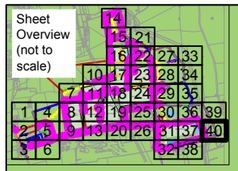
Drawing Title: Tree Protection Plan
A3 Drawing Sheet 39 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Sheet Overview (not to scale)



G24
T14
G12
G23
G11
T38
T37
G22
T36
G21
T13
Oak 300
Oak 400
G99

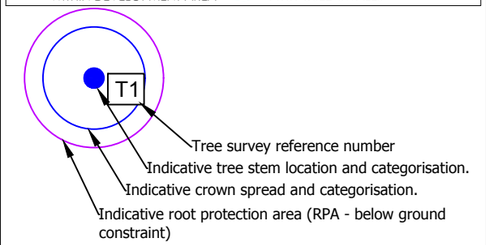
10m 20m 30m 40m 50m

NOTE:

This drawing is to be read in conjunction with all other relevant technical information, statutory approvals, specifications and 3rd party information. Do not scale from this drawing. Use only dimensions provided. All dimensions and levels to be checked on site and all discrepancies must be reported to the drawings author immediately. This drawing was based upon drawings provided by the client. The original of this drawing was produced in colour and monochrome versions cannot be relied upon. This drawing is to be used only for the purposes indicated. It is the responsibility of the contractor to ensure any necessary consents are in place. This drawing is copyright and the property of CBA Trees (CBA) and must not be reproduced without prior written agreement.

LEGEND

- EXISTING RETAINED PONDS
- PROPOSED PONDS
- BUILD ZONE (WITH INDICATED BUFFER ZONES)
- CAMPUS INFRASTRUCTURE / LANDSCAPING
- ECOLOGY PARK
- RETAINED BROADLEAVED WOODLAND
- RETAINED VETERAN TREES WITHIN DEVELOPMENT AREA
- PRIMARY SPINE ROAD
- EASTERN AND WESTERN ACCESS ROADS
- EMERGENCY ACCESS ROAD
- PRIMARY FOOTPATH / CYCLEWAYS
- EXISTING & RETAINED PUBLIC FOOTPATH
- RETAINED DITCHES & STREAMS
- RETAINED DITCHES & HEDGE ROWS
- PROPOSED SWALES



- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES
- Tree, group, hedge to be removed
- Tree, group, hedge removed for sound arboricultural management
- At risk from highway works, removed subject to onsite investigation works to assess root activity with the view to retain the tree
- Location of protection measured adjacent to specific areas of work
- Section of no/minimal dig footpath
- Area of works to be arboriculturally supervised

Rev.	Description.	Date.

CBA Trees.
Chesil House, Arrow Close, Boyatt Wood, SO50 4SY
Tel: 02380 986229

Client: Digital Reef London

Site: East Havering Data Centre Campus

Drawing Title: Tree Protection Plan
A3 Drawing Sheet 40 of 40

Date: February 2026 Drawn By: DAP

Scale: 1-1000@A3 Checked By: GLP

Drawing Number: CBA11656.02H TPP Rev. H

Produced by
Adams Hendry Consulting Ltd

Sheridan House
40-43 Jewry Street
Winchester
Hampshire
SO23 8RY
Tel: 01962 877414
www.adamshendry.co.uk



Adams Hendry
Chartered Town Planners

East Havering Data Centre Campus
Local Development Order











APPENDIX 5 - DRAFT DISCHARGE OF CONDITION FORM

March 2026

Havering
LONDON BOROUGH

Discharge of Condition Form

East Havering Data Centre Campus LDO

Planning Service
Mercury House, Mercury Gardens
Romford RM1 3SL

01708 433100
planning@havering.gov.uk
www.havering.gov.uk/planning

Purpose of this Form

By submitting this form, you are requesting confirmation as to the information provided satisfies the conditional requirements of the East Havering Data Centre Campus LDO.

Following consideration of your request, the London Borough of Havering will issue a decision to confirm whether the condition can be discharged/partially discharged. This will constitute a formal response as required by the Order.

1. Applicant Name and Address						**2.Agent Name and Address**					
Title:		First name:				Title:		First name:			
Last name:						Last name:					
Company (optional):						Company (optional):					
Unit:		House Number:		House suffix:		Unit:		House Number:		House suffix:	
House name:						House name:					
Address 1						Address 1					
Address2:						Address2:					
Address 2:						Address 2:					
Town:						Town:					
County:						County:					
Country:						Country:					
Postcode:						Postcode:					

3. Condition number(s) and Full or Partial Discharge

Please confirm the condition numbers (s) to which this application relates and whether full or partial discharge is being applied for. Where it is a partial discharge of a condition, please state the relevant phase to which the application relates.

Condition Number	Full or Partial Discharge	If Partial Discharge, please confirm relevant Phase/Building/Build Zone etc.

4. Has the development already started?

Yes ☐ No ☐

If yes, please state when the development started (DD/MM/YYY):

5. Has the development been completed?

Yes ☐ No ☐

If yes, please state when the development was completed (DD/MM/YYY):

6. Discharge of Condition

Please provide a full description and/or list of materials being submitted for approval.

7. Declaration

I/we hereby confirm that if it is confirmed that planning permission is not required as provided for by the East Havering Data Centre Campus LDO, I/we have carried or shall only carry out the proposed work in accordance with the details included on this form and the associated plans and documents. I/we understand that any variation from these details may require re-assessment.

I/we confirm that to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine opinion(s) of the person giving them.

Name:	
Signature:	
Date:	

8. Applicant Contact Details		**9.Agent Contact Details**	
Phone number:		Phone number:	
Email:		Email:	

East Havering Data Centre Campus
Local Development Order











APPENDIX 6 - DRAFT PRIOR NOTIFICATION FORM

March 2026

Havering
LONDON BOROUGH

Prior Notification Form

East Havering Data Centre Campus LDO

Planning Service
Mercury House, Mercury Gardens
Romford RM1 3SL

01708 433100
planning@havering.gov.uk
www.havering.gov.uk/planning

Purpose of this Form

By submitting this form, you are requesting confirmation as to whether the works you are proposing constitute permitted development under the East Havering Data Centre Campus LDO.

Following consideration of your request, the London Borough of Havering will issue a decision to confirm that the proposal is or is not permitted development. This will constitute a formal response as required by the Order. Development that is not permitted by the East Havering Data Centre Campus LDO may require the submission of a formal planning application.

Section 1: Contact Details

1a. Applicant Name and Address						**1b. Agent Name and Address**					
Title:		First name:				Title:		First name:			
Last name:						Last name:					
Company (optional):						Company (optional):					
Unit:		House Number:		House suffix:		Unit:		House Number:		House suffix:	
House name:						House name:					
Address 1						Address 1					
Address2:						Address2:					
Address 2:						Address 2:					
Town:						Town:					
County:						County:					
Country:						Country:					
Postcode:						Postcode:					

Section 2: Development Proposal

2a. Description of Development

Type of Development	Yes/No
Erection of a building (or plant for district heating energy centre)	
Extension of a building (or plant for district heating energy centre)	
Alteration of a building (or plant for district heating energy centre)	
Creation and use of land as an Ecology Park	
Construction of a Locally Equipped Area for Play	
Associated Infrastructure	
Site preparation works	
Other (please detail in 2b)	

Proposed Use Class (if applicable)	Yes/No
Data Centre (sui generis)	
Indoor Horticulture (sui generis)	
District Heating Energy Centre (sui generis)	
Visitors Centre (Use Class F2)	
Campus Management (Use Class E (c))	
Campus Security (Use Class E (c))	

Associated Infrastructure	Yes/No
Roads	
Vehicle parking and servicing	
Hard and soft landscaping including fences, gates and walls	
Securing barriers and gatehouses	
Foul and surface water drainage infrastructure	
Utilities infrastructure	
CCTV cameras and associated masts	
Lamp posts and any other lighting masts or infrastructure	

2b. Description of the Development

Please describe the development.

2c. Location of Development

Please provide a description of the site location in the context of the East Havering Data Centre Campus LDO including Build Zone and Phase as appropriate.

Section 3: LDO Conditions and Planning Obligations

3a. LDO Conditions and Planning Obligations

Please provide details of approval of relevant pre-commencement conditions and planning obligations.

Condition/Planning Obligation	LPA Reference	Decision Date

Section 4: Design Details

4a. Building Size

Please provide details of proposed floorspace (ancillary floorspace to be recorded under primary use).

Use	Existing Floorspace (GEA) (To be completed for extension of a building)	Proposed Floorspace (GEA)
Data Centre (sui generis)		
Indoor Horticulture (sui generis)		
District Heating Energy Centre (sui generis)		
Visitors Centre (Use Class F2)		
Campus Management (Use Class E (c))		
Campus Security (Use Class E (c))		
Other building or structure		

4b. Building Height

Development within Build Zones shall accord with the height restrictions in Part 1 of the Design Code (1A.7-1A.14). Please provide a section drawing and plan to show of the proposed building and Height Restriction Zones, Separation Corridors and Buffer Zones.

	Height (m)
Finished Floor level (FFL)	
Building height (measured from FFL to highest part of the roof) including lift overruns, roof top plant and acoustic screens, and/or any other structure (excluding exhaust flues) where not in Height Restriction Zone 4	
Height of lift overruns, roof top plant and/or any other structure (excluding exhaust flues) above building height within Height Restriction Zone 4	
Height of acoustic screen above roof top plant within Height Restriction Zone 4	
Height of exhaust flues above rooftop plant including acoustic screens where proposed	
Height of exhaust flues above building where no roof top plant proposed	
Height rooftop mansafe system above roof of building	

4c. Colours and Materials (refer to 1B-1G of Part 1 of Design Code)

(i) For all buildings/structures please details materials.

	Materials	Colours
External Walls/Elevations		
Gantry Screening		
Roof		
Roof Plant		
Windows /Doors		
Areas of Hard Surfacing		
Other (Please specify)		

(ii) For Data Centres, please confirm percentage of building material elements comprising of recycled or reused content.

%

(iii) For District Heating Energy Centre, please confirm percentage of façade covered by ducting vents. Ducting vents shall cover no more than 5% of the façade.

%

(iv) For Data Centres and Campus Management & Security Facilities, please detail where green/living walls and/or climbing plants shall have been incorporated on building elevations. If they have not been incorporated, then please confirm why this is not feasible

4d. BREEAM Rating (refer to 1H of Part1 of the Design Code)

(i) For Data Centre buildings, Campus Security Facility, Campus Management Building and the Energy Centre, please confirm if the building achieves a minimum pre-assessment BREEAM rating of Excellent.

Yes/No

Please confirm pre-assessment BREEAM Rating:

(ii) For Visitors Centre, please confirm if the building achieves a pre-assessment BREEAM rating of Outstanding.

Yes/No

4e. Carbon Reduction (refer to 1H of Part1 of the Design Code)

For Data Centre buildings, Visitor Centre and Campus Security Facility and Campus Management building please confirm the following:

(i) On-site carbon reduction (Please specify as % beyond Building Regulations or as required by London Plan if applicable)

(ii) Percentage achieved via energy efficiency measures alone

%

4f. Rainwater Harvesting (refer to 1H.9-12 of Part 1 of the Design Code)

For Data Centre buildings and Glasshouses:

(i) Please confirm the peak 24 hour water demand (litres)

(ii) Please provide details of the size of the storage collection tanks. Storage collection tanks must be sized to meet a peak 24-hour water demand, plus a 24 hour reserve.

(iii) Please confirm below ground depth of the storage collections tanks (as appropriate)

m

4g. Photovoltaic Panels (refer to 1H of Part 1 of the Design Code)

For Data Centre buildings (excluding security gate houses), Visitor Centre, Campus Security Facility and Campus Management building and District Heating Energy Centre, please confirm whether photovoltaic panels have been incorporated on the roofs.

Yes/No

If photovoltaic panels have been incorporated, please provide a plan to demonstrate that provision has been maximised in areas not occupied by roof top plant.

If photovoltaic panels have not been incorporated or not provided in all areas not occupied by roof top plant, please provide a detailed explanation why this is unfeasible due to operational requirements.

5. Parking and Transport

5a. Parking Standards (refer to section IJ of Part 1, 2D and 2E of Part 2 of the Design Code)

	Existing Spaces (if applicable)	Proposed Spaces	Bay dimensions (m)
Car parking (total)			
Blue Badge parking			
Enlarged car parking spaces			
Active EV			
Passive EV			
Car sharing			
HGV			
LGV			
Electric Minibus			
Coach			
Taxi			

5b. Cycle Parking (refer to IJ of Part 1, 3D of Part 3 of the Design Code)

(i) Overall Provision

	No. spaces	Type
Long Stay		
Short Stay		

(i) E-bike Charging and non-standard cycles

Type	Percentage
E-bike Charging	
non-standard cycles	

6. Lighting

6a. Lighting (refer to 1K of Part 1, 2F of Part 2 and 3E of Part 3 of the Design Code)

(i) Lighting Equipment

Location (s)	Equipment	Mounting Height (metres)	Installation Details (tilt)	Average Illuminance (lux)	Uniformity	CRI	Colour temp (k)

(ii) Please confirm if lighting meets standards within BREEAM UK New Construction manual.

Yes/No

(iii) Please confirm if luminaries are DarkSky-approved fixtures certified by the International DarkSky Association or luminaires that meet recognised dark sky friendly performance criteria

Yes/No

Please specify:

(iv) Please confirm if columns on circulatory roads are to be mounted a safe distance from the carriageway in accordance with the requirements of the Design Manuel for Roads and Bridges (DMRB).

Yes/No

7. Boundary Treatment

7a. Boundary Treatment (refer to 1L of Part 1 and 3B of Part 3 of the Design Code)

(i) Please detail boundary treatment

Location	Means of Enclosure/Boundary Treatment	Materials/Colour (where appropriate)	Height (m)

(ii) Where timber is used, please confirm if FSC Certified
Yes/No

8. Ecological Creation Features

8a. Ecological Creation Features (refer to 1M of Part 1, 2H of Part 2, 4F of Part 4 of Design Code)

Ecological Feature	Number	Details / Location

9. Internal Access Roads, Footpaths and Cycleways

9a. Internal Access Roads, Footpaths and Cycleways (refer to 2B of Part 2 of Design Code, 3B of Part 3 of the Design Code)

Please provide details including plans and cross-sectional drawings showing the following as appropriate:

	Width	Materials	Plan Reference
Primary Infrastructure Corridor – Spine Road			
Primary Infrastructure Corridor – Footway/Cycleway			
Eastern Access Road			
Western Access Road			
Emergency Access			
Primary Strategic Footpath/Cycleway			
Secondary Footpath/Cycleway			
Informal Paths			

9b. Compliance (refer to 2B of Part 2 of Design Code, 3B of Part 3 of the Design Code)

Please confirm design complies with the Design Manual for Roads and Bridges (DMRB), Manual for Streets (DfT) and Local Transport Note 1/20: Cycle Infrastructure Design or as subsequently amended.

Yes/ No

9c. Road Drainage (refer to 2A of Part 2 of Design Code)

(i) Please detail road drainage design

(ii) Please confirm if drainage design is compliant with DMRB CG 501 – Design of Highway Drainage Systems (or as subsequently updated)? Yes/No

10. Landscaping

10a. Habitat Area
(refer to 2G of Part 2, 3A of Part 3 of the Design Code)

Habitat Type	Area (ha/km)

10b. Trees
(refer to 2G of Part 2, 3A of Part 3 of the Design Code)

Habitat Type	Number Trees	Percentage whips/ standard trees/ semi mature

10c. Tree Paddocks (refer to 3A of Part 3 of the Design Code)

Habitat Type	Paddock Area (ha)

10d. Earth Mounds (refer to 3C of Part 3 of Design Code)

Mound Location/ Reference	Height	Gradient

11. Play Equipment

11a. Details of Paly Equipment in LEAP and Ecology Park (refer to 3D of Part 3 of Design Code)

(i) Please detail items of play equipment

Location	Play Equipment (specify)	Materials

(ii) Please detail surfacing material to be used in play area

(iii) Please confirm all play equipment complies with the guidance of the Royal Society for the Prevention of Accidents (RoSPA) and the BS EN 1176 series of standards for playground equipment.

12. Foul Water Drainage

12a. Foul Water Storage (refer to 2I of Part 2 of Design Code)

Please confirm how foul water is stored on site to accommodate flows from a 24-hour period in the event of pump/power outage.

13. Enclosures

13a. Plans/Drawings

Please details plans and drawings being submitted

	Drawing Number(s)
Location Plan (scale 1:500 or 1:200)	
Site Layout Plan (scale 1:500 or 1:200)	
Existing and proposed layout/floor plans (1:50 or 1:100)	
Existing and proposed elevation plans (1:50 or 1:100)	
Roof plan (1:50/1:100)	
Existing and proposed site sections and finished floor and site levels (scale 1:50 or 1:100)	
Cross section drawing of all roads, drainage channels, swales, mounds and foul water drainage systems (scale 1:50 or 1:100)	
Planting Specification (scale 1:50 or 1:100)	

14. Declaration

14a. Declaration

I/we hereby confirm that if it is confirmed that planning permission is not required as provided for by the East Havering Data Centre Campus LDO, I/we have carried or shall only carry out the proposed work in accordance with the details included on this form and the associated plans and documents. I/we understand that any variation from these details may require re-assessment.

I/we confirm that to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine opinion(s) of the person giving them.

Name:	
Signature:	
Date:	

15. Contact Details

15a. Applicant Contact Details		**15b.Agent Contact Details**	
Phone number:		Phone number:	
Email:		Email:	

East Havering Data Centre Campus
Local Development Order









APPENDIX 7 - DRAFT NON-MATERIAL AND MINOR MATERIAL AMENDMENT NOTIFICATION FORM

March 2026

Havering
LONDON BOROUGH

Non-Material or Minor Material Amendment Notification Form

East Havering Data Centre Campus LDO

Planning Service
Mercury House, Mercury Gardens
Romford RM1 3SL

01708 433100
planning@havering.gov.uk
www.havering.gov.uk/planning

Purpose of this Form

By submitting this form, you are requesting confirmation as to whether the works you are proposing constitute permitted development under the East Havering Data Centre Campus LDO.

Following consideration of your request, the London Borough of Havering will issue a decision to confirm that the proposal is or is not permitted development. This will constitute a formal response as required by the Order. Development that is not permitted by the East Havering Data Centre Campus LDO may require the submission of a formal planning application.

1. Applicant Name and Address						**2.Agent Name and Address**					
Title:		First name:				Title:		First name:			
Last name:						Last name:					
Company (optional):						Company (optional):					
Unit:		House Number:		House suffix:		Unit:		House Number:		House suffix:	
House name:						House name:					
Address 1						Address 1					
Address2:						Address2:					
Address 2:						Address 2:					
Town:						Town:					
County:						County:					
Country:						Country:					
Postcode:						Postcode:					

3. Type of Application

Please confirm whether the application is for a Non-Material Amendment or Minor Material Amendment

Application Type	Yes/No (please confirm)
Non-Material amendment	
Minor-Material Amendment	

4. Description of Non-Material or Minor Material Amendment (s)

Please describe the proposal, including any change of use:

5. Location of Development

Please provide a description of the site location in the context of the East Havering Data Centre Campus LDO

6. Plans and Documents

Please provide a list of the submitted plans and documents.

7. Compliance Details

Please explain how each proposed non-material / minor material amendment complies with the East Havering Data Centre Campus LDO including appropriate references to the Order or paragraph number of the relevant compliance documents.

8. Declaration

I/we hereby confirm that if it is confirmed that planning permission is not required as provided for by the East Havering Data Centre Campus LDO, I/we have carried or shall only carry out the proposed work in accordance with the details included on this form and the associated plans and documents. I/we understand that any variation from these details may require re-assessment.

I/we confirm that to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine opinion(s) of the person giving them.

Name:	
Signature:	
Date:	

9. Applicant Contact Details		**10.Agent Contact Details**	
Phone number:		Phone number:	
Email:		Email:	

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East Havering Data Centre Campus
Local Development Order









DRAFT LANDSCAPE AND ECOLOGICAL MANAGEMENT AND MONITORING PLAN

March 2026

Havering
LONDON BOROUGH

Contents

Contents 1
1 Introduction 2
2 Habitat Classification and Target Conditions 5
3 Maintenance Framework for Soft Landscaping 8
4 Management for Ecological Mitigation Creation Features 23
5 Monitoring Requirements 25
Appendix 1: Habitat Classifications 26
Appendix 2: Condition Sheets 32

1 Introduction

1.1 The Landscape and Ecological Management and Monitoring Plan (LEMMP) forms part of the East Havering Data Centre Campus Local Development Order and must be read in conjunction with it.

1.2 The Habitat Strategy Plan details the habitat types to be both retained and created in the Data Centre Campus and Ecology Park (see Figure 1.1). The phasing of delivery of the Ecology Park is detailed in Figure 1.2.

1.3 The LEMMP provides a framework for the establishment and maintenance of habitats to meet the target conditions detailed in Table 2.1. For some habitat types, there is a longer-term target condition as the habitat will take time to create. For these habitat types, the LEMMP sets out an interim habitat condition to be achieved within a defined period and the target condition to be achieved in the longer-term.

1.4 The LEMMP also provides a framework for the enhancement of some existing hedgerows and watercourses (Refer to table 2.2).

1.5 The LEMMP identifies:

- when and how monitoring shall be undertaken to track progress toward meeting target habitat conditions;
- when and how monitoring results shall be reported to the Local Planning Authority (LPA); and
- the mechanism for agreeing any necessary changes to management practices with the LPA to ensure that agreed outcomes are met.

1.6 The estate management team shall be responsible for the establishment and maintenance of habitats to achieve the required target condition. This obligation is secured in the s106 agreement accompanying this LDO.

1.7 The East Havering Data Centre Campus Design Code sets out the specification for planting within the site and the required ecological mitigation features (e.g. bird and bat boxes).

1.8 The ongoing maintenance requirements for ecological mitigation features is set out in Section 4 of the LEMMP.

1.9 The overall objective of the LEMMP is to:

- retain and enhance the value of existing landscape features;
- successfully establish and integrate new planting with the surrounding landscape;
- ensure that all planting will establish and mature to reach the target condition for each habitat type retained and/or created within the LDO site; and
- set out the required monitoring obligations.

Figure 1.1: Habitat Strategy

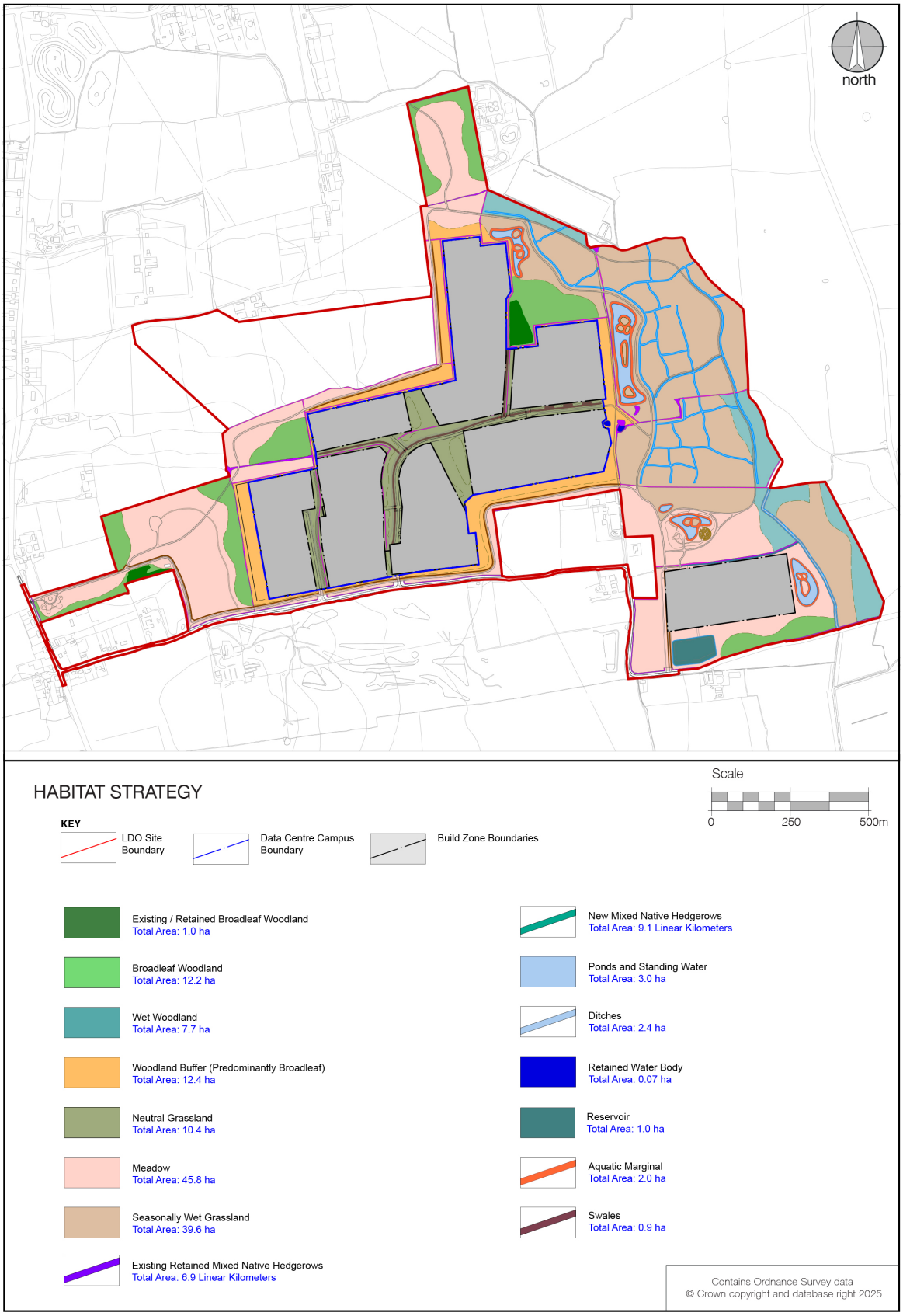
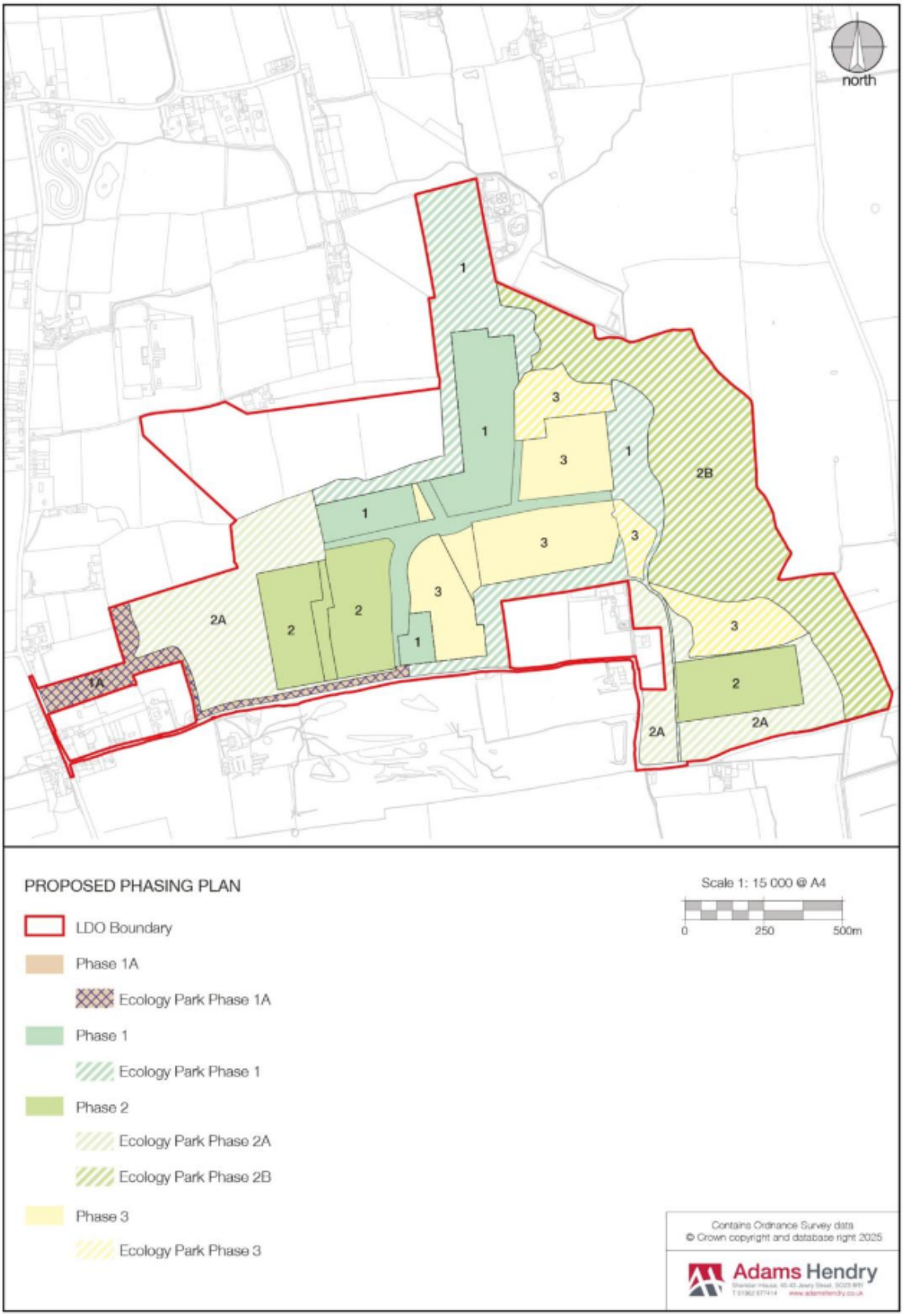


Figure 1.2: Phasing Plan



2 Habitat Classification and Target Conditions

2.1 The site currently comprises agricultural land in arable use, with associated grassland, hedgerows, surface water drainage ditches, ponds, a section of the Mardyke River tributary, woodland, mature trees, scrub, and some small agricultural buildings and vehicular access tracks/roads.

2.2 Post development habitat classifications and habitat condition targets for created habitats on the site are set out in Table 2.1. The combination of habitat classification and condition shall be used to assess delivery against these targets.

2.3 A description of each habitat classification is provided in Appendix 1 and condition assessment sheets to measure the state of each habitat are provided in Appendix 2.

Table 2.1: Habitat Type and Condition Targets for Created Habitat

Habitat Type	Habitat Classification	Target Condition	Estimated Time to Target Condition (years)	Long-term Condition
Broadleaf Woodland	w1g – Other Broadleaf Woodland	Moderate	15	w1f – Lowland Mixed Deciduous Woodland
Wet Woodland	w1d – Wet Woodland	Moderate	15	-
Woodland Buffer	w1g – Other Broadleaf Woodland	Moderate	15	-
Neutral Grassland	g3c – Other Neutral Grassland	Moderate	5	-
Meadow	g3c – Other Neutral Grassland	Good	10	g3a - Lowland Meadows
New Mixed Native Hedgerows	h2a – Native Hedgerow	Moderate	5	-
Seasonally Wet Grassland	f2f55 – Other Wetlands and g3c55 Other Neutral Grassland Floodplain Wetland Mosaic	Moderate	10	-
Ponds and Standing Water	r1g 41 – Other Standing Water Pond	Moderate	3	-
Ditches	r1g 50 – Other Standing Water Ditch	Poor	1	-
Reservoir	r1g 45 – Other Standing Water reservoir	Moderate	5	-

Aquatic Marginals	f2d – Aquatic Marginal Vegetation	Moderate	7	-
Swales	f2d 848 – Aquatic Marginal Vegetation – Sustainable Drainage Systems	Moderate	3	-

2.4 The existing hedgerows and sections of the Mardyke River tributary to be enhanced are shown on Figure 2.1 and the condition targets for enhanced habitats are set out in Table 2.2.

Table 2.2: Condition Targets for Enhanced Habitats

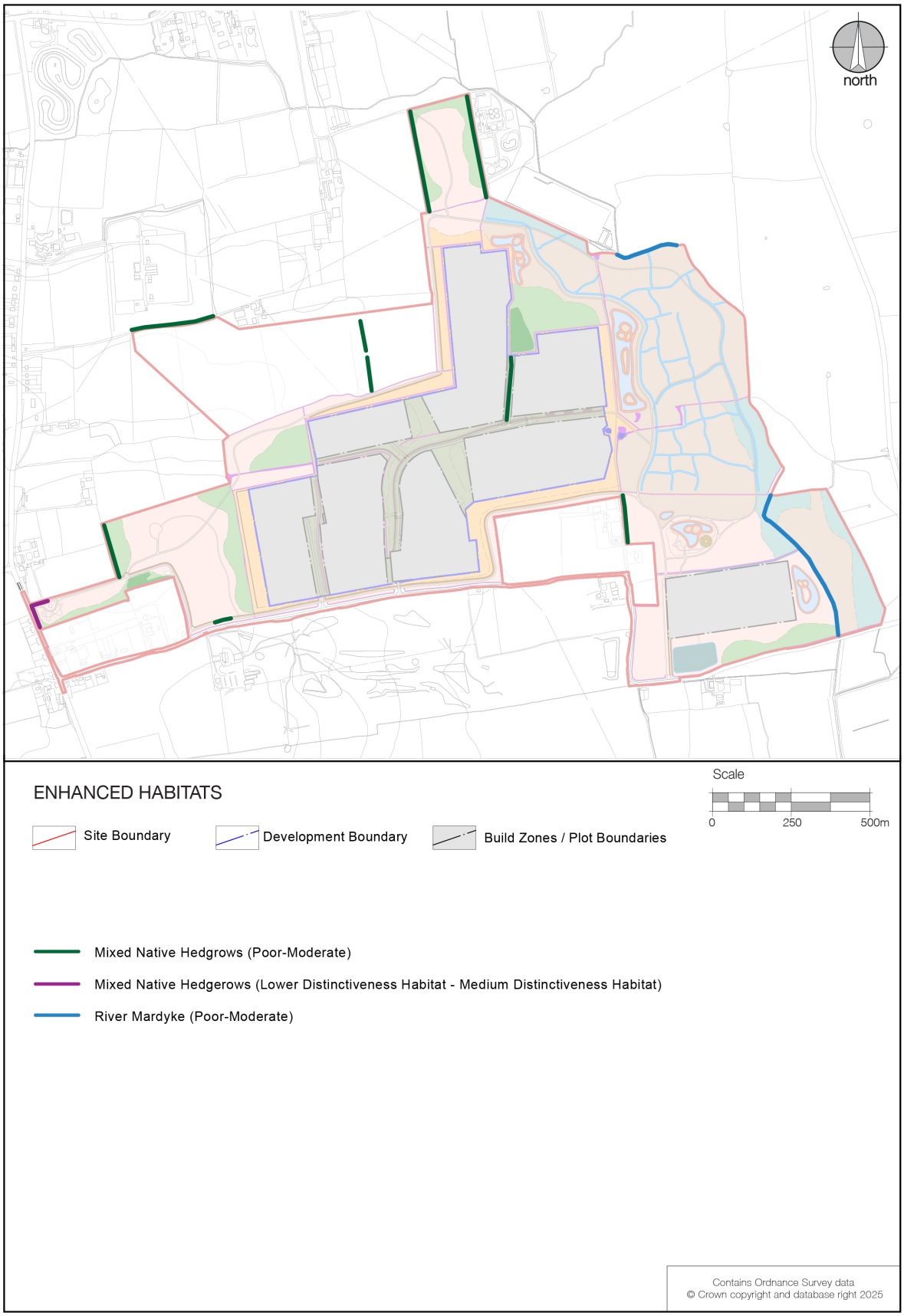
Habitat Type	Habitat Classification	Existing Condition	Target Condition	Estimated Time to Target Condition (years)
Mixed Native Hedgerows	h2a – Native Hedgerow	Poor	Moderate	3
Mixed Native Hedgerows	h2a – Native Hedgerow	Lower distinctiveness habitat - moderate	Medium distinctiveness habitat – moderate	5
River Mardyke	r2b – Other Rivers and Streams	Poor	Moderate	2

2.5 The distinctiveness of the Mixed Native Hedgerow shall be increased by supplemental planting in accordance with soft landscaping specification in Appendix 2 of the Design Code. An assessment of the distinctiveness shall be carried out in accordance with guidance set out in the Hedgerow Survey Handbook 2nd edition published by the Department for Environment, Food and Rural Affairs (Defra), or as updated.

2.6 If any of the Mixed Native Hedgerow is removed to facilitate works, the section removed shall be replanted in the next planting season in accordance the soft landscaping specification in Appendix 2 of the Design Code.

2.7 A River Condition Assessment (RCA) shall be carried out by a MoRPH accredited surveyor to measure condition of the watercourse. No direct works are required to the River Mardyke to meet the target condition as it will naturally improve once land is taken out of arable production.

Figure 2.1: Enhanced Habitats



3 Maintenance Framework for Soft Landscaping

3.1 A maintenance framework for the soft landscaping is set out below.

3A Broadleaf Woodland/ Wet Woodland/ Woodland Buffer

Tree Planting - Bare-root Tree Whips, Standard and Semi Mature Trees

3A.1 When planting trees, a hole wider than the root spread shall be dug to allow roots to expand without crowding. The hole shall be deep enough so that the root flare is at or slightly above ground level. The tree shall be watered thoroughly to settle the soil around the roots.

Establishment Maintenance

3A.2 The following maintenance requirements shall be carried out during the first 24 months post-planting to ensure healthy growth and longevity:

- The soil moisture shall be consistently maintained during dry periods, especially between May and August.
- A 5cm to 10cm layer of organic mulch, such as wood chips or composted bark, shall be applied around the base of the tree but away from the trunk to prevent rot.
- Trees shall be staked or tree anchors used as necessary to provide stability against wind. Flexible ties shall be used to avoid damaging the trunk. Plastic ties should be avoided. The ties shall be regularly checked (at least once a year) and adjusted to prevent girdling. Should plastic guards be unavoidable they shall be removed and disposed of responsibly once no longer needed.
- For whip planting, guards shall be maintained upright and pressed firmly into the soil to prevent small herbivores from accessing the young trees. Tree guards shall be checked in spring and autumn for stability, signs of damage, or intrusion by pests. Any vegetation growing inside the guard shall be removed.
- The interior of tree guards be regularly inspected for signs of pests or diseases. The area shall be kept weed-free to reduce competition for nutrients and water and guards shall be properly installed to help deter pests.
- Weeds shall be hand pulled or appropriate mulch applied to suppress growth.
- Any broken, diseased, or crossing branches shall be removed.
- Heavy pruning shall be avoided during the first year.
- Trees shall be watered as necessary (May to August).
- Established habitats and tree planting areas shall be strimmed to prevent scrub encroachment (November to March).

Ongoing Maintenance

3A.3 After the initial establishment phase, the following maintenance activities shall be carried out as needed during years 3 to 12+ following planting:

- Watering shall continue in year 3 during dry spells, especially in the period May to August. Supplemental watering will be required during prolonged dry periods after year 3.

- Organic mulch, such as wood chips or composted bark, shall be replenished annually to maintain a 5cm to 10cm layer, ensuring it does not touch the trunk to help conserve soil moisture, regulate soil temperature, and suppress weeds.
- Guards, stakes and ties shall be regularly inspected and adjusted as necessary.

- Soil tests shall be undertaken every 3 years to determine nutrient needs.
- Standard and semi-mature trees shall be regularly pruned to help maintain the desired shape and structural integrity.
- Formative pruning of specimens shall be undertaken to promote optimal growth rates and maintain a shape that is clear of any vehicular or pedestrian circulation routes.
- Following strong winds, frost, heave, or other disturbance plants shall be checked and action taken to ensure they remain firmly in place.
- Fertilisers shall be avoided unless deficiencies are identified.
- Trees shall be inspected annually for the first 5 years for signs of pests, diseases, or structural issues and any problems promptly addressed to prevent escalation. Structural pruning shall be undertaken during the dormant season to remove dead, diseased, or crossing branches.
- Stakes shall be removed after the first year unless the tree still requires support.
- Tree guards shall be removed after 5 years or as soon as they split and before they start to disintegrate.
- If the woodland becomes overcrowded and the condition of the trees and/or habitat is being impacted (around year 10, or when trees are about 7m tall), approximately 1 in every 5 trees should be felled to reduce competition for light, water, and nutrients to help the remaining trees to develop a better shape and grow stronger and more resilient.
    - Any vandalised, unhealthy, or dead trees shall be removed and replaced with new plants of the same specification during the next available planting season.

Woodland and Understorey Planting

Establishment Maintenance

3A.4 The following maintenance requirements shall be carried out during the first 12 months post-planting:

- Prior to planting of any trees, the area of proposed woodland planting shall be pre-seeded with suitable seed tolerant native woodland seed mix to enable establishment of ground flora and understorey.
- The woodland and understorey planting areas shall be kept free from weeds. Translocated herbicide and slow-release fertiliser should be avoided wherever possible.
- A low-maintenance, shade tolerant seed mix shall be used under the proposed woodland areas in preference to using mulch alone.
- Treatments for pests and diseases should avoid the use of chemical pesticides e.g. by using spraying and dusting methods.
- Fertilisers should be avoided unless deficiencies are identified.
- Grow tubes, stakes, and ties, shall be inspected, adjusted, and maintained, and repairs shall be made as needed.
- Spirals and guards shall be used where appropriate to protect plants from animal damage.
- Following strong winds, frost, heave, or other disturbance plants shall be checked and action taken to ensure they remain firmly in place.
- Litter and any harmful materials from the planting areas shall be removed.
- Plants should be watered to maintain appropriate moisture levels for optimal growth.
- Any vandalised, unhealthy, or dead shrubs shall be replaced with plants of a similar size to those nearby during the next available planting season.

Ongoing Maintenance

3A.5 The following maintenance requirements shall be carried out as necessary during years 2 to 12+ months post-planting:

- A low-maintenance, shade-tolerant mix shall be seeded under the proposed woodland areas (as part of a seeding maintenance strategy) in preference to organic mulch to encourage the vegetation growth. Should organic mulch be required, this should be replenished annually.
- The selected seed mix shall include species that thrive in shaded conditions, suppress weed growth, and contribute to soil stabilization. Minimal intervention, such as occasional overseeding or selective weeding, may be necessary to ensure successful establishment and sustainability of the woodland understory.
- Fertilisers shall be avoided unless deficiencies are identified.
- Spirals and guards shall be removed when no longer required, or within 5 years.
- Spot treatment for invasive weeds (e.g., brambles) shall be undertaken or invasive weeds shall be removed by hand if necessary.
- Treatments for pests and diseases should be implemented by using spraying and dusting methods that avoid the use of chemical pesticides.
- Fertilisers shall be avoided unless deficiencies are identified.
- Grow tubes, stakes, and ties, shall be inspected, adjusted, and repaired as necessary to ensure the optimum health of individual plants;
- Following strong winds, frost, heave, or other disturbance plants shall be checked and action taken to ensure they remain firmly in place.
- Litter and any harmful materials from the planting areas shall be removed.
- Plants should be watered to maintain appropriate moisture levels for optimal growth until year 2.
- Pruning shall be undertaken to achieve optimum growth rates and maintain a good shape, clear of any vehicular or pedestrian circulation routes.
- Cleaning out and dead-wooding operations shall be undertaken as required.
- Planting shall be thinned (approximately every 10 to 15 years) to ensure that <20% canopy cover of coniferous trees is maintained as the trees reach maturity. This shall be reviewed at intervals with an ecologist to ensure targeted thinning of woodlands to establish long term strategic habitat targets.
- 1/3 of hazel stock shall be coppiced on a 5 year rotational basis.
- Any vandalised, unhealthy or dead plants shall be removed and replaced with plants of a similar size to those adjacent, during the next available planting season, until year 5.
- A minimum of 25 % open space shall be maintained within woodland areas as tree planting matures to allow for the development of a mosaic of shade, dappled shade and sunny glades of open grassland habitats favoured by many reptile species.

Shrub and Groundcover Planting

Establishment Maintenance

3A.6 The following maintenance requirements shall be carried out during the first 12 months post-planting:

- Fertilisers should be avoided where possible to avoid encouraging nettle and bramble growth.

- Pests and diseases should be treated using appropriate spraying and dusting methods that avoid the use of chemical pesticides.
- Shrubs shall be pruned to enhance floral, foliage, and stem colour effects and weak, dead, and diseased branches should be removed to ensure they maintain the correct form and encourage flowering and berry production.
- Dead growth should be removed and herbaceous perennial plants trimmed while avoiding damage to any new shoots that have emerged.
- Litter and any unwanted materials shall be cleared away.
- Beds should be forked over as needed to keep the soil loose, ensuring gentle cambers and avoiding hollows, while taking care not to disturb the depth or effectiveness of organic mulch.
- Following strong winds, frost, heave or other disturbance, plants shall be checked and action taken to ensure they remain firmly in place.
- Plants should be watered to ensure moisture levels are adequate for optimal growth.
- Any vandalised, unhealthy, dead, or short-lived plants shall be promptly removed and replace with plants of a similar size to those nearby during the next available planting season.
- A Glycosphate based herbicide or other means of chemical control should only be used as a last resort. Mechanical approaches such as strimming and hand pulling is preferred.

Ongoing Maintenance

3A.7 The following maintenance requirements shall be carried out as necessary during years 2 to 12+ months post-planting:

- Mulch shall be replenished annually until year 3.
- Fertilisers should be avoided unless absolutely necessary as it encourages nettle and bramble growth.
- Treatment for pests and diseases should be carried out through spraying and dusting methods that avoid the use of chemical pesticides.
- Shrubs shall be pruned to enhance floral, foliage, and stem colour effects and weak, dead, and diseased branches shall be removed to ensure they maintain the correct form and encourage flowering and berry production.
- Wall shrubs and climbers shall be trained and tied to walls or frames for optimal support. All frames and ties shall be maintained and replaced as necessary.
- Dead growth should be removed and herbaceous perennial plants trimmed, taking care to avoid damaging any new shoots that have emerged.
- Litter and any unwanted materials shall be cleared away.
- Beds should be forked over as needed to keep the soil loose, ensuring gentle contours and avoiding hollows while maintaining the depth and effectiveness of the mulch until year 3.
- Plants should be watered to ensure moisture levels are adequate for optimal growth until year 3.
- Heavy pruning of overgrown shrubs and climbers shall be undertaken.
- A Glycosphate based herbicide or other means of chemical control should only be used as a last resort. Mechanical approaches such as strimming and hand pulling is preferred.
- Where possible, an element of ‘rewilding’ should be allowed to occur, with natural colonisation of habitats as well as prescribed planting. There should be minimal

human activity to allow colonisation to take control. These species are likely to be pioneer plants, followed by wider ruderal plants and eventually scrub.

- Standard biosecurity protocols should be followed to control and prevent the spread of invasive plants, including snowberry. This shall include washing and disinfecting tools, vehicles, equipment, footwear, clothing after visiting or working at infected sites, and before visiting or working at new sites.

Existing Vegetation (to be retained)

General Maintenance

3A.8 Existing vegetation should be subject to a high level of protection to ensure its health is maintained throughout the life of the development. The following operations in relation to retained trees shall be undertaken:

- Pruning shall be selective to ensure the satisfactory development of the trees for their ecological value, without the trees becoming elongated as a result of overcrowding.
- Some deadwood should be allowed to develop, to provide niches for bats, birds and invertebrates.
- Crown reduction, shaping, lifting and thinning shall be undertaken (as required).
- Cleaning out and dead-wooding operations shall be undertaken (as required).
- Thinning shall be undertaken to ensure a desirable woodland character (approximately every 10 to 15 years).
- All works to trees shall be undertaken in accordance with BS 3998 *Tree Work Recommendations*.

3B Neutral Grassland

3B.1 The following maintenance requirements shall be carried out:

Establishment Maintenance

- In the first six months, watering shall be undertaken on a weekly basis during dry spells. Watering can be reduced after the plants are well-established.
- Checks shall be carried out for bare patches in the first year and if germination is patchy, overseeding shall be carried out in the autumn or early spring.
- Monthly inspections shall be carried out for invasive species and unwanted weeds.
- Weeds shall be hand-pulled or spot treated before they spread.
    - Mowing shall be avoided for the first 8–12 weeks to allow grasses to develop strong roots. Where necessary, mowing shall be at 15cm-20cm high to suppress weeds while protecting young grass. Over-mowing shall be avoided as it can weaken young grasses.
- After the first 8-12 weeks and up to year 2 mowing shall be carried out every two months, maintaining the sward at 50mm to encourage strong root establishment, prevent aggressive species from dominating, and support biodiversity by allowing slower-growing species to develop.
- Mowing shall be avoided in excessively wet conditions to prevent soil compaction, and excessive cuttings shall be removed to prevent nutrient buildup.
- Mulch, straw or coir matting shall be used to prevent erosion in steep areas
- Annual inspections shall be carried out for pest infestations (e.g. grasshoppers, aphids) and signs of fungal diseases. Biological treatment shall be used to control as required. Chemical treatment shall be used as a last resort.

- Natural predators (birds, beneficial insects) shall be encouraged to control pests.
- Native grass and wildflower species suited to the site conditions shall be used.

Ongoing Maintenance

- Checks shall be carried out annually for bare patches up to year 5. Reseeding if necessary shall take place in years 2-5 in autumn or early spring.
- A mowing regime shall be implemented in the aftercare period (year 3 onward). On low fertility soils, an annual cut shall be sufficient, whereas on higher-fertility soils where there is vigorous grass growth, a biannual cut (twice a year) may be necessary. The first cut shall take place in late summer (August-September) after flowering, while the second cut (if required) should be in late winter (February-March) to control early growth to maintain species diversity, prevent aggressive grasses from taking over, and ensure that organic matter does not accumulate excessively, which could alter soil conditions.
- Mowing should always be done carefully to avoid scalping, with some areas left uncut to promote habitat diversity. Cutting should be avoided during prolonged wet periods to minimise soil damage and compaction.
- For low fertility soils, where an annual mowing regime is followed, 10-20% of the site shall be left uncut in rotational patches each year. These patches shall be rotated annually to prevent scrub encroachment while maintaining habitat diversity. In higher-fertility soils, where biannual mowing may be required, a larger proportion of 20-30% shall remain uncut, with rotational sections left undisturbed to enhance structural variation in vegetation.
- Uncut areas shall be distributed across the site rather than concentrated in a single location to maximise ecological benefits. These areas should be positioned near wetland edges, ditches, or naturally undisturbed sections to provide refuge for pollinators, birds, and small mammals.
- To prevent excessive woody vegetation buildup, uncut patches shall be rotated every 2-3 years, unless scrub development aligns with specific ecological objectives.
- All arisings shall be removed after setting seed to prevent soil enrichment.
- Seasonal inspections shall be conducted for invasive grasses and weeds. Invasive grasses and weeds shall be hand-pulled, mown, or spot-treated before they dominate to help rejuvenate native grasses, control invasive species, and reduce thatch.
- Fertilizing shall be avoided unless necessary to avoid encouraging weed growth.
- If soil health declines, a thin layer of compost or organic matter shall be applied.
- Excessive mowing to protect ground-nesting birds and pollinators should be avoided. If thatch buildup becomes excessive, raking or mowing shall be carried out to prevent smothering.
- A mosaic of plant heights shall be maintained to support diverse wildlife.
- Disturbance should be reduced to allow natural succession where appropriate. If grassland health declines, reseeding native species shall be considered.
- Overseeding shall be carried out after initial establishment to ensure there is a diversity of native grasses and wildflowers, after disturbances such as erosion or trampling, or to help outcompete invasive species. In low-fertility areas, overseeding shall be undertaken to encourage a more balanced plant mix by introducing species struggling to establish naturally. If required, overseeding shall be undertaken in autumn (September-October) to mimic natural seed dispersal and take advantage of winter moisture, or in early spring (March-April) to benefit from warming temperatures and reduced competition from fast-growing grasses.

The seed mix shall include locally sourced, native wildflowers and grasses suited to the habitat, ensuring a diverse and sustainable ecosystem.

- When seeds struggle to establish due to strong competition from existing vegetation, plug planting may be necessary which can be particularly effective for introducing slow-growing or rare species that may not successfully thrive from seed alone. Plug planting shall be especially useful in small, targeted areas, such as pathways, where direct seeding may be less effective to quickly enhance diversity in regions with low floral abundance.
- Plug planting shall be carried out in spring (March-May) to allow root establishment before summer droughts, or autumn (September-October) to enable plants to establish before winter dormancy. The species selected shall be perennial wildflowers, grasses, or sedges that complement the existing flora without allowing aggressive species to dominate. Mowing shall be delayed for at least 6-8 weeks after plug planting to allow seedlings and young plants to establish properly. Invasive species that could hinder growth shall be removed.

3C Meadow

3C.1 The following maintenance requirements shall be carried out:

Pre-Establishment

- Before seeding of wildflower and grass species, soil testing shall be undertaken to establish nutrient levels of the existing soils to ensure suitability for high quality grassland establishment.
- Where nutrient levels are not suitable for high quality grassland establishment, either nutrient stripping through soil inversion (other than in soils with a high percentage of clay) or via cropping shall be used to reduce nutrients to suitable levels.
- These methods shall be implemented following detailed analysis of the site conditions prior to establishment of meadow areas.

Establishment Maintenance

- In the first six months, watering shall be undertaken on a weekly basis during dry spells. Watering can be reduced after the plants are well-established.
- Checks shall be carried out for bare patches in the first year and if germination is patchy, overseeding should be carried out in the autumn or early spring.
- Monthly inspections shall be carried out for invasive species and unwanted weeds.
- Weeds shall be hand-pulled or spot treated before they spread.
- Mowing should be avoided for the first 8–12 weeks to allow grasses to develop strong roots. Where necessary, mowing shall be at 15cm - 20cm high to suppress weeds while protecting young grass. Over-mowing shall be avoided as it can weaken young grasses
- After the first 8-12 weeks and up to year 2, mowing shall be carried out every two months, maintaining the sward at 50mm to encourage strong root establishment, prevent aggressive species from dominating, and support biodiversity by allowing slower-growing species to develop.
- Mowing shall be avoided in excessively wet conditions to prevent soil compaction, and excessive cuttings shall be removed to prevent nutrient buildup.
    - Mulch, straw or coir matting shall be used to prevent erosion in steep areas.

- Annual inspections shall be carried out for pest infestations (e.g. grasshoppers, aphids) and signs of fungal diseases. Biological treatment shall be used to control as required. Chemical treatment shall be used as a last resort.
- Natural predators (birds, beneficial insects) shall be encouraged to control pests.
- Native grass and wildflower species shall be used which are suited to the site conditions.

Ongoing Maintenance

- Checks shall be carried out annually for bare patches up to year 5. Reseeding if necessary shall take place in years 2-5 in autumn or early spring.
- A mowing regime shall be implemented in the aftercare period (year 3 onward). On low fertility soils, an annual cut shall be sufficient, whereas on higher-fertility soils where there is vigorous grass growth, a biannual cut (twice a year) may be necessary. The first cut shall take place in late summer (August-September) after flowering, while the second cut (if required) should be in late winter (February-March) to control early growth to maintain species diversity, prevent aggressive grasses from taking over, and ensure that organic matter does not accumulate excessively, which could alter soil conditions.
- Mowing should always be done carefully to avoid scalping, with some areas left uncut to promote habitat diversity. Cutting should be avoided during prolonged wet periods to minimise soil damage and compaction.
- For low fertility soils, where an annual mowing regime is followed, 10-20% of the site shall be left uncut in rotational patches each year. These patches shall be rotated annually to prevent scrub encroachment while maintaining habitat diversity. In higher-fertility soils, where biannual mowing may be required, a larger proportion of 20-30% shall remain uncut, with rotational sections left undisturbed to enhance structural variation in vegetation.
- Uncut areas shall be distributed across the site rather than concentrated in a single location to maximise ecological benefits. These areas should be positioned near wetland edges, ditches, or naturally undisturbed sections to provide refuge for pollinators, birds, and small mammals.
- To prevent excessive woody vegetation buildup, uncut patches shall be rotated every 2-3 years, unless scrub development aligns with specific ecological objectives.
- All arisings shall be removed after setting seed to prevent soil enrichment.
- A 1m-wide closely mown buffer shall be maintained on both sides of the primary and secondary footpath/cycleways, creating a clear and neat transition between the pathways and the surrounding meadow areas.
    - Along the footpath, a 2m wide mown meadow path shall be integrated within the grassland while preserving the natural landscape. Regular mowing, typically once a week during spring and summer months, shall be carried out to provide a clear and inviting route for visitors while minimising disruption to the surrounding meadow.
- Seasonal inspections shall be conducted for invasive grasses and weeds. Invasive grasses and weeds shall be hand-pulled, mown, or spot-treated before they dominate to help rejuvenate native grasses, control invasive species, and reduce thatch.
- Fertilisers should be avoided unless necessary to avoid encouraging weed growth.
- If soil health declines, a thin layer of compost or organic matter shall be applied.
- Seasonal review of botanical diversity shall be undertaken to ensure a diversity of native grasses and wildflowers is maintained. If grasses become too dominant,

seeding Rhinanthus Minor (yellow rattle) shall be undertaken to supress grass species, combined with reseeding with additional native wildflower seeds to maintain diversity and replenish the meadow.

- Excessive mowing to protect ground-nesting birds and pollinators should be avoided. If thatch buildup becomes excessive, raking or mowing shall be carried out to prevent smothering.
- A mosaic of plant heights shall be maintained to support diverse wildlife.
- Disturbance should be reduced to allow natural succession where appropriate. If grassland health declines, reseeding native species should be considered.
- Overseeding shall be carried out after initial establishment to ensure there is a diversity of native grasses and wildflowers, after disturbances such as erosion or trampling, or to help outcompete invasive species. In low-fertility areas, overseeding should be undertaken to encourage a more balanced plant mix by introducing species struggling to establish naturally. If required, overseeding shall be undertaken in autumn (September-October) to mimic natural seed dispersal and take advantage of winter moisture, or in early spring (March-April) to benefit from warming temperatures and reduced competition from fast-growing grasses. The seed mix shall include locally sourced, native wildflowers and grasses suited to the habitat, ensuring a diverse and sustainable ecosystem.
- When seeds struggle to establish due to strong competition from existing vegetation, plug planting may be necessary which can be particularly effective for introducing slow-growing or rare species that may not successfully thrive from seed alone. Plug planting is especially useful in small, targeted areas, such as pathways, where direct seeding may be less effective to quickly enhance diversity in regions with low floral abundance.
- Plug planting shall be carried out in spring (March-May) to allow root establishment before summer droughts, or autumn (September-October) to enable plants to establish before winter dormancy. The species selected shall be perennial wildflowers, grasses, or sedges that complement the existing flora without allowing aggressive species to dominate. Mowing shall be delayed for at least 6-8 weeks after plug planting to allow seedlings and young plants to establish properly. Invasive species that could hinder growth shall be removed.

3D Mixed Native Hedgerows

3D.1 The following maintenance requirements shall be carried out during the first 12 months post-planting:

Establishment Maintenance

- A 2m wide undisturbed buffer strip shall be left to encourage regrowth.
- Pleached (partially cut and bent) stems shall be checked for strong regrowth.
- Gaps shall be addressed by encouraging natural regeneration or gapping up with native hedge species.
- Invasive weeds (e.g., brambles, nettles, thistles) shall be prevented from overtaking young regrowth, including light trimming of excessive bramble growth if necessary.
- Young regrowth should receive adequate moisture in dry conditions.
- Mulch should be applied around new plants to retain moisture.
- Up to 30% of the hedgerow shall be trimmed/cut per year.
- Spirals and guards shall be used where appropriate to protect hedges from animal damage. Plastic guards shall be avoided wherever possible.

Ongoing Maintenance

3D.2 Once established, hedgerows shall require periodic care to maintain their function and biodiversity value.

- Traditional laid hedges shall be re-laid every 10–20 years depending on growth rate and species.
- Staggered management shall be implemented across different hedge sections to maintain structural diversity.
- Hedges shall be laid in late autumn to early winter when plants are dormant and should not all be re-laid at the same time to prevent loss of wildlife habitats.
- Up to 30% of the hedgerow shall be trimmed/cut per year avoiding the period between February and August to protect nesting birds and as late in the season as possible, to provide forage in the form of berries and shelter for animals through the winter months. Excessive cutting shall be avoided as it may weaken the hedge.
- Lighter hedge trimming may be done every 2–3 years using a rotational approach to maintain shape and density.
- If certain sections become too thick or overgrown, coppice may be undertaken to help encourage fresh basal growth and prevent over-dominance of woody parts.
- Hedges shall be inspected for signs of fungal infections (e.g., honey fungus) or pest damage (e.g., aphids, scale insects) and plants which are severely affected should be removed and replaced if necessary.
- Spirals and guards shall be removed when no longer required or within 5 years.

Enhancement

3D.3 Existing hedgerows shall be enhanced by:

- Supplementary planting.
  Improved maintenance as detailed in 3.13.

3E Seasonally Wet Grassland

3E.1 The following maintenance requirements shall be carried out during the first 12-24 months post-planting:

Establishment Maintenance

- Existing flora and fauna shall be surveyed and documented annually.
- Outlets and weirs shall be inspected and maintained to manage water levels, ensuring the annual flooding or waterlogging essential for wetland functions. Maintenance requirements shall include removing debris accumulation from outlets and weirs; and addressing any structural deficiencies to ensure the proper functional operation of the wetland necessary to support its ecological health.
- Invasive species shall be removed or managed to reduce competition and support native plant establishment.
- Varied surface features like mounds and hollows shall be developed to increase habitat diversity.
- During the first 1–2 years, mowing shall be conducted every two months (6 times per year).

- Throughout the establishment phase, the sward shall be maintained at 50mm, promoting strong root development, preventing the dominance of aggressive species, and supporting biodiversity by allowing slower-growing species to thrive. Mowing should be avoided in excessively wet conditions to prevent soil compaction, and excess cuttings shall be removed to prevent nutrient buildup.

Ongoing Maintenance

- Water levels shall be continuously assessed, and control structures shall be adjusted to mimic natural hydrological regimes.
- Mowing shall be implemented to prevent succession to scrub or woodland, maintaining the open character of wet grasslands.
- In the aftercare period (year 3 onward), the mowing frequency shall depend on soil fertility. On low fertility soils, an annual cut shall be sufficient. On higher-fertility soils where there is vigorous grass growth, a biannual cut (twice a year) may be necessary. The first cut shall take place in late summer (August-September) after flowering, while the second cut (if required) should be in late winter (February-March) to control early growth, maintain species diversity, prevent aggressive grasses from taking over, and ensure that organic matter does not accumulate excessively, which could alter soil conditions.
- Mowing shall always be done carefully to avoid scalping, with some areas left uncut to promote habitat diversity. Additionally, cutting shall be avoided during prolonged wet periods to minimise soil damage and compaction.
- For low fertility soils, where an annual mowing regime is followed, 10-20% of the site shall be left uncut in rotational patches each year. These patches shall be rotated annually to prevent scrub encroachment while maintaining habitat diversity. In higher-fertility soils, where biannual mowing may be required, a larger proportion of 20-30% shall remain uncut, with rotational sections left undisturbed to enhance structural variation in vegetation.
- Uncut areas shall be distributed across the site rather than concentrated in a single location to maximise ecological benefits. Ideally, these areas should be positioned near wetland edges, ditches, or naturally undisturbed sections to provide refuge for pollinators, birds, and small mammals. To prevent excessive woody vegetation buildup, patches shall be rotated every 2-3 years, unless scrub development aligns with specific ecological objectives.
- All arisings shall be removed after setting seed to prevent soil enrichment.
- Invasive species shall be regularly inspected, and appropriate control measures shall be applied promptly.
- Overseeding shall be undertaken following initial establishment to ensure there is a diversity of plant species, after disturbances such as erosion or trampling, or to help outcompete invasive species. Additionally, in low-fertility areas, overseeding shall encourage a more balanced plant mix by introducing species that might struggle to establish naturally. Overseeding shall be undertaken in autumn (September-October) to mimic natural seed dispersal and take advantage of winter moisture, or in early spring (March-April) to benefit from warming temperatures and reduced competition from fast-growing grasses. The seed mix shall include locally sourced, native wildflowers and grasses suited to the habitat, ensuring a diverse and sustainable ecosystem.
- When seeds struggle to establish due to strong competition from existing vegetation, plug planting may be necessary particularly where slow-growing or rare species are to be introduced that may not successfully thrive from seed alone. Plug planting where necessary should be targeted in small areas where direct seeding may be less effective. Plugs shall be planted in spring (March-May) to allow root establishment before summer droughts, or autumn (September-October) to enable plants to

establish before winter dormancy. The species selected shall be perennial wildflowers, grasses, or sedges that complement the existing flora without allowing aggressive species to dominate.
- Mowing shall be delayed for at least 6-8 weeks after planting to allow seedlings and young plants to establish properly.
- Maintenance shall be undertaken annually for the first 10 years to assess success and remove any invasive species that could hinder growth.

3F Aquatic Marginal / Permanent Water Body and Ditches

Establishment Maintenance

- Adequate water levels shall be maintained, especially in the first 3–6 months, until roots establish.
- Extreme water fluctuations should be avoided that could expose or drown young plants.
- For potted or plug plants, the soil shall be kept consistently moist until well-rooted.
- Monthly weeding shall be carried out to prevent competition from aggressive plants.
- Unwanted plants shall be hand-pulled or cut below the waterline to prevent regrowth.
- Invasive species (e.g. reed canary grass) should be removed promptly.
- A check for wilting, yellowing, or uprooted plants should be carried out monthly. Any missing vegetation shall be replanted to maintain coverage.
- Overgrown species shall be thinned out to prevent dominance.

Ongoing Maintenance

- If signs of erosion, overgrowth, or dead vegetation are identified, then conditions within or surrounding the watercourse should be changed.
- Seasonal water levels shall remain suitable for plant growth and be topped up with standing water if required.
- Drastic water level fluctuations should be avoided that could expose or drown plants.
- Inspections for invasive plants should be undertaken every 3–6 months and any such plants should be removed promptly.
- Manual removal or spot treatment with eco-friendly herbicides should be used if needed.
- Dense plant growth shall be thinned out to maintain biodiversity. Physical (the active removal of plant material from a watercourse), biological (the use of biological control agents to control unwanted species or excessive plant growth), or environmental (the alteration of the conditions within or surrounding the watercourse to reduce or prevent plant growth) methods should be applied as necessary.
- Excessive sediment shall be removed on an annual basis to maintain proper depth and plant health. A minimum of 20% of the pond area shall be standing water and not marshy ground.
- Litter, fallen leaves, or organic debris that could affect water quality shall be removed.
- Overgrown or dying plants shall be trimmed back to maintain open water flow.
- Plants that have died due to seasonal changes or competition shall be replaced.
- Natural regeneration shall be allowed where appropriate by ensuring minimal human activity.
- Harmful algae blooms shall be assessed annually as they may indicate nutrient imbalances. The water shall be treated to remove the algae if required.
- Shoreline stabilizers, coir logs, and other erosion controls shall be inspected annually.

- Any washed-out sections shall be repaired before further damage occurs.
- Mulch shall be reapplied every 1–2 years to maintain moisture and suppress weeds.
- Excessive mulch buildup shall be avoided that could block plant growth.
- Plant diversity shall be assessed annually, and the species mix shall be adjusted if needed to take account of specific water level tolerance limits. Planting strategies shall be adapted to changing climate conditions or water levels.
- Major sediment removal shall be conducted every 5–10 years if accumulation affects plant health.

3G Swales

General Planting Topsoil Maintenance

- A specialized soil mix shall be required for bioswale / SuDS planting, formulated to balance high flood tolerance with optimal nutrient retention.
- Infiltration rates shall be maintained as per the design intent in the approved and drainage strategy (to be confirmed by drainage engineer).
- Aeration techniques shall be implemented to enhance water infiltration.
- Sediment should be removed to prevent buildup that may obstruct water flow.
- Litter and debris should be regularly removed to maintain functionality.
- Invasive species that could hinder water absorption should be managed and controlled.
- Topsoil shall be replaced or amended if compaction or nutrient depletion occurs.

Establishment Maintenance

3G.1 The following maintenance requirements shall be carried out during the first 12 months post-planting to ensure the successful establishment of swale planting:

- The bioswale shall be watered regularly (1-2 times per week) during the first growing season, especially during dry periods.
- Planting shall be deep watered to encourage strong root growth.
- Monthly weeding shall be undertaken to prevent invasive species from overtaking native plants. Hand-pulling or selective spot treatment shall be used with eco-friendly herbicides (if necessary).
- Bioswales shall be inspected after heavy rain events and any accumulated sediment, rubbish and debris that might clog the system shall be removed. If erosion is present following heavy rain or a storm event additional mulch may need to be applied. Alternatively, the use of erosion control materials (such as coir logs) or temporary barriers may be required.
- Any disturbed vegetation shall be replanted immediately.
- Inspection shall be carried out for wilting, pests, and diseases.
- Any dead or struggling plants shall be replaced with suitable native or drought-tolerant species.

Ongoing Maintenance

3G.2 After the first year, maintenance frequency can decrease, but essential routine care shall be carried out for long-term functionality.

- Once established, native plants shall require little to no supplemental watering, except during extreme drought conditions.

- Hand-pulling weeds or selectively spot treatment with eco-friendly herbicides shall be continued as needed.
- Vegetation shall be mowed or trimmed along bioswale edges to prevent overgrowth.
- Annually or biannually, excessive sediment shall be removed from the bottom of the swale. If sediment buildup, especially near inlets and low-lying sections, is more than 3- 5cm, it shall be removed to maintain water flow.
- Leaves, plastic, branches, and other debris that could obstruct water movement shall be cleared out, focusing on inlets, outlets, and along the swale's length to prevent blockages.
- Mulch shall be reapplied or reinforced with erosion control materials (such as coir logs or additional plants).
- After storm events, inspections shall be carried out to ensure that stormwater has not uprooted plants or created bald patches. Any damaged areas shall be replanted to maintain full vegetation cover.
- Mulch shall be refreshed every 1-3 years as needed.
- Overgrown plants shall be trimmed to maintain an open channel for water flow.
- Plants shall be replaced as needed to ensure full vegetation coverage.
- Every 5-10 years, the need for a major overhaul shall be assessed, including sediment excavation or plant re-establishment.

3H Build Zone Planting

General Planting Topsoil Maintenance - Ornamental planting

3H.1 To maintain healthy and nutrient-rich topsoil for ornamental planting the following shall be carried out:

- Periodic pH testing (ideal range 6.0-7.5) and implementation of remedial measures as necessary;
- Nutrient balance shall be maintained through regular soil testing and implementation of remedial measures as necessary;
- Organic matter content shall be maintained at 2-5% by weight;
- Any imported topsoil must comply with BS 3882 standards;
- Well-structured sandy loam, free from stones or any other contaminants shall be used;
- Erosion shall be prevented by mulching and vegetation cover;
- Soil amendments shall be used to improve structure if compaction occurs. This may include adding organic matter such as woody mulch; and
- Soil shall be aerated periodically to improve root penetration.

3I General Requirements

General Disposal of Green Waste

3I.1 Green waste (such as grass & wood clippings, pruning, branches, twigs, leaves, tree trimmings) from the routine long term management of the ecology park and Data Centre Campus shall be collected and used to create habitat piles around the site. Green waste should not be removed from the site.

General Management Requirements

3I.2 There are a number of general prescriptions thUpat apply to management of the LDO site. These are as follows:

- All legally designated weeds or invasive plants (identified in Schedule nine, Part II of the Wildlife and Countryside Act 1981 or the Weeds Act 1959) shall be controlled and disposed of in accordance with relevant Natural England; DEFRA; or Environment Agency guidance;
- Vegetation, which suppresses or otherwise inhibits the development of planted species and proper management of habitats shall be restricted and/ or removed;
- Any species which colonise the site and are incongruous with the planting scheme and / or the surrounding context shall be removed; and
- All areas shall be subject to a regular system of litter collection and removal.

4 Management for Ecological Mitigation Creation Features

4.1 Bee Hotels

Ongoing Maintenance

- Nesting materials, tubes, paper straws and stems shall be removed and replaced on an annual basis after the bees have emerged (typically summer) where there are signs of disease and parasite buildup.

4.2 Bird Boxes

Establishment Maintenance

- To encourage swifts to use nest boxes, swift calls shall be played in May, June and July between 06:00-09:00 and 18:00-23:00. This shall be carried out for the first 3 years unless a colony has become established.

Ongoing Maintenance

- Bird boxes shall be cleaned out on an annual basis in the autumn, after the breeding season when there are no birds present. This shall include removing old nesting material and pouring boiling water inside to eliminate parasites. The box shall be allowed to dry thoroughly before reassembling.

4.3 Bat Boxes

Ongoing Maintenance

- Bat boxes shall be maintained by a Suitably Qualified Ecologist (SQE) with a bat licence.
- The boxes shall be checked at least once a year during the winter months (November to early March) when bats are absent. This shall involve looking for cracks, warps, or leaks, which should be repaired as necessary. Any wasp nests or debris shall be removed.

4.4 Refugia for Reptiles and Amphibians

Ongoing Maintenance

- Refugia shall be checked every 2 years for structural integrity, ensuring entrances remain accessible and the mound is stable. The surrounding vegetation shall be retained to provide cover and foraging opportunities but prevent overgrowth that could obstruct entrances or alter the microhabitat.
- The pile shall remain in the same place with materials added every 1 – 2 years as necessary. Trimming or cutting of vegetation may be required, on a rotational basis when amphibians and reptiles are less likely to be using the refugia (usually during dry weather between April and September, with vegetation cut to 150 mm at most).

4.5 Log Piles

Ongoing Maintenance

- As logs decompose, new material shall be added when necessary for the first 5 years to maintain the pile's structure and habitat value. Fresh leaf litter or bark chips shall be added to ensure the pile retains moisture, especially during dry periods.

4.6 Scrapes for Wading Birds

Ongoing Maintenance

- Encroaching vegetation shall be removed to maintain open foraging areas for wading birds.
- The water levels shall have a maximum depth of 300mm and shall be monitored annually and adjusted to ensure the scrapes remain suitable for wading birds, especially during breeding seasons.

4.7 Other mammals

- Appropriate habitats for other mammals including hedgehog, harvest mice and brown hare shall be retained, with clear signage identifying areas to be undisturb by visitors, particularly dog walkers.

- Identified badger setts shall be retained with a buffer around them of “defensive plants” such as brambles, blackthorn and hawthorn, to reduce the effects of disturbance by humans and dogs.

5 Monitoring Requirements

Monitoring Surveys

5.1 Monitoring surveys for each phase of development as shown in Figure 1.2 (Phase 1A,1, 2A, 2B and 3) shall be carried out. The number, location and frequency of surveys of each habitat type shall be agreed in writing with the LPA in advance and shall be carried out by a competent person at the optimum time of the year.

Reporting Monitoring Results

5.2 A habitat condition report prepared by a qualified ecologist against the criteria in the condition sheets in Appendix 2 and, where required, an assessment of hedgerow distinctiveness and RCA shall be submitted to the LPA within three months of completion of each survey. The report shall include the ecological reasoning for the judgement regarding the habitat condition following analysis of survey data.

5.3 The report shall include a detailed record of management activities undertaken since the previous survey results were reported and include monitoring data to show the ecological changes that have taken place within each habitat type.

5.4 Where the habitat type is being established, the report shall provide an assessment of progress towards meeting the required habitat condition within the specified timeframe.

Actions Post Monitoring

5.5 Where the outcome of the condition assessment for each habitat type does not meet the target condition set out in Table 2.1 and Table 2.2, or it identifies that progress towards meeting the required habitat condition within the specified timeframe is not on target, enhancement interventions through adjustments to the management and maintenance regimes to improve the condition score shall be agreed in writing with the LPA along with a programme for implementation.

5.6 The programme of monitoring shall continue on an annual basis until the target condition for each habitat type is met unless otherwise agreed with the LPA.

Long -Term Condition

5.7 Once the interim habitat condition has been achieved for a habitat type where there is a long-term condition target, monitoring shall then commence against the long-term condition target in accordance with the monitoring requirements detailed above. The programme of monitoring shall continue on an annual basis until the longer-term condition target is met unless otherwise agreed with the LPA.

Appendix 1: Habitat Classifications

Habitat Classification	Definition (Based on UKHab v2.01(2023)
w1d – Wet Woodland	Occurs on poorly drained or seasonally wet soils, usually with Alder *Alnus glutinosa*, Birch *Betula spp.* and Willows *Salix spp.* as the predominant tree species, but sometimes including Ash *Fraxinus excelsior*, Oak *Quercus spp.* Scots Pine *Pinus sylvestris* and Beech *Fagus sylvatica* on dryer riparian areas.
w1f - Lowland Mixed Deciduous Woodland	Includes woodland growing on the full range of soil conditions, from very acidic to base rich. It occurs largely within enclosed landscapes, usually on sites with well-defined boundaries and at relatively low altitudes. Includes: - Monospecific stands of native species such as Elm *Ulmus spp.,* Field maple *Acer campestre,* Ash *Fraxinus excelsior* or Hazel *Corylus avellana* in the drier non-Atlantic lowlands. Excludes: - A mixture of broadleaved and coniferous species.
w1g – Other Broadleaf Woodland	Broadleaf and mixed woodland. Includes: - Stands of non-native broadleaved tree species. - Woodlands of non-native species or Sycamore Acer pseudoplatanus that have developed though recent successions. Excludes: - Upland woodland comprising Acidophilous Sessile Oak *Quercus petraea* woods with low-branched trees and may ferns, mosses, lichens and evergreen bushes. - Upland mixed ashwoods comprising woods on base-rich soils in the north and west, in most of which Ash *Fraxinus excelsior* is a major species, although locally Oak *Quercus spp.,* Birch *Betula spp.,* Elm *Ulmus spp.,* Small-leaved Lime *Tilia cordata* and even Hazel *Corylus avellana* maybe the most abundant species.

	- Lowland beech and yew woodland which is dominated by Beech *Fagus sylvatica* in the lowlands. Spans a variety of distinctive vegetation types, reflecting differences in soil and topographical conditions. Beech can grow on both acidic and calcareous sites, although is association with Yew *Taxus baccata* tends to be most abundant on calcareous sites. - Upland birchwoods which have abundant Birch *Betula spp,* with constituents such as Rowan *Sorbus aucuparia,* Willow *salix spp*, Juniper *Juniperus spp.* And Aspen *Populus tremula.* These woodlands differ from successional Birch stands found within oakwoods and Dwarf Birch scrub. - w1d – Wet Woodland - w1f – Lowland Mixed Deciduous Woodland -
g3c – Other Neutral Grassland	A neutral grassland that meets at least three of these four criteria: 1. >20% cover of broadleaved herbs and sedges 2. >8 species per m^2 (including forbs, grasses, sedges and rushes and excluding bryophytes) 3. ≥1 grass species that is not generally sown for intensive agricultural production (ie. Rye-grasses *Lolium spp.* Timothy *Phleum pratense,* Cock's-foot *Dactylis glomerata,* Meadow fescue *Festuca pratensis)* is at east abundant. 4. Cover of Rue-grasses *Lolium spp.* And White Clover *Trifoliumrepens,* where present, is <30%.
g3a - Lowland Meadows	A lowland grassland that meets at least two of these three criteria: 5. >15 species per m^2 (including grasses and excluding bryophytes) 6. >30% cover of broadleaved herbs and sedges (Excluding White Clover *Trifolium repens,* Creeping Buttercup *Ranunculus repens* and injurious weeds) 7. <10% cover of rye grasses and White Clover *Trifolium repens* AND EITHER ≥4 of these indicators at least 'present' on the DAFOR* scale.

	Or ≥3 of these indicators at least 'occasional' on the DAFOR* scale (but not limited to field corners or edges. *DAFOR Scale: D (Dominant): 76-100% cover/abundance (e.g., the main species in a monoculture). A (Abundant): 51-75% cover/abundance (e.g., common but not overwhelming). F (Frequent): 26-50% cover/abundance (e.g., present in many places). O (Occasional): 11-25% cover/abundance (e.g., scattered individuals). R (Rare): 0-10% cover/abundance (e.g., very few individuals).
h2a – Native Hedgerow	A hedgerow with >80% canopy cover of UK native or archaeophyte woody species. Includes: - Archaeophytes are species that have been recorded as naturalised in the wild before 1500CE. - Sycamore *Acer* should be included as an archaeophyte. Excludes: - Climbers such as Honeysuckle *Lomicera periclymenum* and Bramble *Rubus fruticosus agg.* Are recognised as integral to many hedgerows however they require other woody plants to be present to form a distinct woody boundary feature, and as such are not include in the definition of woody species.
f2f 55 – Other Wetlands and g3c 55 Other Neutral Grassland Floodplain Wetland Mosaic	Naturally functioning mosaics of wetland habitats with natural or near natural hydrological function and-or good water quality. Areas of floodplain that are either: - Naturally functioning floodplains will not be drained or contain water control structures and will not have artificial barriers between the water body and the floodplain. The water quality will be good with no evidence of nutrient enrichment. Naturally functioning wetlands will contain mosaic habitats potentially including fens, bogs, grasslands, woodlands and open water.

	Naturally functioning floodplains will; not be drained - Areas of modified floodplain but only if they provide important refuges for wetland species whose natural habitats have been lost. Modified floodplains are typically areas of periodically inundated pasture or meadow with water control measures and ditches to maintain the water levels. Site may contain standing brackish or fresh water including permanent and-or seasonal ponds with some emergent swamp communities. Comprising: Wetlands including swamps other than reedbeds. Excludes: - Lowland fens which are wetlands that receive water and nutrients from the soil, rock and groundwater, as well as from rainfall. - Purple moor-grass and rush pastures where the vegetation has a distinct character and consists of various species rich types of fen meadow and rush pasture. - Upland flushes fens and swamps which includes a number of wetland communities in the uplands, from swamp vegetation at the margins of lochs or the waters of sluggish streams, through tall fens with mixtures of herbs and rushes, to sedge-dominated mire and bryophyte springs. - f2d – Aquatic Marginal Vegetation - Reedbeds which are wetland that are dominated by >5m wide stands on the Common Reed *Rhragmitis australis and where the* water table is at or above the ground level for most of the year. - Parcels dominated by Common reed *Phragmites australis* where no part is inundated for most of the year. Neutral grassland that meets at least three of these four criteria: 1. >20% cover of broadleaved herbs and sedges

	2. >8 species per m^2 (including forbs, grasses, sedges and rushes and excluding bryophytes) 3. ≥1 grass species that is not generally sown for intensive agricultural production (ie. Rye-grasses *Lolium spp.* Timothy *Phleum pratense,* Cock's-foot *Dactylis glomerata,* Meadow fescue *Festuca pratensis)* is at east abundant. 4. Cover of Rue-grasses *Lolium spp.* And White Clover *Trifoliumrepens,* where present, is <30%.
r1g 41 – Other Standing Water Pond r1g 50 – Other Standing Water Ditch r1g 45 – Other Standing Water reservoir	Standing water that is not: - Eutrophic standing waters which are water bodies ≥ 2 ha that are highly productive because plant nutrients are plentiful, either naturally or as a result of artificial enrichment. They are characterised by algal blooms and dark anaerobic mud and are rich in organic matter. - Mesotrophic lakes in the middle of the trophic range characterised by having a narrow range of nutrients, the main indicative ones being inorganic nitrogen (N) and total phosphorus (P). - Oligotrophic and dystrophic lakes which are water bodies that are mainly > 2 ha in size and characterised by their low nutrient levels and low productivity. - Aquifer-fed naturally fluctuating water bodies which are natural water bodies that have an intrinsic regime of extreme fluctuation in water level with periods of complete or almost-complete drying out as part of the natural cycle. They have no inflow or outflow streams at the surface, except at times of very high water level, when temporary out-flows may develop. Instead, they are directly connected to the underlying groundwater system and periodically empty and are recharged via swallow holes or smaller openings in their beds. - Canals which are an artificial watercourse for inland navigation or irrigation. - Temporary water bodies which contain water normally for <6 months each year. Includes: - Lakes (except for those specified above) - Most ponds - Drainage ditches that a likely to retain water for >4 months a year in fenland or levels.

f2d – Aquatic Marginal Vegetation	Vegetation fringing open water that is often developed as a narrow (<0.5m wide or <0.2 ha in extent) part of a hydrosere between standing water and upslope vegetation. Includes inundated, vegetation filled ditches with little or no open water. Common Reed *Phragmites australis* is often dominant.
f2d 848 – Aquatic Marginal Vegetation – Sustainable Drainage Systems	Vegetation fringing open water that is often developed as a narrow (<0.5m wide or <0.2 ha in extent) part of a hydrosere between standing water and upslope vegetation. Includes inundated, vegetation filled ditches with little or no open water. Common Reed *Phragmites australis* is often dominant. Includes elements designed to manage surface water to aid in reducing flooding and increasing water quality.
r2b – Other Rivers and Streams	Rivers and streams that are not: - Riverine water bodies of high hydromorphological or ecological status. - Headwaters (a watercourse within 2.5km of its furthest source as marked with a blue line on OS maps at a scale of 1:50,000). - Chalk rivers. - Active shingle rivers. - A/SSSIs (Areas/Sites of Special Scientific Interest) designated for river species, riverine features or fluvial geomorphology. - Contains species including: (i) Habitats Directive Annex 2 species (ii) Biodiversity Action Plan Priority species. (iii) Invertebrate species that are strongly indicative of ruiver shingle.

Appendix 2: Condition Sheets

SHEET 1: WET WOODLAND, BROADLEAF WOODLAND and WOODLAND BUFFER

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

Condition Assessment Criteria

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	**Age distribution of trees**	Three age-classes[1] present.	Two age-classes[1] present.	One age-class[1] present.		
B	**Wild, domestic and feral herbivore damage**	No significant browsing damage evident in woodland[2].	Evidence of significant browsing pressure is present in less than 40% of whole woodland[2].	Evidence of significant browsing pressure is present in 40% or more of whole woodland[2].		
C	**Invasive plant species**	No invasive species[3] present in woodland.	Rhododendron *Rhododendron ponticum* or cherry laurel *Prunus laurocerasus* not present, and other invasive species[3] <10% cover.	Rhododendron or cherry laurel present, or other invasive species[3] ≥10% cover.		
D	**Number of native tree species**	Five or more native tree or shrub species[4] found across woodland parcel.	Three to four native tree or shrub species[4] found across woodland parcel.	Two or less native tree or shrub species[4] across woodland parcel.		
E	**Cover of native tree and shrub species**	>80% of canopy trees and >80% of understory shrubs are native[5].	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native[5].	<50% of canopy trees and <50% of understory shrubs are native[5].		
F	**Open space within woodland**	10 - 20% of woodland has areas of temporary open space[6]. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted[7].	21 - 40% of woodland has areas of temporary open space[6].	<10% or >40% of woodland has areas of temporary open space[6]. But if woodland <10ha has <10% temporary open space, please see Good category[7].		
G	**Woodland regeneration**	All three classes present in woodland[8]; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland[8].	No classes or coppice regrowth present in woodland[8].		
H	**Tree health**	Tree mortality 10% or less, no pests or diseases and no crown dieback[9].	11% to 25% tree mortality and or crown dieback or low-risk pest or disease present[9].	Greater than 25% tree mortality and or any high-risk pest or disease present[9].		
I	**Vegetation and ground flora**	Recognisable NVC plant community[10] at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community[10] at ground layer present.	No recognisable woodland NVC plant community[10] at ground layer present.		
J	**Woodland vertical structure**	Three or more storeys across all survey plots, or a complex woodland[11].	Two storeys across all survey plots[11].	One or less storey across all survey plots[11].		
K	**Veteran trees**	Two or more veteran trees[12] per hectare.	One veteran tree[12] per hectare.	No veteran trees[12] present in woodland.		
L	**Amount of deadwood**	50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities[13].	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].		
M	**Woodland disturbance**	No nutrient enrichment or damaged ground evident[14].	Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground[14].	1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground[14].		
				Total Score (out of a possible 39)		

Condition Assessment Result	Condition Assessment Score	Result Achieved

Total score >32 (33 to 39)	Good (3)	
Total score 26 to 32	Moderate (2)	
Total score <26 (13 to 25)	Poor (1)	

Suggested enhancement interventions to improve condition score

Footnotes

Footnotes below refer to the EWBG woodland condition assessment details: EWBG (No date). *Assessing your Woodland's Condition* [online]. Available from:

Woodland Wildlife Toolkit (sylva.org.uk)

The woodland condition assessment survey methodology is outlined in the EWBG toolkit. However the criteria on this sheet are those specific to the Statutory Biodiversity Metric and must be used when assessing woodland condition.

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch *Betula* sp., cherry *Prunus* sp. or *Sorbus* sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or *Sorbus* species; 0 - 20 years = Young; 21 - 60 years =Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.

Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage *Lysichiton americanus* ; Himalayan balsam *Impatiens glandulifera* ; Japanese knotweed *Reynoutria japonica* ; cherry laurel *Prunus laurocerasus* ; shallon *Gaultheria shallon* ; snowberry *Symphoricarpos albus* ; variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum* ; rhododendron *Rhododendron ponticum* ; and tree-of-heaven *Alianthus altissima* .

Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.

Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this.

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)

and:

Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

EWBG INDICATOR 12 is the relevant indicator.

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

SHEET 2: NEUTRAL GRASSLAND AND MEADOW

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). [1] **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**		
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens [2].		
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.		
E	Combined cover of species indicative of suboptimal condition [3] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species [4] (as listed on Schedule 9 of WCA [5]) are present, this criterion is automatically failed.		
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**		
	Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		
	Number of criteria passed		

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Acid grassland types (Result out of 5 criteria)		
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	
Non-acid grassland types (Result out of 6 criteria)		
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)	
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)	

Suggested enhancement interventions to improve condition score

Notes

Footnote 1 - Professional judgement should be used alongside the UKHab description.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 3 - Species indicative of suboptimal condition for this habitat type include: creeping thistle *Cirsium arvense* , spear thistle *Cirsium vulgare* , curled dock *Rumex crispus* , broad-leaved dock *Rumex obtusifolius* , common nettle *Urtica dioica* , creeping buttercup *Ranunculus repens* , greater plantain *Plantago major* , white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris* . There may be additional relevant species local to the region and or site.

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.

Footnote 5 – Wildlife and Countryside Act 1981 (as amended).

SHEET 3: MIXED NATIVE HEDGEROW

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	**Criterion passed (Yes or No)**	**Notes (such as justification)**
Core groups - applicable to all hedgerow types					
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).		
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).		
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).		
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).		
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.		
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.		
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA [3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website [4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora' [6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website [7].		
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).		
Additional group - applicable to hedgerows with trees only					
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient [8]), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.		
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.		

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the Statutory Biodiversity Metric. The scores for each are set out in the tables below.

Condition categories for hedgerows without trees

Category	Category Requirements	Metric Score
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 4 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
	Score achieved:	

Condition categories for hedgerows with trees

Category	Category Requirements	Metric score
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
	Score achieved:	

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook. A standard procedure for local surveys in the UK.* [online] Available on:
layout (hedgelink.org.uk)
Footnote 2 – STALEY, J.T. ET AL. (2020) *Definition of Favourable Conservation Status for Hedgerows.* [online] Available on:
Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)
Footnote 3 – Wildlife and Countryside Act 1981 (as amended).
Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain.* Species Status 7: 1-116. [online] Available on:
The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub
Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?* [online] Available on:
Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)
Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora.* [online] Available on:
Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk)
Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on:
Home » NNSS (nonnativespecies.org)
Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

SHEET 4: SEASONALLY WET GRASSLAND

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for **all wetland habitat types**:			
A	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. **Note - this criterion is essential for achieving Good condition.**		
B	The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present. [1]		
C	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.		
D	Cover of scrub and scattered trees are less than 10%.		
E	Cover of bare ground is less than 5%.		
F	There is an absence of invasive non-native plant species [2] (as listed on Schedule 9 of WCA [3]) and species indicative of suboptimal condition [4] make up less than 5% of ground cover.		
Additional Criterion - must be assessed for **Fen and Purple moor grass and rush pasture** habitats only:			
G	No more than 25% of the habitat area has a continuous cover of litter (such as dead vegetation) preventing regeneration.		
Additional Criterion - must be assessed for **Bog** habitats only:			
H	Sphagnum moss *Sphagnum* spp. and cottongrasses *Eriophorum* spp. are at least Frequent [5]. Cover of ericaceous dwarf shrubs [6] is less than 75%.		
Additional Criterion - must be assessed for **Reedbed** habitats only:			
I	The reedbed has a diverse structure with between 60% and 80% reeds *Phragmites australis*. Other areas may include open water (at least 10%), species-rich fen [7] and or wet woodland.		
Additional Criterion - must be assessed for **Floodplain wetland mosaic and CFGM** only:			
J	All ditches recorded within the habitat achieve Good condition as assessed using the Ditch condition sheet.		
	Essential criterion achieved (required for Good condition) Yes or No:		
	Number of criteria passed		

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Results for habitats requiring assessment of 6 criteria (Depression on peat substrates (H7150) and Oceanic valley mire [1] (D2.1)):		
• Passes 5 or 6 core criteria, including criterion A.	Good (3)	
• Passes 3 or 4 core criteria; OR • Passes 5 core criteria but fails criterion A.	Moderate (2)	
• Passes 2 or fewer core criteria.	Poor (1)	
Results for habitats requiring assessment of 7 criteria - core criteria and additional criterion specified for habitat type - all habitat types except Depression on peat substrates (H7150) and Oceanic valley mire [1] (D2.1):		
• Passes 5 or 6 core criteria including criterion A; AND • Passes additional criterion G, H, I or J (choose the one specified for the habitat type).	Good (3)	
• Passes 4 or 5 of 7 criteria; OR • Passes 6 of 7 criteria but fails criterion A or additional criterion G, H, I or J (choose the one specified for the habitat type).	Moderate (2)	
• Passes 3 or fewer criteria.	Poor (1)	

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – Professional judgement should be used alongside the UKHab description.

Footnote 2 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 3 – Wildlife and Countryside Act 1981 (as amended).

Footnote 4 – Species indicative of suboptimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, common nettle *Urtica dioica*, docks *Rumex* spp., and common ragwort *Jacobaea vulgaris*. There may be additional relevant species local to the region and or site.

Footnote 5 – According to the relative abundance DAFOR scale – Dominant, Abundant, Frequent, Occasional or Rare.

Footnote 6 – Ericaceous dwarf shrubs include: crowberry *Empetrum nigrum*, cowberry *Vaccinium vitis-idaea*, bilberry *Vaccinium myrtillus*, cranberry *Vaccinium oxycoccos*, heather *Calluna vulgaris*, cross-leaved heath *Erica tetralix*, and bell heather *Erica cinerea*. There may be additional relevant species local to the region and or site.

Footnote 7 – For fens, specify what fen type is present using base-status and trophic status - alkaline, neutral, or acidic; eutrophic, mesotrophic or oligotrophic.

SHEET 5: PONDS AND STANDING WATER and AQUATIC MARGINALS

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - applicable to all ponds (woodland [1] and non-woodland):			
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.		
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.		
C	Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.		
D	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.		
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams[2], pumps or pipework.		
F	There is an absence of listed non-native plant and animal species [3].		
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.		
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed) [4] cover at least 50% of the pond area which is less than 3 m deep.		
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.		
	Number of criteria passed		

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Results for woodland ponds which require assessment of 7 core criteria		
Passes 7 criteria	Good (3)	
Passes 5 or 6 criteria	Moderate (2)	
Passes 4 or fewer criteria	Poor (1)	
Results for non-woodland ponds which require assessment of 9 criteria		
Passes 9 criteria	Good (3)	
Passes 6 to 8 criteria	Moderate (2)	
Passes 5 or fewer criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 – This excludes natural dams such as those created by Eurasian beaver *Castor fiber*.

Footnote 3 - Any species included on the Water Framework Directive (WFD) UKTAG GB High Impact Species List should be absent: WFD UKTAG (2021) *Classification of aquatic alien species according to their level of impact*[online]. Available from: UKTAG classification of alien species working paper v8.pdf (wfduk.org)

• Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.

Footnote 4 - If the pond is seasonal (as in, it dries out in most summers) then emergent species alone are likely to be found.

SHEET 6: DITCHES

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.		
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.		
C	There is less than 10% cover of filamentous algae and or duckweed *Lemna* spp. (these are signs of eutrophication).		
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.		
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.		
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.		
G	Less than 10% of the ditch is heavily shaded.		
H	There is an absence of non-native plant and animal species [1].		
	Number of criteria passed		

Condition Assessment Result (out of 8 criteria)	Condition Assessment Score	Score Achieved ×/✓
Passes 8 criteria	Good (3)	
Passes 6 or 7 criteria	Moderate (2)	
Passes 5 or fewer criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – This includes any species listed on the Water Framework Directive UKTAG GB High Impact Species List: Water Framework Directive (WFD) UKTAG (2021) *Classification of aquatic alien species according to their level of impact* [online]. Available from: UKTAG classification of alien species working paper v8.pdf (wfduk.org)

• Frequently occurring non-native plant species include water fern *Azolla filiculoides* , Australian swamp stonecrop *Crassula helmsii* , parrot's feather *Myriophyllum aquaticum* , floating pennywort *Hydrocotyle ranunculoides* , Japanese knotweed *Reynoutria japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank).

• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus* , zebra mussel *Dreissena polymorpha* , killer shrimp *Dikerogammarus villosus* , demon shrimp *Dikerogammarus haemobaphes* , and carp *Cyprinus carpio* .

SHEET 7: RESERVOIR

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

Average 'Habitat Naturalness Assessment' Class	Condition Assessment Score	Score Achieved
1 Natural	Good (3)	
2	Fairly good (2.5)	
3	Moderate (2)	
4	Fairly poor (1.5)	
5 Least natural	Poor (1)	

Suggested enhancement interventions to improve condition score			

SHEET 8: SWALES

(Sheet to be completed for each habitat type and parcel)

Habitat Type	
Grid Reference/Parcel Reference	
Survey Date and Surveyor Name	

Core Criteria - must be assessed for **all urban habitat types**:												
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.											
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.											
C	Invasive non-native plant species (listed on Schedule 9 of WCA [1]) and others which are to the detriment of native wildlife (using professional judgement) [2] cover less than 5% of the total vegetated area [3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**											
Additional Criterion - must be assessed for **Open mosaic habitat on previously developed land** only:												
D	The parcel shows spatial variation and forms a mosaic of bare substrate PLUS: - At least four early successional communities (a) to (i); Communities: (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.											
Additional Criteria - must be assessed for **Bioswale and SuDS** habitat types only:												
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife [4].											
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.											
Additional Criterion - must be assessed for **Intensive green roofs** only:												
F	The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).											
Additional Criterion - must be assessed for **Biodiverse green roofs** only:												
G	The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. **Note – to achieve Good condition, some additional habitat, such as sand piles, stones, logs etc. are present.**											
	Essential criteria relevant for habitat type achieved (Yes or No)											
	Number of criteria passed											

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓									
Results for habitats requiring assessment of **3 core criteria** only **(all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs)** :											
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)										
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)										
• Passes 0 or 1 of 3 core criteria.	Poor (1)										
Results for **Green roofs** and **Open mosaic habitat on previously developed land** (requiring assessment of **4 criteria** only - core criteria plus additional criterion specified for habitat type):											
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes additional criterion relevant to specific habitat type (D, F or G).	Good (3)										
• Passes 2 or 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)										
• Passes 0 or 1 of 4 criteria.	Poor (1)										
Results for **Bioswale or SuDS** (requiring assessment of **5 criteria** - core criteria plus additional criteria specified for habitat type):											
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group F)	Good (3)										
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)										
• Passes 2 or fewer of 5 criteria.	Poor (1)										

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – Wildlife and Countryside Act 1981 (as amended).

Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNSS) website:

Home » NNSS (nonnativespecies.org)

and Natural England Access to Evidence page should also be checked for up-to-date information:

Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk)

For criterion C – For green roof habitat types only – buddleia *Buddleja davidii* should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNSS website:

Alternative plants » NNSS (nonnativespecies.org)

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East Havering Data Centre Campus
Local Development Order











DRAFT HEADS OF TERMS FOR A S106 AGREEMENT RELATING TO THE PROPOSED LDO

March 2026

Havering
LONDON BOROUGH

Draft Heads of Terms for Section 106 Obligation

East Havering Data Centre Campus- Local Development Order

London Borough of Havering / Developer

February 2026

Ecology Park

- Ecology Park defined as all areas outside the Build Zones
- Management and operation of the ecology park in accordance with management and maintenance plan and compliance with Public London Charter
- Public access to be granted in perpetuity (save for maintenance and to avoid presumed dedication)
- Provision of a shared footway / cycle route throughout the site should be delivered and maintained in accordance with the approved plans (save for maintenance and to avoid presumed dedication).
- The shared footway/ cycle route within the site should be suitable for use by mobility buggies and wheelchairs, in terms of its surfacing, width, and gradients.
- Agreement of a maintenance and management plan for the footpath/cycle route from Ockendon Road to main site entrance
- Permissive dedicated walk/cycle route through the proposed ecology park connecting Ockendon Road to the main site entrance to be accessible 24/7 (save for maintenance and to avoid presumed dedication)

Green Belt Mitigation/Compensation Contribution

- Payment of £6.924m (payments phased relevant to completion of floorspace) for the enhancement of the following Green Belt sites to increase/establish/improve their beneficial use for access provision; for outdoor sport and recreation; to enhance landscapes, visual amenity and biodiversity; and to improve damaged/derelict land

No	Site	Asset ID	Land (L) or Land With Buildings (LWB)	Anticipated Improvements	Cost in the Region Of (cross subsidy from sites may be permitted/ required)
1	ABBEY WOOD LANE PUBLIC OPEN SPACE	P01060	L	Biodiversity improvements to pond Interpretation/entrance signage	£75k £10k
2	ASH LANE, adj 124	P00715	L	Boundary repair/improvements	£15k

				PROW improvements to Ash Lane 83	
3	ASH LANE	P00890	L	see above	
4	BEDFORDS PARK	P00380	L	Conservation grassland fence repairs Five years of conservation grazing Site wide pond improvements Deer pen improvements Walled Garden building replacement	£40k £7k £100k £25k £230k
5	BRETONS OUTDOOR RECREATION	P00468	LWB	Sports pitch improvements River/lake bank improvements BMX track	£25k £150k £75k
6	CHASE NATURE RESERVE	P00243	L	Improvements to bridleway 180	£10k
7	CRANHAM (BRICKFIELDS) PLAYING FIELDS	P01074	L	Improvements to PROW 193 Hedgerow planting Car park improvements Entrance/ interpretation signage Improvement to pond	£50k £3k £75k £10k £50k
8	CROSS ROAD FLOOD LAGOON	P00954	L	Access improvements to PROW 63 Stream and riverbank improvements Signage	£10k £50k £2k
9	DAGENHAM ROAD CEMETERY	P00302	LWB	Muslim section pathway and planting improvements Front entrance planting scheme Crow Lane boundary footway improvements Create tree copse to enhance biodiversity	£30k £2k £20k £4k
10	DAGNAM PARK	P00862	L	Installation of a cyclical walk around field 1 Site wide pond restoration One year of deer cull (contractor led) *subject to agreement Resurface and drainage of main pathway (Sustrans cycle route)	£200k £150k £60k £30k

11	DUCK WOOD	P01484	L	Tree management Pond improvements Boundary fencing improvements	£50k £120k £30k
12	ELLIOT PLAYGROUND & SPORTS GROUND	P00864	L	Tree management, maintenance and planting Seating New play area and path access	£20k £5k £200k
13	FREDERICK ROAD PLAYING FIELDS & SPORTS GROUND (Mardyke OPEN SPACE)	P01081	L	MUGA Improvements Entrance improvements All weather pathway	£50k £50k £200k
14	GIDEA PARK PLAYING FIELDS & SPORTS GROUND	P00001	L	Tree management. Planting at main entrance	£50k £2k
15	GRENFELL PARK	P01067	L	Improvements to pathways and access Seating Entrance sign/interpretation	£100k £20k £20k
16	HACTON PARKWAY PUBLIC OPEN SPACE	P01068	L	Play area improvements Entrance sign/interpretation Trim trail	£150k £30k £75k
17	HAROLD WOOD PARK	P01077	L	Wetland Creation Oak processionary moth treatment/hotels Stream bank improvements Pathway improvements	£200k £25k £25k £100k
18	HAVERING COUNTRY PARK	P00384	L	Woodland management Conservation grassland Fencing improvements Five years conservation grazing Pond and drainage ditch improvements	£100k £50k £50k £6k £50k
19	HAVERING PLAYING FIELDS	P00792	L	Pathway improvements	£75k
20	HAVERING VILLAGE GREEN	P01034	L	Pathway improvements Boundary replacement	£100k £50k
21	HORNCHURCH COUNTRY PARK	P00385	L	Parking along entrance track Reopening of historic air raid shelter for visitor use Exercise trail improvements	£50k £200k £75k

				SSSI marsh drainage and vegetation works	£300k
22	JUBILEE CLOSE PLAYING FIELDS & SPORTS GROUND (GAYS FIELD)	P01071	L	Tree planting Biodiversity enhancements Improvements to public access	£25k
23	KEATS AVENUE PLAYSITE	P01468	L	MUGA and hard surface improvements Play improvements Access improvements including scrub and tree management	£300k £100k £75k
24	LAND ADJACENT AVELON PLACE	P01479	L	Tree planting Biodiversity enhancements Improvements to public access	£25k
25	LILLIPUTS PLAY SPACE	P01528	L	Improvements to public access (car park and gate) Seating	£40k £5k
26	LOWER BEDFORDS RD PLOT 4	P00285	L	Tree maintenance/planting Improvements to paths/routes Biodiversity improvements	£30k
27	LOWER MARDYKE AVENUE – LAND	P01055	L	Biodiversity improvements Improved access	£10k
28	NORTH HILL DRIVE RECREATION GROUND	P01080	L	Play area improvements MUGA improvements Pathway improvements Fencing improvements	£100k £100k £90k £70k
29	PARKLANDS PUBLIC OPEN .SPACE	P00863	L	Improvements to PROW 221 Footbridge and access improvements Woodland maintenance and improvements Improvements to historic bridge New entrance signage Improvements to lake and bank	£30k £100k £50k £50k £12k £75k
30	RISE PARK	P01061	L	Wetland installation Pathway improvements Drainage to dog training area Stream improvements	£500k £100k £50k £60k

31	RISEBRIDGE CHASE – GRAZING	P00721	L	River environment enhancement	£45k
32	RUSH GREEN GARDENS	P01527	L	Improvements to PROW 153 Public access enhancements	£10k £30k
33	SCOTT & ALBYNS FARM PUBLIC OPEN SPACE – Part of Hornchurch Country Park	P00377	LWB	Included in Hornchurch Country Park enhancements	
34	SPRING FARM PARK	P00382	L	Tennis court improvements Perimeter improvements Play area improvements All weather path works Football changing rooms improvements Cricket facilities drainage improvements	£30k £30k £100k £60k £50k £50k
35	SUTTONS PARKWAY PUBLIC OPEN SPACE	P01078	L	Improvements to PROW 215, 216 & London Loop Biodiversity improvements (HWP project)	£50k £200k
36	UPMINSTER CREMATORIUM & CEMETARY	P00911	LWB	Pump house and taps installation to support plant growth Bird boxes, bird viewing areas and visitor boards Troughs and path improvements Boundary improvements to provide stability for hedgerows Wild meadow planting	£10k £6k £10k £8k £2k
37	UPPER RAINHAM ROAD - LAND	P01052	L	Improvements to PROW 203 Boundary treatment improvements Tree maintenance	£15k
38	WHITE HART LANE NATURE RESERVE	P01038	L	River enhancements	£35k
40	WINGLETYE LANE (Opp 255 - 261)	P00720	L	Boundary repair/improvements Improvements to PROW 142	£20k £30k

- Contribution to Green Belt parks tree strategy - £TBC
- Monitoring and implementation contribution for the green belt enhancement works - £40k per annum for duration of LDO

Landscape and Ecological Management and Monitoring Plan

- Implementation of LEMMP in accordance with details and timescales therein
- Monitoring and reporting in accordance with LEMMP
- Any changes/updates to LEMMP to be submitted to and agreed in writing by LPA, together with payment to cover reasonable costs of landscape/ecology consultant to review

Skylark Mitigation

- Prior to commencement to submit to the LPA for approval a Habitat Creation, Management and Monitoring Plan for the provision of skylark habitat ("the Mitigation Habitat"), as shown on Plan [SPECIFY PLAN], or such alternative suitable location as set out in the Plan (such location to be subject to an additional deed binding that land if necessary).
- Prior to commencement of works affecting [SPECIFY AREA], the Mitigation Habitat shall be provided and thereafter monitored and managed in accordance with the approved Plan.
- To maintain and manage the Mitigation Habitat in perpetuity.

Visitors Centre

- Design Competition, with approval of team to ensure team has necessary expertise
- Availability and use of Visitor Centre by LBH and schools located within LBH at no charge for hire.
- Delivery thereof, no later than prior to first opening of Ecology Park to the public
- Requirement for visitor centre to remain available in perpetuity for public use in connection with the Ecology Park
- Visitor Centre – no cost use by local schools. Use by local community groups and other hirers in accordance with submitted and approved community use strategy
- Visitor Centre opening hours – minimum 10:00-16:00, five days per week (including one day at the weekend)

District Heating Network, Waste Heat and Horticultural Facility

- Developer to build, own, operate and maintain the horticultural building, the energy centre, including heat pumps, pumps and balance of plant and the connection between each, as well as the district heating network within the site and each build zone. Developer to build, own, operate and maintain for the duration of the supply contract, the thermal offtake sub-station within the horticulture building. Heat must be supplied to the horticulture building at 54°C unless it can be demonstrated by Developer and approved by the Local Planning Authority in writing that a more optimised temperature for the

horticulture facility can be provided. A minimum of 40,000 MWh/year at 54°C heat (or at a temperature agreed in accordance with the above) will be supplied to the horticulture development in perpetuity at a supply contract price of 0.00p/kWh with zero standing charges and zero connection charges.

- Prior to first occupation of data centre buildings - Contribution of £100k for feasibility study (and annual updates) into the use of excess heat off-site including costings of providing connections, heat boosting/energy centres/pumps and piped connections off site.
- To deliver the maximum amount of fully recovered waste heat (or such lesser amount which should be fully justified by the developer and agreed in writing by the LPA) from each data centre building to the energy centre or connection point(s) on boundary with public highway. To deliver heat from the energy centre (at pressure, temperature and flow rates to be reasonably agreed – in particular to provide within the energy centre sufficient equipment to provide heat at high grade unless otherwise agreed) to the boundary of the site for connection to future heat network.
- To use best endeavours to regularly seek end-users for the heat from the data centre for district heating/premises heating. Reporting frequency annually from commencement.
- Until whichever is the sooner of 100% of the waste heat being reused or 30 years from the date of this LDO, - Developer to hold bi-annual workshops with building developers, DHN developers/operators, LBH, neighbouring LAs to promote the EHDC waste heat opportunity.
- In the event of any future district energy network/premises heating becoming available, the developer to use all reasonable endeavours to agree terms to provide said connection between Data Centre Campus and the decentralised energy network. The terms must ensure that the heat is provided to the network at no cost to the heat network operator(s).

Carbon Offset

- Financial contribution in accordance with the agreed per building energy statement submitted in compliance with LDO towards carbon offset schemes to be paid to LB Havering
- Financial contribution of £80k towards monitoring and allocation costs associated with carbon offset schemes, payable with submission of first

Be Seen Energy Monitoring

- Before each building is occupied, submit verified as-built energy performance estimates for all reportable units via the GLA ‘Be Seen’ webform and confirm that appropriate monitoring devices are installed and maintained in line with the GLA guidance.
- Starting from the first year of occupation or the end of the defects liability period (whichever is later), submit verified annual in-use energy performance data for all reportable units via the GLA ‘Be Seen’ webform for at least four years, in accordance with the GLA guidance.
- If performance estimates not met, to investigate and identify the causes of underperformance and the potential mitigation measures and set these out in the relevant comment box of the ‘Be Seen’ in-use stage reporting webform as

well as adoption and implementation of an action plan comprising mitigation measures identified.

Highways Matters, including Travel Planning

S278

- Acknowledgement that developer will enter into S278 agreement in respect of the highway works required by the LDO

Active Travel Contribution

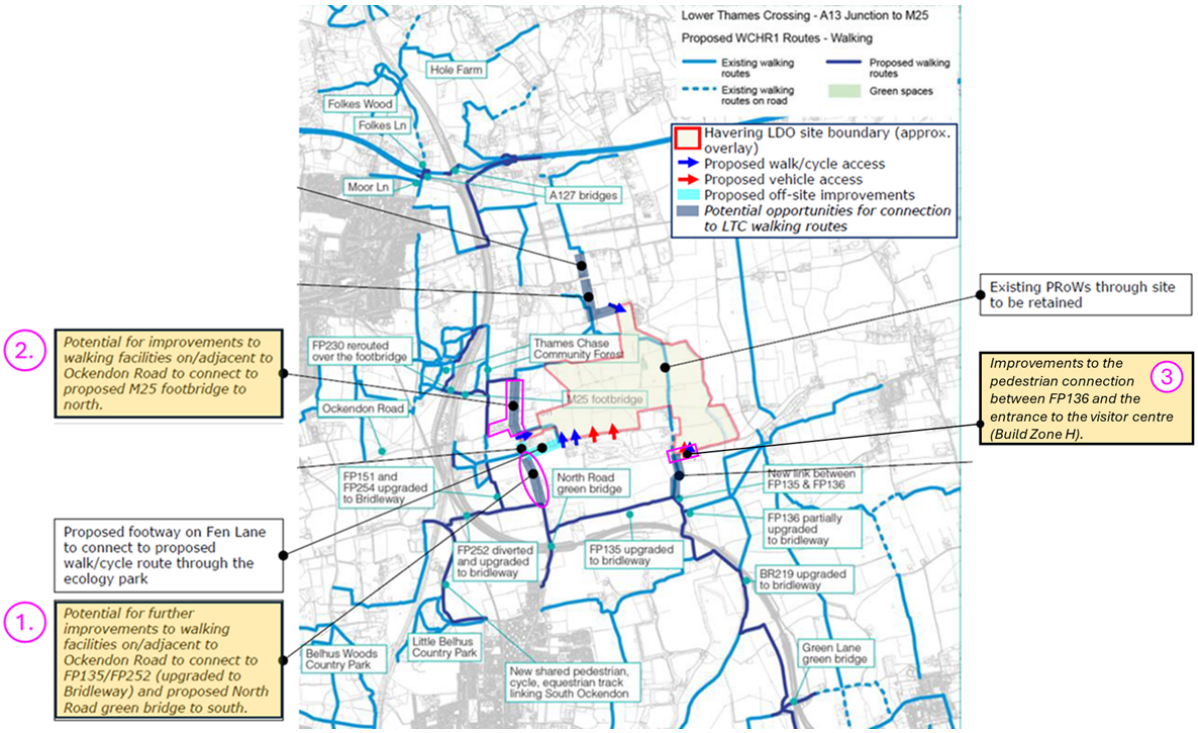
- Prior to first occupation of the development, active transport contribution towards off-site improvements of £1.2m (including pedestrian and cycle paths, pedestrian crossings and landscaping where appropriate).:

  1) B186 Ockendon Road – South of Fen Lane: Active travel improvements in the form of a footway to connect to FP135/FP252. (£565,000)

  2) B186 Ockendon Road & Clay Tye Road – North of Fen Lane: Active travel improvements to improve the condition of footways on Ockendon Road & Clay Tye Road to the north of the new site entrance/ chicane with potential connection to FP230 and proposed M25 footbridge to the north. (£235,000)

  3) Improvements to the pedestrian connection between FP136 and the entrance to the visitor centre (Build Zone H) (£400,000)

  The location of items 1, 2 and 3 are illustrated in pink on the plan below.



Highways Contribution (Prior to Occupation)

- Traffic calming contributions for Ockendon Road of £300,000, for schemes including:
    - Extending 30mph limits south of Fen Lane.
    - Camera enforcement of chicanes.
    - Reducing speed limits on Clay Tye Road.
    - Vehicle Activated Sign (VAS) - Installation of a VAS to provide advance warning of a junction ahead or reinforce the posted speed limit.
    - Contribution to include maintenance of VAS for life of the LDO.
    - Speed Limit Repeater Signs - Installation of additional 30 mph repeater signs along North Ockendon to improve driver awareness of the speed limit.
    - Enhanced Village Gateway Signage - Installation of upgraded “Welcome to North Ockendon” gateway signs incorporating 30 mph speed limit signs. This includes replacing the northern gateway signage (currently without speed limit signs) and introducing new gateway signage to the south on Ockendon Road.
    - Speed Cushions introduced between the northern and southern chicanes, designed in accordance with LTN 1/07 principles to accommodate wide-tracked vehicles such as buses and emergency vehicles.
    - Carriageway Markings – introduction of solid double white “no overtaking” lines on B186 Ockendon Road near the Fen Lane junction, improving safety and sightline compliance with MfS paragraph 7.7.5.
- Traffic calming contributions for Fen Lane of £50,000. Measures are to support lowering vehicles speeds in the vicinity of informal crossings:
    - Vehicle Activated Sign (VAS) - Installation of a VAS to provide advance warning of a junction ahead or reinforce the posted speed limit.
    - Contribution to include maintenance of VAS for life of the LDO.
    - Upgraded gateway signage and carriageway markings.

Public Transport Contribution (Payable prior to first occupation)

- Financial contribution of £X (TfL figure required) towards public transport infrastructure (platform improvements at Upminster/other public transport improvements) required by TfL

Accessible Transport Provision

- Provision of accessible transportation (DDA compliant) between the bus stop on Ockendon Road and main entrance of the data centre campus and the horticultural facility, subject to details submitted before the operation of each data centre/horticultural facility.

LBH Highways and Sustainable Transport Officer Resource

- Prior to commencement, funding of £35,000 per year for the life of the LDO (up to 20 years) for LBH officer resource. This will be split between highways delivery and sustainable travel elements, including involvement in the travel plan steering group. Funding will be payable prior to commencement of construction in Year 1, and then annually on the same date thereafter.

Travel Plan

- Establish Travel Plan Steering Group (to include representative from LBH Highways), prior to commencement of construction.
- Submission and agreement of Construction Phase Travel Plan prior to commencement of construction activities.
- Submission and agreement of Operational Phase Travel Plan prior to commencement of construction activities for the first build zone. The Operational Phase Travel Plan to be based on and following the principles set out in the Travel Plan appended to the S106. Revisions to the Travel Plan can be made, subject to the prior written approval of the LPA.
- The developer to ensure that the travel plan is implemented, monitored and reported on in accordance with the requirements set out within the agreed Travel Plan, including setting up governance structure and steering group.

Shuttle Bus and Coach Services

- Delivery of a shuttle bus at shift change over times (frequency and timing of service, defined route, for employees only, size of bus, in perpetuity, without charge for users) from first day of data centre operation, in accordance with the Travel Plan. Any changes to the service level to be agreed through the Travel Plan Steering Group and with the prior written approval of the LPA.
- Coach transport for workers at horticultural facility between (to/from) the site and worker accommodation location.
- Coach transport for construction workers between (to/from) the site and Upminster Station/Ockendon Station.
- Drop off/Pick up points to be delivered prior to commencement

Travel Plan Levy

- The travel Plan Levy (to be held by the Travel Plan Steering Group) will comprise of the following:

1. A bond of £20,000 + £0.10 per sq m of occupied data centre floorspace will be required upon first occupation and thereafter every five years to be used by the Travel Plan Steering Group, subject to approval from the Council to remedy any failure to comply with the terms of the approved travel plan(s). The Travel Plan bond will be payable until such time as targets have been achieved for 5 consecutive years following full occupation.

2. Payment of a Travel Plan Monitoring Fee of £20,000, for the first two years, for the purposes of monitoring the operation and effectiveness of the travel plan(s), and then £15,000 for the remainder of the LDO (separate from Sustainable Transport Officer Resource above). The first travel plan monitoring fee will be payable prior to commencement of construction in Year 1, and then annually on the same date thereafter. Monitoring contributions will continue until such time as targets have been achieved for 5 consecutive years following full occupation or end of LDO, whichever is the later.

Car Parking Capacity Management Plan

On the 10th, 20th and 30th anniversary of first occupation of any data centre floorspace, to submit a Car Parking Capacity Management Plan (CPCMP) (or revised CPCMP for 20th and 30th anniversary) to the local planning authority. The CPCMP shall be accompanied with a report monitoring usage of the car parking since first occupation. Subject to the CPCMP demonstrating that the spaces are not essential for operation purposes, to include within the CPCMP a scheme for the removal of identified non-essential parking spaces, such scheme to include details of the restoration of the spaces and timescales.

Highway Maintenance

- Make good or a financial contribution towards the making good of the construction traffic routes. Extent of making good to be captured through prior highways condition survey carried out prior to commencement or site preparation works. [NOTE: S106 to confirm whether developer can make good or should be payment]
- Condition surveys should be undertaken every year of the LDO. Surveys should be undertaken in the same month each year. The results of the survey should be submitted to LBH within 4 weeks, and defects identified should be made good within 8 weeks thereafter [subject to above as to whether developer makes good or financial payment].

Traffic Management Orders

- Traffic Management Order contribution of £50k to implement/enforce no waiting/parking is vicinity of site.

Abnormal Loads

- No deliveries involving abnormal loads until a Highways Agreement is in place to enable abnormal loads to access the site.

<u>Local Procurement (construction and operation)</u>

- Developer will use best endeavours to secure 25% of contract procurement (in terms of £value) from suppliers domiciled in Havering and 50% from suppliers domiciled in Redbridge, Barking & Dagenham, Brentwood and Thurrock,

supplemented by the rest of London and Essex. By agreement, certain defined highly specialised procurement categories can be excluded from this calculation.
- Funding to support and realise the above procurement targets are met – LBH inward investment team member - £75,746 x 20yrs

Local Employment and Training

- Prior to commencement, contribution of £50k per annum for duration of the LDO for LBH employment, and jobs brokerage service (Havering Works)
- To submit an employment and skills strategy and plan which secures the following:
  Construction Phase:
    - Apprenticeship Opportunities – at least 5% of total labour force
    - Upskilling the construction workforce
    - Opportunities available to local colleges
    - School/College Engagement, including work experience – Gatsby benchmarks to be achieved
    - Local advertisement of all job opportunities
    - Minimum 20% workforce to be local (within 10 miles of site)
    - Career events, job fair opportunities including site visits
    - Archaeological skills training

  End Use Phase:
    - Establish Bursary and Grant Funding for 10 students from Havering a year in relevant technical qualifications for period of 20 years
    - Minimum 20% workforce to be local (within 10 miles of site)
    - All job opportunities to be advertised locally
    - Offer of supported employment opportunities for Havering residents
    - Care Leavers for whom the Council has or has had Corporate Parent Responsibility to be given priority consideration for all opportunities
    - Career events, job fair opportunities including site visits

Social Value

- To adopt a social value strategy that delivers the equivalent of 1% (construction) or 2% (end user) of employees time to be committed to volunteering for initiatives as part of LBH Social Value Strategy (as amended from time to time). Construction adoption – prior to commencement. End User adoption – prior to first occupation
- Annual reporting – no of employee hours per year, no of volunteer hour per year. Monitored in accordance with e.g. Social Value Portal Reporting Protocols, or equivalent as agreed.

Air Quality Neutral

- To submit to the LPA for approval an Air Quality Neutral Assessment prior to any construction within each build zone.

- Where the Air Quality Neutral assessment shows that the development does not meet one or both air quality benchmarks and cannot be totally mitigated onsite or offsite, an offsetting payment will be agreed. This is in line with the Air Quality Neutral London Planning Guidance. The offsetting calculation is assessed individually for NOx emissions, PM 2.5 emissions, Transport NOx emissions and Transport PM 2.5 emissions. The fee will be calculated using the following formula:
  Excess emissions above the benchmark (tonnes of carbon dioxide/annum) × the damage costs (£/tonne of pollutant) over a 30-year period, with a 2% annual uplift, where the relevant damage cost is derived from the Defra published damage costs for air pollution (or equivalent guidance that is subsequently published) and agreed in advance by the LPA.
- Financial obligation is expected to be paid in full prior to the occupation of the development within each applicable build zone. Any offsetting contributions are used to support the delivery of initiatives set out in the council's adopted Air Quality Action Plan.
- All mitigation measures to be implemented in accordance with the Air Quality Neutral Assessment.

Community Infrastructure Levy

Acknowledgement that developer will be liable for the Mayor of London Community Infrastructure Levy payment in accordance with the CIL Regulations

Legal Costs, Administration and Monitoring

- A financial contribution of £X to be paid by the developer to the Council to reimburse the Council's legal costs associated with the execution of the planning obligation

Indexation Clause

- All sums subject to indexation (index used to be agreed) from date of LDO

Monitoring

- Funded post for a dedicated monitoring role for duration of LDO (£75,746 per annum indexed)
- £90,000 amount for specialist monitoring (LEMP)
- Annual report from developer to be submitted:
  an annual report to enable the Council to monitor the implementation of the LDO continually and regularly to assess its effectiveness and to check and monitor compliance with the LDO and this Deed and to collect data to enable the Council to measure the achievement of the LDO in delivering national and local growth, economic and regeneration objectives, which shall set out, in respect of the 12 month period ending on the last day of the month immediately preceding the date of each report:
  a) the total number of jobs (FTE) at the Entire Development, broken down by employment type and location;
  b) statistics on number of employees/trainees/apprentices engaged/employed in accordance with the local employment and training clauses;

c) the amount of Data Centre Floorspace in Occupation;
d) the amount of Data Centre Floorspace that is completed but not in Occupation;
e) annual water usage for data centre cooling, including proportion of mains and harvested water; annual water usage for non-data centre cooling purposes (not including horticulture);
f) the achievement of BREEAM standards for any building within the entire Development;
g) the amount of heat recycled through the energy centre

Summary of Financial Contributions

Contributions	
Green Belt Compensation/Enhancement	£6.924m
District Heat Feasibility	£0.1m
Active Travel	£1.2m
Traffic Calming	£0.35m
Public Transport	tbc
TMO	£0.05m
Total (provisional)	£8.624m
Monitoring/Delivery Contributions	
Green Belt Enhancement Delivery - £40k x 20yrs	£0.8m
Carbon offset	£0.08m
Highways and Sustainable Transport - £35k x 20yrs	£0.7m
Travel Plan Monitoring £20k x 2yrs + £15k x 18 yrs	£0.310
Local Employment/Training £50k x 20yrs	£1m
LDO Monitoring £75,746 x 20yrs	£1.51492m
LEMP	£0.09m
Inward Investment Post £75,746 x 20yrs	£1.51492m
Total (provisional)	£6.00984m

East Havering Data Centre Campus
Local Development Order











TRAVEL PLAN

February 2026

Havering
LONDON BOROUGH

Intended for

Local Planning Authority of the London Borough of Havering

Document type

Travel Plan

Date

February 2026

East Havering Data Centre Campus

Travel Plan

East Havering Data Centre Campus
Travel Plan

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Contents

1.	Introduction and Context	2
1.1	Report Purpose	2
1.2	Report Structure	3
2.	Development Description	4
2.1	Description of Development	4
2.2	Walking/Cycling Access	6
2.2.1	Cycle Parking	8
2.3	Public Transport Access	8
2.3.1	Shuttle bus service to/from Upminster station	9
2.4	Vehicle Access	10
2.5	Vehicle Parking	12
2.5.1	Delivery & Servicing Access	13
3.	Travel Surveys	15
3.1	Baseline Mode Split Estimates	15
3.3	Baseline Delivery/Servicing Trip Estimates	18
3.4	Baseline Surveys	18
3.4.1	Baseline Travel Survey	18
3.4.2	Baseline Traffic Survey	19
4.	Policy Context	20
4.1.1	National Planning Policy Framework (NPPF) (December 2024)	20
4.1.2	London Plan 2021	20
4.1.3	Mayor's Transport Strategy 2018	21
4.1.4	TfL Freight and Servicing Action Plan (March 2019)	22
4.1.5	Havering Local Plan 2016-2031 (Adopted November 2021)	22
5.	Aim and Objectives	24
5.1	Aim	24
5.2	Objectives	24
6.	Targets	25
6.1	Travel Plan Targets	25
7.	Measures	27
7.1	Staff and Visitor Measures	27
7.1.1	'Hard' Measures	27
7.1.2	Soft Measures	28
7.2	Delivery & Servicing Measures	31
8.	Management	33
8.1	Travel Plan Governance	33
8.1.1	Travel Plan Steering Group	33
8.1.2	Travel Plan Coordinator	34
8.1.3	Occupier Representatives	35
9.	Monitoring	36
9.1	Traffic Monitoring	36
9.2	Travel Plan Monitoring	36
9.3	Delivery & Servicing Monitoring	38
10.	Review	38
10.1	Travel Plan Review	38

1. Introduction and Context

The East Havering Data Centre Campus Travel Plan forms part of the East Havering Data Centre Campus Local Development Order (LDO) and must be read in conjunction with it.

The Local Development Order ('LDO') permits the development of up to a maximum of 400,000 m² of gross external area including: data centre uses, indoor horticulture, campus management facilities, campus security facilities and district heating centre, a visitors centre, plus installation of electrical infrastructure and associated plant equipment to serve the development, the creation of a ecology park and highway works in Fen Lane and Ockendon Road ('the development'), on land at North Ockendon, Havering, London ('the site').

The Travel Plan sets out specific objectives, targets and measures in relation to sustainable travel for staff, visitors, and delivery/servicing vehicles, reflecting the approach set out within Transport for London's (TfL) 'What a Travel Plan Should Contain' guidance[1] ('the Travel Plan guidance') and 'Delivery and Servicing Plan Guidance: Planning for Safe, Clean, and Efficient freight in London' (December 2020)[2] ('the DSP guidance').

This Travel Plan forms part of the East Havering Data Centre Campus Local Development Order (LDO) and the obligations are legally binding under the Section 106 Agreement. The development must accord with this Travel Plan in order to benefit from the permitted development rights conferred by the LDO.

1.1 Report Purpose

The purpose of the Travel Plan is to encourage behaviour change which will lead to the use of more sustainable modes of travel to reduce overall travel to and from the site and mitigate the impacts of operational trips generated by the site. A Construction Phase Travel Plan is separately secured via legal agreement.

An effective Travel Plan has social benefits, as well as positive impacts for the site occupants, including:

- Reduced congestion;
- Reduced transport emissions (improving local air quality);
- Improved accessibility by sustainable modes of transport (including public transport and car sharing); and
- Promotion of active travel (encouraging physical activity and healthy lifestyles).

The Travel Plan applies across the full development site (all uses) and is applicable to all staff, visitors, delivery and servicing trips to and from the development including both Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs). It identifies the aims, objectives and targets of the Travel Plan and a package of measures and an outline Action Plan to achieve these. It further sets out the key responsibilities and requirements for implementing, managing and monitoring the delivery of the Travel Plan to ensure that the targets set are being met.

[1] https://content.tfl.gov.uk/what-a-travel-plan-should-contain.pdf
[2] https://content.tfl.gov.uk/delivery-and-servicing-plan-guidance.pdf

The Travel Plan will be reviewed annually. Where targets are not being achieved a Travel Plan Steering Group (see Section 8) will agree corrective actions / mitigation measures. Any corrective actions/mitigation measures recommended by the Travel Plan Steering Group will be reported to the Local Planning Authority. The Planning Authority will advise on any actions expected of the Steering Group over the next monitoring period.

1.2 Report Structure

The remainder of this Travel Plan is structured as follows:

- **Section 2** – Development Description
- **Section 3** – Travel Surveys
- **Section 4** – Policy Context
- **Section 5** – Objectives
- **Section 6** – Targets
- **Section 7** – Measures
- **Section 8** – Management
- **Section 9** – Monitoring
- **Section 10** – Review

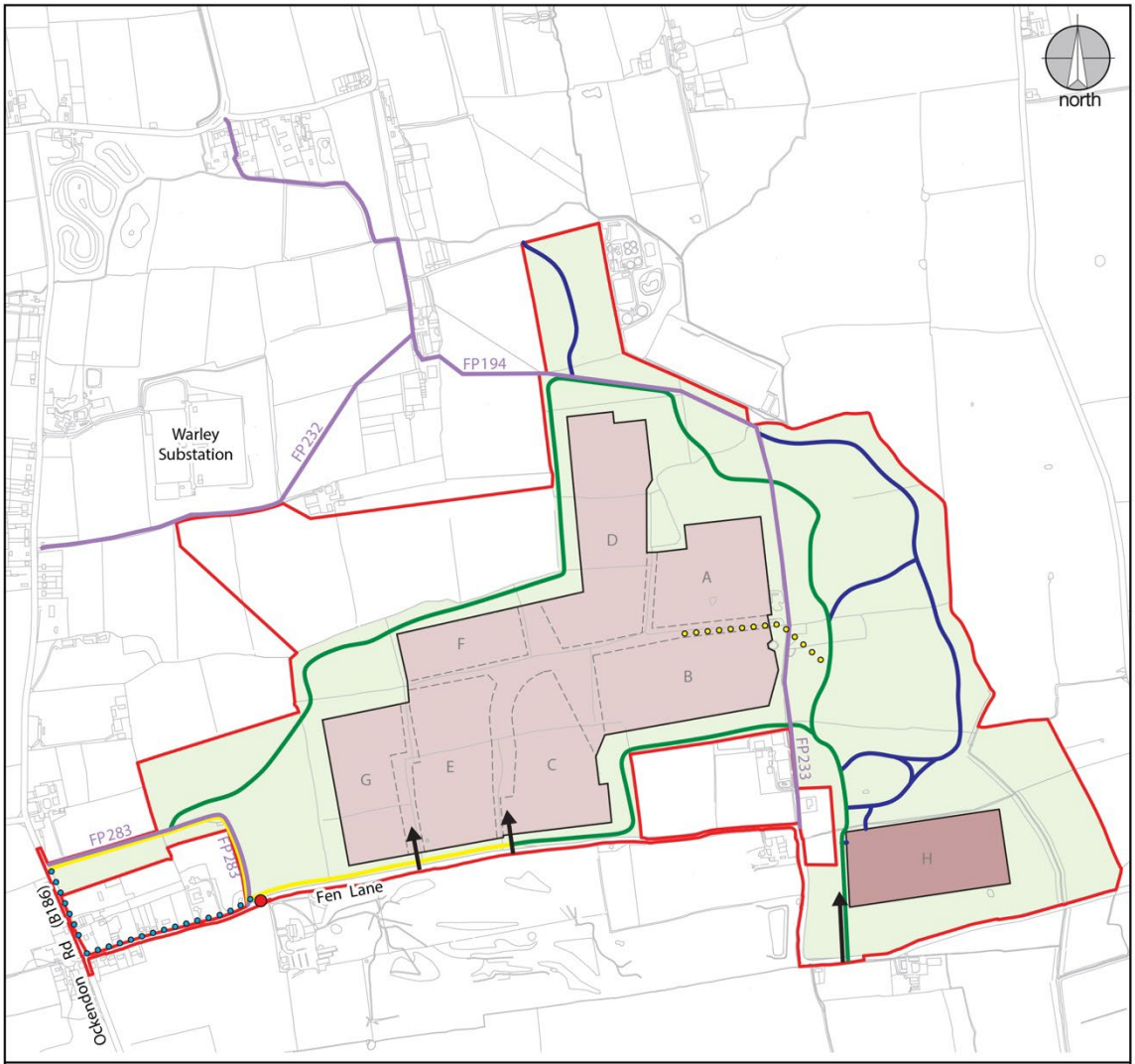
2. Development Description

This initial section describes the access (by road, public transport and active travel) to the development site. It includes detail of the access improvements that are to be delivered through the requirements of the LDO.

2.1 Description of Development

The development includes data centre uses, indoor horticulture, campus management facilities, campus security facilities and district heating centre, a visitors centre, plus installation of electrical infrastructure and associated plant equipment to serve the development, the creation of an ecology park and highway works in Fen Lane and Ockendon Road.

An overview of the development (including accesses) is provided in



CONNECTIVITY PLAN

Scale 1: 15 000 @ A4

0 250 500m

- LDO Boundary
- Data centre campus
- Ecology Park
- Build Zones
- Build Zone H (indoor horticulture, district heating centre, visitor centre)
- Site access
- Existing public footpath
- New footway
- Primary strategic footway / cyclepath to data centre campus
- Primary footway / cyclepath
- Emergency access route
- Secondary footway / cyclepath
- Informal crossing point

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Figure 2-1. Table 2-1 (below) provides a breakdown of the maximum gross external area (GEA) permissible for each use under the LDO.

Table 2-1 Schedule of Accommodation

Ref	Use	Maximum Gross External Area (m^2)
1	**Total LDO Floor Space (All Uses)**	**400,000**
2	Data Centres	340,000
3	Indoor Horticulture	50,000
4	Campus management	2,700
5	Campus security facilities	3,400
6	District heating	3,300
7	Visitors Centre	600

2.2 Walking/Cycling Access

Four accesses are to be provided for pedestrians and cyclists (including public transport users) as follows:

- Dedicated pedestrian/cycle access from Ockendon Road through the ecology park to the Data Centre Campus. An informal crossing comprising a kerbed central island reservation with associated dropped kerbs and tactile paving on each side of the Ockendon Road provides a safe crossing point to the ecology park from the north bound bus stop. There is a continuous footpath connection to the southbound bus stop on Ockendon Road.
- Dedicated pedestrian/cycle access to the data centre campus and ecology park via a new 1.5m wide footway on the northern side of Fen Lane from Ockendon Road to the east of the Ladyville Lodge Care Home, alongside an informal crossing from Top Meadow golf course and hotel;
- Dedicated pedestrian/cycle access to the ecology park from the access road to Bury Farm sewage treatment works to the north of the site; and
- Shared pedestrian/cycle and vehicle access off Fen Lane via the eastern access road.

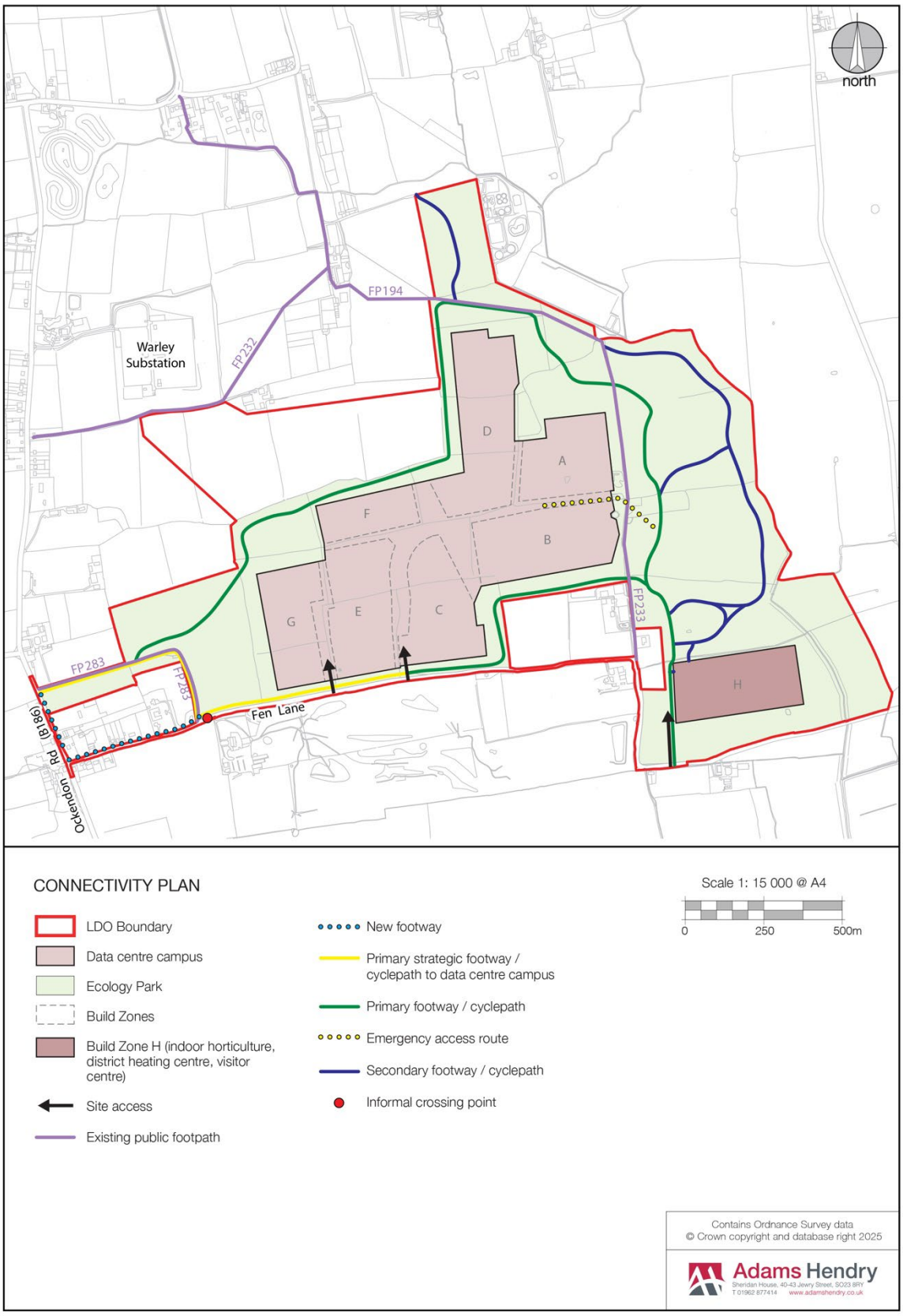


Figure 2-1 Development layout and access

2.2.1 Cycle Parking

Cycle parking requirements throughout the site are set out in Table 2-2 below. Cycle parking shall accord with the Department of Transport's (DfT's) Local Transport Note (LTN) 1/20 Cycle Infrastructure Design July 2020 (or as subsequently updated).

Table 2-2 Quantum of cycle parking through the LDO

Use	Type	Proposed Spaces
Data Centres including campus management and security facilities	Long-stay cycle parking (staff)	Minimum 1 space per 10 staff (based on the anticipated maximum number of staff per shift)
	Short-stay cycle parking (visitors)	Minimum 1 space per 20 staff (based on the anticipated maximum number of staff per shift)
Indoor Horticulture	Long-stay cycle parking (management staff)	At least 6 spaces
Visitors centre / Ecology Park	Long-stay cycle parking	Minimum 1 space per 10 staff (based on the anticipated maximum number of staff per shift)
	Short-stay cycle parking	Minimum 20 spaces

2.3 Public Transport Access

The development has access to local bus, national rail, London Underground (LU) and London Overground (LO) services.

The closest bus stops to the development site are on B186 Ockendon Road in North Ockendon. At time of writing, these stops are served by bus routes 269 between Brentwood and Grays; and 370 between Romford and Lakeside (Grays).

The closest railway stations to the development site are Ockendon (located in South Ockendon, c.15-minute cycle from the development site) and West Horndon (c.20-minute cycle from the development site), both of which (at time of writing) are served by c2c services on different branches of the line between London Fenchurch Street, Basildon, Stanford-le-Hope, Southend Central, and Shoeburyness. The journey time from Ockendon/West Horndon to London Fenchurch Street is approximately 30-minutes.

The closest LU station to the development site is Upminster, which is served by the District Line with trains linking to Barking, Ealing Broadway and Richmond. At the time of writing, a typical service of c.6 trains per hour (tph) in either direction is in operation. Upminster is also served by Overground (Liberty line) services to Romford (currently c.2 tph), providing connectivity to the Elizabeth Line; and by c2c rail services on the line between London Fenchurch Street and both Southend and Shoeburyness. This means users of the development can connect to LU, LO and Elizabeth Line services from Ockendon and West Horndon via Upminster.

The closest direct connection to the Elizabeth Line is at Brentwood, served by westbound trains towards Paddington and Heathrow (currently c.8 tph) and eastbound trains towards Shenfield (c.8 tph).

Users of the development can also access existing services to/from Ockendon and West Horndon by cycling (within c.20 minutes); or to/from Ockendon, Upminster, Romford, or Brentwood via bus routes 370 and 269 (at time of writing). It is noted that data centre shift changeovers are scheduled such that all staff are able to use rail services from Ockendon and Upminster, including those working the night shift (beginning at 23:00).

To support use of the local bus services, accessible last-mile transport (DDA compliant) will be available to staff from the first day of data centre/horticultural facility operation at shift change-over times, between the bus stop on the B186 Ockendon Road, the main entrance to the data centre campus and the horticulture facility. All data centre staff must be provided with the means to pre-book the service. The transport will offer capacity for a minimum of six bus users per changeover. The route, mode and location of pick-up / drop-off facilities for this transport must be agreed by the London Borough of Havering (LBH) Highways team ahead of site occupation as secured in the legal agreement.

2.3.1 Shuttle bus service to/from Upminster station

To support faccessibility to National Rail and LU services, a complimentary shuttle bus will be provided during shift changeover times, for use by data centre staff from the first day of data centre operation,. This is secured within the Section 106 agreement. The continued operation of the shuttle bus will be the responsibility of the developer via the Estate Management Team. The service is to be provided in perpetuity.

The shuttle bus service is to be run by 2no. electric 15-seater minibuses (plus driver). Dedicated parking and charging facilities are provided on-site for these vehicles. The shuttle bus services must be scheduled to align with shift changeover times and as close to rail service timetabling as possible. Service timing should be kept under review accordingly.

At a minimum, shuttle bus services must be run to/from Upminster station, given that this provides most flexibility of all local stations in terms of access to c2c rail services between London Fenchurch Street, Southend Central, and Shoeburyness; District line LU services; and Overground services to Romford. While Ockendon station is closer to the development site, it is served by National Rail services between London Fenchurch Street and Southend Central only, operating at a lower service frequency. Trains from Upminster towards Southend also call at Ockendon. Upminster can also be used for onward connections to Romford via the London Overground, where users could join the Elizabeth Line.

The peak hour journey time between the site and Upminster station is approximately 18 minutes per direction, meaning each minibus can make 1 round trip journey per hour during shift changeover periods, providing capacity for up to 30 staff per shift.

Demand for, and utilisation of, the proposed shuttle bus service will be monitored through this Travel Plan. Any amendments to the service (for instance to increase capacity, expand to other stations, or expand eligibility for use) will be reviewed and agreed by the Travel Plan Steering Group (see section 8.1) and will require the prior approval of the Local Planning Authority (see Section 8.1). Any subsequent service adjustments will be implemented by the Estate Management Team.

The indoor horticulture facility is staffed by produce workers and management staff. All produce workers must be transported to/from the site via assigned coaches which are to be provided by the occupier. The management staff can travel to/from the site by private means.

2.4 Vehicle Access

Vehicular access to the development (see

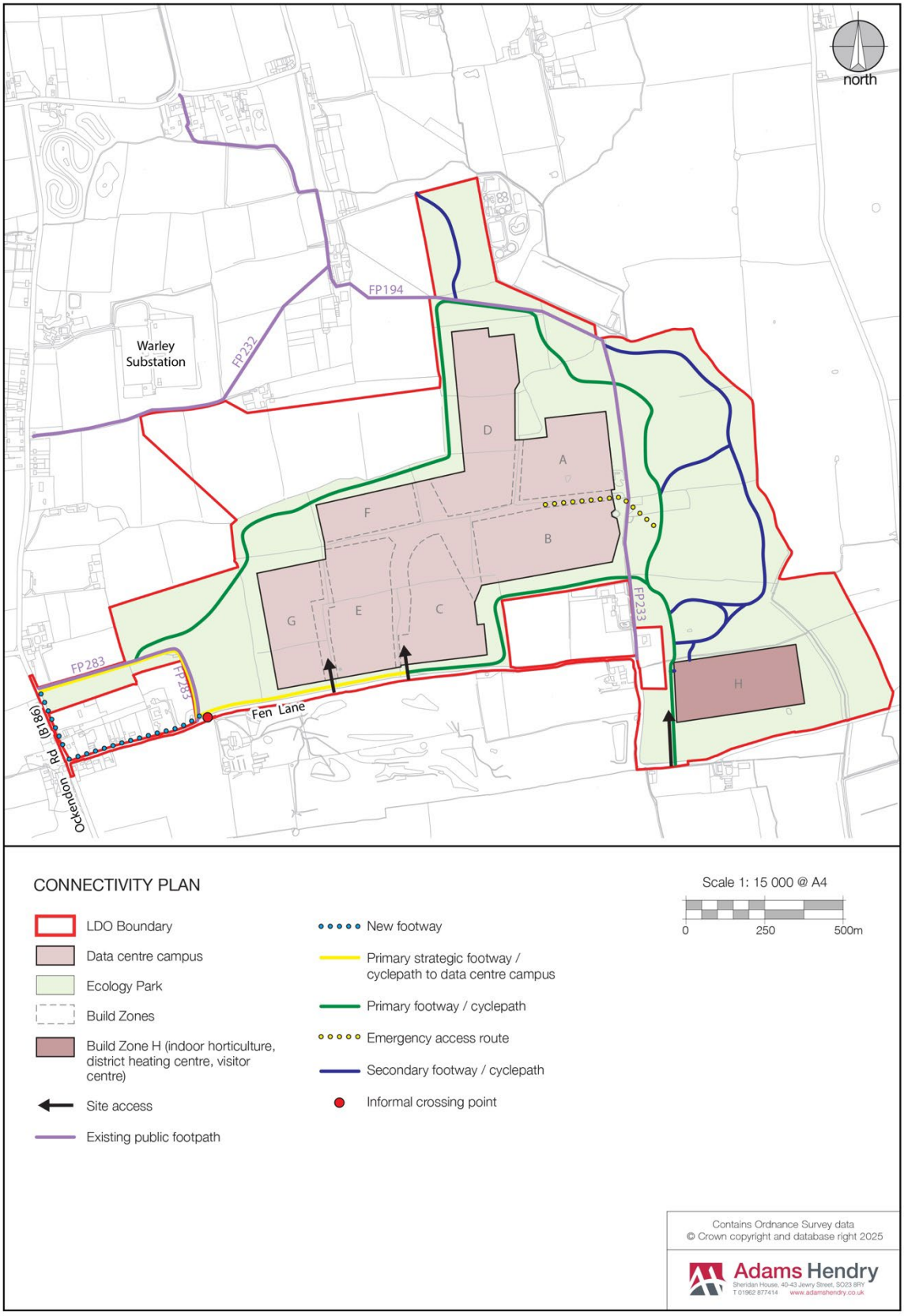


Figure 2-1) is provided as follows:

- Main site access taken from Fen Lane connecting to the internal primary infrastructure corridor to serve build zones A-F including data centres, campus management and security facilities and electrical infrastructure uses;
- Western access taken from Fen Lane to serve build zone G; and,
- Eastern access taken from Fen Lane to serve build zone H (including the indoor horticulture facility and visitors centre).

Vehicular access to the data centre campus via the main site access and western access is security controlled. Public vehicular access is available via the eastern access to the indoor horticultural uses and visitors centre and associated ecology park.

Emergency access is also available to the data centre campus via the eastern access road continuing north through the ecology park to a connection point on the eastern boundary of the data centre campus.

Automatic Number Plate Recognition (ANPR) cameras are to be installed at each entry to monitor vehicle arrivals and departures.

2.5 Vehicle Parking

All staff will be required to obtain a parking permit to use staff parking which will be restricted to a specified build zone (or zones where appropriate). Visitors passing through the main security gate and controlled access to Build Zone G will require a temporary permit. Further detail on the parking permits and parking management is provided in 7.1.2.1.

Vehicle parking standards are set out below (in Table 2-3). Parking is to be managed across the site by the Estate Management Team. Parking utilisation will be monitored and reviewed by the Travel Plan Steering Group.

Table 2-3 Vehicle parking requirements

Use	Type	LDO standard
Data centres	On-plot: staff and visitors car parking	Up to 249,999sqm (GIA): maximum of 1 space per 1750sqm (GIA) Between 250,000sqm and 299,999sqm (GIA): maximum of 1 space per 2,200sqm (GIA) Between 300,000sqm and 329,800sqm (GIA): maximum of 1 space per 2,600sqm (GIA)
	On-plot: operational parking (appropriate mix of LGV, HGV)	Maximum of 1 operational space per 25000sqm (GEA) on data centre plots, subject to provision of at least 2 operational LGV spaces and 1 operational HGV space per plot
	Estate-wide: Operational parking (outside secure line)	14 estate-wide operational spaces to be provided adjacent to campus management security facility at the primary site access off Fen Lane (10 car + 2 minibus + 2 taxi). Car parking limited to 15 minute wait time
	Estate-wide: Operational parking (inside secure line)	Up to 10 estate-wide operational spaces (mix of car and LGV) and up to 4 motorcycle spaces
Indoor Horticulture	Car parking (management staff)	At least 4 spaces and up to 6 spaces
	Operational parking (coach, LGV, HGV)	At least 1 operational LGV space and 1 operational HGV space per plot, plus at least 2 spaces for coaches

Use	Type	LDO standard
District heating / electrical infrastructure (e.g. sub stations)	Operational parking (LGV)	At least 1 operational LGV space per plot
Visitors centre / Ecology Park	Car parking (staff and visitors)	Maximum of 50 parking spaces. Visitor parking is to be restricted to short stay parking (for a maximum of 2 hours)
	Operational parking (LGV, coach)	At least 1 operational LGV space and up to 5 operational LGV spaces, plus at least 2 spaces for coaches
	Overflow provision (temporary use only)	Area of hardstanding suitable to accommodate up to 25 vehicles

Minimum standards for disabled, enlarged, active electric vehicle (EV) and passive EV charging spaces for all uses are set out Table 2-4.

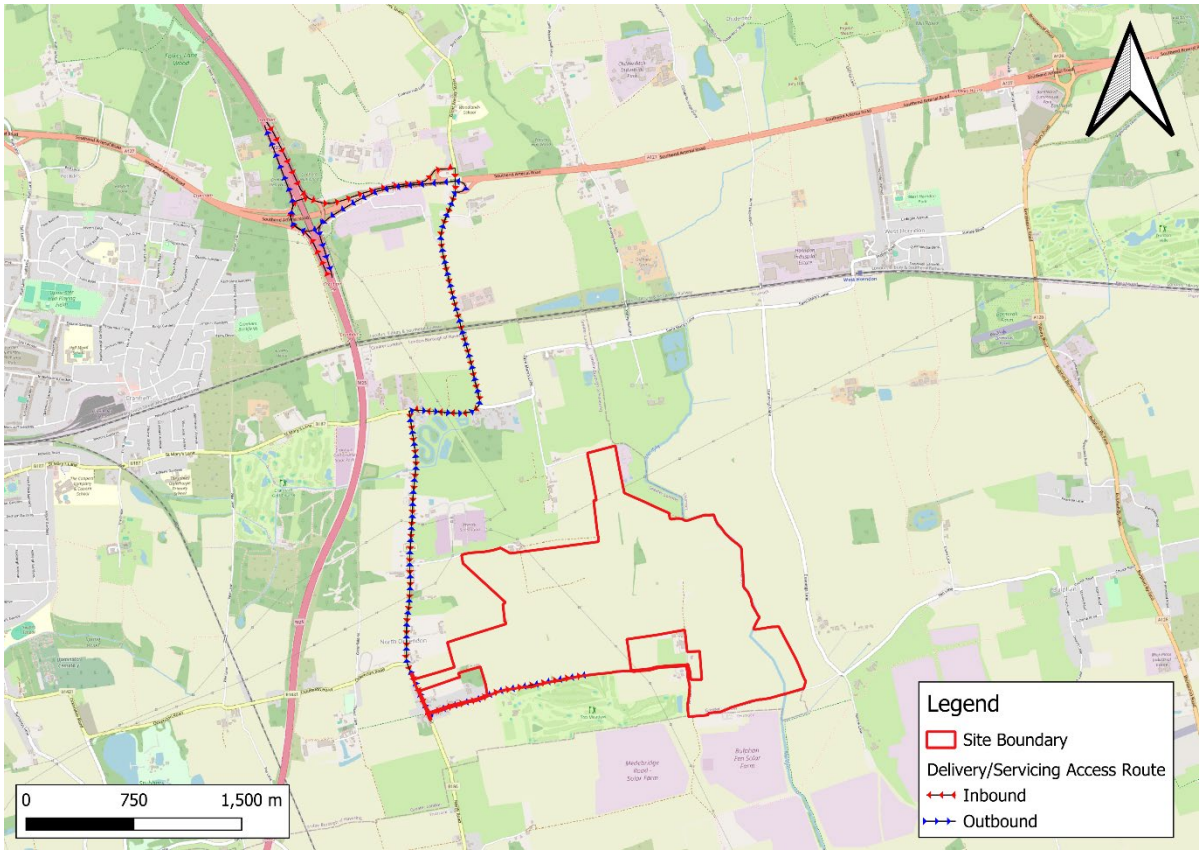
Table 2-4 Minimum standards for disabled, enlarged, active electric vehicle (EV) and passive EV charging spaces

Type of space	LDO standard (minimum)
Disabled	Minimum 5% of total staff/visitor parking provision for data centres, including campus management and security, and indoor horticulture Minimum 6% of total staff/visitor parking provision for the visitor centre / ecology park
Enlarged	Minimum 5% of total staff/visitor parking provision for data centres, including campus management and security, and indoor horticulture Minimum 4% of total staff/visitor parking provision for the visitor centre / ecology park
Active EV	Minimum 10% of total staff/visitor parking provision for data centres and indoor horticulture (slow-charging, minimum 3kw) Minimum 10% of total staff/visitor parking provision for visitors centre / ecology park (rapid-charging) All operational spaces for taxis and vehicles based on-site (e.g. minibuses) At least 1 active EV charging space for each operational parking area across the site
Passive EV	Minimum 20% of remaining staff/visitor provision (without active EV charging)
Car sharing	Minimum 5% of spaces to dedicated as priority for car sharing, in convenient locations close to main building entrances

2.5.1 Delivery & Servicing Access

All delivery/servicing trips (both LGVs and HGVs) must access the site to/from the north via Ockendon Road and Fen Lane, using the route shown in Figure 2-2.

Figure 2-2 Delivery and Servicing Access Route



Delivery and servicing trips to the development are to be scheduled outside of peak network hours wherever possible, with the focus of trips between 10:00-16:00, to avoid further congestion on the local highway network and ensure more reliable delivery times.

3. Travel Surveys

3.1 Baseline Mode Split Estimates

Table 3-1 presents an estimated baseline mode split, in advance of completion of site-specific Travel Surveys. These figures are based on the assumptions around mode share that have been used to prepare the Transport Assessment for the LDO

Table 3-1 Modal split assumptions by use and user group (main mode of travel)

Use	User Group	Assumption	Walk	Cycle	Bus	Train	LU	Car (Driver)	Car (Passenger)	Taxi	Motorcycle	LGV	HGV	Coach	Total
1. Data Centres	Office/admin staff	Travel by private means, with shuttle bus access	0.0%	0.9%	3.3%	6.0%	3.2%	79.5%	5.2%	1.3%	0.6%	-	-	-	**100%**
	Engineering staff	Travel by private means, with shuttle bus access	0.0%	0.9%	3.3%	6.0%	3.2%	79.5%	5.2%	1.3%	0.6%	-	-	-	**100%**
	Security staff	Travel by private means, with shuttle bus access	0.0%	0.9%	3.3%	6.0%	3.2%	79.5%	5.2%	1.3%	0.6%	-	-	-	**100%**
	Visitors	Travel by private means, without shuttle bus access	0.0%	1.0%	3.6%	0.0%	0.0%	87.6%	5.7%	1.4%	0.7%	-	-	-	**100%**
	Delivery / servicing	Assume 50% LGV and 50% HGV	-	-	-	-	-	-	-	-	-	50%	50%	-	**100%**
2. Indoor Horticulture	Produce workers	All housed in shared accommodation and travel to site by coach	-	-	-	-	-	-	-	-	-	-	-	100%	**100%**
	Management staff	Travel by private means, without shuttle bus access	0.0%	1.0%	3.6%	0.0%	0.0%	87.6%	5.7%	1.4%	0.7%	-	-	-	**100%**
	Delivery / servicing	Assume 50% LGV and 50% HGV	-	-	-	-	-	-	-	-	-	50%	50%	-	**100%**
3. Campus management, security facilities and district heating centre	Campus management staff	Assume travel by LGV owing to nature of role	-	-	-	-	-	-	-	-	-	100%	-	-	**100%**
	Security staff	n/a – already accounted for under Data Centre use	-	-	-	-	-	-	-	-	-	-	-	-	**-**

Use	User Group	Assumption	Walk	Cycle	Bus	Train	LU	Car (Driver)	Car (Passenger)	Taxi	Motorcycle	LGV	HGV	Coach	Total
	Maintenance / engineering staff	Assume maintenance / engineering staff travel by LGV owing to nature of role	-	-	-	-	-	-	-	-	-	100%	-	-	**100%**
	Deliveries	Assume all deliveries by HGV				-	-	-	-	-	-	-	100%	-	**100%**
4. Visitor Centre / Ecology Park	Staff	Travel by private means, without shuttle bus access	0.0%	1.0%	3.6%	0.0%	0.0%	87.6%	5.7%	1.4%	0.7%	-	-	-	**100%**
	Private visitors (i.e. general public)	Travel by private means, without shuttle bus access, and assume vehicle occupancy of 1.5	2.0%	1.0%	3.6%	0.0%	0.0%	60.9%	30.4%	1.4%	0.7%	-	-	-	**100%**
	Educational visitors (e.g. school trips)	Travel by coach to/from educational facility				-	-	-	-	-	-	-	-	100%	**100%**
	Deliveries, servicing and maintenance	Assume 100% LGV	-	-	-	-	-	-	-	-	-	100%	-	-	**100%**
5. Electric Infrastructure/District Heating	Maintenance / engineering staff	Assume maintenance / engineering staff travel by LGV				-	-	-	-	-	-	100%	-	-	**100%**

3.3 Baseline Delivery/Servicing Trip Estimates

Table 3-2 shows the estimated worst-case delivery/servicing daily trip generation by land use assuming full build-out of the development, in advance of completion of site-specific Travel Surveys. Please refer to the Transport Assessment for the LDO for more detail on the derivation of this estimated trip generation.

Table 3-2 Estimated Peak Day Delivery/Servicing (LGV and HGV) Trip Generation (worst case)

Land Use	Assumption (Peak Day)	Estimated Daily Delivery/Servicing Trip Generation (Peak Day)		
		Arrivals	Departures	Two-Way
Data Centres	1 vehicle per ha, arrive/depart off-peak	34	34	68
Indoor Horticulture	Assume 0.5 vehicles per ha, arrive/depart off-peak	3	3	6
District Heating / Electrical Infrastructure	Assume 1 delivery (arriving by HGV) per week, arrive/depart off-peak	1	1	2
Visitor Centre / Ecology Park	1 delivery and 1 waste collection, arrive/depart off-peak	2	2	4
TOTAL Delivery / Servicing (LGV and HGV) Trip Generation (Peak Day)		**40**	**40**	**80**

3.4 Baseline Surveys

3.4.1 Baseline Travel Survey

Baseline travel surveys for each data centre build zone (once these become occupied), the visitor centre and the indoor horticulture facility will be required to provide an accurate baseline of travel behaviour which is consistent with the classifications and reporting methods set out in the Travel Plan.

Travel Surveys must be compliant with the TRICS Standard Assessment Methodology (SAM), cover both staff and visitors, and include the following data at a minimum:

- Mode of travel – i.e. the ways in which people travel to and from the site (e.g. car driver, car passenger, bus, cycle), including capturing multimodal journeys, use of the dedicated shuttle bus for data centre staff and use of last-mile accessible transport to connect buses serving Ockendon Road and the main site entrance;
- Attitudes to travel (e.g. reasons/motivators for travel choices, perceived barriers, willingness to consider sustainable modes);
- Trip origin (i.e. home location) and distance travelled;

- Typical time of arrival and departure; and
- Feedback on travel measures provided on the site (e.g. staff shuttle bus, vehicle and cycle parking provision, walking/cycling routes, and other incentives).

Surveys should also be used to determine how many drivers are travelling in single occupancy vehicles.

Initial baseline travel surveys must be completed within three months from the first occupation, covering all occupiers. The target for completion should be at least 75% of staff.

Travel Surveys must be repeated annually for a minimum period of 5 years following full build-out of the LDO development to monitor progress towards the delivery of Travel Plan targets and support the development of any mitigating activities required. The Travel Plan Coordinator will collate all monitoring and provide a consolidated Annual Monitoring Report covering all survey results. This is to be reviewed and approved by the Travel Plan Steering Group ahead of submission to the Local Planning Authority.

Following the minimum period, the Travel Plan Steering Group (in consultation with the Local Planning Authority) will determine if further annual monitoring is to be required. Key to this decision will be whether the Travel Plan targets are being met.

Further detail is provided regarding Travel Plan management in Section 8, monitoring in Section 9 and review in Section 10.

3.4.2 Baseline Traffic Survey

Baseline traffic surveys must be undertaken by the developer within 3 months of the first site occupation. As a minimum, this shall include:

- Classified vehicle entries and exits at the main site entrance and eastern and western entrances on Fen Lane;
- Pedestrian and cyclist counts at each access;
- Automatic Traffic Counts (ATC) at the entrances to car parking areas within each build zone to establish car park accumulation; and
- An ATC on Fen Lane (to the west of the main vehicle entrance) and an ATC on Ockendon Road (to the north of the junction with Fen Lane) to capture vehicle volumes and speeds.

Details of vehicle entries and exits are to be provided from the ANPR cameras installed at each entrance. The ATCs must include details of vehicle numbers and vehicle classification, capturing vehicles over a 24-hour period (spear. They must be undertaken during a neutral traffic period (avoiding school holidays, bank holidays, local events or roadworks).

Baseline surveys must also include delivery and servicing movements to/from the development. Continuous ongoing monitoring of delivery/servicing movements must be undertaken by recording the arrival and departure of all delivery/servicing vehicles associated with each occupier in a central database, overseen by the Estate Management Team. Such records must be provided to LBH on request.

All traffic surveys, including ATC locations, shall be agreed with the LBH Highways team prior to being undertaking.

4. Policy Context

This section summarises relevant national, regional and local policies which inform the Travel Plan, at the time of writing. This section is to be updated as the policy context evolves.

4.1.1 National Planning Policy Framework (NPPF) (December 2024)

The National Planning Policy Framework (NPPF)[3] sets out the Government's planning policies for England and how these are expected to be applied. The NPPF constitutes guidance for local planning authorities and decision-makers both in drawing up plans and as a material consideration in determining applications. Chapter 9 of NPPF relates to promoting sustainable transport.

Paragraph 117 states "*applications for development should:*

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and
e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

Paragraph 118 details that "*All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored."*

4.1.2 London Plan 2021

The London Plan[4] is the Spatial Development Strategy for Greater London, and forms part of the statutory development plan for London.

Policy T1 states "*Development Plans should support, and development proposals should facilitate the delivery of the Mayor's strategic target of 80 per cent of all trips in London to be made by foot, cycle or public transport by 2041*". Moreover, policy T2 states "*Development Plans should:*

1) promote and demonstrate the application of the Mayor's Healthy Streets Approach to: improve health and reduce health inequalities; reduce car dominance, ownership and use, road danger, severance, vehicle emissions and noise; increase walking, cycling and public transport use; improve street safety, comfort, convenience and amenity; and support these outcomes through sensitively designed freight facilities; and,

[3] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[4] Available at: https://www.london.gov.uk/programmes-strategies/planning/london-plan/london-plan-2021

2) *identify opportunities to improve the balance of space given to people to dwell, walk, cycle, and travel on public transport and in essential vehicles, so space is used more efficiently, and streets are greener and more pleasant."*

Of specific relevance to Travel Planning is Policy T4 – Assessing and Mitigating Transport Impacts, which states that "*Travel plans, parking design and management plans, construction logistics plans and delivery and servicing plans would be required having regard to Transport for London guidance.*"

Policy T5 states "*Development Plans and development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle."*

Policy T7 relates to delivery, servicing, and construction, which with respect to delivery and servicing states:

- *"Development proposals should facilitate safe, clean, and efficient deliveries and servicing. Provision of adequate space for servicing, storage and deliveries should be made off-street, with on-street loading bays only used where this is not possible."*
- *"Delivery and Servicing Plans will be required and should be developed in accordance with Transport for London guidance and in a way which reflects the scale and complexities of developments."*
- *"Developments should be designed and managed so that deliveries can be received outside of peak hours and in the evening or night-time. Appropriate facilities are required to minimise additional freight trips arising from missed deliveries and thus facilitate efficient online retailing."*

Policy T7 also refers to the use of consolidation centres to manage freight for large developments.

4.1.3 Mayor's Transport Strategy 2018

The Mayor's Transport Strategy[5] states: "*The Mayor, through TfL and the boroughs, and working with stakeholders, will reduce Londoners' dependency on cars in favour of active, efficient and sustainable modes of travel, with the central aim for 80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041*". Moreover, the Mayor aims to reduce the number of lorries and vans entering Central London in the morning peak by 10% by 2026. To support achieving this aim, the Mayor has introduced road user charging policies which impact the consented development site including the Congestion Charge and Ultra Low Emission Zone.

Two key initiatives introduced by the Mayor to achieve the Mayor's Transport Strategy include the Healthy Streets approach and Vision Zero.

The Healthy Streets Approach puts people and their health at the centre of decisions about how we design, manage and use public spaces. It aims to make our streets healthy, safe and welcoming for everyone. The Approach is based on ten indicators of a Healthy Street which focus on the experience of people using streets. As noted in London Plan Policy T2, all developments should promote and demonstrate the application of the Mayor's Healthy Streets Approach.

The aim of Vision Zero is to eliminate all deaths and serious injuries on London's transport system. The actions in the plan aim to reduce road danger for everyone and create streets safe for walking and cycling. The Vision Zero ambition is set out in Policy 3 of the Mayor's Transport Strategy:

[5] Available at: https://www.london.gov.uk/programmes-strategies/transport/our-vision-transport/mayors-transport-strategy-2018

"The Mayor, through TfL and the boroughs, and working with stakeholders, will adopt Vision Zero for road danger in London. The Mayor's aim is for no one to be killed in or by a London bus by 2030, and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041."

4.1.4 TfL Freight and Servicing Action Plan (March 2019)

The TfL Freight and Servicing Action Plan (FSAP)[6], "*provides clarity on future policies and sets out the actions we can take now, and in the future, to support safe, clean and efficient freight operations*". This action plan is one of many subsidiary documents to the Mayor's Transport Strategy.

The FSAP states, "*safety is our main priority and underpins all our plans for the freight and servicing industry*" focused on safe vehicles, speeds, streets, and behaviours.

Moreover, "*the Mayor aims to reduce emissions from freight by encouraging a switch to ultra-low emission vehicles (which include battery electric, plug-in hybrid and range-extended electric vehicles), providing incentives to freight services to assist in making the switch, adopting smarter delivery practices and reducing freight movements through better use of consolidated trips*".

Finally, the FSAP seeks to achieve efficient movement across the network while maintain goods access to local areas.

4.1.5 Havering Local Plan 2016-2031 (Adopted November 2021)

The Havering Local Plan was adopted in November 2021 and sets out the council's strategy for *future growth and sustainable development* up to 2031. The plan lists the following transport related objectives:

- *"Improve accessibility, connectivity, and ease of movement to, from and within Havering;*
- *Support sustainable transport options and make havering a better place to cycle and walk around;*
- *Increase the quantity, quality, and accessibility of Havering's public open spaces and maintain and enhance biodiversity and geodiversity."*

Policy 12 – Healthy Communities:

The Council will support development in Havering that provides opportunities for healthy lifestyles, contribute to the creation of healthier communities, and help reduce health inequalities.

The local plan will promote health and wellbeing by:

- Supporting measures to promote walking and cycling.

Policy 23 – Transport Connections:

The Council will support and encourage developments in Havering in the locations that are most accessible by a range of transport options. The Council supports development which ensures safe and efficient use of the highway and demonstrates that adverse impacts on the transport network are avoided or, where necessary, mitigated.

[6] Available at: https://content.tfl.gov.uk/freight-servicing-action-plan.pdf

- *Providing residents with options to travel sustainably and enable walking and cycling;*
- *Working with partners to provide sustainable access to key employment areas across the borough;*
- *Requiring new developments to optimise sustainable access and other future transport connections, wherever applicable;*
- *Promoting the benefits of active travel to schools, local businesses and developers and supporting development, delivery, and monitoring of school, residential, and workplace travel plan;*
- *Ensuring good sustainable access between new developments and public transport interchanges in the borough to promote active travel; and*
- *Supporting new developments that include shared use routes for people walking and cycling which lead to public open spaces and parks to promote active recreational activities.*

Policy 26 – Urban Design

The Council will promote high quality design that contributes to the creation of successful places in Havering by supporting the following development proposals that:

- *Provide active streets, good sight lines, and natural surveillance;*
- *Fully integrate with neighbouring developments, existing path and circulation networks, and patterns of activity particularly to accommodate active travel; and*
- *Provide a high standard of inclusive access for all members of the public.*

5. Aim and Objectives

5.1 Aim

In line with the policy context set out in section 4, the aim of this Travel Plan is:

- To promote, facilitate and increase **sustainable travel choices to, from and within the development** by staff and visitors, thereby seeking to minimise single occupancy car use and transport emissions; and
- To ensure **safe, clean and efficient delivery and servicing arrangements** for the development.

5.2 Objectives

The Travel Plan aim is to be achieved through the following objectives:

1. To ensure safe, comfortable and convenient access to the site by non-car modes by removing barriers (both perceived and actual) to walking, cycling and public transport;

2. To reduce single occupancy car travel and promote use of sustainable travel modes, including staff shuttle services and car sharing;

3. To increase understanding among site users of the travel options that are available to them by:
    a. providing information to allow site users to understand the benefits of and opportunities for sustainable transport;
    b. actively promoting non-car travel choices and car sharing;
    c. marketing and raising awareness of the Travel Plan and its purpose.

4. To enable and promote use of low or zero-emission vehicles to access the development (including delivery and servicing vehicles), where use of vehicles is required;

5. To minimise the number of vehicle trips required for delivery to the development as far as possible; and

6. To minimise the number of delivery and servicing vehicle trips taking place in network peak hours to reduce potential impacts on the surrounding road network and improve journey time reliability.

6. Targets

To enable monitoring of progress against the objectives, SMART targets have been defined, which link to the aim and objectives presented in Section 5. SMART targets are Specific, Measurable, Achievable, Realistic and Time-bound. The targets provide a means of measuring how well the aim and objectives are being achieved.

6.1 Travel Plan Targets

For **staff and visitors** to the site (excluding the ecology park), the preliminary targets for this Travel Plan are to:

1. Reduce the proportion of users travelling to the site by single-occupancy private car by 20 percentage points over the lifetime of the LDO (thereby reducing the proportion of car drivers from approximately 80% to approximately 60%); and
2. Deliver year-on-year reductions in carbon emissions from users traveling to the site.

Preliminary targets for staff and visit trip mode share are presented overleaf in Table 6-1. These are preliminary, set in accordance with the aim and objectives of the Travel Plan, and are to be aligned more closely with site-specific users once the baseline Travel Surveys have been undertaken. For the purposes of the preliminary targets, the baseline mode share is assumed to be the same as that presented in Section 3.1.

For **delivery and servicing trips**, the preliminary targets are to:

3. Ensure the overall number of delivery/servicing vehicle movements associated with the development does not exceed 80 two-way vehicle trips a day, on average over the year, for every year of operation;
4. Reduce the average rate of daily delivery/servicing trips (number of daily trips per unit of operational floorspace) associated with each use by 10% over the first 5-years of operation of that use; and
5. Increase the proportion of low- or zero-emission delivery/servicing vehicle trips associated with each use by 10% over the first 5-years of operation of that use.

Specific annual targets (linked to the above) for the first 5 years are to be agreed for each build zone by the Travel Plan Steering Group, in consultation with the Local Planning Authority, following baseline survey completion. The Travel Plan Coordinator (see Section 8.1) will be responsible for monitoring and reporting annually on progress towards these.

Targets are to be monitored for 5 years following full build-out for each build zone. After this period, where overall targets have been met, these will as a minimum need to be maintained for the lifetime of the LDO. Should targets not have been met at this stage, remedial measures (which are to be determined by the Travel Plan Steering Group in consultation with the Local Planning Authority) will be triggered and requirements for annual monitoring extended for up to a further 5 years.

Table 6-1 Preliminary Travel Plan Mode Share Targets

Use	User Group	Baseline				Year 10				Year 17 (end of LDO)			
		Car Driver (single occupant)	Public Transport	Active Travel (Walk/Cycle)	Car Share / Taxi / Motorcycle	Car Driver (single occupant)	Public Transport	Active Travel (Walk/Cycle)	Car Share / Taxi / Motorcycle	Car Driver (single occupant)	Public Transport	Active Travel (Walk/Cycle)	Car Share / Taxi / Motorcycle
Data Centres	Staff	79.5%	12.5%	0.9%	7.1%	68.8%	18.5%	2.5%	10.3%	58.0%	24.5%	4.0%	13.5%
	Visitors	87.7%	3.6%	1.0%	7.7%	76.8%	9.3%	2.5%	11.5%	65.8%	15.0%	4.0%	15.2%
Indoor Horticulture	Management staff*	87.7%	3.6%	1.0%	7.7%	76.8%	9.3%	2.5%	11.5%	65.8%	15.0%	4.0%	15.2%
Visitors Centre / Ecology Park	Staff	87.7%	3.6%	1.0%	7.7%	76.8%	9.3%	2.5%	11.5%	65.8%	15.0%	4.0%	15.2%
	Visitors	60.9%	3.6%	3.0%	32.5%	48.7%	9.3%	6.5%	35.5%	36.5%	15.0%	10.0%	38.5%

*Produce workers to be transported to/from site by coach

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7. Measures

This section sets out measures to be implemented to achieve the aim, objectives and targets of this Travel Plan. The Travel Plan Coordinator is responsible for the implementation of the measures. The package of measures can be adjusted as appropriate over time, in response to monitoring data and in agreement with the Local Planning Authority.

7.1 Staff and Visitor Measures

This section outlines measures to be implemented throughout the site in order to help achieve the Travel Plan aim, objectives and targets. The measures have been grouped into two types as follows:

- 'Hard' engineering measures incorporated into the design of the development; and
- 'Soft' measures which would be implemented as part of the management of the development to ensure that sustainable travel is maximised.

7.1.1 'Hard' Measures

The following measures have been incorporated into the design of the development:

- Provision of a primary, strategic footway/cycle path connecting Ockendon Road to the main entrance of the Data Centre Campus;
- Provision of a new footway on the northern side of Fen Lane between Ockendon Road and east of the Ladyville Lodge Care Home, where tie-in to the primary, strategy walk/cycle path is achieved;
- Provision of continuous footway on eastern side of Ockendon Road extending southwards from the entrance to the Ecology Park to the southern boundary of Fenland Nursery to provide a continuous footpath connection to the southbound bus stop on Ockendon Road;
- A new informal crossing on Ockendon Road with associated dropped kerbs and tactile paving providing safe access to the northbound bus stop on Ockendon Road;
- Provision of internal footway/cycle paths (minimum of 3.0m wide) within the data centre campus and to the visitors centre and horticultural uses (via the ecology park) to provide safe and convenient access to building entrances and cycle parking facilities;
- Provision of a shared cycle path / footpath connecting the visitor centre to Fen Lane;
- Safe, secure and convenient staff cycle parking and facilities (such as lockers, showers and changing rooms) provided from the outset;
- Disabled and electric charging car parking spaces; and
- Provision of seating, lighting, things to see/do (e.g. play areas), and attractive landscaping along footpaths/cycleways throughout the proposed ecology park particularly for leisure use.

There is also a potential for the local authorities (LBH, Essex County Council and Thurrock County Council) to improve surrounding rights of way and cycling infrastructure, particularly in line with improvements proposed through the Lower Thames Crossing scheme.

Prior to the first occupation of the development, this is to include contribution to the following off-site improvements:

- B186 Ockendon Road – South of Fen Lane: Active travel improvements in the form of a footway to connect to FP135/FP252.
- B186 Ockendon Road & Clay Tye Road – North of Fen Lane: Active travel improvements to improve the condition of footways on Ockendon Road & Clay Tye Road to the north of the new site entrance/ chicane with potential connection to FP230 and proposed M25 footbridge to the north; and
- Improvements to the pedestrian connection between FP136 and the entrance to the visitor centre (Build Zone H)

7.1.2 Soft Measures

'Soft' enhancement measures to promote and encourage sustainable travel will be implemented and monitored through the Travel Plan, following occupation of each use/plot. Details of site wide 'soft' measures to be provided or considered are listed below. Further measures could also be introduced specific to each occupier, as appropriate.

7.1.2.1 Parking and car Sharing

The following measure are to be provided:
- Manage parking demand through a paid-for parking permit system for staff and visitors
- Provide dedicated parking spaces for those who are car sharing;
- Implement a car sharing database to identify opportunities for staff on similar shift patterns and travelling similar routes to travel together; and

The cost of a parking permit is to be initially set at £5 per vehicle per day (with individual occupiers to determine whether these costs are to be passed on to individual staff members). Parking Permits are to be administered and managed by the Estate Management team (see Section 8). The revenues generated are to be used to cover the cost of permit administration and parking management, with any additional revenues raised to be restricted to the measures outlined within the Travel Plan and other measures which support the delivery of the Travel Plan targets. Permit charges are to be reviewed by the Travel Plan Steering Group (see Section 8), reflecting the outputs of annual monitoring and progress towards the Travel Plan targets.

The Estate Management Team is to develop and implement a Car Parking Capacity Management Plan (CPCMP). This is to:
- Ensure that the car parking spaces within the development are available for intended employees and visitors only;
- Ensure unauthorised individuals do not park within the development site through security arrangements and enforcement monitoring;
- Introduce a monitoring regime which will be overseen by the Estate Management Team (as part of an estate-wide monitoring approach with inputs from individual occupiers);
- Set out processes for reviewing parking tariffs and managing parking demand; and
- Set out enforcement processes and penalties for infringement.

The Estate Management Team will be required to appoint a parking management company / procure a parking management system.

It will be the responsibility of the Estate Management Team and individual occupiers to monitor and manage parking provision and utilisation across the development. Table 7-1 sets out required measures for the CPCMP and who is to be responsible for each. An estate-wide plan will need to be prepared by the Estate Management Team prior to the first use of any car parking on the site.

Table 7-1 Car Parking Capacity Management Plan

Measure	Responsible party	Timeframe	Description
Parking enforcement	Estate Management Team	From first occupation	Robust monitoring measures must be used, including CCTV and daily spot-checks by members of the Estate Management Team to enforce parking restrictions on site, including: ensuring use of operational parking spaces for permitted uses only (e.g. shuttle bus, taxis), ensuring operational parking outside the main security gate is for temporary use only, and ensuring parking on internal estates roads by permission only. Penalty Charge Notices (PCNs) are to be issued for non-compliance.
Monitoring of car parking utilisation	Estate Management Team and individual occupiers	From first occupation	Utilisation of staff car parking is to be monitored and recorded on a daily basis from first occupation, using gate entry/exit data and on-site spot checks, to understand actual parking demand. The parking standards already assume an increased use of sustainable modes in future, meaning reduced parking quantum is required for later development plots.
Staggered shift changeover times	Individual occupiers	From first data centre occupation	Slight staggering of shift changeover times between data centre plots should be used to smooth peaks in demand at shift changeovers, as required.
Overflow car parking area (ecology park)	Estate Management Team	From ecology park opening	The overflow parking area for the ecology park (specified using gravel surfacing, 'Grasscrete' permeable paving, or similar) must be closed for everyday use and only opened when required, at the discretion of the ecology park management team, to prevent any inappropriate parking on internal estates roads or the public highway.
Prevention of inappropriate parking on local highways	LBH / Thurrock Highways	From ecology park opening	Incidence of users of the development parking on Fen Lane must be monitored by the Estate Management Team and reported to LBH on a monthly basis. The need for a Traffic Regulation Orders on Fen Lane and Ockendon Road will be considered by LBH Highways to prevent parking on the highway on review of monitoring submissions. Restrictions if required will be enforced during seasonal peaks through spot-checks by LBH enforcement officers.
Monitoring of EV charging	Estate Management Team and individual occupiers	From first occupation	EV charging utilisation is to be monitored and recorded on a daily basis, with charging provision to be expanded when capacity is needed to meet growth in demand. Management of EV charging (including the installation, operation, maintenance and decommissioning and renewal of equipment) is to be the responsibility of the developer where parking is in communal / public areas (including visitors centre / ecology park parking) and individual occupiers (where parking relates to specific occupier use only).

The Car Park Capacity Management Plan is to be agreed with the Local Planning Authority prior to the first occupation of the site.

On the 10th, 20th and 30th anniversary of first occupation of any data centre floorspace, the Estate Management Team is required to submit a CPCMP (or revised CPCMP for 20th and 30th anniversary) to the local planning authority. The CPCMP shall be accompanied with a report monitoring usage of the car parking since first occupation. Subject to the CPCMP

demonstrating that the spaces are not essential for operation purposes, to include within the CPCMP a scheme for the removal of identified non-essential parking spaces.

7.1.2.2 Walking & Cycling

- Provide readily accessible and up-to-date information regarding access by walking and cycling to all site users;
- Provide personalised travel planning services to support individuals in identifying opportunities for sustainable travel to/from the site;
- Promote the health benefits of sustainable travel to staff;
- Monitor utilisation of cycle parking and seek feedback from users to ensure it remains fit-for-purpose, and consider expansion of facilities if required;
- Provision of basic maintenance equipment for cyclists;
- Arrange for a visiting or onsite 'Bike Doctor' to provide free bike repair and maintenance to staff; and
- Set up a local/site Bike User's Group to promote and encourage cycle use.

7.1.2.3 Public Transport

The following measures secured through the legal agreement are to be provided in accordance with the details submitted to the Local Planning Authority to discharge the respective obligations:

- a complimentary shuttle bus service for use by data centre staff from the first day of data centre operation;
- a coach service to transport produce workers associated with the indoor horticulture facility to and from the site and worker accommodation location; and
- accessible transportation (DDA compliant) between the bus stop on Ockendon Road and the data centre campus and the horticultural facility.

The schedule of the shuttle bus service shall align with rail service timetabling and shall be kept under review. Usage is to be reported as part of the Annual Monitoring Report (see Section 8). Any alterations to capacity, service patterns and stations served must be agreed through the Travel Plan Steering Group and with the prior written approval of the LPA.

7.1.2.4 Marketing Strategy

For the Travel Plan to work effectively it is important that all the incentives are well promoted across the site.

Staff and visitors must be made aware of the existence of the Travel Plan measures as soon as feasible, to help them with their travel choices at the earliest opportunity. For staff, this should be prior to starting work.

Measures are to include:

- Provision of travel information to potential jobseekers during the recruitment process, including:
    - Public transport (bus and rail) timetables, fare information and route maps;
    - Local walking and cycling route maps; and
    - Shuttle bus information and timetable, if appropriate.
- Provision of an introductory 'Travel Pack' as part of the onboarding process, including:
    - An introduction to the measures of the Travel Plan and what it means to staff;

- Information on current travel choices to the site and personalised travel planning assistance available;
- Information regarding forthcoming initiatives, events and surveys as required; and
- Contact details for the Travel Plan Coordinator.

The Travel Plan Coordinator is responsible for hosting promotions throughout the year and reporting of the results of annual surveys, which are to be made available, to give all employees a sense of ownership over the Travel Plan aim and objectives, and to maintain momentum on achieving them.

7.2 Delivery & Servicing Measures

Table 7-2 presents measures to be implemented to meet the delivery and servicing objectives laid out in Section 5. These cover the entire site. The measures are organised around the three central principles of safe, clean and efficient delivery/servicing.

Table 7-2 DSP Measures and alignment with objectives

Measure	Responsible	Safe	Clean	Efficient
Implement a delivery booking system to manage the volume, arrival time and type of vehicles for deliveries to the development, ensuring all deliveries are scheduled outside peak periods: seek to concentrate deliveries between 10:00-16:00.	Estate Management Team	**X**	**X**	**X**
When deliveries are booked in, provide drivers with directions for the route they should follow and instruction to proceed to the main entrance/gatehouse. Once security checks are complete (if required), drivers will be directed to the relevant delivery/collection point within the site. Clear directions will avoid drivers becoming lost/distracted while navigating local roads around the site, or within the site. Telematics data/GPS tracking to be used to verify correct routing is followed.	Estate Management Team	**X**		**X**
When deliveries are booked in and/or suppliers are contracted, explicitly prohibit any waiting/loading/unloading activity on Fen Lane or any local highways; this rule is to be monitored and enforced by the Estate Management Team.	Estate Management Team	**X**		
Prioritise suppliers using low or zero-emission vehicles when booking in deliveries and/or contracting suppliers. As a minimum, all couriers will be expected to comply with the ULEZ vehicle emissions standards.	Estate Management Team		**X**	
Prioritise suppliers with FORS Silver[7] accreditation when booking in deliveries and/or contracting suppliers.	Estate Management Team	**X**		
Ensure all unloading/loading activity on the site takes place in designated loading areas as far as possible.	Estate Management Team	**X**		
Use temporary warning signage to highlight unloading/loading activity on internal estates roads when necessary.	Estate Management Team	**X**		

[7] https://www.fors-online.org.uk/cms/silver-2/

Measure	Responsible	Safe	Clean	Efficient
Where possible, promote consolidation of similar deliveries by individual occupiers, and between occupiers, to reduce the overall number of vehicle trips required.	Estate Management Team	**X**	**X**	**X**
Schedule deliveries outside network peak hours to avoid congestion on the local highway network and therefore enable more reliable arrival times.	Estate Management Team			**X**
Only schedule deliveries when estates management personnel are available on site, to ensure security checks can be carried out and avoid missed deliveries.	Estate Management Team		**X**	**X**

The Travel Plan Coordinator, sitting within the Estate Management Team, has overall responsibility for the delivery and monitoring of these measures. However it is recommended that implementation of the Delivery and Servicing Plan measures is delegated to another member of the team who deals specifically with site logistics, while the Travel Plan Coordinator focuses on implementation of sustainable travel measures applicable to staff and visitors.

8. Management

8.1 Travel Plan Governance

The roles and responsibilities of key groups / authorities / individuals in implementing, monitoring and developing the Travel are summarised in Table 8-1.

Table 8-1 Travel Plan Governance Overview

Group / individual	Roles and responsibilities
Travel Plan Steering Group	To oversee, coordinate and monitor the implementation and evolution of the Travel Plan (ensuring LDO conditions are met) and agree on the implementation of the Travel Plan Fund.
Travel Plan Coordinator (TPC)	To be responsible for the delivery of the Travel Plan measures, monitoring of progress against targets, reporting and refinement of the Travel Plan document.
Occupier / developer representatives	To support the TPC in the delivery and promotion of travel plan measures and administration of staff travel surveys.
Local Planning Authority	To oversee and ensure the implementation of the s106 commitments agreed within the LDO and ensure the Travel Plan targets are being met.

The terms of reference and responsibilities of the Travel Plan Steering Group, Travel Plan Coordinator (TPC) and others are provided in more detail below.

8.1.1 Travel Plan Steering Group

A Travel Plan Steering Group will be established ahead of the first occupation of the development. The Group will oversee, coordinate, and monitor the implementation and evolution of the Travel Plan and will decide how best to use funding provided by the 'Travel Plan Levy' (consistent with the obligations in the S106 agreement).

The Travel Plan Steering Group is to be set up and chaired by the Travel Plan Coordinator (TPC) who is to be appointed by the developer and will be part of the Estate Management Team. It is to comprise the following additional key stakeholders:

- Representatives for each the individual occupiers - which may be a single representative for multiple smaller occupiers (e.g. a representative for a single build zone) where this is most appropriate; and
- The lead contractor (for the duration of the construction phase).

The requirement for lead contractor representation reflects the interaction between construction worker trips and the operational trips generated by the site. The contractor will be required to submit a staff travel plan prior to commencement of construction.

The Steering Group will inform and action the continued development and monitoring of the Travel Plan through the regular review process, bringing to light concerns, views and ongoing issues regarding sustainable travel and delivery/servicing activity.

Specifically, the Group is to:

- Oversee the delivery of the Travel Plan and related targets;
- Ensure compliance with the LDO travel plan conditions /obligations;
- Oversee the monitoring of staff and visitor travel patterns and behaviours;
- Review parking permit cost and provision (on an annual basis / as new build zones are occupied);
- Agree mitigation and improvement measures as needed;
- Review and approve the Annual Monitoring Report for the Travel Plan produced by the TPC (see Section 9.2);
- Agree necessary updates to the Travel Plan, informed by the outputs of the Annual Monitoring Report;
- Support the promotion of sustainable travel modes for staff, contractors, and visitors; and
- Liaise with stakeholders, including the local planning and highway authorities.

All decisions made by the Group are to be made unanimously. These include the use of the Travel Plan Levy, or revenue raised through parking charges, to fund new interventions and on changes to measures, targets, or monitoring. Any proposed variations to the commitments set out within the Section 106 agreement will require formal written approval from the Local Planning Authority prior to being implemented

The Group is to initially meet quarterly from the first year of operation, then at least once every 6 months (as agreed by the Group). As a minimum, meetings must be attended by at least one nominated representative from the developer and each build. Minutes from these meetings are to be provided to the LBH Highways team.

The Group shall apply funds generated through the 'Travel Plan Levy' (and any other revenue raised) as appropriate support the delivery of the Travel Plan targets. This may include (but is not limited to) funding towards:

- Costs towards new or extended measures or initiatives – including infrastructure to support sustainable transport access, contributions to additional services, information on services or promotional activities; and
- The cost of surveys, reports and monitoring over and above that undertaken directly by the Travel Plan Coordinator or occupier representatives.

The Group will also be expected to seek alternative funding sources which may become available from outside agencies and take a pro-active role in attracting additional funding where opportunities exist to complement and enhance existing plans.

8.1.2 Travel Plan Coordinator

To ensure that there is site-wide adoption of the Travel Plan, a Travel Plan Coordinator (TPC) must be appointed prior to first occupation of the development. The TPC will be responsible for the implementation of measures and ongoing monitoring. The name and contact details of the TPC must be sent to LBH within one month of their appointment and following any change to the appointed TPC thereafter.

The TPC is to be responsible for:

- Travel Plan delivery, management, promotion and awareness, including information campaigns;
- Chairing the Travel Plan Steering Group;
- Preparing the Annual Monitoring Report (see Section 9.2);
- Ensuring the implementation of measures, both at a site-wide level and for individual uses/occupiers;
- Confirming that information provided is relevant and current;
- Ensuring new staff members receive an enrolment Travel Pack;
- Consulting with local bus operators and the local authority to provide up to date information on services and facilities to staff;
- Defining and implementing standardised staff/visitor Travel Surveys and delivery/servicing surveys for each occupier;
- Monitoring performance against targets;
- Administration of the Travel Plan including annual updates in response to monitoring data; and
- Answering questions as they arise.

The TPC should also appoint a member of the Estate Management Team to focus on implementation of the Delivery & Servicing measures. The name and contact details of the Delivery and Servicing Plan co-ordinator must be sent to LBH within one month of their appointment and following any change to the appointed co-ordinator thereafter.

In addition, the TPC will be responsible for the implementation of the site-wide car park management plan.

8.1.3 Occupier Representatives

Representatives at the Travel Plan Steering Group will be required on behalf of each of the development occupiers. Where appropriate, a single representative may be appointed for multiple occupiers (for instance a representative for a development build zone). This is to be agreed between individual occupiers and agreed by the Travel Plan Steering Group.

Representatives will be required to:

- Attend the Travel Plan Steering Group to inform, discuss, and action additional measures / necessary remedial measures;
- Work with the TPC to promote the uptake of sustainable transport modes for their staff and visitors and support the implementation of measure; and
- Support the TPC in staff travel and traffic surveys and the production of the Annual Monitoring Report.

9. Monitoring

A programme of monitoring and review will be implemented to generate information by which the success of the Travel Plan can be evaluated. All monitoring and reporting will be coordinated and consolidated by the Travel Plan Coordinator.

9.1 Traffic Monitoring

The Travel Plan Coordinator will be responsible for monitoring the number of vehicles, pedestrians and cyclists entering the proposed development through the main site entrance and the eastern and western access roads, and for undertaking annual traffic surveys.

Annual traffic monitoring is to be consistent with the baseline surveys and is to include:

- Classified vehicle entries and exits at the main site entrance and eastern and western entrances on Fen Lane;
- Pedestrian and cyclist counts at each access;
- Automatic Traffic Counts (ATC) at the entrances to car parking areas within each build zone to establish car park accumulation; and
- An ATC on Fen Lane (to the west of the main vehicle entrance) and an ATC on Ockendon Road (to the north of the junction with Fen Lane) to capture vehicle volumes and speeds.

Traffic Surveys must be repeated annually for a minimum period of 5 years following full build-out, unless a changed schedule is agreed with LBH.

Details of vehicle entries and exits are to be provided from the ANPR cameras installed at each entrance. The ATCs must include details of vehicle numbers and vehicle classification, capturing vehicles over a 24-hour period. They must be undertaken during a neutral traffic period (avoiding school holidays, bank holidays, local events or roadworks).

Results of the counts / surveys are to be provided to the Travel Plan Steering Group by the Travel Plan Coordinator as part of the Annual Monitoring Report. Quarterly updates should also be provided on entries / exits at the main entrance based on ANPR data.

Any results which record daily traffic levels higher than the 1,250 two-way operational vehicle movements (i.e. total number of trips in both directions) per day set out in the 'worst-case' assessment in the Transport Assessment will require immediate remedial action to be agreed with the Local Planning Authority (which is expected to include increases to parking pricing or restrictions on the issue of parking permits to manage parking demand). Construction-related traffic will be subject to a separate contractor travel plan and be covered by separate monitoring requirements.

9.2 Travel Plan Monitoring

Annual Travel Surveys are to be undertaken for each build zone. These must be compliant with the TRICS Standard Assessment Methodology (SAM), consistent with the baseline survey and cover both staff and visitors. As a minimum they must include:

- Mode of travel – i.e. the ways in which people travel to and from the site (e.g. car driver, car passenger, bus, cycle), including capturing multimodal journeys, use of the dedicated shuttle bus for data centre staff and use of last-mile accessible transport between the bus on Ockendon Road and the main site entrance;

- Attitudes to travel (e.g. reasons/motivators for travel choices, perceived barriers, willingness to consider sustainable modes);
- Trip origin (i.e. home location) and distance travelled;
- Typical time of arrival and departure; and
- Feedback on travel measures provided on the site (e.g. staff shuttle bus, vehicle and cycle parking provision, walking/cycling routes, and other incentives).

Surveys should also be used to determine how many drivers are travelling in single occupancy vehicles.

Travel Surveys must be repeated annually for a minimum period of 5 years following full build-out to monitor progress towards the delivery of Travel Plan targets and support the development of any mitigating activities required. The target for completion should be at least 75% of staff.

The Travel Plan Coordinator will collate all monitoring and provide a consolidated Annual Monitoring Report covering all survey results. This to include:

- Detail on the number of trips to the development, the mode share of trips and changes from the previous reporting year;
- Detail on parking utilisation and permit allocation across the development, including any proposed changes to permit pricing;
- An overview of progress against each of the travel plan targets, including detail of any proposed mitigation measures where these are not on-track;
- Detail on Travel Plan implemented over the previous year and their impacts;
- Detail on planned Travel Plan measures, including proposed mitigation measures where targets are not on-track;
- Proposed changes to Travel Plan targets;
- An overview of key risks to the delivery of the Travel Plan targets and mitigation / management actions to be undertaken;
- Detail on how the Travel Plan Levy has been used over the previous year and planned expenditure for the year ahead.

The Annual Monitoring Report is to be produced by the Travel Plan Coordinator and is to be reviewed and approved by the Travel Plan Steering Group. The Annual Monitoring Report is then be submitted to the Local Planning Authority for approval (with comments to be provided within six weeks of receipt). The response from the Planning Authority will include detail of any actions expected of the Steering Group over the next monitoring period.

The results of the Travel Surveys will indicate whether the measures and incentives introduced are achieving the required targets, or if further measures are needed. Where targets are not being achieved, the measures and incentives should be reviewed and adjusted accordingly as well as the potential introduction of new initiatives, managed through the Travel Plan. The key points arising from the survey and review must be communicated to site occupants via information boards in foyers/communal areas, digital communications, and the Travel Plan Steering Group.

Analysis of Travel Survey results will indicate whether the measures and incentives introduced are achieving the required targets are not being met. Where targets are not being achieved the Travel Plan Steering Group will agree corrective actions / mitigation measures (including changes to parking charges). This corrective action may include new research to identify why the targets are not being met and what further action is required to reach the targets. Increasing parking tariffs is expected to be a key measure here to manage vehicle demand, together with other incentives to promote sustainable travel. A unanimous decision will be required by all parties on actions to

be funded through the Travel Plan Levy. Any changes to the Travel Plan will require the prior written approval of the Local Planning Authority.

9.3 Delivery & Servicing Monitoring

Continuous ongoing monitoring of delivery/servicing movements must be undertaken by recording the arrival and departure of all delivery/servicing vehicles associated with each occupier. This data is to be recorded by each occupier in a central database, overseen by the Estate Management Team to allow the actual delivery/servicing trip generation of the site to be monitored over time. The data will be used to monitor progress against the Travel Plan targets. The targets and measures may be adjusted accordingly by the Travel Plan Steering Group, on at least an annual basis.

Details on this monitoring, progress against targets and proposed remedial measures / actions or changes to targets are to be set out in the Annual Monitoring Report described above. Failure to deliver against targets will require remedial action by the Travel Plan Steering Group, with any use of the Levy to remedy this failure requiring the prior approval of the Local Planning Authority. A format for the survey data collection is provided below, based on Appendix C of the TfL Delivery and Servicing Plan guidance[8].

Date	*Arrival Time (hh:mm)*	*Depart Time (hh:mm)*	*Site access point*	*Use / occupier*	*Delivery point within site*	*Vehicle type*	*Fuel type*	*Type of Goods/ Waste*

10. Review

10.1 Travel Plan Review

The Travel Plan should be reviewed annually by the Travel Plan Coordinator following approval of the Annual Monitoring Report to ensure targets and measures are up-to-date. Where changes are required an updated Travel Plan must be issued subject to the prior written approval of the LPA.

Using the monitoring data collected on an ongoing basis, the delivery and servicing targets must also be reviewed and updated at least annually. This may include adjusting targets to make them more or less stretching, consistent with the overall objectives.

After the 5 year monitoring period, where overall targets have been met, these will as a minimum need to be maintained for the lifetime of the LDO. Should targets not have been met at this stage, remedial measures will be triggered and requirements for annual monitoring extended for up to a further 5 years

[8] https://content.tfl.gov.uk/delivery-and-servicing-plan-guidance.pdf

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East Havering Data Centre Campus Local Development Order









STATEMENT OF REASONS

March 2026

Havering
LONDON BOROUGH

Contents

1. INTRODUCTION AND BACKGROUND 3

2. THE NEED FOR DATA CENTRES 6

3. POLICY CONTEXT 15

4. ENVIRONMENTAL CONTEXT 24

5. DESCRIPTION OF DEVELOPMENT 27

6. CONDITIONS, CONTROLS AND LEGAL AGREEMENT 29

7. DURATION OF LDO 32

8. IMPLEMENTATION OF THE LDO 33

9. MONITORING 35

10. REVOCATION OF THE LDO 36

11. PREPARATION OF THE LDO 37

12. MAIN CONSIDERATIONS 39

13. GREEN BELT BALANCE 59

14. COMPLIANCE WITH THE DEVELOPMENT PLAN AND PLANNING BALANCE 61

15. SECTION 106 OBLIGATIONS 67

16. SUMMARY AND CONCLUSION 69

1. Introduction and Background

1.1 The East Havering Data Centre Campus Local Development Order (LDO) grants planning permission for up to 400,000 square metres of development comprising data centre floorspace (sui generis) plus associated external plant and security, indoor horticulture facilities, district heating energy centre, electrical substations and distribution infrastructure and a visitor's centre. It also permits the construction of new access roads, civil engineering works, hard and soft landscaping, and the formation of an ecology park. The boundary of the LDO is shown on Plan 1.

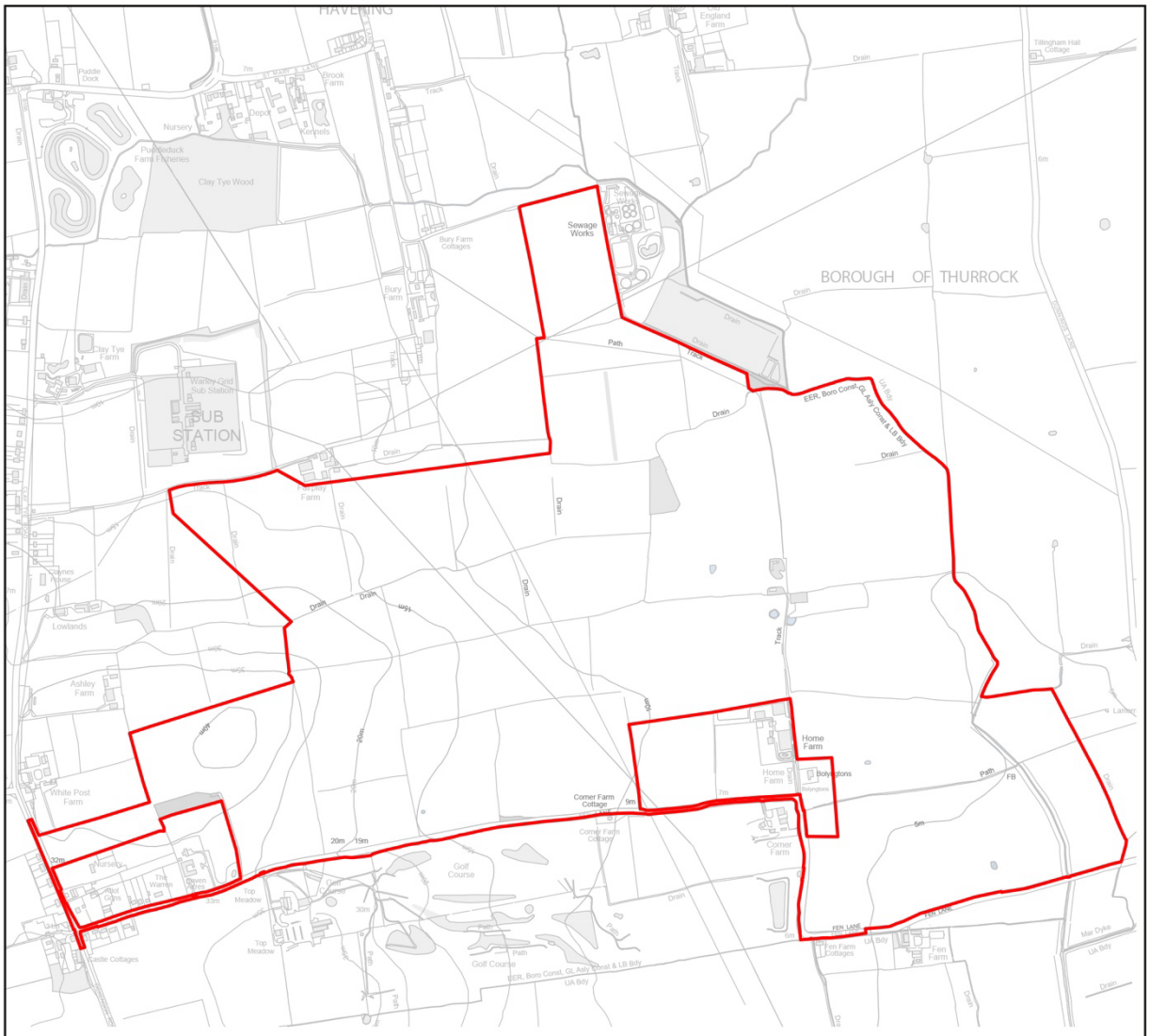
1.2 This Order is adopted by the Council under the powers conferred on it as the LPA by sections 61A–61D of and Schedule 4A to the Town and Country Planning Act 1990 (as amended) ("the Act") and pursuant to the Town and Country Planning (Development Management Procedure) (England) Order 2015 and shall be known as the 'East Havering Data Centre Campus Local Development Order'.

1.3 The LDO is being promoted by the London Borough of Havering to support the UK Government's aspirations to kickstart a data revolution across the UK and to contribute towards Havering, London and the UK's data capacity and data security needs.

1.4 In September 2024, the Government designated UK data centres – the buildings which store much of the data generated in the UK – as 'Critical National Infrastructure'. It means that data housed and processed in UK data centres such as NHS patient records and sensitive financial investment information, is less likely to be compromised during outages, cyber-attacks and adverse weather events. Putting data centres on an equal footing as water, energy and emergency services systems will mean the data centre sector can now expect greater government support in recovering from and anticipating incidents, giving the industry greater reassurance when setting up business in the UK and helping generate economic growth for all.

1.5 The new protections will also boost business confidence in investing in data centres in the country, an industry which already generates an estimated £4.6 billion in revenues a year.[1] Awarding Critical National Infrastructure status shows the fundamental importance of data centres and the government's commitment to ensuring the UK data industry remains secure and stable.

[1] https://www.gov.uk/government/news/data-centres-to-be-given-massive-boost-and-protections-from-cyber-criminals-and-it-blackouts#:~:text=Data%20centres%20powering%20the%20economy,minimising%20impacts%20on%20the%20economy.



LDO Boundary

EAST HAVERING DATA CENTRE CAMPUS

PLAN 1:
PROPOSED LDO BOUNDARY

north

Scale 1: 15 000 @ A4

0 250 500 metres

Contains Ordnance Survey data
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1.6 The NPPF consultation document (July 2024), which led to the current (December 2024) version of the NPPF, confirms data centres are forecast to support a UK tech sector worth an additional £4.5 billion and 678,000 jobs by 2025. The document makes it clear that planning policies should reflect our broad economic and infrastructure priorities, including supporting rapidly advancing commercial opportunities such as data centres, which will be the foundation of the UK's future.

Objectives and Purpose

1.7 The objective of the LDO is to facilitate the development of data centre floorspace to contribute towards meeting the significant need for additional capacity to serve the London cloud region and to create the certainty and stability businesses need to invest in the digital economy which is essential to drive economic growth at the national and local level.

1.8 As a secondary objective, the LDO will enhance the beneficial use of the Green Belt through the creation of an Ecology Park and visitor's centre and through a programme of habitat creation, tree planting and management, will deliver significant biodiversity gains.

1.9 The purpose of the LDO is to simplify planning control and to give greater flexibility to developers, occupiers and other users to develop and use new premises. It is designed to improve investor confidence and allow rapid construction of development.

2. The Need for Data Centres

Government Policy

2.1 Digital infrastructure, including data centres, drive growth across the economy by connecting businesses and public services thereby enabling them to be more efficient and productive. Data centres make a significant contribution to the UK economy, generating an estimated £4.6 billion in revenue each year (2021) and forecast to support a UK tech sector worth an additional £4.5 billion and 678,000 jobs by 2025.

2.2 As set out in the National Data Strategy[2], the UK is already a leading digital nation, and home to the highest number of data centres in Western Europe. Boosting the resilience of the sector will help the country top the global leagues for data security and support the UK government in its mission of achieving sustained economic growth.

2.3 The data market in the UK (i.e. money made from products or services derived from digitised data) is the largest in Europe and globally the UK now sites behind only the US and China in terms of venture capital investment.

2.4 In September 2024, the Government designated UK data centres – the buildings which store much of the data generated in the UK – as 'Critical National Infrastructure'. This means that data housed and processed in UK data centres such as NHS patient records and sensitive financial investment information, is less likely to be compromised during outages, cyber-attacks and adverse weather events. Putting data centres on an equal footing as water, energy and emergency services systems will mean the data centre sector can now expect greater government support in anticipating and recovering from incidents, giving the industry greater reassurance when setting up business in the UK and helping generate economic growth for all.

2.5 In November 2024, the Government published a green paper[3] setting out its vision for a modern industrial strategy to deliver the certainty and stability businesses need to invest in the high growth sectors that will drive its growth mission. The strategy focuses on eight sectors which offer the highest growth opportunity for the economy, one of which is digital and technologies. It notes that further additional data centre capacity and access to fast, secure and reliable digital connectivity is essential to enabling economic growth and to reap the transformational productivity benefits of digitalisation and the adoption of AI.

2.6 The National Planning Policy Framework (NPPF) published in December 2024 seeks to help create the conditions in which businesses can invest, expand and adapt. Paragraph 85 confirms that significant weight should be placed on the need to support economic

[2] National Data Strategy, DCMS (December 2020)
[3] Invest 2035: The UK's Modern Industrial Strategy

growth and productivity, taking into account both local business needs and wider opportunities for development.

2.7 Local planning policies are required to pay particular regard to facilitating development to meet the needs of a modern economy, including by identifying suitable locations for uses including data centres (paragraph 86 (c)) and to recognise and address the specific locational requirements of different sectors. This includes planning policies which make provision for clusters or networks of knowledge and data-driven, creative of high technology industries, and for new, expanded or upgraded facilities and infrastructure that are needed to support the growth of these industries, including data centres and grid connections (paragraph 87 (a)).

Need for data centres

2.8 Data centres underpin the world's digital economy. Transportation, energy, finance, national security, health systems, and other essential services all rely on real-time data stored in and accessed through data centres. The sensitivity and importance of this information shapes the facility's requirements, while the communication needs dictate the data centre's connectivity to the world.

2.9 The Covid-19 pandemic significantly accelerated digital transformation, triggering a surge in video conferencing through Microsoft Teams, Google Video and Zoom, as well as online retail and streaming services such as Netflix. As the demand for internet-based services such as these increases so does the demand for data centre space, with one type of service, public cloud, currently accounting for more than 75% of all demand in the UK.

2.10 Cloud computing is in essence, the storage of and access to data and programs over the internet instead of a computer's hard drive. Public cloud facilities are physical data centres in specific geographic locations containing servers, storage systems and other equipment. They are designed to guarantee essentially uninterrupted services to support companies' computing systems and data storage needs.

2.11 Hyperscale data centres are typically the largest form of data centre in terms of space and power. Historically power consumption in a hyperscale data centre was on average 20-50MW, however due to the exponential growth in the market, hyperscale demand has resulted in increasingly larger requirements with new facilities frequently exceeding 100MW of IT power. This is due to the fact that customers need to be sure that the Cloud Service Providers (CSPs) have adequate capacity in their data centre portfolios to be able to migrate their entire business onto their cloud platform over the deployment timeline.

2.12 To make their services readily accessible worldwide, CSPs usually organise their cloud infrastructure into different geographical regions, known as cloud regions. A region is a set

of availability zones (AZs) in a designated geographical area. Each AZ within a region is connected independently to all other AZ within the same region using redundant, low-latency private fibre optic links, ensuring high-speed and reliable communication and replication. These interconnections prevent any one AZ from becoming a single point of failure for communication between other AZs. Each AZ is fully independent, featuring redundant (backup) power and cooling.

2.13 Major cloud providers (e.g. AWS (Amazon Web Services), Microsoft, Google) select regions and AZs closest to business operations to provide the lowest possible latency to end-users and customers, thereby achieving the highest performance possible.

2.14 Data centre capacity growth globally has been driven by the locations of major centres of economic activity, in the most data hungry sectors. In Europe, data centre hubs are located in Frankfurt, London, Amsterdam, Paris and Dublin (referred to as the FLAPD markets) due to their large populations, their prime and large business districts, being major financial hubs and locations for large corporate organisations, and availability of utilities, technology and transportation.

2.15 The physical distance between public cloud data centres within cloud regions is limited by the speed at which data can physically travel i.e. latency, which is dependent on distance and the fibre infrastructure. To keep up with the significant demand, public cloud data centres typically require optical fibre for data transmission.

2.16 Proximity between data centres within AZs and between AZs reduces network latency allowing for faster data transmission and improved performance particularly for applications that require real-time processing or frequent data access. Having a low latency network within a single cloud region enables efficient disaster recovery solutions. In the event of failure in one data centre of AZ, backup resources can quickly take over from an alternative removing or minimising any downtime for the customer. For this reason, public cloud data centres must be sufficiently close to each other to effectively serve a single cloud region.

Need for data centre capacity in London

2.17 The principal need within the UK market centres around the London cloud region.

2.18 The role of London in the data centre market is a result of several factors including that it is the major global financial and business centre in Europe, it has excellent connectivity and secure and reliable power supplies and the largest concentration of IT personnel and data centre expertise in Europe.

2.19 The London data centre market has over 1.4GW of live IT power, the second largest data centre market in the world after Northern Virigina in the USA. It grew from its dominant

financial industry, the early adopters of data centres and fibre outside telecommunication switching houses. The banks' decision to open facilities and take colocation in Slough (originally due to the location of both land and power) led it to becoming London's key development location. This trend led to the London data centre market extending outside the London metropolitan area.

2.20 AWS operates three AZs in its London cloud region, situated in Slough, Hayes and Hemel Hempstead. Slough and West London host multiple AZs from different cloud providers, including Microsoft, making it the largest submarket in London in terms of built capacity.

2.21 Whilst data centres continue to be developed throughout Greater London, Knight Frank[4] notes that 95% of the end user demand is from cloud customers who require interconnectivity within pre-defined 'Availability Zones'. Therefore the proximity of any new data centre to the public cloud region and its users is a key consideration in evaluation site suitability.

2.22 The London Cloud market is now experiencing severe supply constraints within its core AZs as demand continues to outpace available supply. While the London market has secured substantial power for future development, there is a shortage of readily available and confirmed power to meet cloud demand over the next five years.

2.23 As noted in the Inspector's Report to the Secretary of State for Housing, Communities and Local Government in connection with an appeal against the refusal of an application for a data centre of 84,000sqm in Abbots Langley[5], there is no centrally produced figure for data centre need at either the national or the regional level. Montagu Evans on behalf of the appellant in this case, calculated the need based on the assessment of need prepared by JLL that was accepted by the Inspector in the Woodlands Park appeal in Iver[6], projected forward to 2029. It indicated a very substantial growth in the need for data centre capacity across London, with a central forecast of 3,824 MW during the period 2024-2029, 95% of which is for public cloud data centres.

2.24 Knight Frank produced a report on data centre development to support an application for a 187,000sqm data centre on land to the east of South Mimms Service Station in September 2024[7]. It suggested an IT demand of 2,350 MW to the end of the decade of which 2,000 MW will be from public cloud providers. It noted that there was only 477 MW of supply announced to come forward for the remainder of the decade (including the 96 MW at Abbotts Langley), 165 MW of IT of which was already reserved to end users leaving available IT at 312 MW, significantly short of the 2,000 MW required for public cloud.

[4] Data Centre Development Report – Land to the East of South Mimms Service Station – Knight Frank (September 2024)
[5] See IR208 of Appeal Ref: APP/P1940/W/24/3346061
[6] Appeal Ref: APP/N0410/W/24/3347353
[7] Data Centre Development Report – Land to the East of South Mimms Service Station (Knight Frank) September 2024

2.25 The data in the Knight Frank report is based on known requirements and historic take-up rates (actual leased or developed capacity). This figure will inevitably be lower than the overall 'need' due to the historic constraints in supply such as limited power availability and scarcity of suitable land.

2.26 Savills were appointed by Digital Reef to provide advice based on their knowledge of the data centre market in the UK. The data relied upon in the Woodlands Park appeal, which originated from JLL, more closely reflects Savills view of the underlying market requirement driven by strong structural factors which are primarily cloud migration and digital infrastructure adoption.

2.27 Savills state that there is currently 1,289MW[8] of secured data centre capacity within the principal sub-markets in London i.e. where the site has been acquired, planning permission obtained and power secured. A significant portion of this power depends on the new Iver B substation at Uxbridge Moor which has faced significant delays and is not anticipated to be completed until 2029. Delays in power delivery are limiting the ability to meet the current need for public cloud services in London.

2.28 It is clear that even if the current amount of secured data centre capacity in London was doubled (based on the quantum of need accepted in the Abbots Langley case) there would still be a significant shortfall at 2029. There is therefore an urgent need for additional data centre capacity to meet demand in the London cloud region and to ensure that the UK retains its competitive edge in attracting data centre investment and maintaining its leading position in Europe's digital economy.

2.29 The extent of the need for new data centres is such that additional hyperscale public cloud data centres within existing or new AZs, are the only realistic option for meeting that demand. However, there are few sites that can serve the London cloud region with secured power for scalable growth.

2.30 To meet the growing demand, new facilities entering the market are becoming significantly larger. Hyperscale cloud providers now require the ability to scale up to 100MW or more in a single deployment or within a short time frame, prompting wholesale operators to develop much larger facilities, often surpassing 100MW in power.

2.31 The significant constraints in power and land availability within core locations are pushing demand for expansion beyond the traditional AZs. To deliver the necessary resilience and acceptable levels of latency to end users within the cloud region, new deployment would need to be as close as possible to existing, established infrastructure.

[8] East Havering Data Centre Campus – UK Data Centre Need and Supply Assessment (August 2025)

2.32 The Slough AZ and adjacent AZs in Hayes and West London have the largest quantum of public cloud infrastructure serving the London cloud region and include provision from all of the major public cloud providers. The search for available power to facilitate new data centre capacity should therefore focus on sites that are as close as possible to the Slough AZ and with good access to the existing fibre network, connectivity hubs and network points such as the London Internet Exchange.

2.33 A 'reasonable distance' for hyperscalers will be a product both of actual distance and the quality (i.e. capacity and speed) of the fibre infrastructure. Access to essential utilities, including a Grid Supply Point (GSP), power transmission infrastructure and major fibre routes are always critical considerations.

2.34 Savills have looked at the physical characteristics of the European data centre landscape for public cloud facilities across the FLAPD markets. The current distance between data centres within AZs ranges from an estimated 30km in Frankfurt to 58km in Amsterdam. It has grown over time reflecting the increase in demand for live IT capacity and the issues in securing available land and power.

2.35 Based on the latency constraints determining end-user requirements, and supported by analysis of the FLAPD markets, a new deployment capable of contributing to meeting the needs of the London cloud region within approximately 60km from the AZ clusters in Slough and West London would be functionally and commercially acceptable. A new site within this search area would provide additional resilience for the Slough and West London AZs and new capacity within the London cloud region.

2.36 New deployment should be as close as possible to the Slough AZ which (along with the adjacent cluster of AZs in Hayes and West London) is the largest quantum of public cloud infrastructure serving the London cloud region. Connectivity to a single AZ and provider would significantly constrain the commercial function of a new location.

Power availability

2.37 Digital Reef has secured a contract with UKPN to deliver a minimum of 160MVA from existing Warley GSP by 2029 and a total of 600MVA by 2033 from the proposed new Warley GSP. Consideration has therefore been given to whether there are any other GSPs closer to the Slough AZ that could deliver the same amount of power within the same or better timescale as provided for in the agreement between Digital Reef and UKPN.

2.38 By the time the first tranche of power is available in 2029, the construction programme provided by Digital Reef indicates that the first two data centres will be completed and the construction of two further data centres will be well underway. As such, Digital Reef's proposal will be able to begin to contribute to meeting the identified need as soon as the

power becomes available in 2029. It follows that delay to the delivery of power will have serious negative implications on the delivery of operational data centre floorspace to meet identified needs.

2.39 Noveus, a utility infrastructure specialist advising Digital Reef, has undertaken an assessment of the status of each GSP within a reasonable distance of the Slough Availability Zone, to ascertain what power, if any, would be available now and what is anticipated to be available in 2029 on the basis of upgrades to existing GSPs or planned new GSPs.

2.40 It should be noted that power networks and the application system are dynamic and can change as a result of the number and type of applications for connections and the acceptance of connection offers. The information obtained by Noveus reflects the position at 29th January 2025 when new connection applications were paused pending the outcome of Connections Reform.

2.41 Connections Reform refers to the major overhaul of the electricity transmission connections process being led by the National Energy System Operator (NESO) with an objective of creating a connections queue aligned with the government's Clean Power 2030 Action Plan. Currently the number of contracted applicants and capacity for electricity connections for generation projects far exceed the requirement to meet the clean generation capacity required by 2030 (200-225GW) and net zero requirements for 2035/2050. These reforms aim to remove unviable projects from the queue and prioritise those critical to delivering clean power and wider industrial decarbonisation.

2.42 At January 2025 there was no GSP closer to the Slough AZ that had sufficient power to support a hyperscale facility by 2029 than that already contracted to Digital Reef at Warley. The only power available that was not already allocated to customers was at Highbury GSP and that only had 10-20 MVA, well below the minimum required for a hyperscale data centre.

2.43 The timescales for constructing a new GSP or upgrading the transmission or distribution network are significant. It can take from between just under five years to nearly eight years from entering into a contract before power would be available. This includes time for acquisition of land, designing the layout and infrastructure, securing planning permission (or other form of approval) and completing the works.

2.44 Upgrades to the existing network or GSP may be able to be completed in a shorter timeframe than the provision of a new GSP, however this would be dependent on lead in times for plant and equipment, land acquisition and the ability to take network outages as well as the condition of the existing GSP, its equipment, voltage and environmental factors. It is understood than an upgrade to a GSP to provide significant power would take almost five years from the initial application to transmission or distribution operators.

2.45 Whilst it is acknowledged that the electricity transmission connections process is currently the subject of a major overhaul through Connections Reform, it is not anticipated that the amount of power available at 2029 will materially change given the lead in time for the necessary upgrade to an alternative GSP to create the resilience required by a data centre.

2.46 Prior to Connections Reform there was a well-established secondary market for NESO power connections with parties trading their agreement for a grid connection. However power contracts with Distribution Network Operators (DNOs) such as UKPN are dedicated to the development site and cannot be changed to another site. The power contracts can change hands with the sale of a site, but the power remains dedicated to the development site. There is therefore no prospect of the 600MVA secured by Digital Reef being traded for use on another site.

2.47 As there are no GSPs closer to the Slough AZ with sufficient available power at 2029 than Warley, the search area for potential alternative sites was centred on the Warley GSP.

Consideration of Alternatives to the Proposed Development

Alternative Site Assessment

2.48 Savills undertook an assessment of alternative sites that could accommodate a hyperscale data centre campus of approximately 340,000 sqm, associated infrastructure and ancillary floorspace on behalf of Digital Reef.

2.49 A staged approach was undertaken to the consideration of alternative sites. The first stage involved the identification of a Focused Search Area (FSA) based on the established need for data centre floorspace and specific locational requirements including the availability of power and fibre.

2.50 As energy is lost as it travels, a shorter cable route minimises risk and optimises efficiency. Data centres should therefore be as near to the GSP as possible to provide maximum resilience and security for the power supplies. Whilst the commercially preferred maximum separation distance between a data centre and relevant GSP would be up to 5km, a distance of 10km has been used in the consideration of alternative sites for added robustness. This search area was accepted by Hertsmere Borough Council in relation to proposals for a 187,000sqm data centre on land to the east of South Mimms Service Station.[9] The FSA for the assessment of alternative sites was therefore defined as land within 10km of Warley GSP.

[9] Hertsmere Borough Council planning application reference 24/1152/OUTEI

2.51 A search for sites was undertaken by Savills of land within the FSA across each of the five local authorities[10] based on publicly available data, land owned by LBH, sites that the LPA had been made aware of during the early stages of preparing a new Local Plan and sites that were being actively marketed.

2.52 Savills initially assessed all of the identified sites against a series of minimum requirements covering issues such as size, shape and topography, flood risk, power, fibre, ownership and availability.

2.53 Of the 16 sites identified within the FSA, 12 did not meet the minimum requirements and were therefore not further assessed.

2.54 Of the remaining sites, Savills concluded that there were no available sites outside the Green Belt nor any sites within the Green Belt which comprised to any material extent previously developed land, or sites that would qualify as Grey Belt.

2.55 It was concluded that the only site that is demonstrably available and potentially suitable, is the proposed development site.

[10] London Borough of Havering, Thurrock Council, London Borough of Barking and Dagenham, Brentwood Borough Council and Basildon Council

3. Policy Context

3.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied and is a material consideration in planning decisions. The main material policies of the NPPF are set out below.

National Planning Policy Framework (2024)

3.2 Chapter 6 of the NPPF specifies the need to build a strong, competitive economy. Paragraph 85 states that planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt, with paragraph 86 specifically requiring planning policies to identify suitable locations for data centres.

3.3 NPPF makes it clear that the specific locational requirements of different sectors should be addressed. Paragraph 87 requires provision to be made for clusters or networks of knowledge and data-driven, creative or high technology industries, and for new, expanded or upgraded facilities and infrastructure that are needed to support the growth of these industries (including data centres and grid connections).

3.4 Chapter 10 states that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. Paragraph 110 recognises that opportunities to maximise sustainable transport solutions will vary between urban and rural areas and this should be taken into account in decision-making.

3.5 Paragraph 115 requires sustainable transport modes to be prioritised taking account of the vision of the site, the type of development and its location and for safe and suitable access to the site to be achieved for all users. Priority should be given to pedestrian and cycle movements within the scheme and with neighbouring areas and access to high quality public transport should be facilitated as far as possible (paragraph 117).

3.6 The need to make effective use of land is set out in Chapter 13. Paragraph 129 states that planning policies and decisions should support development that makes efficient use of land, taking into account a range of factors including local market conditions and viability, the availability and capacity of infrastructure and services, the desirability of maintaining an area's prevailing character and setting or of promoting regeneration and change and the importance of securing well-designed, attractive and healthy places.

3.7 Chapter 13 confirms the importance the Government attaches to protecting Green Belts by preventing urban sprawl and therefore keeping land permanently open.

3.8 The five purposes of Green Belts are (a) to check the unrestricted sprawl of large built-up areas; (b) to prevent neighbouring towns merging into one another; (c) to assist in

safeguarding the countryside from encroachment; (d) to preserve the setting and special character of historic towns; and (e) to assist in urban regeneration by encouraging the recycling of derelict and other urban land (paragraph 143).

3.9 Local planning authorities should plan positively to enhance beneficial uses of land within the Green Belt including providing opportunities to provide access, sport and recreation, to retain and enhance landscapes, visual amenity and biodiversity, or to improve damaged and derelict land (paragraph 151).

3.10 National Forest and Community Forests, which offer valuable opportunities for improving the environment around towns and cities, are covered by paragraph 152. It confirms that the National Forest Strategy and an approved Community Forest Plan may be a material consideration in deciding planning applications. Proposals for development with National or Community Forests in the Green Belt should be subject to normal policies for controlling development in Green Belts.

3.11 When considering planning applications, local planning authorities should ensure that substantial weight is given to any harm to the Green Belt, including harm to its openness. Inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances. Paragraph 153 makes it clear that '*very special circumstances'* will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations.

3.12 Development in the Green Belt is inappropriate unless one of the stated exceptions listed in paragraph 154 apply. These include buildings for agriculture and forestry, facilities including buildings for outdoor sport and recreation, cemeteries and burial grounds and allotments, the extension or replacement of a building, limited infilling in villages, limited affordable housing for local community needs, limited infilling or the partial or complete redevelopment of previously developed land.

3.13 Other forms of development including mineral extraction, engineering operations, local transport infrastructure, the reuse of buildings and material changes in the use of land or development brought forward under a Community Right to Build Order of Neighbourhood Development Order would also not be inappropriate provided they preserve its openness and do not conflict with the purposes of including land within it.

3.14 Paragraph 155 confirms that commercial development in the Green Belt should not be regarded as inappropriate where it would utilise grey belt land and would not fundamentally undermine the purposes (taken together) of the remaining Green Belt across the area of the plan, there is a demonstrable unmet need for the type of development proposed and the development would be in a sustainable location.

3.15 Chapter 15 states that planning policies and decisions should contribute to and enhance the local environment including by recognising the economic and other benefits of the best and

most versatile agricultural land and of trees and woodland and minimising impacts on and providing net gains for biodiversity (paragraph 187).

3.16 Paragraph 193 makes it clear that if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensated for, then planning permission should be refused.

Draft National Planning Policy Framework (2025)

3.17 Consultation on the draft NPPF published in December 2025 is currently underway and therefore it attracts very limited weight in decisions on development proposals in England.

The London Plan 2021

3.18 The main material policies of the London Plan are considered to be as follows.

3.19 In order to conserve and enhance London's global economic competitiveness, Policy GG5, growing a good economy, states that those involved in the planning and development must ensure that London's economy diversifies and therefore the benefits of economic success are shared more equitably across London. There is a need to plan for sufficient employment and industrial space in the right locations to support economic development and regeneration; ensure that London continues to provide leadership in innovation, research, policy and ideas; and identify the benefits of a transition to a low carbon circular economy in order to strengthen London economic success.

3.20 Policy GG6, increasing efficiency and resilience, states that those involved in planning and development need to help London to become a more efficient and resilient city by improving energy efficiency and supporting the move towards a low carbon circular economy.

3.21 Policy E4, land for industry, logistics and services to support London's economic function, states that sufficient supply of land and premises in different parts of London should be provided and maintained in order to meet current and future demands for industrial and related functions.

3.22 Policy G2, London's Green Belt, sets out that Green Belt should be protected from inappropriate development, which defined in Paragraph 147 in the NPPF as harmful to the Green Belt and should only be approved in very exceptional circumstances.

3.23 Policy G5 states that major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

3.24 Policy G6 requires Sites of Importance for Nature Conservation to be protected. Where harm is unavoidable and where the benefits of the development proposal clearly outweigh the impacts on biodiversity, the mitigation hierarchy shall be applied. In the first instance, damage to the significant ecological features should be avoided, if this is not possible, the overall spatial impact shall be minimised and mitigated through improvements to the quality and management of the rest of the site. If this is not possible, off site compensation of better biodiversity value shall be delivered.

3.25 Policy G6 also states that development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain and those which reduce deficiencies in access to nature should be considered positively.

3.26 Policy G7 requires existing trees of value to be retained. Where tree removal is required, there should be adequate replacement based on the existing value of the benefits of the trees removed.

3.27 Policy HC1 confirms that development proposals affecting heritage assets and their settings, should conserve their significance by being sympathetic to the assets' significance and appreciation within their surroundings. The cumulative impacts of incremental change from development on heritage assets and their settings should also be actively managed. Development proposals should avoid harm and identify enhancement opportunities by integrating heritage considerations early on in the design process.

3.28 Assets of archaeological significance should be identified and harm avoided or minimised through design and appropriate mitigation (Policy HC1).

3.29 Policy D3 seeks to make the best use of land by following a design-led approach that optimises the capacity of sites. Development should respond to a site's context and capacity for growth and existing and planned supporting infrastructure. Development proposals should encourage and facilitate active travel with convenient and inclusive pedestrian and cycling routes, crossing points, cycle parking and legible entrances to buildings. Proposals should also aim for high sustainability standards and take into account the principles of the circular economy.

3.30 Delivering good design is also covered by Policy D4. It confirms that masterplans and design codes should be used to help bring forward development and ensure it delivers high quality design and place-making. Design quality should be retained by ensuring maximum detail appropriate to the design stage is provided to avoid the need for later design amendments and ensuring that planning conditions provide clarity regarding the quality of the design.

3.31 Policy D8 seeks to encourage opportunities to create new public realm where appropriate and to ensure appropriate management and maintenance arrangements are in place which maximise public access and minimise rules governing the space to those required for its safe management in accordance with the Public London Charter.

3.32 Policy D11 states that development proposals should maximise building resilience and minimise potential physical risks, including those arising as a result of extreme weather, fire, flood and related hazards. Development should include measures to design out crime, deter terrorism, assist in the detection of terrorist activity and help mitigate its effects.

3.33 Fire safety is covered under Policy D12. It states that all development proposals must achieve the highest standards of fire safety and ensure that they are constructed in an appropriate way to minimise the risk of fire spread.

3.34 Policy SI 1 states that development proposals should not lead to further deterioration of existing poor air quality, create new areas that exceed air quality limits, or create unacceptable risk of high exposure to poor air quality. As a minimum, development proposals must be Air Quality Neutral.

3.35 Policy SI 2, Minimising greenhouse gas emissions, makes it clear that major development should be net zero-carbon by reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand. Part B of the policy notes that major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy. Part E states that major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations.

3.36 Policy SI 3 requires energy masterplans to identify heat loads from existing buildings that can be connected to future phases of a heat network, opportunities for low and ambient temperature heat networks, possible land for energy centres and/or energy storage and heating and cooling network routes, infrastructure and land requirements for electricity and gas supplies and opportunities to maximise renewable electricity generation.

3.37 Policy SI 4 requires major development proposals to demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems.

3.38 Policy SI 5 states that development proposals should minimise the use of mains water infrastructure, achieving at least the BREEAM excellent standard for 'Wat 01' water category or equivalent and should incorporate measures such as smart metering, water saving and recycling measures.

3.39 Policy SI 7 requires the submission of a Circular Economy Statement for referrable applications which demonstrates how waste has been reduced.

3.40 Policy SI 12 states that development proposals should ensure that flood risk is minimised and mitigated and that residual risk is addressed.

3.41 Policy SI 13 requires development proposals to aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Drainage

should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

3.42 Policy T1 requires all development to make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London's transport networks and supporting infrastructure are mitigated.

3.43 Policy T2 states that development proposals should deliver improvements that support the ten Healthy Streets Indicators, reduce the dominance of vehicles on London's streets and be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport.

3.44 Policy T4 requires the submission of a transport assessment to ensure that impacts on the capacity of the transport network are fully assessed. Where appropriate, mitigation will be required to address adverse transport impacts that are identified.

3.45 Policy T5 states that development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle. Appropriate levels of cycle parking should be provided which should be secure and well-located.

3.46 Policy T6 states that car parking should be restricted in line with levels of existing and future public transport accessibility and connectivity. Provision should be made for infrastructure for electric or other Ultra-Low Emission vehicles.

3.47 Policy T9 confirms that the Mayor will charge the Mayoral Community Infrastructure Levy to secure funding towards transport infrastructure of strategic importance. Planning obligations, including financial contributions will be sought to mitigate impacts from development.

Havering Local Plan 2016 – 2031

3.48 The main material policies of the Havering Local Plan are considered to be as follows.

3.49 Policy 19, Business growth, notes that the council is committed to building a strong and prosperous economy in Havering.

3.50 Policy 22, Skills and training, notes that the Council will encourage employment and skills development opportunities for local residents by supporting major development proposals. These proposals should be committed to provide a minimum local labour target of 20% during construction and end user phase for major or mixed use developments. Major development proposals should also make the notification of all vacancies associated with the development and its end use through the Council's employment service and offer opportunities to local businesses within their supply chains. Policy 22 makes it clear that wherever local labour

targets cannot be achieved, and all opportunities to meet this target have been explored a commuted sum payable to the Council will be required.

3.51 Policy 23, transport connections, states that the Council will support and encourage developments in Havering in locations that are most accessible by a range of transport options, ensures safe and efficient use of the highway and demonstrates that adverse impacts on the transport network are avoided or where necessary mitigated.

3.52 Policy 27, landscaping, sets out that the Council will support development proposals that incorporate a detailed and high quality landscape scheme. It also states that all proposals should prove that adequate arrangements have been made for future maintenance and management and major development proposals should be supported by a comprehensive Management Plan.

3.53 Policy 26, urban design, confirms that the Council will promote high quality design that contributes to the creation of successful places in Havering. Development proposals that are inter alia informed by, respect and complement the distinctive qualities, identity, character and geographical features of the site and local area and that are designed in accordance with the principles of Secured by Design will be supported.

3.54 Whilst not strictly applicable to non-residential development, the aspects of Policy 7 that relate to the need to protect the amenity of existing and future residents by supporting development that does not result in unacceptable overlooking or loss of privacy or outlook, unacceptable loss of daylight and sunlight and unacceptable levels of noise, vibration and disturbance, have been considered.

3.55 Policy 28 acknowledges the significance and value of Havering's heritage assets. Where a development proposal is judged to cause harm then it will be assessed against the relevant test in the NPPF.

3.56 Policy 29, green infrastructure, states that the Council is keen on maintaining and expanding the network of green spaces and natural features in Havering and enhancing the benefits of green infrastructure to the environment, economy and community.

3.57 Policy 30 relates to biodiversity and geodiversity. It states that development which would adversely affect the integrity of Specific Scientific Interest, Local Nature Reserves and Sites of Importance for Nature Conservation will not be permitted except for reasons of overriding public interest, or where adequate compensatory measures are provided. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will normally be refused.

3.58 Policy 32 states that the Council will support development that seeks to avoid flood risk to people and property. The Council will seek to reduce the risk from surface water flooding by requiring development proposals to provide sustainable drainage systems.

3.59 Policy 33, air quality, states that the Council will support development which is at least air quality neutral, optimises the use of green infrastructure to reduce pollution concentrations and exposure, delivers measures to support active travel to reduce emissions, meets the targets for carbon dioxide reduction in the London Plan and minimises emissions from construction.

3.60 Policy 34 confirms that the Council will support development proposals that do not unduly impact upon amenity, human health and safety and the natural environment by noise, dust, odour and light pollution, vibration and land contamination.

3.61 Policy 36, Low Carbon Design and Renewable Energy states that the Council will seek to optimise the energy efficiency of buildings and support low carbon and renewable energy developments including energy efficiency improvements to existing buildings. In addition, the Council will require major development to prioritise connection to any existing or planned decentralised energy networks and, where feasible, integrate combined heat and power systems on site.

Policies Map - Site Specific Designations

3.62 The LDO site lies within Green Belt, the protection and enhancement of which is identified as a strategic objective in the Local Plan. The entire site also lies within a Countryside Conservation Area and the Thames Chase Community Forest.

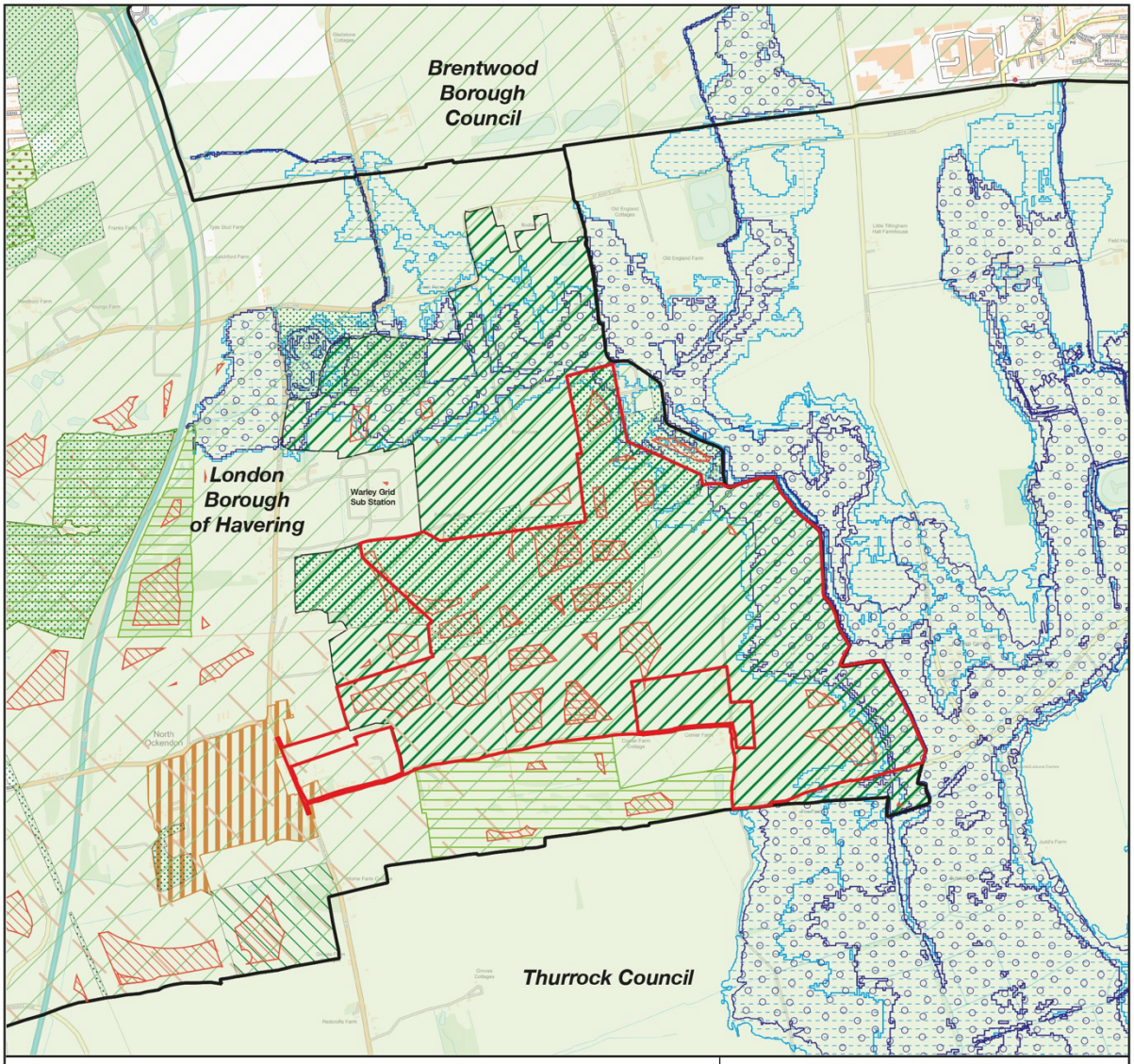
3.63 An area along the eastern boundary of the site proposed for inclusion within the Ecology Park lies within Flood Zones 2 and 3.

3.64 The northern part of the site, including the proposed cable routing area, is designated as a Site of Importance for Nature Conservation (Borough).

3.65 The site also includes a number of parcels of land suitable for small and medium wind energy developments, where proposals for wind turbines will be supported where they are in accordance with Policy 36.

3.66 A small part of the site to the west (the majority of which would be within the Ecology Park) lies within a Minerals Safeguarding Area. Policy 37 allows non-mineral development in such areas including where the development is required for open air recreation and would be otherwise acceptable or there is an overriding need for the incompatible development.

3.67 Plan 2 overleaf shows the designations applicable to the site.


Brentwood Borough Council
London Borough of Havering
Warley Grid Sub Station
Thurrock Council
LDO Boundary
Local Planning Authority Boundaries
Metropolitan Green Belt
Conservation Areas
Sites of Importance for Nature Conservation – Metropolitan
Sites of Importance for Nature Conservation – Borough
Sites of Importance for Nature Conservation – Local
Local Nature Reserves
Countryside Conservation Area
Parks, Open Spaces, Playing fields and Allotments
Thames Chase Community Forest
Minerals Safeguarding Areas
Land Suitable for Medium Wind Energy Developments
Land Suitable for Small Wind Energy Developments
Flood Zone 3
Flood Zone 2
EAST HAVERING DATA CENTRE CAMPUS
PLAN 2:
POLICIES MAP
Sources:
Havering Local Plan 2016-2031 Policies Map (adopted 2021)
Brentwood Local Plan 2016-2033 Policies Map (adopted 2022)
Thurrock Core Strategy and Policies for Management of Development 2011-2026 Policies Map (adopted 2015)
DEFRA Flood Zone Jan 2025
north
Scale 1: 25 000 @ A4
0
500
1km
Contains Ordnance Survey data
© Crown copyright and database right 2025
Adams Hendry
Sheridan House, 40-43 Jewry Street, SO23 8RY
T 01962 877414 www.adamshendry.co.uk

4. Environmental Context

Site and Surroundings

4.1 The site is located within the Metropolitan Green Belt, approximately 30km east of Central London to the northeast of the village of North Ockendon. It forms part of the Thames Freeport economic zone established by the Government in 2021 to help boost global trade, attract inward investment and generate employment opportunities.

4.2 The administrative boundary of Thurrock Council adjoins the site to the east and south. The boundary with Brentwood Borough Council lies approximately 1.4km to the north. At their closest points, South Ockendon and the village of Bulphan, both within the jurisdiction of Thurrock Council, are located approximately 3.5km southwest of the site and 1.7km to the east respectively. Upminster, within the administrative boundary of the London Borough of Havering, is approximately 4.5km to the west and the village of West Horndon within the borough of Brentwood is approximately 2km to the north-east.

4.3 The site has direct access to Fen Lane to the south of the site which connects to Junction 29 of the M25 via the B186/B187 and the A127. The A127 is approximately 1.9km to the north of the site boundary. Junction 30 of the M25 can be accessed via the B186, the A1306 (Arterial Road North Stifford), approximately 5.5km south, and the A126. The M25 is to the west of the site at a distance of 900m at its closest point.

4.4 The site is predominantly in agricultural use and currently consists of parts of four arable farms, with associated field boundaries, ditches and vehicular access tracks/roads. It also includes a field shelter, a small agricultural building and two storage areas (including waste stockpiles and bulk above ground storage tanks) located adjacent to the end of the main access track from Fen Lane and remnants of old farm buildings that have been demolished.

4.5 The site also includes land within the public highway on Fen Lane and Ockendon Road. The part of Fen Lane within the site is a narrow single-carriageway rural road providing access to several residential properties, farms, Ladyville Lodge Care Home and Top Meadows Golf Club and Hotel. Fen Lane has no footways along most of its length, except for a very narrow footway on the north side of the carriageway which extends approximately 45m back from the junction with B186 Ockendon Road.

4.6 The part of B186 Ockendon Road within the site is a single-carriageway rural road providing access to Fenlands Nursery and residential properties. It also includes a priority chicane approximately 260 m to the north of the junction with Fen Lane.

4.7 The Mardyke flows south along the north-east boundary and crosses the south-east corner of the site before flowing into the Thames Estuary at Purfleet. Parts of the site to the east (within the proposed ecology park) are within flood zones 2 and 3.

4.8 The site is designated as a Countryside Conservation Area and within the Thames Chase Community Forest in the adopted Havering Local Plan.

4.9 Two UK Power Networks (UKPN) 132 kilovolt (kv) overhead power lines cross the site which distribute power to and from the Warley substation to the north-west of the site as presented in Figure 2.3. A powerline crosses the centre of the site in a north-west to south-east alignment, crossing Fen Lane and across the eastern confines of the Top Meadow Golf Course. The other power line briefly crosses the northern most part of the site in an east to west alignment, abutting the southern edge of Fen Farm Sewage Works.

4.10 The site is also crossed by the Hordon to Abridge High Pressure Gas Pipeline and is therefore within a Health and Safety Executive (HSE) major hazard zone. A low pressure gas main also crosses the western most confines of the site on a north-south alignment.

4.11 The following Public Rights of Way (PRoW) cross the site:

- Footpath 233 from Fen Lane to Bury Farm which crosses through the centre of the site; and
- Footpath 283 from Fen Lane to Ockendon Road which crosses the western most confines of the site.

4.12 The whole of the London Borough of Havering has been declared as an Air Quality Management Area (AQMA) for exceedances of the annual mean NO_2 objective and the daily mean PM_{10} National Air Quality Strategy Objective/2006)[11].

4.13 To the north of the site are agricultural fields and an unnamed road. Bury Farm sewage works is immediately adjacent to the north-east site boundary. The Upminster sewage works grass beds Site of Importance for Nature Conservation (SINC) is adjacent to the north-east of the site boundary.

4.14 To the east of the site, are further agricultural fields beyond which is Dunnings Lane. The Grade II Blankets farmhouse is located approximately 300m to the east of the site.

4.15 A small cluster of industrial buildings is located to the south-east.

4.16 Immediately adjacent to the southern boundary of the site and north of Fen Lane are the closest residential properties of Home Farm, which also includes a number of commercial buildings which are part of the wider Home Farm Estate, and Bolyngtons, accessed via an unnamed road off Fen Lane.

[11] Department for Environment, Food and Rural Affairs (DEFRA), 2023. UK Air Information Resource. Online. Available at: https://uk-air.defra.gov.uk/aqma/details?aqma_ref=464

4.17 To the south of Fen Lane is the Top Meadow Golf Course, Corner Farm and Fen Farm and Fen Farm Cottages.

4.18 Agricultural fields and woodlands are adjacent to the south-western boundary of the site, beyond which is a small cluster of residential properties, Ladyville Lodge Care Home and Fenlands Nursery.

4.19 The site contains no listed buildings. The closest listed building to the site is the Grade II Russell Cottage is approximately 130 m to the south-west of the site boundary.

4.20 Adjacent to the far west boundary is Ockendon Road/Clay Tye Road (B186), with further residential properties beyond.

4.21 The Clay Tye Wood (SINC), an area of Ancient Woodland is approximately 600 m to the west.

4.22 The village of North Ockendon is located within a Conservation Area, part of which borders a short length of the western site boundary (see Figure 2.2). Cranham Conservation Area is located approximately 1.6 km west of the site boundary at its closest point.

4.23 Agricultural fields, Fairplay Farm and an unnamed access road to Fairplay farm are adjacent to the north-western boundary, beyond which is Warley substation, a battery storage scheme (approximately 1.7 ha), Clay Tye Road (B186) and further residential properties.

4.24 The Warley substation covers an area of approximately 4.6 ha and consists of a National Grid 275 KV four-switch mesh sub-station and a UKPN 132 kV sub-station. The National Grid sub-station provides the power supplies to the UKPN sub-station. The National Grid sub-station is supplied by 2 x 275 kV circuits from Tilbury grid supply point (GSP) and Elstree GSP.

4.25 Bury Farm is located appropriately 250 m to the north-west of the site boundary.

5. Description of Development

5.1 The LDO will permit, subject to a range of controls, a total of 400,000m^2 of commercial floorspace including 340,000m^2 of data centre use and 50,000m^2 of indoor horticultural use.

5.2 Electrical infrastructure and associated plant and equipment to serve the development would also be permitted alongside and any operations or engineering works necessary to enable the delivery of the development including excavation and earthworks, installation of underground services and utilities, creation of estate roads and associated infrastructure and highway works on Fen Lane and Ockendon Road.

5.3 The LDO will also secure the delivery of an Ecology Park on land adjoining the data centre campus to the north of Fen Lane.

5.4 The LDO is in four main parts (set out in Schedule 1), which permit:

- Part 1: Erection of Buildings

  - The erection, extension or alteration of a building for use as a data centre, campus management, campus security, indoor horticulture use, district heating energy centre or visitor centre.

  - Development would not be permitted by Part 1 if it would result in the toral amount of floorspace exceeding:
    - 340,000m^2 in data centre use;
    - 50,000m^2 in indoor horticulture use;
    - 3,300 m^2 in district heating centre use;
    - 2,700 m^2 in campus management; and
    - 600m^2 of visitor centre use.

- Part 2: Other Development

  - The creation and use of land as an Ecology Park and the construction of a Locally Equipped Area for Play.

- Part 3: Associated Infrastructure

  - Including internal roads, vehicle parking and serving, hard and soft landscaping, foul and surface water drainage infrastructure, vehicle refuelling and washing facilities, utilities infrastructure (electricity, gas, water, telecommunications) including any substations or pumping stations, CCTV and lighting.

- Part 4: Site Preparation Works

    - Including earthworks required to change the level of any land, provision of temporary site offices and welfare facilities and the external storage of plant and equipment.

5.5 The four parts of the LDO are each subject to specific limitations and conditions. Schedule 2 also sets out general conditions applicable to all development, including compliance with the East Havering Data Centre Campus Design Code and Code of Construction Practice. It also includes a number of conditions that require further details to be submitted to the local planning authority for approval at certain trigger points e.g. prior to commencement or occupation/first use of development.

5.6 Taken together with the matters set out in Section 5, including the s106 obligations which include a requirement for occupiers to comply with the East Havering Data Centre Campus Travel Plan and Landscape and Ecological Mitigation and Management Plan, development may come forward without the need for further planning permission over the lifetime of the LDO.

5.7 The Council believes that the LDO is an effective, expedient and proportionate way of contributing towards Havering, London and the UK's data capacity and data security needs. The Council further believes that there are adequate procedural and substantive safeguards set out in the LDO as described in this Statement and set in full in the LDO and its compliance documents.

5.8 Facilitation of the development through an LDO will have advantages in terms of timing and delivery of the scheme benefits over a traditional planning application. It is flexible enough to accommodate changes in technology and design whilst providing the necessary certainty to secure investment for the significant costs associated with the delivery of power and the capital expenditure required for electrical, mechanical and cooling systems.

5.9 Paragraph 52 of the NPPF encourages the use of LDOs to set the planning framework for particular categories of development where the impacts would be acceptable and in particular where this would promote economic, social or environmental gains for the area.

5.10 Impacts arising from the development to be permitted by the LDO have been mitigated to an acceptable degree. It would promote significant economic, social or environmental gains for the area and is therefore considered an appropriate mechanism for the delivery of much needed data centre capacity.

6. Conditions, Controls and Legal Agreement

6.1 Development to be permitted by Schedule 1 of the LDO will be subject, in each case, to the restrictions and conditions set out in the relevant Part of Schedule 1. Schedule 2 of the LDO sets out further general conditions that will all apply to all classes of development.

6.2 These conditions are in place to ensure that the development proceeds in an appropriate manner to deliver the objectives of the LDO and to ensure the delivery of a high quality development supported by the necessary infrastructure and services.

6.3 The LDO will not grant planning permission for any development which would be likely to have a significant effect on a European site (i.e. a Special Protection Area under the Birds Directive or a Special Area of Conservation under the Habitats Directive) or a European offshore marine site. Further the LDO will not grant planning permission for any development affecting a listed building or development which is Schedule 1 development within the meaning of Regulation 2(1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

6.4 Various Codes and Plans are referred to in the conditions accompanying the LDO. These compliance documents set out detailed guidance to control overall design quality, construction management practices, landscape and ecological mitigation and management related to the Data Centre Campus and Ecology Park. These ensure that the LDO fulfils the requirement to enable delivery of an acceptable and sustainable development.

6.5 Development permitted by the LDO must accordingly comply with the requirements set out within the compliance documents:

- East Havering Data Centre Campus LDO Design Code; and
- East Havering Data Centre Campus LDO Code of Construction Practice; (CoCP);

6.6 The s106 agreement accompanying the LDO requires the implementation of and compliance with the East Havering Data Centre Campus LDO Travel Plan and the East Havering Data Centre Campus LDO Landscape and Ecological Mitigation and Management Plan (LEMMP).

6.7 The Design Code sets out the minimum applicable standards to be applied to the building plots, infrastructure and Ecology Park and, amongst other things restricts the locations of certain types of buildings as well as their maximum height. Its purpose is to establish the parameters for the development and to ensure that a high and consistent standard of design is maintained throughout the Campus and Ecology Park to provide a sustainable and stimulating working environment whilst at the same time enabling the commercial requirements of individual occupiers to be met.

6.8 The CoCP provides a framework for compliance for all site preparation and construction

works. It establishes site-wide codes of practice and protocols, detailed work methodologies and provides a framework for the management of environmental impacts including specific control measures for managing noise levels, air quality, water resources, ecology and archaeology. All necessary environmental permits, licences and regulatory notifications will still have to be obtained.

6.9 Ecological mitigation and enhancement measures are set out in the Design Code. The LEMMP includes a requirement for continued management and surveillance and sets out monitoring protocols for terrestrial ecology. These are secured through a combination of conditions and planning obligations.

6.10 The LDO Travel Plan sets out measures to reduce the impact of the Data Centre traffic on local communities and to promote sustainable modes of transport for employees and deliveries and servicing.

6.11 An agreement under Section 106 of the Town and Country Planning Act 1990 (the s.106 Agreement), between the Council and the owners of land within the LDO boundary will be entered into, before the LDO is made, to ensure, primarily, that the mitigation necessary to support the development will be delivered when required.

6.12 In summary, it will secure the delivery of the following measures:

- Management and access to the Ecology Park and associated walking/cycle routes
- Delivery and use of the visitor's centre
- Implementation and monitoring of the Landscape and Ecological Management Plan
- Green Belt Mitigation Compensation
- Delivery of mitigation for skylark
- Delivery of the horticultural facility and use of waste heat
- Contribution to a district heating network feasibility study and utilisation of waste heat
- Contribution towards carbon offset schemes
- Submission of as-built energy performance estimates for all buildings
- Requirement to enter into a s278 agreement to deliver highway works
- Delivery of a shuttle bus and coach services
- Implementation and monitoring of the Travel Plan
- Travel Plan levy
- Submission of a car park management plan
- Contribution to active travel
- Contribution towards traffic calming measures on Ockendon Road and Fen Lane
- Public transport contribution
- Accessible transportation provision between the bus stop on Ockendon Road and data centre/horticultural facility
- Contribution towards the making good of the construction traffic routes
- Contribution to Traffic Management Order to implement and enforce a no

waiting/parking in the vicinity of the site

- Highways agreement to enable abnormal loads to access the site
- Local procurement
- Local employment and training
- Social value
- Air quality neutral
- Mayoral CIL
- Legal costs, administration and monitoring

7. Duration of LDO

7.1 The LDO would be active for a period of 20 years from the date it is made. Following the end of this period, the LDO will cease to apply.

7.2 Development started under the provision of the LDO prior to its expiry can be completed following the expiry of LDO.

7.3 The developments that have taken place under the LDO will be allowed to continue to operate but no new development will be allowed under the terms of the LDO following its expiry. Such new development would require separate planning permission in the normal course.

7.4 Any proposed amendments to the Order following review by the Local Planning Authority will be subject to the consultation procedures set out in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (or its successor).

8. Implementation of the LDO

Discharge of Conditions

8.1 The LDO is subject to a number of conditions, many of which will need to be discharged prior to development commencing. The developer must submit the necessary applications for approval in writing before a prior notification submission is made using the East Havering Data Centre Campus LDO Discharge of Condition Form (appended to the LDO).

8.2 All other relevant conditions will need to be discharged at the appropriate trigger points set out in the specific condition.

8.3 The LPA will endeavour to determine applications to discharge conditions within eight weeks of submission, however failure to determine an application within this time period does not imply that the application is acceptable.

Prior Notification of Development

8.4 Once all pre-commencement conditions have been discharged in writing, notification of the proposed development permitted by the LDO must be made to the London Borough of Havering prior to the commencement of development using the East Havering Data Centre Campus LDO Prior Notification of Development form (appended to the LDO).

8.5 The London Borough of Havering will confirm in writing, within 28 days of receipt of the completed Prior Notification of Development form, that:

- the proposed development is permitted under the terms of the LDO and therefore can proceed without the requirement for a planning application, or
- whether a separate planning application is required as the proposed development is beyond the scope of the LDO, or
- further information is required, specifying the required details and reasons for them.

8.6 Failure of the local planning authority to respond in writing within the 28 day period will be deemed as confirmation that the proposal is compliant with the provisions of the LDO.

Non-Material and/or Minor Material Amendments

8.7 Notification of proposed non-material and minor material amendments to works previously

confirmed as being permitted under the LDO can be made at any point using the East Havering Data Centre Campus LDO Non-Material and/or Minor Material Amendment Notification Form. This provision does not allow an amendment to the Order itself; all amendments must be within the scope of the LDO.

8.8 The London Borough of Havering will confirm in writing, within 28 days of receipt of the completed non-material and/or minor material amendment form, that:

- where works are proposed, the development is permitted under the terms of the LDO and therefore can proceed without the requirement for a planning application, or
- where works have been carried out, the development would have been permitted under the terms of the LDO and can be retained, or
- whether a separate planning application is required as the development is beyond the scope of the LDO, or
- further information is required, specifying the required details and reasons for them.

9. Monitoring

9.1 The LDO will be subject to regular and continuous monitoring to assess its effectiveness. The monitoring scheme will allow the Local Planning Authority to:

- check and monitor the development's compliance with the LDO and Section 106 obligations; and
- collect data to enable the LPA to measure the achievement of the LDO in delivering national and local growth and economic objectives.

9.2 The Data Centre Campus developers will be obliged to supply the Council with an annual monitoring report, which will comprise data on such topics as:

- the total number of jobs (FTE) at the entire development, broken down by employment type and location;
- statistics on number of employees/trainees/apprentices engaged/employed in accordance with the local employment and training clauses;
- the amount of Data Centre floorspace in occupation;
- the amount of Data Centre floorspace that is completed but not in occupation;
- annual water usage for data centre cooling, including proportion of mains and harvested water; annual water usage for non-data centre cooling purposes (not including horticulture);
- the achievement of BREEAM standards for any building within the entire development; and
- the amount of heat recycled through the energy centre.

10. Revocation of the LDO

10.1 The Local Planning Authority (LPA) may exercise its powers to amend or withdraw the Order (provided by section 61A [6] of Planning and Compulsory Purchase Act 2004) at any time. The Council would do so if, in the Council's view, the LDO had consistently failed to meet the objectives in making the LDO as set out at Section 1 of this Statement of Reasons, and it is considered that amendments to the Order would not overcome this, or, if changes in material considerations require the LDO to be revoked, amended or revised.

10.2 Should the local authority determine that the LDO, in part or in whole, will be revoked or amended or revised, it will give the landowner(s) and any other interested parties a minimum of 6 months' notice prior to any such revocation, amendment or revision.

10.3 In pursuance of the Town and Country Planning Act s.61D, development that has commenced lawfully before this Order is revoked, amended or revised (as the case may be), may be completed notwithstanding that the effect of the revocation, amendment or revision is to withdraw permission for the same.

11. Preparation of the LDO

11.1 The LDO has been prepared in accordance with s.61A to 64D of, and Schedule 4A to, the Town and Country Planning Act 1990, as amended, and articles 38 and 41 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended); and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

11.2 The Council is satisfied that it fully complies with the necessary legislative requirements.

11.3 Regulation 80 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') must be applied to the making of an LDO. This requires the Council as 'competent authority' to decide if a plan or project is likely to have a significant effect on a European site or a European offshore marine site, either alone or in combination with other plans or projects. The decision on whether to make an LDO can only be taken if it is first determined that there are not likely to significant effects.

11.4 A report to inform a Habitats Regulations Assessment carried out for the purposes of the Habitats Regulations confirms that the LDO would not have a likely significant effect on a European site or a European offshore marine site, either alone or in combination with other plans or projects.

11.5 The preparation of the LDO included both informal consultation - with technical consultees only during the drafting of the Order and a formal period of consultation. The consultation included the Environmental Statement (ES), compliance documents and supporting strategies.

11.6 The information included within the ES on potential significant effects is based on the Scoping Opinion issued by the Council pursuant to Part 7 Regulation 32(6) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) issued on 23rd May 2024. This was subject to formal consultation with statutory and non-statutory bodies.

11.7 The LDO is supported by key compliance documents: a Design Code, a Code of Construction Practice, a Landscape and Ecological Mitigation Management Plan and a Travel Plan. These, in turn, are informed by a series of technical strategy documents and assessments, including a Flood Risk Assessment, Transport Assessment, Heritage Statement, Green Belt Assessment, Equalities Impact Assessment and Health Impact Assessment.

11.8 Preparation of the LDO has involved a partnership between Digital Reef, the potential beneficiary of the LDO, and the London Borough of Havering, as local planning and highway authority.

11.9 Evidence prepared by Digital Reef and its consultants has been relied upon to support the LDO. Key documents include information on need and alternative sites prepared by Savills, details on the availability of power prepared by Noveus and an assessment of the potential economic benefits prepared by Oxford Economics.

11.10 Technical information on the delivery of the LDO development has been provided by Digital Reef including on earthworks, drainage, landscape and biodiversity net gain.

11.11 All of the material produced by or on behalf of Digital Reef has been carefully scrutinised by the local planning authority in accordance with the Tameside duty. This places on obligation on the decision maker to make sufficient or due inquiry of the submitted information.

12. Main Considerations

12.1 The main considerations applying to the development to be permitted by the proposed LDO are as follows:

a. Whether there is sufficient need for the amount of data centre floorspace in this location generally;
b. Whether there are alternative sites that could meet this need within the same or better timescale;
c. Whether there is a plan-led solution;
d. Whether the proposed development would constitute inappropriate development in the Green Belt, and if so, whether very special circumstances exist to justify it;
e. Whether the proposed development would result in harm to a designated heritage asset and if so whether public benefits are sufficient to outweigh that harm;
f. Whether the development complies with the development plan;
g. Whether any harm arising from the proposal would be outweighed by other considerations so as to justify the development.

12.2 This Statement relies on detailed technical evidence submitted alongside the LDO, principally in the Environmental Statement. It does not seek to cover every issue but rather focuses on significant effects. Further information on other issues can be found in the supporting evidence.

Data Centre Need

12.3 It is widely accepted that there is a significant and urgent need for additional data centre capacity to ensure that the UK retains its competitive edge in attracting data centre investment and maintaining its leading position in Europe's digital economy.

12.4 Whilst there is currently no centrally produced figure for data centre need at either the national or regional level, evidence contained in recent appeal decisions would suggest a figure in the region of 3,824MW is needed to serve the London cloud region by 2029.

12.5 The extent of the need is such that additional hyperscale public cloud data centres within existing or new AZs, are the only realistic option for meeting that demand. New deployment should be as close as possible to the Slough AZ to avoid constraining the commercial function of a new location.

12.6 Digital Reef has secured a contract with UKPN to deliver in principle a minimum of 160MVA from existing Warley GSP by 2029 and a total of 600MVA by 2033 from the proposed new Warley GSP. There are no other GSPs closer to the Slough AZ that could deliver the same

amount of power within the same or better timescale as provided for in the agreement between Digital Reef and UKPN.

12.7 The site at East Havering is the only site that can deliver hyperscale data centre floorspace by 2029. The level of need for data centre development is so great, that even if it were possible to upgrade other GSPs capable of serving the London cloud region in the short to medium term (noting that an upgrade is likely to take at least five years), these sites are likely to be required in addition to, not instead of, the site at East Havering.

12.8 The proposed East Havering Data Centre Campus LDO would permit a significant amount of data centre floorspace capable of serving the London cloud region. It has the potential to boost the resilience of the sector and contribute to data security and sustained economic growth at a national, regional and local level and is in accordance with economic objectives set out in the NPPF, Policies GG5 and E4 of the London Plan and Policy 19 of the Havering Local Plan.

12.9 It is clear that there is a demonstrable need for data centre capacity to serve the London cloud market. As sufficient power for a hyperscale facility is only available at Warley GSP, the location of a new facility must be within 10km of Warley.

Alternative Sites

12.10 In order to test whether there were any other available sites that were more suitable for a data centre campus of the scale proposed than the one at East Havering, a comprehensive assessment of sites over 40ha within 10km of Warley GSP was undertaken.

12.11 There were only three sites that met the minimum requirements (all of which were in the Green Belt) and of these, the only one that was demonstrably suitable and available was the site at East Havering. Even if the other three identified sites were considered to be available such that they are equal in terms of Site Assessment considerations to the LDO site, the LDO site is “oven ready” (including with a developer in place and a power agreement secured (which cannot be transferred to another site)), the site is well advanced in the planning process and, as such, is in a position to be developed (subject to the making of the LDO) and contribute to meeting the need. There is no indication that those other sites are in that position and all indications are that they are not.

12.12 The Sites Assessment used a minimum size threshold of 40ha which is less than the 60ha identified for potential data centre use on the proposed LDO site (Build Zones A-G). This would allow for some level of disaggregation once parking, landscaping, fencing and ancillary structures have been accounted for.

12.13 To further disaggregate the floorspace would mean that the benefits of delivery of a hyperscale data centre would be compromised. These include the opportunity to provide operators with flexibility to scale up to meet future increases in customer demand and the

additional resilience provided to an operator by having multiple data centres on the same site in the event of an outage affecting a single data centre.

12.14 Resilience is also provided through dedicated connections to existing AZs in Slough and West London, where all of the major operators have a base. The proposed data centre campus is large enough to provide hyperscale capabilities for a number of different operators without compromising latency, increasing its attractiveness to the widest possible market.

12.15 By 2029 the first data centres at East Havering would be operational and utility connections (power, fibre and water) would be in place. Given the overwhelming shortage of data centre capacity to serve the London cloud market and the severe constraints on the availability of power, it would be irrational not to fully utilise the available power at Warley GSP and capitalise on the existing infrastructure connections, avoiding the cost and disruption associated with its provision at numerous other sites.

12.16 The development proposed to be permitted through the LDO would make a significant contribution to meeting the need for data centre floorspace at the right time and in the right location. The significant constraints on the availability of power mean that there are no other sites capable of accommodating a hyperscale data centre of this scale to serve the London cloud region within the short to medium term. The contribution to meeting the urgent need for data centre floorspace and the lack of alternatives to the site should therefore be attributed substantial weight.

The Absence of a Plan-Led Solution

12.17 In considering whether to make an LDO for the proposed development, it is necessary to consider what provision the development plan makes for such uses.

12.18 Paragraph 86 c) of the NPPF states that planning policies should pay particular regard to facilitating development to meet the needs of a modern economy, including identifying suitable locations for data centres. There are no policies specific to data centres in the London Plan and no sites identified for new data centres in the adopted Havering Local Plan.

12.19 Work has commenced on a review of the London Plan. The consultation document 'Towards a New London Plan' published in May 2025 recognises the importance of data centres in supporting the London economy. In response to a question to the Mayor in June 2025[12], it was confirmed that the GLA has commissioned a study to forecast data centre growth in London to inform future policy, and the identification of suitable locations for data centres. This study has yet to be published.

[12] https://gla.moderngov.co.uk/documents/s117552/Minutes%20-%20Appendix%203%20-%20Written%20Answer%20Report.pdf

12.20 The Havering Local Plan was adopted in November 2021 with a commitment to undertake an immediate review. In January 2026 the Council published its Annual Monitoring Report (AMR) for 2024/25 which provided an updated programme, with Regulation 18 consultation anticipated in summer/autumn 2026. An updated evidence base is currently being prepared and in line with the requirement in the NPPF and the emerging London Plan is expected to include an assessment of the need for additional data centre capacity within the Borough and the identification of suitable sites.

12.21 As there is no current or emerging plan-led solution to meet the need for data centres in either the London Plan or the Havering Local Plan and given the extent of Green Belt in the Borough, it is somewhat inevitable that the only available and suitable site is in the Green Belt.

12.22 The absence of a Plan led solution carries material weight in favour of the proposal and engages the tilted balance set out in paragraph 11 of the NPPF.

Impact on the Green Belt

12.23 The NPPF makes it clear at paragraph 155 that commercial development in the Green Belt should not be regarded as inappropriate where it would utilise grey belt land and would not fundamentally undermine the purposes (taken together) of the remaining Green Belt across the area of the Plan, there is a demonstrable unmet need for the type of development proposed and the development would be in a sustainable location.

12.24 For the purposes of decision-making, ‘grey-belt’ is defined as land in the Green Belt comprising previously developed land and/or any other land that in either case, does not strongly contribute to any of purpose (a), (b) or (d) in paragraph 143.

12.25 LUC was commissioned by the LPA to undertake an independent assessment of the proposed development on the East Havering site given its location in the Green Belt. This included an assessment as to whether the site should be considered as grey belt.

12.26 The site is not previously developed land. LUC considered that the site very strongly contributed to purpose (a) i.e. to check the unrestricted sprawl of large built-up areas as it lies relatively close to the built up area of Greater London, it is predominantly free of existing development and there are no physical features in reasonable proximity strong enough to restrict and contain development.

12.27 The contribution to purpose (b) i.e. to prevent neighbouring towns merging into one another was considered by LUC to be moderate as it lies on the periphery of a moderate gap between Cranham and Basildon, the site is predominantly free of existing development and comprises a large but not substantial part of the gap and development would have no material impact on visual separation between towns.

12.28 LUC concluded that the contribution to purpose (d) i.e. to preserve the setting and special character of historic towns to be weak to none as land does not form part of the setting of a historic town, with no visual, physical or experiential connection to the historic aspects of a town.

12.29 LUC also considered the site in terms of its contribution to purpose (c) – to assist in safeguarding the countryside from encroachment and purpose (e) – to assist in urban regeneration by encouraging the recycling of derelict and other urban land.

12.30 The contribution of the site to purpose (c) was considered to be very strong as it is part of the countryside and therefore the Green Belt designation contributes to preventing encroachment on it, it is predominantly free of development and it could have a significant urbanising influence on adjacent Green Belt land, particularly to the north and east which sit on lower land.

12.31 In respect of purpose (e), LUC concluded that all Green Belt land makes an equal contribution to this purpose.

12.32 As the site makes a very strong contribution to purpose (a), it does not meet the definition of grey belt land. The proposed development is therefore inappropriate development in the Green Belt under the terms of the NPPF and therefore it must be demonstrated that very special circumstances exist for the scheme to be permitted

12.33 In addition to the identified harm to green belt purposes, LUC also concluded that there would be a loss of openness following the proposed development. Build Zones A-G have relatively little space between them and that space would make no significant contribution to the openness of adjacent Green Belt land, rather it would have an urbanising influence on it.

12.34 Build Zone H, identified for predominantly heated horticultural uses (glasshouses), is isolated from other areas of proposed development on the site and would likely not affect the openness of the Green Belt.

12.35 The remaining parts of the site are to remain undeveloped and open, other than the introduction of pedestrian/cycle routes. It is not anticipated that cycle and pedestrian movements would have a significant impact on openness.

12.36 The wider urbanising influence of the built development would not be extensive (relative to its size) because of a combination of the wider Green Belt's dominant open views of the wider countryside (making it more resilient) and the planned planting and mounding around the scheme designed to screen a significant proportion of the urbanising influences within it.

12.37 In addition to the efforts made to mitigate the impacts of the development through design

and landscaping, contributions will be sought through the s106 agreement to positively enhance the beneficial uses of certain areas of Green Belt in the Borough to compensate for the Green Belt impacts of the proposal. Securing enhancements to the beneficial use of the Green Belt accords with paragraph 151 of the NPPF.

12.38 A contribution of £6.924m would be required for the enhancement of 40 different identified sites within the Green Belt. Enhancements include improvements to biodiversity, PRoW, boundary fences and signage, new play areas and seating, Multi-Use Games Areas etc. As well as positively enhancing their beneficial use, 18 of the sites identified for enhancement are within the Thames Chase Community Forest and will contribute to some of the objectives in the approved Thames Chase Forest Plan.

12.39 The development is however inappropriate development and causes harm to green belt purposes and openness. Paragraph 153 of the NPPF makes it clear that local planning authorities should ensure that substantial weight is given to any harm to the Green Belt, including harm to its openness. 'Very special circumstances' will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations. The assessment of whether very special circumstances exist is set out in Section 13 of this Statement.

Impact on Heritage Assets

12.40 Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 imposes a duty upon the local planning authority to have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses when considering whether to grant planning permission which affects a listed building or its setting.

12.41 A similar duty applies in respect of conservation areas under section 72 of the aforementioned Act. This requires the local planning authority to pay special attention to the desirability of preserving or enhancing the character or appearance of that area in respect of development within a conservation area.

12.42 There are no heritage assets that would be directly affected by the proposed development; however, the setting of some heritage assets would be affected.

12.43 The Heritage Statement which was produced by MOLA on behalf of the LPA, identifies where the setting of a heritage asset has the potential to be affected as set out below.

Description	Grade	Distance	Potential and reason for setting to be affected
North Ockendon	NA	Adjacent to the west and shared	Low – intervisibility

Description	Grade	Distance	Potential and reason for setting to be affected
Conservation Area		boundary	
Kilbro	Grade II	Adjacent to the south-west	Very low – negligible intervisibility
Russell Cottage	Grade II	Adjacent to the south-west	Low – limited intervisibility
The Forge	Grade II	Adjacent to the south-west	Very low – negligible intervisibility
No. 7 Castle Cottages	Grade II	40 m south-west	Very low – no intervisibility
Old England	Grade II	470 m north-east	Low – possible intervisibility
Blankets Farmhouse	Grade II	300 m east	Low – limited intervisibility
Bury Farmhouse	Grade II	290 m west of the northern end of the site	High –substantial intervisibility, substantial change within current open landscape.

12.44 The North Ockendon Conservation Area (NOCA) Appraisal outlines eight key views within the conservation area from where the historic and architectural merits can be appreciated. Only two of these views have the potential to affected by the proposed development; one is looking north up Ockendon Road, which includes No. 7, Castle Cottages in the foreground and the other lies further north along Ockendon Road, looking eastwards into the junction of the B1421 and the B186, towards White Post Farm.

12.45 The impact of the proposed development on the significance of the NOCA would be limited both by landscaping in the western part of the site and the row of newer houses along Ockendon Road. However, it would nonetheless remove a large swathe of agricultural land to the east that would lessen the rural feel of the village.

12.46 There would be negligible intervisibility between the proposed development and Kilbro and The Forge with no effect on key views of the buildings. Therefore, the proposed development would not have an impact on their setting, their significance or the ability to appreciate them as individual listed buildings.

12.47 The roofline of the proposed development may appear within views of Russell Cottage and the locally listed White Post Farm at the north-eastern corner of the NOCA. However, the visibility of the proposed development would be extremely limited and the limited extent of change would not affect the significance of these listed buildings.

12.48 The road widening works along North Ockendon Road and Fen Lane would result in very minor change to the setting of the NOCA and the heritage assets within it and would have

no adverse effects on its significance.

12.49 The immediate settings of the three designated heritage assets to the north and east of the site (Bury Farmhouse, Old England and Blankets Farmhouse) all comprise partially converted farmyards which house operations that are not necessarily all connected with farming. As a result, the settings do not make a meaningful contribution to the significance of the farmhouses because the connection between the buildings and their yards has been eroded.

12.50 Old England lies approximately 1 km to the north-east of Build Zone D. Due to distance, intervening vegetation, the layout of the Build Zones and the restrictions on massing and scale, the proposed development would have no effect on the significance of this asset.

12.51 The northernmost part of the proposed development would be visible in the view looking south towards the frontage of Bury Farmhouse. However, the vast majority of the proposed development would lie further to the south allowing the asset to remain prominent within the view. When considered from this viewpoint, the changes to the setting that would be introduced by the proposed development would not be sufficient to alter the significance of the asset.

12.52 The Build Zones and parts of the ecology park would also lie within peripheral views of Bury Farmhouse from the lane to the north-east which leads to Bury Farm Sewage Works. These views are sensitive to change because of the simple openness and flat topography which is devoid of buildings, aside from the farm itself and electricity pylons. The proposed development would represent considerable change within this landscape by removing a large swathe of open farmland so that the new built form would appear significantly larger than the heritage asset, at a similar height to the pylons. The asset would no longer be prominent within the view. Consequently, the proposed development would have a substantial negative impact on the significance of the asset when viewed from the lane to the north-east, although the most important view, looking south towards the frontage of Bury Farmhouse, would not be substantially impacted.

12.53 Blankets Farmhouse lies approximately 800m to the east of the Build Zones and is separated from them by Lamorna and outbuildings on the west side. No substantial changes would be made to the immediate setting of the farmhouse and its significance is unlikely to be affected.

12.54 MOLA conclude that the level of harm caused to the significance of the NOCA would be in the lower range of less than substantial harm. This is largely due to the fact that most key elements of the special characteristics would be unaffected and the limited intervisibility due to intervening built form, the introduction of mounds and landscaping within the ecology park and the distance to the Build Zones. The wider landscape setting of the NOCA is not visible from within it, but it provides a key element of rural isolation. This key quality would be eroded by the proximity of the development but would not considerably reduce the

significance of the NOCA.

12.55 The level of harm to the significance of Bury Farmhouse is considered to be in the mid-range of less than substantial harm. When viewed from the north-east, moderate peripheral visual impact would occur within the landscape setting, which is sensitive to change, which leads to some harm to significance in this view.

12.56 Great weight and importance are attached to the harm to Bury Farmhouse and its setting. Although the development is located outside the NOCA, as a matter of planning judgment, great weight and importance is attached to the adverse effect on the significance of the Conservation Area too.

12.57 Paragraph 215 of the NPPF states that where a development proposal will lead to less than substantial harm of the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal.

12.58 National Planning Practice Guidance[13] (NPPG) makes it clear that public benefits may follow from many developments and could be anything that delivers economic, social or environmental objectives as described in paragraph 8 of the NPPF. Public benefits should flow from the development. They should be a nature or scale to be of benefit to the public at large and not just be a private benefit.

12.59 The economic objective described in the NPPF centres on the need to build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.

12.60 It is irrefutable that there is an urgent and overwhelming need for data centre floorspace. As noted in the National Data Strategy, boosting the resilience of the sector will help the country top the global leagues for data security and support the UK government in its mission of achieving sustained economic growth.

12.61 The proposed development will make a significant contribution to the need for data centres serving the London cloud region and will result in an investment of £2.26 billion in the UK economy and £1.87 billion in the Havering economy.

12.62 The s106 also requires a contribution of £50k per annum for the duration of the LDO for the creation of employment within the Borough including through the jobs brokerage service (Havering Works). It also includes a best endeavours requirement to secure local procurement.

12.63 The economic benefits of the scheme carry significant weight.

[13] Paragraph: 020 Reference ID: 18a-020-20190723

12.64 The NPPF describes social objectives as supporting strong, vibrant and healthy communities including the fostering of well-designed beautiful and safe places, with accessible services and open spaces that reflect current needs and support communities' health, social and cultural well-being.

12.65 It is not possible to quantify the social benefits of the proposed development in the same way as for economic benefits, but that does not mean that they do not exist or that they should not be attributed any weight.

12.66 As noted in the Woodlands Park decision[14], almost everything relating to medical and legal matters, transport and news media is grounded in digital infrastructure. The NHS is cited as an example of a 'cloud-first' approach to its use of technology in order to reduce cost but more importantly allow staff, medical and administrative, to be more innovative and productive in the service and care provided to NHS uses.

12.67 There would also be social benefits from the delivery of the Ecology Park including the network of footpaths and cycleways and the visitor's centre, which will be available as an education resource for local schools and for use by local community groups.

12.68 The s106 would include a requirement for a social value strategy that delivers 1% of construction and 2% of end user employees time to be committed to volunteering for initiatives as part of the Borough's Social Value Strategy.

12.69 The social benefits flowing from expanded digital infrastructure and the provision of the above should therefore be given significant weight.

12.70 The environmental objective described in the NPPF seeks to protect and enhance the natural, built and historic environment, including making effective use of land, improving biodiversity and mitigating and adapting to climate change, including moving to a low carbon economy.

12.71 The proposed Ecology Park would deliver an on-site biodiversity net gain of 62.45% area units, 85.64% hedgerow units and 236.55% watercourse units. The delivery of the Ecology Park would be secured by the s106 and the biodiversity net gain would be secured by the East Havering Data Centre Campus Landscape and Ecological Mitigation Management Plan.

12.72 Each data centre building would be required to achieve at least BREEAM Excellent rating and would aim to be net zero carbon (i.e. cause no net release of carbon dioxide and other greenhouse emissions into the atmosphere). Where this is not possible, buildings would achieve an on-site carbon reduction of at least 40% beyond Building Regulations. Where it is clearly demonstrated that it is not possible to achieve the zero-carbon target on site, any shortfall would be provided through a cash in lieu contribution to the borough's carbon offset

[14] See paragraph 8.43

fund to be secured through a planning obligation.

12.73 The environmental benefits of the scheme should also be attributed significant weight.

12.74 It is considered that the harm to the setting and thereby the significance of the NOCA and to the significance of Bury Farmhouse, to which great weight and importance is attached in both cases, is outweighed by the considerable public benefits of the development which the LDO permits.

Archaeology

12.75 During the construction stage, there is a predicted potential for the truncation or complete removal of archaeological remains. It is considered that the adverse effects on buried heritage assets could be offset by a staged programme of archaeological evaluation and were necessary, mitigation with dissemination at an appropriate level to increase knowledge and appreciation of the buried heritage assets.

12.76 Following the implementation of archaeological mitigation the proposed development would not give rise to significant residual effects for most archaeological remains, apart from prehistoric and/or Roman settlement remains for which there would be a significant adverse residual effect due to the extent of earthworks and the construction of foundations.

12.77 There is no certainty that the development would affect prehistoric and/or Roman settlement remains, but if remains where encountered, the effect would be significant adverse. For this reason the impact of the proposed development on buried heritage assets only carries moderate weight.

Socio-Economic Impacts

12.78 Digital Reef appointed Oxford Economics (OE) to advise on the local economic impact of the proposed data centre campus.

12.79 Based on data provided by Digital Reef (which has been reviewed and verified by consultants appointed by the LPA), OE estimate that the construction phase would generate a Gross Value Added (GVA) average of £38 million and 330 job years of employment across Havering each year. Cumulatively, this amounts to £804 millions of GVA and 6,970 job years through the 21-year development phase. Employment will mostly be in the construction sector at the proposed development site itself, although it will support more than one further job year of employment across the Havering economy for every four directly employed at the proposed development site.

12.80 Across the national economy, OE estimate that the construction phase would generate an

average of £121 millions of GVA, creating or sustaining 1,340 job years of employment and £28 million in taxes, each year. Cumulatively, this amounts to £2.53 billion of GVA, 28,120 job years of employment, and £586 million of taxes through the 21-year development phase.

12.81 The operational phase of the proposed development would create highly productive, permanent employment across the Havering economy. OE estimate that the proposed development could generate £281 million of GVA and create or sustain 620 jobs across Havering once fully operational in 2045, including 350 on average highly-productive and well-remunerated jobs at the proposed development site itself. The operational phase would equate to a 2.3% increase in Havering's total GVA, and a 0.5% uplift to employment, relative to the baseline forecast for the local economy.

12.82 The operational phase would create employment opportunities for residents of varying skill levels. It is estimated that almost a third of employment would be in elementary trades, while a majority of jobs would not require degree-level qualifications. Across the national economy, OE estimate that the proposed development could generate £393 million of GVA, 1,780 jobs, and £56 million in taxes once fully operational in 2045.

12.83 The Environmental Statement, which is based on the outputs from the OE report, concludes that the impact of increased construction employment and training, as well as the associated GVA and local spending would be significantly beneficial at the borough level.

12.84 Once operational, the ES concludes that additional spending in the local economy as a result of new and sustained jobs is estimated to be beneficial but not significant at the borough level.

12.85 The substantial investment in both the national and local economy is a major benefit of the scheme and therefore carries significant weight.

Noise and Vibration

12.86 The construction of the proposed development would result in significant adverse noise effects at receptors within 50m of Fen Lane due to the additional road traffic in the peak year of construction, and in significant adverse effects at receptors within 50m of the proposed highway works on Fen Lane and Ockendon Road due to construction activity noise.

12.87 The operation of the proposed development would similarly result in a significant adverse noise effect on receptors within 50m of Fen Lane due to the additional road traffic generated by the completed development.

12.88 The road traffic noise effects of the proposed development with construction traffic from the Lower Thames Crossing would be no worse than the effects of the proposed development

alone.

12.89 Given that the noise during construction is temporary and only a limited number of properties (including a small part of the Ladyville Care Home) would be affected once the site is operational, this harm is attributed moderate weight.

Soils and Agriculture

12.90 During the construction stage, there would be a permanent irreversible loss of 75ha of agricultural land within the Build Zones of which 28.6ha is best and most versatile (BMV) land in grade 3a; the remainder being in grade 3b.

12.91 The 114.1 ha of land within the proposed ecology park (of which 34.6 ha is in grade 3a and 79.5 ha is in grade 3b) would also be removed from agricultural production but is potentially reversible.

12.92 Any agricultural land affected by the installation of the cable routes connecting the site to Warley substation would be restored upon completion.

12.93 The heavy-textured soils are sensitive to disturbance and handling, but the implementation of soil resource management measures with the LDO compliance documents would reduce the effect on soil resources. With this additional mitigation in place, the residual construction effects on soil resources are considered to be:

- Permanent significant adverse within the Build Zones;
- Permanent, but potentially reversible, significant adverse within the ecology park; and
- Temporary and reversible, not significant adverse within the cable routing connecting to Warley substation.

12.94 Only 15% of the site comprises BMV land that would be permanently and irreversibly lost as a result of the built development. Whilst this would have an effect on food security, this is mitigated to a small extent by the introduction of food production associated with the heated horticulture. The loss of agricultural land is therefore given moderate weight.

Landscape and Visual

12.95 During construction works, there is potential for adverse effects on both landscape and visual receptors.

12.96 Some of the on-site landscape planting within the ecology park would be delivered early in the construction programme to help lessen impacts. However, the most pronounced effects would be associated with changes to the landscape fabric on the site, and the introduction of tall plant and machinery e.g. cranes.

12.97 The effects of the construction stage and completed development stage for scenario 1 (end of LDO 2045) and scenario 2 (10 years following the end of the LDO i.e. 2035) on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary).

12.98 The effects on landscape character would be adverse but not significant for host Landscape Character Area (LCA) 7: Essex Plateau and the adjoining LCA A1: Bulphan Fenland.

12.99 The effects of the construction stage of the proposed development on visual amenity during the day-time would be significant adverse at viewpoints from ten PRoW.

12.100 The effects of the completed development stage for scenario 1 and 2 on visual amenity during the night-time would be significant adverse at viewpoints from three PRoW.

12.101 The cumulative effects of the construction stage in combination with the proposed development on visual amenity during the day-time would be significant adverse at 16 viewpoints.

12.102 The proposed development will be seen as an alien feature in the landscape and will adversely affect both landscape and visual receptors. This harm is attributed significant weight.

Residential Visual Amenity Assessment

12.103 Ramboll was appointed by the LPA to prepare a Residential Visual Amenity Assessment of the proposed development. The findings of this assessment show that significant effects would be experienced at ten properties, with five of these also experiencing significant cumulative effects.

Property	**Completed Development**		**Cumulative**	
	Scenario 1*	**Scenario 2***	**Scenario 1***	**Scenario 2***
6 Bury Farm	Moderate to Major Adverse	Moderate to Major Adverse	Moderate to Major Adverse	Moderate to Major Adverse
2 Blanket Cottages	Moderate to Major Adverse	Moderate to Major Adverse	Moderate to Major Adverse	Moderate Adverse
Glass House Retreat	Moderate to Major Adverse	Moderate Adverse	Moderate to Major Adverse	Moderate to Major Adverse
5 Fen Farm Mews	Moderate to Major	Moderate to Major	Major Adverse	Moderate Adverse

	Adverse	Adverse		
Fen Farm Cottages	Moderate to Major Adverse	Moderate to Major Adverse	Moderate to Major Adverse	Moderate to Major Adverse
Bolyngtons	Moderate to Major Adverse	Moderate to Major Adverse	No cumulative schemes visible	No cumulative schemes visible
Corner Farm Cottage	Major Adverse	Major Adverse	No cumulative schemes visible	No cumulative schemes visible
Home Farm	Major Adverse	Major Adverse	No cumulative schemes visible	No cumulative schemes visible
Corner Farm	Moderate to Major Adverse	Moderate Adverse	No cumulative schemes visible	No cumulative schemes visible
Lower Meadow Farm	Major Adverse	Major Adverse	No cumulative schemes visible	No cumulative schemes visible
**Scenario 1: end of LDO* **Scenario 2: 10 years post LDO*				

12.104 The RVAA considers whether the effect of the development on Residential Visual Amenity:

- would be of such nature and/or magnitude that it potentially affects living conditions or 'residential amenity';
- would be considered unacceptable; and
- would be of sufficient gravity as to represent a matter of public interest which is likely to be given material weight in the exercise of planning balance.

12.105 These three matters together constitute the Residential Visual Amenity Threshold (RVAT) against which the proposed development has been assessed.

12.106 Relevant individual or combined factors that would contribute to the threshold being reached or exceeded include effects that are:

- overbearing - of such scale and dominance relative to the residential environment and views that the proposed development can be said to represent a significant detractor or change to views and the character of landscape both within and adjoining the property;
- overwhelming - representing overpowering and/or oppressive effects that are largely unavoidable at the property;
- oppressive - effects that may be considered intolerable or of such an extent that they result in a sense of ill-ease and/or discomfort; and
- pervasive - effects are ubiquitous or experienced extensively throughout the property, curtilage and associated access points.

12.107 Ramboll concluded that in all cases, the RVAT would not be exceeded as a result of the proposed development.

12.108 The harm to residential amenity should be attributed moderate weight.

Other Environmental Impacts

12.109 No significant adverse effects are predicted on transport and accessibility, air quality, ecology, water resources and flood risk or climate change during construction or operation of the proposed development.

12.110 Limited weight is attributed to the harm from the development on transport and accessibility, air quality, ecological receptors, water resources and flood risk and climate change.

Transport and Accessibility

12.111 During construction and on completion, the effects on driver, pedestrian and cyclist delay and on public transport are considered to be adverse, but not significant. The effects on severance are considered to be neutral.

12.112 The effects on non-motorised user amenity during construction and on completion is considered to be beneficial for most non-motorised users, and adverse for non-motorised users associated with the private residences and care home on Fen Lane.

12.113 The effects on fear and intimidation in the construction stage are considered to be adverse, and neutral on completion.

Air Quality

12.114 Air quality impacts from dust and construction traffic would be adverse but not significant as would the completed development stage traffic effects.

12.115 The dispersion modelling assessment of the emergency generator testing regime showed the effect at human health and ecological receptors would be adverse but not significant for all pollutants assessed.

12.116 With abatement (SCR) in place, there would be no significant effects on ecological receptors from NOx emissions. There would be no significant effects on human health receptors.

Ecology

12.117 During construction, adverse effects on ecologically sensitive receptors and biodiversity are

likely to arise however these effects would not be significant.

12.118 The effects during the construction stage on designated sites, habitats, invertebrates, amphibians, reptiles, birds, bats, badgers, water voles and other species would be adverse but not significant. These effects would be temporary and reduce as new habitat is created and becomes established over time.

12.119 On completion of the proposed development, beneficial effects on biodiversity are likely to arise as a result of the introduction of extensive new habitats within the ecology park.

12.120 The effects on habitats would be beneficial and significant, and beneficial but not significant for designated sites, invertebrates, reptiles, amphibians, birds, bats, badgers and water vole. There would be no effects on other protected and notable species.

Water Resources and Flood Risk

12.121 During construction and on completion of the proposed development, there would be no significant effects on water resources and flood risk.

Climate Change

12.122 The proposed development would result in adverse, but not significant effects in respect of climate change resilience and greenhouse gas emissions during construction and completion.

Equalities Impact Assessment

12.123 The LPA has a duty under the Equality Act 2010 to ensure that the proposed development does not lead to unlawful discrimination, and that it advances equality of opportunity and fosters good relations between those with a protected characteristic[15] and all others (the Public Sector Equality Duty – PSED).

12.124 Aecom were appointed by the LPA to undertake an Equality Impact Assessment to consider the effects of the proposed development on groups with protected characteristics.

12.125 The EqIA has identified potential beneficial equality effects as follows:

- During construction and operation increased employment opportunities may benefit local populations, particularly those underrepresented in employment statistics. Increased employment opportunities may have positive socio-economic impacts for

[15] Protected characteristics are defined under the Equality Act 2010: age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation and marriage/civil partnership.

lower-income households in more deprived urban areas near London.

- The proposed development may have positive impacts through new skills and training opportunities provided as part of the Employment and Skills Plan, such as outreach and engagement with schools.
- There may be wider long-term benefits generated through employment, skills and training opportunities which may be transferrable to other long-term jobs created through increased demand in related industries. The ecology park and accessible footways may have positive mental and physical health benefits for local residents, particularly for those who are mobility impaired who may typically face barriers when accessing green space.
- The connections between footpaths and public transport may positively impact the local community, particularly those more reliant on public transport. The introduction of lighting along pathways may also improve perceptions of safety for protected characteristic groups, particularly women.

12.126 However, there remains some potential negative equality impacts resulting from the proposed development. These include:

- During construction and operation there may be negative environmental impacts including increased noise, vibration and air pollution. This may disproportionately impact people with disabilities, older people, children and pregnant women who can be more sensitive to environmental impacts.
- The data centre may have negative visual impacts which may disproportionately impact groups who may spend more time at home, such as older people, people with disabilities, pregnant women and young children.

12.127 These impacts have been mitigated to the greatest extent possible.

Health Impact Assessment

12.128 The LPA appointed Ramboll to prepare a Health Impact Assessment (HIA) in line with the requirements of the Havering Local Plan.

12.129 The purpose of a HIA is to identify the positive and negative impacts of a proposed development on human health, and identify ways to mitigate any negative impacts, and potentially enhance positive impacts to address health inequalities.

12.130 The assessment identifies that the proposed development is likely to result in a range of positive health outcomes, alongside some localised adverse effects that are appropriately mitigated through embedded design and management measures.

Environmental Health

12.131 The primary environmental health considerations relate to construction and operational impacts including noise, air quality, traffic and changes to the existing landscape. The ES concludes that air quality effects associated with both construction and operation are not significant, reflecting low baseline pollutant concentrations and relatively modest traffic increases. From a health perspective, this suggests limited potential for measurable respiratory or cardiovascular impacts.

12.132 Construction noise and road traffic noise along Fen Lane may result in temporary and, for a small number of receptors, locally significant adverse effects. These impacts primarily relate to disturbance and potential annoyance rather than long-term health risks. The implementation of mitigation measures through the Code of Construction Practice (CoCP) is expected to minimise exposure and maintain acceptable living conditions.

12.133 Sustainable drainage strategies, climate-responsive design and energy efficiency measures contribute to environmental resilience and support long-term health outcomes by reducing flood risk, improving environmental quality and responding to future climate pressures.

Active environments and accessibility

12.134 The proposed development introduces extensive new walking and cycling infrastructure integrated with surrounding public rights of way and public transport connections. These measures improve connectivity within a rural context where active travel infrastructure is currently limited, creating opportunities for increased physical activity, improved access to green space and reduced reliance on private vehicles.

12.135 Inclusive and age-friendly design principles embedded throughout the development, including accessible routes, facilities and public spaces, support equitable access for people with mobility impairments, older adults and families, contributing positively to independence, participation and wellbeing.

Social cohesion and community infrastructure

12.136 The creation of a publicly accessible ecology park and visitor centre introduces new opportunities for community engagement, recreation, education and volunteering. These elements support mental wellbeing through increased access to nature, social interaction and community participation. Design approaches that minimise severance and enhance connectivity ensure that the development integrates with surrounding communities rather than creating physical or social barriers.

12.137 Secure by Design principles and appropriate lighting, surveillance and access

arrangements are expected to enhance perceptions of safety, which may encourage use of public spaces and active travel routes.

Economic and wider determinants of health

12.138 The proposed development is predicted to deliver significant employment and economic benefits at both borough and regional levels, including temporary construction employment and long-term operational jobs. Access to stable employment is a key determinant of health, contributing to improved income security and social wellbeing. The proposed employment and skills strategy secured through planning obligations is important in ensuring that local communities are able to access these opportunities and that benefits are distributed equitably.

Sustainability, climate and long-term health resilience

12.139 The incorporation of renewable energy, waste heat recovery, sustainable construction practices and biodiversity enhancement contributes to climate mitigation and environmental sustainability. These measures support long-term population health by reducing greenhouse gas emissions, improving environmental quality and enhancing resilience to climate change. The ecology park and associated habitat creation represent significant positive contributions to biodiversity, nature access and environmental wellbeing.

Overall conclusion

12.140 Taking account of embedded mitigation measures, design features and operational management frameworks secured through the LDO, the overall health effects of the proposed development are considered to be predominantly positive. Adverse effects are expected to be localised, temporary or appropriately managed, with no significant residual health risks identified.

12.141 The proposed development demonstrates a comprehensive approach to integrating health considerations within design, environmental management and community infrastructure, supporting positive outcomes across multiple determinants of health including environmental quality, physical activity, social cohesion, economic opportunity and climate resilience.

13. Green Belt Balance

13.1 The LDO site does not constitute grey belt and therefore the proposed development would comprise inappropriate development in the Green Belt.

13.2 Paragraph 153 of the NPPF makes it clear that substantial weight should be given to any harm to the Green Belt and that 'very special circumstances' will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations.

13.3 The development proposed to be permitted through the LDO would make a significant contribution to meeting the need for data centre floorspace to serve the London cloud region by 2029 and beyond. There is no Plan led solution in either the London Plan or the Havering Local Plan to meet this need and no alternative sites that would be capable of accommodating a datacentre of this scale in the short term.

13.4 It is considered that the overwhelming need for new data centre floorspace, the lack of alternatives to meeting that need and the lack of a plan led solution are all capable of contributing to the very special circumstances required by the NPPF and should be attributed substantial weight.

13.5 The development of data centres and ancillary infrastructure would have an urbanising influence on the Green Belt resulting in a loss of openness and harm to the purposes of including land within the Green Belt. This harm is attributed substantial weight in accordance with the NPPF.

13.6 The contribution to be secured in the s106 agreement towards the enhancement of other Green Belt sites within the Borough as compensation for the impact on the Green Belt arising from the proposals is considered to be material including by furthering the national policy objective of securing opportunities to enhance beneficial use of the Green Belt. As such it is attributed moderate weight.

13.7 The proposed development will result in an investment of £2.26 billion in the UK economy and £1.87 billion in the Havering economy as well as significant direct and indirect job creation. The economic benefits of the scheme carry substantial weight.

13.8 A financial contribution will be made to secure local employment and training. This carries moderate weight in favour of the scheme.

13.9 The social benefits flowing from expanded digital infrastructure, the delivery of the Ecology Park and the visitor's centre and the requirement for a social value strategy should be attributed substantial weight.

13.10 Similarly the environmental benefits of the scheme including the delivery of significant biodiversity net gain, measures to mitigate and adapt to climate change and move to a low carbon economy should also be attributed substantial weight.

13.11 The proposals will give rise to harm to green belt openness and purposes, as described above. Harm arises in policy terms as the development is inappropriate development in the green belt, which is by definition harmful. Substantial weight is given to these elements of green belt harm, as required by NPPF para.153.

13.12 Having regard to the duty under s66 and s72 of the Planning (Listed Building and Conservation Areas) Act 1990 and the provisions of the NPPF, the LDO is promoted on the basis that any harm to the setting and significance of Bury Farmhouse or the NOCA is clearly outweighed in each case by the considerable public benefits of the development which the LDO permits. The harm to built heritage assets is none the less attributed substantial weight in the green belt planning balance.

13.13 Moderate weight is attached to harm arising from noise, to archaeology, soils and agriculture and on residential amenity.

13.14 Limited weight is attached to harm on transport, air quality, ecology, water resources and flood risk and climate change.

13.15 Given the substantial positive weight attached to direct and indirect employment generation, need, economic benefits, and the lack of alternative sites, the significant positive weight attached to social benefits including the visitor's centre, the significant positive benefit attached to environmental benefits including BNG, and the delivery of the Ecology Park and the moderate positive weight attached to employment and training, the absence of a plan-led solution and the contributions towards enhancement of the Green Belt, when taken together clearly outweigh the harms identified including that to the Green Belt which is attributed substantial weight.

13.16 In light of the above, it is considered that the benefits of the scheme are material considerations which clearly outweigh the green belt and other harms arising from the proposals. As such, the 'very special circumstances' arise to justify the proposals being allowed to proceed, in accordance with paragraph 153 of the NPPF and Policy G2 of the London Plan.

14. Compliance with the Development Plan and Planning Balance

Impact on the Green Belt

14.1 As set out in Section 13, the proposed development would constitute very special circumstances and as such would be consistent with the NPPF and Policy G2 of the London Plan. There is no specific policy on the Green Belt in the Havering Local Plan as it relies on the NPPF and the London Plan.

Economic Considerations

14.2 The proposed East Havering Data Centre Campus LDO would permit a significant amount of data centre floorspace capable of serving the London cloud region. It has the potential to boost the resilience of the sector and contribute to data security and sustained economic growth at a national, regional and local level and is in accordance with economic objectives set out in the NPPF, Policies GG5 and E4 of the London Plan and Policy 19 of the Havering Local Plan.

14.3 The s106 agreement includes a requirement for the submission of an employment and skills strategy securing apprenticeship opportunities and local employment (20% of the construction and operational workforce to be resident within 10 miles of the site) in accordance with Policy 22 of the Havering Local Plan.

Environmental Considerations

14.4 The proposed development would result in the loss of approximately 40.9ha of the Fairplay Farm SINC, of which 26ha would be reinstated as ecology park habitat. Whilst the loss of the SINC cannot be avoided, in line with the mitigation hierarchy set out in Policy G6 of the London Plan and Policy 30 of the Havering Local Plan, the impact has been minimised and compensated for through the enhancement of the retained area of the SINC within the LDO site and the delivery of the Ecology Park. Compensatory skylark habitat is also secured through the s106.

14.5 Whilst mandatory biodiversity net gain is not required for proposals consented through an LDO, the proposals would deliver significant biodiversity net gain (far in excess of the 10% that would otherwise have been required if the scheme was the subject of a planning application) in accordance with the NPPF, Policy G6 of the London Plan and Policy 30 of the Havering Local Plan.

14.6 The LDO Design Code requires the incorporation of green roofs and walls where feasible, and a programme of significant tree planting both on the data centre campus itself and in the adjoining Ecology Park. A nature-based sustainable drainage strategy including swales and attenuation ponds is also proposed. Taken together these measures would contribute to the greening of London in accordance with Policies G5, SI 12 and SI 13 of the London Plan and Policies 27 and 29 of the Havering Local Plan.

14.7 Where possible existing trees of value (including all veteran trees) will be retained. Where tree removal is required, these would be replaced in accordance with London Plan Policy G7.

14.8 The proposals will not create new areas that exceed air quality limits or create unacceptable risk of high exposure to poor air quality. The s106 includes a requirement for the submission for approval of an Air Quality Neutral Assessment prior to construction within each Build Zone. The LDO is therefore in accordance with Policy SI 1 of the London Plan and Policy 33 of the Havering Local Plan.

14.9 The LDO requires the submission and approval of a Whole Life-Cycle Statement, Energy Statement and Circular Economy Statement for each building. It is therefore considered that the requirements of Policy SI 2, SI 4 and SI 7 of the London Plan and Policy 36 of the Havering Local Plan have been met.

14.10 In order to maximise the beneficial use of waste heat from the data centres, the LDO includes consent for a District Heating Energy Centre and a requirement that the visitor's centre, campus management and campus security building must utilise this waste heat unless it is not operationally feasible, commercially viable or less carbon-efficient than an alternative. It also includes a requirement to pump the remaining waste heat to the public highway for onward transmission should a beneficial user be identified. It is therefore considered that the proposed development is in accordance with London Plan Policy SI 3.

14.11 The LDO imposes a limit on the total amount of potable water used for the cooling process and a limit on the Water Usage Effectiveness for each data centre building per kWh or IT load per annum. Water efficiency measures are also required in the welfare areas of all buildings to reduce water usage. This will be monitored through smart meters in accordance with Policy SI 5 of the London Plan.

14.12 Rain water is required to be collected from buildings and utilised as the primary source of water for cooling and irrigation to minimise the use of mains water in accordance with Policy SI 5 of the London Plan. Whilst there is no specific requirement to meet the BREEAM excellent standard for water specifically, data centres, campus management and security buildings are required to achieve BREEAM excellent and the visitor's centre must meet BREEAM outstanding.

14.13 Paragraph 187 of the NPPF requires the economic and other benefits of best and most versatile (BMV) agricultural land to be recognised in planning policies and decision. The proposed development would result in the permanent loss of 28.6ha of BMV agricultural land and a further 34.6ha of BMV agricultural land would be lost as a result of the creation of the Ecology Park and as such the economic and other benefits of this land remaining in agricultural use would be lost. However, it is considered that the economic and other benefits of the loss of BMV agricultural land are outweighed by the significant economic benefits of the proposed development.

Heritage Considerations

14.14 Any harm to the setting and significance of the Grade II listed Bury Farmhouse or the NOCA is clearly outweighed by the considerable public benefits of the development which the LDO permits in accordance with the NPPF and Policy 28 of the Havering Local Plan.

14.15 Mitigation has been proposed to minimise as far as possible the impact of the proposed development on the setting of heritage assets. As set out previously, whilst the affected part of setting of Bury Farmhouse does not make a major contribution towards its significance, and the impact of the development on the significance of the NOCA would be limited, the proposed development would not conserve the significance of these heritage assets and would therefore be contrary to Policy HC1 of the London Plan. However as this harm is outweighed by the considerable public benefits arising from the proposed development (in accordance with the NPPF test), limited weight is attached to the conflict with HC1.

Design Considerations

14.16 The LDO, including detailed requirements set out in the Design Code, seeks to ensure that the capacity of the site is optimised and to facilitate active travel with a requirement to deliver a network of pedestrian and cycling routes in accordance with London Plan Policies D3 and D4 and Policy 26 of the Havering Local Plan.

14.17 The building heights and setbacks secured in the Design Code were informed by an assessment of landscape character and the geographical features of the site in accordance with Policy 26 of the Havering Local Plan. Given the scale of the development, which has been mitigated as far as is practical, there will be a residual adverse effect on landscape and visual character which does not complement the character of the area and in this regard, the proposals are not consistent with Policy 26.

14.18 The LDO requires buildings to meet ‘Secured by Design’ accreditation in accordance with Havering Local Plan Policy 26.

14.19 Whilst not strictly relevant to proposals for commercial development, the aspects in relation to amenity of residents set out in parts i-iii of Policy 7 of the Havering Local Plan have been considered. The proposed development would not lead to unacceptable overlooking, loss or privacy or outlook or loss of daylight and sunlight. This is supported by the RVAA which concluded that in all cases the Residential Visual Amenity Threshold would not be exceeded.

14.20 Some properties within 50m of Fen Lane would experience an increase in noise as a result of additional traffic from the development. However these are limited in number and the impact in terms of noise is not considered to be unacceptable.

14.21 Taken as a whole, the proposed development is considered to be in general accordance with Local Plan Policy 7.

14.22 The delivery of the Ecology Park will create significant new public realm and the implementation of the LDO Landscape and Ecological Mitigation and Management Plan will ensure that appropriate management and maintenance arrangements are in place. The requirement to open the Ecology Park to the public is secured in the s106 agreement. It is therefore considered that the proposals are consistent with London Plan Policy D8 (including the Public London Charter) and Havering Local Plan Policy 29.

14.23 The Design Code requires materials to be durable and compliant with fire safety standards. No buildings are proposed in Flood Zones 2 or 3 to minimise the potential for flood related hazards. Discussions with the Metropolitan Police have informed the Design Code and measures incorporated to reduce crime and deter terrorism. The perimeter security fence will meet SR1 standards and will be fitted with an intruder detection system. As such the proposals accord with London Plan Policy D11.

14.24 The LDO includes a condition requiring the submission and approval of a Fire Statement for each building other than for district heating and horticulture. It is therefore considered that sufficient safeguards have been incorporated to ensure compliance with London Plan Policy D12.

Transport Considerations

14.25 The LDO is accompanied by a Travel Plan to reduce the impact of traffic on local communities and to propose sustainable modes of transport for employees, deliveries and servicing. The requirement for the submission of a Construction Travel Plan is secured by the s106 agreement to promote sustainable travel for construction workers.

14.26 The s106 also requires a contribution towards active travel and a public transport contribution towards infrastructure improvements required by Transport for London.

14.27 Accessible transportation between the bus stop on Ockendon Road and the data centre / horticultural facilities is also secured in the s106. A network for footpaths and cycleways will also connect the campus to Fen Lane and Ockendon Road.

14.28 Coach transport will be provided for workers at the horticultural facility and for construction workers between the site and Upminster Station and Ockendon Station. A free shuttle bus will also be provided for employees in perpetuity.

14.29 With the above measures in place, it is considered that the proposed development accords with London Plan Policies T1 and T2 and Policy 23 of the Havering Local Plan.

14.30 In accordance with London Plan T4, a transport assessment has been prepared and appropriate mitigation identified.

14.31 The provision of an appropriate level of car parking (including for electric vehicles) and cycle parking are set out in the Design Code in accordance London Plan policies T5 and T6.

14.32 The development to be permitted by the LDO will be liable for the Mayoral Community Infrastructure Levy in accordance with London Plan Policy T9.

Other Considerations and Conclusion

14.33 Whilst a number of parcels of land are identified as being suitable for small and medium wind energy developments, there is no requirement under Policy 36 of the Havering Local Plan for the site to be reserved for such development and therefore there is no conflict with the development plan arising from the proposed LDO.

14.34 A large part of the site that lies within the Minerals Safeguarding Area will be kept free of development as part of the Ecology Park and therefore would be in accordance with Policy 37 of the Havering Local Plan which allows use of such land for open air recreation. As set out elsewhere in this Statement, there is an overriding need for data centre floorspace in this location and therefore non-mineral development would be permissible under Policy 37.

14.35 It follows from the analysis set out above there is compliance with a number of development plan policies. There are also conflicts with some development plan policies. Overall, it is considered that the proposed development is in accordance with the London Plan and the Havering Local Plan, taken as a whole.

14.36 Neither the London Plan nor the Havering Local Plan make specific provision for data centres. In these circumstances, the tilted balance set out in paragraph 11 of the NPPF

is engaged. It makes it clear that a presumption in favour of sustainable balance should be applied unless:

i. the application of policies in the NPPF that protect areas or assets of particular importance (including Green Belt and designated heritage assets) provide a strong reason for refusing the development proposed or

ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits.

14.37 There are no policies in the NPPF that protect areas or assets of particular importance that provide a strong reason for refusing the development proposed and the adverse impacts of the development would not significantly and demonstrably outweigh the benefits.

14.38 Whilst the planning balance lies in favour of the development considering the development plan alone, when considered in light of the NPPF taken as a whole, and other material considerations, the planning benefits of making the LDO are only reinforced.

15. Section 106 Obligations

15.1 As set out in section 6 of this Statement, the LDO is accompanied by a s106 agreement securing a number of obligations.

15.2 Regulation 122 of the Community Infrastructure Levy Regulations 2010 makes it clear that a planning obligation may only constitute a reason for granting planning permission for the development if the obligation is:

(a) necessary to make the development acceptable in planning terms;
(b) directly related to the development; and
(c) fairly and reasonably related in scale and kind to the development.

15.3 The proposed obligations have been considered against the requirement of Regulation 122 of the CIL Regulations as follows:

Obligations necessary to secure benefits of the proposed development are delivered

- Management and access to the Ecology Park and associated walking/cycle routes
- Delivery and use of the visitor's centre
- Delivery of the horticultural facility and use of waste heat
- Implementation and monitoring of the Landscape and Ecological Management Plan

Obligations necessary to mitigate impacts arising from the proposed development

- Delivery of mitigation for skylark
- Requirement to enter into a s278 agreement to deliver highway works
- Contribution towards traffic calming measures on Ockendon Road and Fen Lane
- Contribution towards the making good of the construction traffic routes
- Contribution to Traffic Management Order to implement and enforce a no waiting/parking in the vicinity of the site
- Highways agreement to enable abnormal loads to access the site
- Implementation and monitoring of the Travel Plan
- Travel Plan levy
- Submission of a car park management plan
- Contribution to active travel
- Public transport contribution
- Accessible transportation provision between the bus stop on Ockendon Road and data centre / horticultural facility
- Delivery of a shuttle bus and coach services

Obligations necessary to meet requirements in the NPPF, London Plan and/or Havering Local Plan

- Contribution towards carbon offset schemes
- Submission of as-built energy performance estimates for all buildings
- Local procurement
- Local employment and training
- Social value
- Air quality neutral
- Contribution to a district heating network feasibility study and utilisation of waste heat
- Green Belt Mitigation Compensation
- Mayoral CIL

15.4 In order to ensure the proper operation of the s106, there is also an obligation to fund legal costs, administration and monitoring.

15.5 All of the above obligations are considered to be necessary to make the development acceptable in planning terms, directly related to the development and fairly and reasonably related to it in scale and kind. The regulation 122 tests are met.

16. Summary and Conclusion

The LDO

16.1 The East Havering Data Centre Campus Local Development Order (LDO) grants planning permission for up to 400,000 square metres of development comprising data centre floorspace indoor horticulture facilities, district heating energy centre, electrical substations and distribution infrastructure, a visitor's centre, and an ecology park.

16.2 The LDO is being promoted by the London Borough of Havering to contribute towards meeting the significant need for additional data centre capacity to serve the London cloud region and to create the certainty and stability businesses need to invest in the digital economy which is essential to drive economic growth at the national and local level. It will also enhance the beneficial use of the Green Belt through the creation of an Ecology Park and visitor's centre and through a programme of habitat creation, tree planting and management, will deliver significant biodiversity gains.

16.3 An LDO is flexible enough to accommodate changes in technology and design whilst providing the necessary certainty to secure investment for the significant costs associated with the delivery of power and the capital expenditure required for electrical, mechanical and cooling systems.

16.4 Development to be permitted by the LDO will be subject to restrictions and conditions to ensure that the development proceeds in an appropriate manner to deliver the objectives of the LDO and to ensure the delivery of a high quality development supported by the necessary infrastructure and services.

16.5 The LDO will not grant planning permission for any development which would be likely to have a significant effect on a European site or a European offshore marine site or for any development affecting a listed building or development which falls within Schedule 1 of the EIA Regulations.

16.6 A s106 agreement accompanies the LDO to secure the delivery of key benefits, mitigate as far as practicable any adverse impacts and to meet policy requirements.

16.7 The LDO would be in force for 20 years from the date it is made. It will be regularly monitored and may be revoked or revised if it consistently fails to meet the objectives in making the Order.

Need and Alternatives

16.8 The London Cloud market is experiencing severe supply constraints within its core AZs as demand continues to outpace available supply, with a particular shortage of readily available and confirmed power to meet cloud demand over the next five years.

16.9 The extent of the need for new data centres is such that additional hyperscale public cloud data centres within existing or new AZs, are the only realistic option for meeting that demand. To deliver the necessary resilience and acceptable levels of latency to end users within the cloud region, new deployment would need to be as close as possible to existing, established infrastructure within the Slough AZ.

16.10 At January 2025 there was no GSP closer to the Slough AZ that had sufficient power to support a hyperscale facility by 2029 than that already contracted to Digital Reef at Warley. The search area for potential alternative sites was therefore centred on Warley GSP.

16.11 There were no available sites outside the Green Belt nor any sites within the Green Belt which comprised to any material extent previously developed land, or sites that would qualify as Grey Belt.

16.12 The only site that is demonstrably available and potentially suitable, is the proposed development site.

16.13 The development proposed to be permitted through the LDO would make a significant contribution to meeting the need for data centre floorspace at the right time and in the right location. The significant constraints on the availability of power mean that there are no other sites capable of accommodating a hyperscale data centre of this scale to serve the London cloud region within the short to medium term. The contribution to meeting the urgent need for data centre floorspace and the lack of alternatives to the site should therefore be attributed substantial weight.

Plan Led Solution

16.14 There is no current or emerging plan-led solution to meet the need for data centres in either the London Plan or the Havering Local Plan.

16.15 The absence of a Plan led solution carries moderate weight in favour of the proposal and engages the presumption in favour of sustainable development.

Planning Balance

16.16 The overwhelming need for new data centre floorspace, the lack of alternatives to meeting that need and the lack of a plan led solution are all capable of contributing to the very

special circumstances required by the NPPF and should be attributed substantial weight.

16.17 The development would have an urbanising influence on the Green Belt resulting in a loss of openness. This harm is attributed substantial weight.

16.18 Having regard to the duty under s66 and s72 of the Planning (Listed Building and Conservation Areas) Act 1990 and the provisions of the NPPF, the LDO is promoted on the basis that any harm to the setting and significance of Bury Farmhouse or the NOCA is clearly outweighed in each case by the considerable public benefits of the development which the LDO permits. The harm to built heritage assets is none the less attributed substantial weight in the green belt and overall planning balance.

16.19 Given the substantial positive weight attached to direct and indirect employment generation, need, economic benefits, and the lack of alternative sites, the significant positive weight attached to social benefits including the visitor's centre, the significant positive benefit attached to environmental benefits including BNG, and the delivery of the Ecology Park and the moderate positive weight attached to employment and training, the absence of a plan-led solution and the contributions towards enhancement of the Green Belt, when taken together clearly outweigh the harms identified including that to the Green Belt, which is attributed substantial weight.

16.20 In light of the above, it is considered that the 'very special circumstances' arise to justify the grant of planning permission for inappropriate development in the Green Belt, therefore in accordance with paragraph 153 of the NPPF and Policy G2 of the London Plan.

16.21 As set out in Section 14 of this Statement, the proposals are in accordance with the London Plan and the Havering Local Plan taken as a whole. The application of policies in the NPPF would not provide a strong reason for refusing the development and neither would any adverse impacts significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework, taken as a whole.

16.22 The proposed planning obligations are necessary to make the development acceptable and meet the Regulation 122 tests in all other regards and are therefore given appropriate weight in the decision to make the LDO.

16.23 The Council believes that the LDO is an effective, expedient and proportionate way of contributing towards Havering, London and the UK's data capacity and data security needs. The Council further believes that there are adequate procedural and substantive safeguards set out in the LDO as described in this Statement and set in full in the LDO and its compliance documents.

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EAST HAVERING DATA CENTRE CAMPUS
HABITATS REGULATIONS SCREENING ASSESSMENT

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HABITATS REGULATIONS SCREENING ASSESSMENT

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5	02/06/2025	JC	BS	BS	Updated red line boundary
6	25/11/2025	JC	BS	BS	Updated red line boundary

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CONTENTS

1.	**INTRODUCTION**	**2**
1.1	Background	2
1.2	Objective and Scope of Works	2
2.	**SITE DETAILS and Proposed Development Description**	**3**
2.1	Site Location and Description	3
2.2	Proposed Development	3
3.	**ASSESSMENT METHODOLOGY**	**5**
3.1	Stage 1 – Screening	5
3.2	Stage 2 – Appropriate Assessment	5
3.3	Stage 3 - Derogation	5
4.	**STAGE 1 – NATIONAL SITE NETWORK AND RAMSAR SITES SCREENING ASSESSMENT**	**7**
4.1	Legislative Basis for Designations	7
4.2	Special Protection Areas	7
4.3	Ramsar Sites	8
4.4	Justification of Likely Significant Effects	9
5.	**CONCLUSION**	**11**

TABLES

Table 4.1: Designation Criteria and Qualifying Features of Special Protection Areas within 10 km of Site 7
Table 4.2: Designation Criteria and Qualifying Features of Ramsar Sites within 10 km of Site 8
Table 4.3: Baseline Information for Thames Estuary & Marshes SPA and Ramsar Site 9
Table 4.4: Screening of Likely Significant Effects for Thames Estuary & Marshes SPA 10
Table 4.5: Conclusions for Thames Estuary & Marshes SPA and Ramsar site 10

APPENDICES

Appendix 1
Figures

Appendix 2
Limitations & Constraints

1. INTRODUCTION

1.1 Background

Ramboll UK Limited (Ramboll) has been appointed by the Local Planning Authority of the London Borough of Havering (the 'LPA') to undertake a Habitats Regulations Assessment (HRA) of a proposed data centre campus (the 'proposed development') on land at North Ockendon within East Havering (the 'site'). The site location is presented in Figure 1, Appendix 1.

The HRA has been undertaken in accordance with The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[1], also known as the Habitats Regulations. HRA applies to plans or projects where there could be a likely significant effect on Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which are collectively known as National Site Network sites[2], and / or on Ramsar sites.

1.2 Objective and Scope of Works

This report has been prepared with the aim of informing decision making by the competent authority (in this case the LPA), in relation to the potential for likely significant effects to arise from the proposed development on the following designated sites:

- Thames Estuary & Marshes SPA; and
- Thames Estuary & Marshes Ramsar site.

Additionally, Epping Forest SAC has been identified, which is designated for its stag beetle *Lucanus cervus* population and beech woodland habitat. However, at over 20 km distance away the proposed development is of a form and in a location that it cannot affect the species and habitats for which this SAC is designated.

This Habitat Regulations Screening Assessment has been prepared to conclude whether the proposed Local Development Order would have a likely significant effect on these European sites. Due to the distance between the site and the Thames Estuary & Marshes SPA and Ramsar sites as well as the lack of any clear impact pathways, the only identified potential impact on these sites is the loss of supporting habitat for wintering birds. The locations of these designated sites in relation to the site are shown in Figure 2, Appendix 1.

This report also considers the following:

- Ecological interest of the two designated sites;
- Nature and scale of any identified likely significant effects from the proposed development; and
- Consideration of the need for an appropriate assessment (see Section 4).

Where it is considered that an appropriate assessment is not likely to be required, the reasons and evidence to support that conclusion are presented.

[1] *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 (Accessed: February 2025).

[2] Formerly known as European / Natura 2000 Sites.

2. SITE DETAILS AND PROPOSED DEVELOPMENT DESCRIPTION

2.1 Site Location and Description

As presented in Figure 1, Appendix 1, the site is located approximately 30 km east of central London, 4 km east of Upminster and less than 1 km from the London Orbital Motorway (M25), centred approximately at national grid reference of TQ 60005 85431.

The site boundary adjoins the administrative boundary of Thurrock Council to the east. The boundary with Brentwood Borough Council lies approximately 1.4 km to the north of the site boundary.

The site is located in an area of open agricultural land in arable use to the north and north-east of the village of North Ockendon, which is approximately 100 m west of the site boundary at its closest point.

At their closest points, South Ockendon and the village of Bulphan, both within the administrative area of Thurrock Council, are located approximately 3.5 km south-west of the site and 1.7 km to the east respectively. Upminster, within the administrative boundary of LBH, is approximately 4 km to the west and the village of West Horndon within the borough of Brentwood is approximately 2 km north-east.

The site comprises an irregularly shaped area of land, covering approximately 218.8 hectares (ha). The site is in agricultural use and currently consists of four individual working arable farms.

2.2 Proposed Development

The proposed development is intended to be delivered via Local Development Order (LDO). LDOs were introduced under Section 40 of the Planning and Compulsory Purchase Act 2004 which has the effect of amending the Town and Country Planning Act 1990[3]. An LDO grants permission for the type of development specified in the LDO and by so doing, removes the need for the submission of a planning application.

A LDO cannot grant planning permission for development which is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site.

The proposed development would consist of up to 400,000 m^2 of gross external area (GEA) comprising the following:

1. Erection of buildings up to a maximum of 400,000 m^2 (GEA) including the following:
   a) Data centre uses up to 340,000 m^2;
   b) Indoor horticulture of 50,000 m^2;
   c) Visitor centre up to 600 m^2 (and no less than 300 m^2);
   d) District heating centre up to 3,300 m^2;
   e) Campus management facilities up to 2,700 m^2; and
   f) Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2.

[3] Secretary of State, 1990. Town and Country Planning Act 1990 (as amended), London. HMSO.

2. Installation of electrical infrastructure and associated plant equipment to serve the development.
3. Creation of an 'ecology park'.
4. Any operations or engineering works necessary to enable the delivery of the development including the following:
    a) Excavation and earthworks (e.g. 'cut and fill');
    b) Formation of compounds for the stockpiling and sorting of excavated materials;
    c) Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
    d) Creation of estate roads and associated infrastructure for access for all modes of transport;
    e) Site security measures including fencing, gates and gate houses;
    f) Works to install underground services and utilities; and
    g) Provision of temporary site offices and welfare facilities.
    h) Highway works on Fen Lane and Ockendon Road.

3. ASSESSMENT METHODOLOGY

A competent authority is required under the Habitats Regulations to carry out a habitat regulations assessment (HRA) to test if a plan or project could significantly harm the features of a European site (SACs, SPAs and Ramsar sites). The process can have up to three stages as set out below.

3.1 Stage 1 – Screening

Under the first stage, it is necessary for the competent authority to examine if the plan or project would result in any 'likely significant effect' on the conservation objectives of a European site, either alone or in combination with other plans or projects.

If it can be objectively concluded that there are not likely to be significant effects on relevant designated sites, no further assessment is necessary.

If any 'likely significant effects' are identified or where it remains unclear whether effects would be significant, the assessment procedure should follow on to Stage 2.

Measures intended to avoid or reduce the harmful effects of a plan or project on a designated site should not be taken into account at this screening stage, and instead these must be considered as part of an Appropriate Assessment (Stage 2). An exception to this is where the mitigation proposed is integral to or embedded in the project in order for the project to ensure compliance with an identified piece of legislation (other than the Habitats Regulations) or policy, as opposed to being required to avoid or reduce impacts to the specific features of the designated site.

Should it be determined that (in the absence of mitigation/avoidance measures) a plan or project would result in 'likely significant effects' on a designated site (or that such effects cannot be ruled out), the competent authority should proceed to the next stage (Stage 2 Appropriate Assessment), where further assessment is required.

3.2 Stage 2 – Appropriate Assessment

Under the second stage, it is necessary for the competent authority to determine whether the plan or project, either alone or in combination with other projects or plans, would result in any adverse effects on the integrity of the designated site in view of the conservation objectives of the designated site. The precautionary principle should be applied, and the focus should be on objectively demonstrating, with supporting evidence, that there would be no adverse effects on the integrity of the designated site. Where this is not the case, adverse effects must be assumed.

If it is considered by the competent authority that the plan or project would not adversely affect the integrity of the designated site, the plan or project can proceed. If this cannot be ascertained, or there is uncertainty, the assessment procedure should follow on to Stage 3.

3.3 Stage 3 - Derogation

If significant effects are still considered to be likely then Stage 3 is required, which requires the competent authority to consider alternatives. If no satisfactory alternatives are found, it should then be considered if there are imperative reasons of overriding public interest. If there are considered to be sufficient imperative reasons of overriding public interest, then the competent authority may still grant permission for a proposal. However, regarding LDOs, Regulation 80

states that *"Regulation 64 (Considerations of overriding public interest) does not apply to the making of a local development order".*

4. STAGE 1 – NATIONAL SITE NETWORK AND RAMSAR SITES SCREENING ASSESSMENT

4.1 Legislative Basis for Designations

In England, Wales and Scotland, a national site network has been created comprising sites previously designated under the European Commission (EC) Nature Directives (previously referred to as 'Natura 2000' sites). These sites, which include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), continue to be designated through domestic UK legislation, comprising the Conversation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[4] (the '2019 Habitats Regulations') in England and Wales and the Conservation (Natural Habitats) Regulations 1994 and Conservation of Offshore Marine Habitats and Species Regulations 2017 in Scotland.

The Regulations impart a duty on competent authorities to carefully consider whether a proposed development is likely to have a significant effect on a National Site Network or Ramsar site, either alone or in combination with other plans or projects.

In most circumstances, permission may only be given for a plan or project that has a likely significant effect to proceed if it has been ascertained that it would not have an adverse effect on the integrity of any such designated site.

The habitat types and species for which these sites are designated are those considered to be most in need of conservation at an international level. SACs with marine components are sites that contain qualifying marine habitats or species. Ramsar sites are designated under the Convention on Wetlands of International Importance (Ramsar Convention 1971). Although Ramsar sites do not form part of the national site network, many overlap with SAC and SPA boundaries, and Ramsar sites are in effect protected in the same way as SACs and SPAs under the 2019 Habitats Regulations as a result of policy[5].

4.2 Special Protection Areas

A distance threshold of 10 km has been used as a precautionary measure, to ensure that impacts on highly mobile species such as wintering birds and foraging bats are considered even if a direct impact to a European site within this range is not likely.

The site is within 10 km of one SPA:

- Thames Estuary & Marshes SPA, located 9.19 km south-east of the site.

Reasons for designation and qualifying features of each SPA are outlined in Table 4.1.

Table 4.1: Designation Criteria and Qualifying Features of Special Protection Areas within 10 km of Site

Special Protection Area	Reference Code	Qualifying Features	Initial Screening of Impact Pathways (Screen IN or OUT)
Thames Estuary &	UK9012021	Qualifies for supporting significant populations of the following Annex I birds over winter:	IN – Due to the European site's

[4] The National Archives, 2019. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 [online] https://www.legislation.gov.uk/uksi/2019/579/contents/made#:~:text=The%20Conservation%20of%20Habitats%20and%20Species%20%28Amendment%29%20%28EU,Regulations%202019%20UK%20Statutory%20Instruments%202019%20No.%20579 [January 2023]

[5] National Planning Policy Framework (Ministry of Housing, Communities and Local Government) 2021, Paragraph 181 available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf [March 2023]

Table 4.1: Designation Criteria and Qualifying Features of Special Protection Areas within 10 km of Site

Special Protection Area	Reference Code	Qualifying Features	Initial Screening of Impact Pathways (Screen IN or OUT)
Marshes SPA		- Hen harrier *Circus cyaneus* – 1% of the GB population - Avocet *Recurvirostra avosetta* – 28.3% of the GB population Qualifies for supporting significant populations of the following non-Annex I migratory birds over winter or in passage: - Dunlin *Calidris alpina alpina* – 2.1% of the population - Red knot *Calidris canutus* – 1.4% of the population - Black-tailed godwit *Limosa limosa islandica* – 2.4% of the population - Grey plover *Pluvialis squatarola* – 1.7% of the population - Redshank *Tringa totanus* – 2.2% of the population - Ringed plover *Charadrius hiaticula* – 2.6% of the population (passage) Qualifies for supporting an internationally important assemblage of birds: - Over winter the area regularly supports 75,019 waterfowl[6]	designation for mobile species, which may make use of habitats on site despite the considerable distance.

4.3 Ramsar Sites

The site is within 10 km of one Ramsar site:

- Thames Estuary & Marshes Ramsar site, located 9.19 km south-east of the site.

Reasons for designation and qualifying features of the Ramsar site are outlined in Table 4.2.

Table 4.2: Designation Criteria and Qualifying Features of Ramsar Sites within 10 km of Site

Ramsar site	Reference Code	Qualifying Features	Initial Screening of Impact Pathways (Screen IN or OUT)
Thames Estuary & Marshes Ramsar site	UK11069	Qualifies under Ramsar criterion 2 for supporting rare wetland flora and invertebrates: - Supports one endangered and 14 nationally scarce plant species of wetland habitats - Supports more than 20 British Red Data Book invertebrates Qualifies under Ramsar criterion 5 for supporting a wintering bird assemblage of international importance: - 45,118 peak waterfowl count Qualifies under Ramsar criterion 6 for supporting internationally important populations of the following bird species: - Ringed plover – 595 individuals / 1.8% GB population (spring/autumn peak counts) - Black-tailed godwit – 1,640 individuals / 4.6% population (spring/autumn peak counts) - Grey plover – 1,643 individuals / 3.1% GB population (winter peak counts) - Red knot – 7,279 individuals / 1.6% population (winter peak counts)	IN – Due to the European site's designation for mobile species, which may make use of habitats on site despite the considerable distance.

[6] Natural England, 2012. Thames Estuary and Marshes SPA Standard Data Form. Available at: https://publications.naturalengland.org.uk/publication/3227002 (Accessed: January 2025).

Table 4.2: Designation Criteria and Qualifying Features of Ramsar Sites within 10 km of Site

Ramsar site	Reference Code	Qualifying Features	Initial Screening of Impact Pathways (Screen IN or OUT)
		- Dunlin – 15,171 individuals / 1.1% population (winter peak counts) - Redshank – 1,178 individuals / 1% GB population (winter peak counts)[7]	

4.4 Justification of Likely Significant Effects

Based on the initial screening outlined above, the following designated sites have been identified as requiring further consideration to assess the likelihood of significant effects:

- Thames Estuary & Marshes SPA; and
- Thames Estuary & Marshes Ramsar site.

Baseline information for these sites is provided in Table 4.3.

Likely significant effects on these sites have been considered together in Tables 4.3 through 4.5 as their boundaries overlap and they are designated for similar features.

Table 4.3: Baseline Information for Thames Estuary & Marshes SPA and Ramsar Site

Baseline Information	Detail
Relationship between Designated Site and the site	Located 9.2 km south-east of the site boundary.
Relationship with other National Site Network or Ramsar Sites	These designated sites overlap with one another, sharing the same border in the area closest to the site. Both designated sites are underpinned by Mucking Flats and Marshes Site of Special Scientific Interest (SSSI) in this area.
Conservation Objectives	SPA: "*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;* - *The extent and distribution of the habitats of the qualifying features* - *The structure and function of the habitats of the qualifying features* - *The supporting processes on which the habitats of the qualifying features rely* - *The population of each of the qualifying features, and,* - *The distribution of the qualifying features within the site.*"[8] Ramsar: Not listed.
Condition	Condition information is not available for Thames Estuary & Marshes SPA or Ramsar site; however, this information is published for Mucking Flats and Marshes SSSI. Aggregations of black-tailed godwit, dunlin, grey plover, redshank, ringed plover and shelduck *Tadorna tadorna* are all considered to be in favourable condition. The invertebrate assemblage in unshaded early successional areas is in favourable condition, whilst the invertebrate assemblages in saltmarsh and traditional brackish marsh, open water on disturbed sediments and permanent wet mire are in unfavourable condition but are recovering. Littoral sediment habitats (including saltmarsh and mudflats) are in favourable condition, whilst inshore sublittoral sediments (including free-draining brackish grassland with scattered scrub and wetland habitats with ditches) are in unfavourable condition but are also recovering.

[7] Joint Nature Conservation Committee, 2008. Information Sheet on Ramsar Wetlands (RIS) – Thames Estuary & Marshes. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11069.pdf (Accessed: January 2025).

[8] Natural England, 2019. European Site Conservation Objectives for Thames Estuary and Marshes Special Protection Area Site Code: UK9012021. Available at: https://publications.naturalengland.org.uk/publication/4698344811134976 (Accessed: January 2025).

Table 4.3: Baseline Information for Thames Estuary & Marshes SPA and Ramsar Site

Baseline Information	Detail
Threats	There are no listed threats or pressures for Thames Estuary & Marshes SPA or the underpinning Mucking Flats and Marshes SSSI. Listed threats to Thames Estuary & Marshes Ramsar site include: - Dredging (on-site and off-site) - Erosion (on-site) - Eutrophication (on-site and off-site) - General disturbance from human activities (on-site)[7]

Table 4.4: Screening of Likely Significant Effects for Thames Estuary & Marshes SPA

Key Issues and Relevant Threats	Justification
Supporting habitat loss for wintering birds	Construction: Construction of the proposed development would lead to the loss of extensive farmland within the site boundary, which could serve as ancillary / supporting habitat for wintering birds for which Thames Estuary & Marshes SPA and Ramsar site are designated. However, due to the substantial distance from the site to the SPA and Ramsar site (9.2 km at the closest points) it is considered unlikely that the site would be used by bird populations for which the SPA and Ramsar site are designated. This is supported by wintering bird surveys undertaken by SLR Consulting Limited (SLR Report ref: 231220 424.01455.00013 Havering Data Centre Bird Survey Report V1) in January / February 2021 and from September 2022 to February 2023, which recorded no species for which Thames Estuary & Marshes SPA and Ramsar site are designated. Whilst this data is several years old, it covers multiple years and shows that the site has not consistently been used by these species. Therefore a likely significant effect resulting from supporting habitat loss has been screened out for Stage 2 Appropriate Assessment. Completed Development: Due to the distance from the SPA and Ramsar site and the lack of any clear impact pathways resulting from the proposed development, it has been concluded that the proposed development is unlikely to give rise to significant effects in respect of the two designated sites. In-Combination Effects: A number of cumulative schemes have been identified for the proposed development, however as wintering bird surveys have identified that the site itself does not support bird species associated with the Thames Estuary & Marshes SPA & Ramsar site, a cumulative significant effect from habitat loss has been ruled out.

Table 4.5: Conclusions for Thames Estuary & Marshes SPA and Ramsar site

Is the potential scale or magnitude of any effect likely to be significant?	
Alone	No
In combination with *other* plans or projects	No
In the absence of mitigation, is the proposed development likely to have a significant effect on the designated site?	
The proposed development is unlikely to give rise to significant effects on the designated sites.	

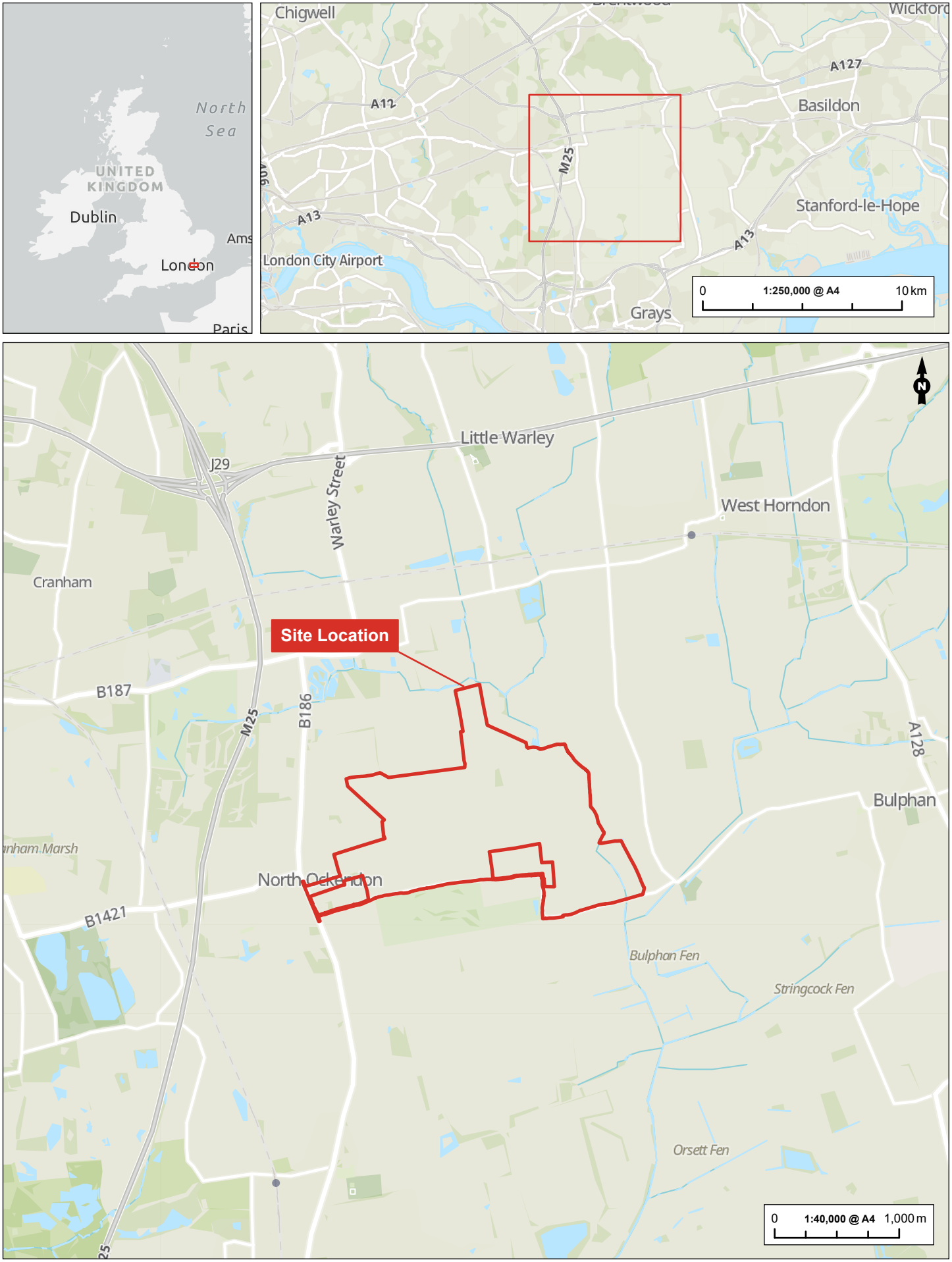
5. CONCLUSION

This report has been prepared to provide information to the competent authority regarding the potential for the proposed development to have likely significant environmental effects on designated sites, in accordance with the HRA process required under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The effects of the proposed development on Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar site have been considered using the available information and professional judgement.

There would be **no likely significant environmental effects** arising from the proposed development, either alone or in combination with other plans or projects (during the construction stage or completed development stage), on National Site Network or Ramsar sites, and therefore an appropriate assessment (Stage 2) is **not** required.

APPENDIX 1
FIGURES



RAMBOLL	Figure Title: Site Location	Project Name: East Havering Data Centre Campus	Date: November 2025
			Prepared By: CT / Figure No.: 1
	Client: Local Planning Authority of the London Borough of Havering	Project No.: 1620016267 / REH2023N03156	Scale: As Shown / Revision: 1.0

1620016267-RAM-MA-ZZ-00018_Fig1SiteLocation_04.pagx

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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936.



Legend

- Site Boundary
- 10 km Site Boundary Buffer
- RAMSAR
- Special Protection Area

Figure Title
National Site Network Sites Within 10 km

Project Name
East Havering Data Centre Campus

Project No./Filery ID
1620016267 / REH2023N03156

Date	Figure No.	Revision
November 2025	2	1.0

Prepared By	Scale
CT	1:90,000 @A3

Client
Local Planning Authority of the London Borough of Havering

RAMBOLL

1620016267-RAM-MA-ES-00019_Fig2NationalSiteNetwork_04.pagx

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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936.

APPENDIX 2
LIMITATIONS & CONSTRAINTS

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Ramboll has been commissioned to identify potential impacts on relevant designated sites as a consequence of the proposed development. This report does not address any other potential environmental impacts that may result from the proposed development.

In preparation of the report and performance of any other services, Ramboll has relied upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to Ramboll was accurate, complete and available to Ramboll within the reporting schedule. Ramboll does not accept any liability for the accuracy or otherwise of any information derived from secondary sources; however, reasonable endeavours have been made to verify information obtained in this way.

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This report is based on an assessment of the site (the boundaries of which are as presented in Figure 1) and the proposed development. If the proposed development extends to land additional to that presented in Figure 1, or the proposals alter, the assessment and subsequent recommendations may need to be revised.

Intended for
London Borough of Havering Council

Date
February 2026

Project Number
1620016267

EAST HAVERING DATA CENTRE CAMPUS HEALTH IMPACT ASSESSMENT

RAMBOLL

Project Name	**East Havering Data Centre Campus**
Project no.	**1620016267**
Recipient	**London Borough of Havering Council**
Issue No.	**2.0**
Date	**20/02/2026**
Made by	**Daniel Hamp**
Checked by	**Philippa Raphael**
Approved by	**Ben Seward**
Reference	**REH2023N03156-RAM-RP-00031**

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CONTENTS

1.	**INTRODUCTION**	**1**
1.1	Overview	1
1.2	Objective of Assessment	2
2.	**POLICY CONTEXT**	**4**
2.1	National Policy	4
2.2	Regional Policy	4
2.3	Local Policy	5
3.	**SCOPE AND STRUCTURE OF ASSESSMENT**	**7**
3.1	Approach	7
3.2	Technical Scope	8
3.3	Spatial Scope	9
3.4	Temporal Scope	9
3.5	Consultations	9
3.6	Structure of Report	10
3.7	Assumptions and Limitations	10
4.	**SITE DESCRIPTION**	**11**
4.1	Site Description and Context	11
5.	**PROPOSED DEVELOPMENT**	**13**
5.1	Proposed Development Overview	13
6.	**KEY HEALTH STATISTICS**	**16**
6.1	Demographic Information	16
6.2	Health Statistics	16
6.3	Socio-Economic and Employment Information	19
6.4	Baseline Summary and Vulnerable Groups Identification	20
7.	**HEALTHY URBAN DEVELOPMENT UNIT ASSESSMENT**	**22**
8.	**HUDU HIA FRAMEWORK:**	**23**
9.	**CONCLUSION**	**55**

1. INTRODUCTION

1.1 Overview

Ramboll UK Limited ('Ramboll') has been commissioned by the Local Planning Authority of the London Borough of Havering (the 'LPA') to undertake a Health Impact Assessment (HIA) for the for a data centre campus (the 'proposed development'), on land located within East Havering, to the north of South Ockendon (the 'site'). The site is wholly within the administrative boundary of the London Borough of Havering.

The proposed development would consist of up to 400,000 m^2 of gross external area (GEA) comprising

The erection of buildings up to a maximum of 400,000 m^2 (GEA) including :

a) Data centre uses up to 340,000 m^2;
b) Indoor horticulture of 50,000 m^2;
c) Visitor Centre up to 600 m^2 (and no less than 300 m^2);
d) District heating centre up to 3,300 m^2;
e) Campus management facilities up to 2,700 m^2; and
f) Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2.

Installation of electrical infrastructure and associated plant equipment to serve the development.
Creation of an 'ecology park'.
Any operations or engineering works necessary to enable the delivery of the development including

a) Excavation and earthworks (e.g. 'cut and fill');
b) Formation of compounds for the stockpiling and sorting of excavated materials;
c) Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
d) Creation of estate roads and associated infrastructure for access for all modes of transport;
e) Site Security measures including fencing, gates and gate houses;
f) Works to install underground services and utilities;
g) Provision of temporary site offices and welfare facilities; and
h) Highway works on Fen Lane and Ockendon Road.

This HIA has been prepared to accompany the consultation documentation for the proposed Local Development Order (LDO) and should be read alongside the Environmental Statement (ES) and supporting technical documentation. Although human health was scoped out of the EIA as significant effects were considered unlikely to arise, the HIA provides a dedicated, integrated assessment of health and wellbeing effects, drawing on the evidence base established in the ES and other supporting submissions, and translating relevant environmental and socio-economic effects into likely health outcomes and distributional effects.

The HIA is intended to aid the LPA in understanding the extent to which the proposed development, as controlled through the LDO parameters and compliance documents, may influence health determinants for local communities, site users and relevant vulnerable groups during both construction and operation.

1.2 Objective of Assessment

Health is defined by the World Health Organisation (WHO)[1] as the state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

HIA has been defined by the Department of Health (DoH)[2] as: "*…a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population*".

In HIA, impacts on the health and wellbeing of various people or communities are identified in two main ways by asking the following questions:

- What are the direct effects on health?
- What are the indirect effects mediated through the determinants of health, such as employment, housing conditions, community cohesion and social support, and access to services and amenities?

HIA identifies the positive and negative impacts of a proposed development on human health, and identifies ways to mitigate any negative impacts, and potentially enhance positive impacts to address health inequalities. The HIA provides the context of the site constraints and the aspects of the proposed development that are relevant to health. Descriptions of where the design of the proposed development has considered health are provided within the assessment. Where further measures are required to enhance positive impacts, recommendations have been made. In line with comprehensive HIA practice, this assessment considers:

- direct health effects arising from environmental exposures (e.g. noise, air quality, traffic, water/land quality, climate-related risks); and
- indirect effects via wider determinants of health (e.g. access to nature and physical activity, employment and skills, accessibility and inclusion, community safety and social interaction).

Where the ES identifies significant environmental effects (e.g. major adverse noise effects for receptors within 50 m of Fen Lane), the HIA treats these as important inputs and explicitly considers likely health and wellbeing implications (including annoyance, sleep disturbance risk, stress and reduced amenity), and the extent to which additional health-focused management measures are appropriate even where physical mitigation options are constrained.

This assessment follows a comprehensive HIA process consistent with recognised good practice, structured around the HUDU framework topics to ensure alignment with planning determinants of health. The HIA process comprised:

Screening: Confirmation of the need for a stand-alone HIA in the context of the LDO and the EIA scoping outcome, recognising the scale and duration of construction activity and the potential for effects on environmental determinants and local wellbeing.

Scoping: Identification of determinants likely to be materially influenced by the proposed development and/or capable of being secured through the LDO via compliance documents conditions and legal obligations. The scoping is presented in Table 3.1 and has been refined to focus on determinants with plausible pathways to health outcomes for relevant receptors.

[1] World Health Organization, 2024. World Health Organization Constitution [online]. Available at: https://www.who.int/about/accountability/governance/constitution. Accessed on: 09/04/2024.

[2] Department of Health, 2010. Health Impact Assessment of Government Policy: A Guide to carrying out a Health Impact Assessment of new policy as part of the Impact Assessment Process [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216009/dh_120110.pdf

Baseline profiling: Establishment of demographic, health and socio-economic baseline conditions (Section 6), drawing on Census and published public health datasets, supplemented by spatial context and receptor sensitivity information captured in the ES.

Impact appraisal: Qualitative appraisal of health effects for construction and operation, drawing on ES topic assessments and other consultation documents. Effects are described in terms of nature, duration, reversibility, likely magnitude and the sensitivity/vulnerability of affected populations. Distributional effects are considered explicitly where relevant.

Mitigation and enhancement: Identification of embedded measures (secured through LDO compliance documents and legal obligations) and additional measures recommended to further minimise adverse effects or enhance benefits, including the monitoring and governance recommendations appropriate to an LDO delivery approach. The report has been informed by the environmental assessments, including the Environmental Impact Assessment (EIA), that have been undertaken of the proposed development and other supporting reports that accompany the consultation documentation for the potential Local Development Order (LDO).

2. POLICY CONTEXT

2.1 National Policy

The following documents have been used to inform the assessment:

- National Planning Policy Framework (NPPF)[3];
- Planning Practice Guidance (PPG)[4].

The National Planning Policy Framework (NPPF) establishes the overarching planning policy framework for England and places strong emphasis on the role of the planning system in supporting health and wellbeing. Promoting healthy and safe communities is a central theme of the NPPF, with Chapter 8 setting out the expectation that planning policies and decisions should aim to achieve healthy, inclusive and safe places. This includes environments that promote social interaction, are safe and accessible for all users, and support active and healthy lifestyles. The NPPF also recognises the importance of high-quality design, access to green infrastructure, sustainable transport and environmental protection as key contributors to improved health outcomes.

Planning Practice Guidance (PPG) supplements the NPPF by providing further detail on how health considerations should be integrated into planning and decision-making. The PPG emphasises that planning can influence health outcomes through two primary pathways: firstly, by creating environments that support and encourage healthier lifestyles, and secondly, by ensuring that development is supported by appropriate infrastructure and services, including healthcare provision where relevant. The guidance highlights the importance of early engagement with public health stakeholders and local communities to ensure that health needs, vulnerabilities and potential inequalities are understood and addressed. This HIA has been prepared in accordance with these principles, assessing both environmental and social determinants of health associated with the proposed development.

2.2 Regional Policy

2.2.1 The London Plan

The London Plan[5] is the Spatial Development Strategy for London. As the overall strategic plan for London, it sets out an integrated economic, environmental, transport and social framework for the development of London over a 20-25 year period.

Policy 'GG3 – Creating a Healthy City' states that development proposals should *"ensure that the wider determinants of health are addressed in an integrated and co-ordinated way''* and *"promote more active and healthy lives for all Londoners and enable them to make healthy choices''*.

Policy 'D5 – Inclusive Design' states that development proposals *"should achieve the highest standards of accessible and inclusive design''*.

Accordingly, and in line with these policies, a HIA is required to consider the potential health and wellbeing effects of the proposed development and to assess how it addresses the wider determinants of health and promotes healthy outcomes.

[3] Ministry of Housing, Communities and Local Government, 2024. The National Planning Policy Framework. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

[4] Planning Practice Guidance: Healthy and Safe Communities, and Department for Levelling Up, Housing and Communities, 2022. Planning Practice Guidance: Healthy and Safe Communities.

[5] Greater London Authority, 2021. The London Plan. The Spatial Development Strategy for Greater London. London. GLA. https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

2.3 Local Policy

2.3.1 Havering Local Plan 2016-2031[6]

The Havering Local Plan outlines the vision and strategy for Havering's future growth and sustainable development up to 2031. As part of this vision, the Havering Local Plan states that "*Health will continue to be a key focus for the borough building on the strengthened role and responsibility that the Council has for public health. The overall health of residents will have improved and new developments will have increased opportunities for people to pursue healthier and more active lifestyles"*.

Strategic objectives have been identified for the Local Plan, to allow the London Borough of Havering Council (LBH) to achieve its vision and aims. In addition to a number of strategic objectives that relate to the determinants of health, the Havering Local Plan identifies the strategic objective to *"Enable healthier lifestyles to improve the health and well-being of Havering's population and reduce health inequalities"*.

The Havering Local Plan recognises the importance of designing places that "*encourage social interaction and promote health lifestyles"* and designing out environments that "*can contribute to obesity and that provide opportunities for crime and antisocial behaviour"*. Accordingly, the Havering Local Plan emphasises the importance of maximising the potential health gains from development proposals and ensuring that any negative impacts are mitigated, and the role of HIAs to ensure and demonstrate full consideration of health and wellbeing and the principles of active design. All major development proposals must be supported by a HIA.

Within the Havering Local Plan, 'Policy 12: Healthy Communities' states that health and wellbeing will be promoted by:

i. Directing new development to well connected locations to enable active travel (refer to Policy 3);
ii. Promoting well designed and safe places (refer to Policy 26);
iii. Promoting the diversification of uses within town centres and managing the overconcentration of uses that can have a negative health impacts (refer to Policy 13);
iv. Supporting the delivery of essential community services (refer to Policies 16 and 17);
v. Providing and protecting open space, leisure and recreation facilities (refer to Policy 18);
vi. Supporting measures to promote walking and cycling (refer to Policy 23);
vii. Supporting the provision of multifunctional green infrastructure (refer to Policy 29);
viii. Seeking environmental improvements, minimising exposure to pollutants and improving air quality (refer to Policies 33 and 34); and
ix. Avoiding contributing to factors that affect climate change, and contribute to prevention measures that mitigate against the effects of climate change (refer to Policies 32 and 36).

As such, other policies within the Havering Local Plan that indirectly relate to health and wellbeing include those referred to within Policy 12:

- Policy 3: Housing supply;
- Policy 26: Urban design;
- Policy 13: Town centre development;
- Policy 16: Social infrastructure;

[6] London Borough of Havering, 2021. Havering Local Plan 2016-2031 Adopted November 2021. Available at: https://www.havering.gov.uk/download/downloads/id/5300/havering_local_plan_2016_-_2031.pdf.

- Policy 17: Education;
- Policy 18: Open space, sports and recreation;
- Policy 23: Transport connections;
- Policy 29: Green infrastructure;
- Policy 33: Air quality;
- Policy 34: Managing pollution;
- Policy 32: Flood management; and
- Policy 36: Low carbon design and renewable energy.

Additionally, Policy 12 specifically details that *''All major development proposals must be supported by a Health Impact (HIA) to demonstrate that full consideration has been given to health and wellbeing and the principles of active design''*.

3. SCOPE AND STRUCTURE OF ASSESSMENT

3.1 Approach

The NHS London Healthy Urban Development Unit (HUDU) has produced an HIA framework and checklist that provides a standardised and transparent structure for assessing how development proposals may influence health and wellbeing through planning-related determinants. The HUDU framework supports the integration of health into planning decision-making by bringing together relevant policy requirements and built environment standards that influence health outcomes.

LBH's HIA template (August 2022) adopts the HUDU framework topics and checklist format. The wording of the questions in this HIA follows that of the LBH template, consistent with the Havering Local Plan 2016–2031.

The use of the HUDU HIA assessment matrix aims to promote healthy urban planning by ensuring that the health and wellbeing implications of local plans and major planning applications are consistently taken into account. By bringing together planning policy requirements and standards that influence health and wellbeing, the checklist seeks to mainstream health into the planning system.

The assessment matrix does not identify all issues related to health and wellbeing but focuses on the built environment and issues directly or indirectly influenced by planning decisions. It is generic and should be localised for specific use. Not all the issues or assessment criteria may be relevant, and the user is encouraged to prioritise specific actions which focus on key impacts.

As the proposed development is larger than 9,999 m^2 and above a comprehensive HIA has been undertaken[7]. However, LBH's HIA template for rapid HIAs (August 2022)[8] which adopts the matrix/questions has served as the basis for the report structure of this assessment.

The scope of this HIA included a desktop appraisal, a document analysis and an appraisal of the proposed development.

The desktop appraisal involved establishing the policy context and the current health baseline from a range of publicly available on-line resources. Baseline conditions have been established using published databases, maps, technical assessment reports and other planning submission documents.

The document analysis involved a review of topic specific LDO submission documents to understand how health and wellbeing have been considered and designed within the proposed development. These documents include, but are not limited to:

- The Local Development Order[9];
- Environmental Statement (ES), Ramboll, February 2026[10];
- East Havering Data Centre Campus, S106 Heads of Terms[11];
- East Havering Data Centre Campus Code of Construction Practice, February 2026[12];

[7] London Borough of Havering, 2022. Further Information for Developers on Health Impact Assessment July 2022 - Health Impact Assessments (HIA) for major developments.
[8] London Borough of Havering, 2022. Rapid Health Impact Assessment (HIA). Template for Development of Major Development Projects. Size range: 10 to 99 Units (1,000 to 9,999 sqm). Available at: https://www.havering.gov.uk/download/downloads/id/5524/havering_health_impact_assessment_10-99_units_template.pdf

[10] Ramboll, 2026. East Havering Data Centre Campus Environmental Statement. Revision Feb 2026.
[11] London Borough of Havering, 2026. East Havering Data Centre Campus, Draft Heads of Terms for a S106 Relating to the Proposed LDO. Revision Feb 2026.
[12] Adams Hendry, 2026. East Havering Data Centre Campus Code of Construction Practice. Revision Feb 2026.

- East Havering Data Centre Campus Design Code, February 2026[13];
- East Havering Data Centre Campus Landscape and Ecological Management and Monitoring Plan[14];
- Sustainability and Energy Statement, Mitie, November 2025[15]; and
- East Havering Data Centre Campus Travel Plan, Ramboll, February 2026[16].

This was followed by an appraisal of the potential human health impacts likely to arise from the proposed development.

3.2 Technical Scope

The HIA has considered a range of lifestyle, social, community, environmental, economic, access and service determinants of health. A scoping exercise was undertaken to identify the determinants of health that would have the potential for likely significant population health effects. The scoping exercise was informed by the nature of the proposed development and what could realistically and reasonably be secured, delivered or influenced as part of the proposed development by the LPA. In this respect, it should be noted that many determinants of health, particularly in relation to quality of housing, education and access to social infrastructure such as healthcare services and community facilities, are not considered relevant to the proposed development.

The determinants of health were based upon the list of wider determinants of health set out in IEMA Guidance 2022[17], which have been derived from and based upon the WHO definition of health. These are presented in Table 3.1.

Table 3.1: Scoping of Health Determinants

Categories	Determinants of health	Scoped in/out
Health related behaviours	physical activity	In
	risk taking behaviour	Out
	diet and nutrition	Out
Social environment	housing	Out
	relocation	Out
	open space, leisure and play	In
	transport modes, access and connections	In
	community safety	In
	community identity, culture, resilience and influence	Out
	social participation, interaction and support	In
Economic environment	education and training	In
	employment and income	In
Bio-physical environment	climate change mitigation and adaptation	In
	air quality	In

[13] Adams Hendry, 2026. East Havering Data Centre Campus LDO Design Code. Revision Feb 2026.
[14] Adams Hendry, 2026. East Havering Data Centre Campus Landscape and Ecological Management and Monitoring Plan. Revision Feb 2026.
[15] Mitie, 2025. East Havering Centre Campus: Sustainability and Energy Statement. Revision Nov 2025.
[16] Ramboll 2026. East Havering Data Centre Campus Travel Plan. Revision Feb 2026.
[17] Institute of Environmental Management and Assessment, 2022. Guide to: Effective Scoping of Human Health in Environmental Impact Assessment.

Table 3.1: Scoping of Health Determinants		
	water quality	In
	land quality	In
	noise and vibration	In
	radiation	In
Institutional and built environment	health and social care services	Out
	built environment	In
	wider societal infrastructure and resources	In

3.3 Spatial Scope

Key demographic and health related statistics have been obtained at a ward or local authority level, depending on the availability of data.

The HIA draws upon and considers the impacts in relation to a range of environmental aspects including (but not limited to) air quality, noise, traffic, and climate change. Accordingly, the HIA does not adopt a defined study area as it considers potential impacts across different spatial scales depending on the health determinant being assessed, from the site level to a global level. For example, impacts associated with noise and vibration are limited to noise sensitive receptors in close proximity to the site, impacts associated with employment opportunities are considered on a local and district level, and impacts relating to climate change and sustainable design are considered on a national and transboundary level. The study areas are consistent with those adopted within the technical chapters of the ES and other environmental assessments that accompany the consultation documentation for the potential LDO.

3.4 Temporal Scope

The lifespan of the LDO is proposed to be 20 years and construction would be permitted throughout this period. However, it is considered that the proposed development would be delivered within 17 years assuming the fastest reasonable programme. The approach to construction and sequencing of the proposed development would be unchanged if the construction were to take longer. On this basis, the assessment has considered impacts and effects arising during the construction stage of the proposed development which is anticipated to take place over a 17 year period. Although the construction stage would take place over the full lifecycle of the LDO, the enabling works and construction in each build zone individually would be delivered in shorter time frames. Therefore, effects would be expected to be temporary/permanent (reversable or irreversible) in nature and short-, medium-term and long-term in duration.

The assessment has considered impacts arising during the completed development stage which would be permanent in nature and long-term in duration.

3.5 Consultations

An EIA Scoping Request Report was submitted to the LPA in February 2024 in support of a request for a formal EIA Scoping Opinion pursuant to Regulation 15(2) of the EIA Regulations.

The LPA adopted an EIA Scoping Opinion on 23 May 2024 having consulted consultation bodies on the emerging development proposals.

It was agreed through this scoping process that a discrete human health technical assessment chapter would be scoped out of the ES on the basis that the proposed development would not give

rise to significant environmental effects regarding human health. Nevertheless, several technical assessments within the ES do provide consideration of human health.

However, a HIA is required in accordance with the policy requirements of the London Plan and the relevant policies of the Havering Local Plan.

The LDO submission material (including this HIA) will be issued for public consultation and consultation responses will be considered during that stage of the process.

3.6 Structure of Report

The report comprises the following key sections:

- Section 4: Site Description;
- Section 5: Proposed Development;
- Section 6: Key Health Statistics;
- Section 7: Healthy Urban Development Unit Assessment;
- Section 8: Impact Assessment; and
- Section 9: Conclusion.

3.7 Assumptions and Limitations

The assessment of health effects has been undertaken against the most recent, publicly available data; the progress of emerging data was tracked throughout to ensure an up-to-date assessment is presented.

The spatial levels have been assessed where data is available and/or where it is considered most informative based on professional judgement.

Where data has not been available at the identified levels, alternative spatial data deemed relevant and appropriate has been used.

Publicly available information has been relied upon in undertaking the assessment. It has been assumed that the information is up-to-date.

- The assessment is dependent on the parameter-based nature of the LDO. Certain detailed design elements (e.g. final plant configurations, building-specific operational noise characteristics, detailed routing of fibre connections) would be finalised at later stages within the LDO process. The HIA therefore, places emphasis on the effectiveness of the proposed LDO controls and compliance mechanisms (e.g. CoCP, Framework for Managing Operational Noise, Travel Plan requirements, and LEMMP) to ensure that health outcomes are managed consistently as individual build zones come forward.

4. SITE DESCRIPTION

4.1 Site Description and Context

The site is located within an area of open agricultural land, close to the village of North Ockendon, and located between the settlements of Upminster to the west, South Ockendon to the south, Bulphan to the east and West Horndon to the north-east. The site location is shown on Figure 4.1.

As illustrated on Figure 4.1, the site comprises approximately 218.8 hectares (ha) and is a shape and configuration that allows for its practical development for the purposes proposed. The site is currently in agricultural use, comprising four working farms used for arable farming, with associated field boundaries, ditches and vehicular access tracks/roads.

The site is bordered by the following:

- An unnamed road to the north;
- Bury Farm Sewage Works to the far north-east;
- Agricultural fields to the east, beyond which is Dunnings Lane and a small cluster of industrial buildings to the south-east;
- Home Farm and Fen Lane along the southern site boundary. Top Meadow Golf Course and two farms with associated cottages (Fen Farm, Corner Farm) are located adjacent to Fen Lane, south and south-east of the site boundary, respectively. Home Farm Estate is accessed via an unnamed road off Fen Lane;
- Agricultural fields and woodlands along the south-western boundary, beyond which is a small cluster of residential properties, Ladyville Lodge Care Home and Fenlands Nursery;
- Ockendon Road/Clay Tye Road (B186) along the far western boundary, with residential properties beyond;
- Agricultural fields, Fairplay farm and an unnamed access road to Fairplay farm adjacent to the north-western boundary, beyond which is Warley substation, Clay Tye Road (B186) and residential properties; and
- Bury Farm to the far north-west.

From a health and wellbeing perspective, the site's current agricultural use and Green Belt context contribute to a baseline of low ambient activity and a generally tranquil rural setting for nearby receptors. Public access is currently limited primarily to the existing PRoW network. The proposed development would change this context through:

- introduction of long-duration construction activities and associated traffic on local routes (as assessed in the ES); and
- creation of a large publicly accessible ecology park with enhanced and new routes, which would increase opportunities for recreation and contact with nature for the local population.

These contextual factors are relevant to assessing both potential adverse amenity impacts (particularly for receptors closest to Fen Lane and Ockendon Road) and the potential long-term health benefits associated with increased access to green and blue infrastructure.

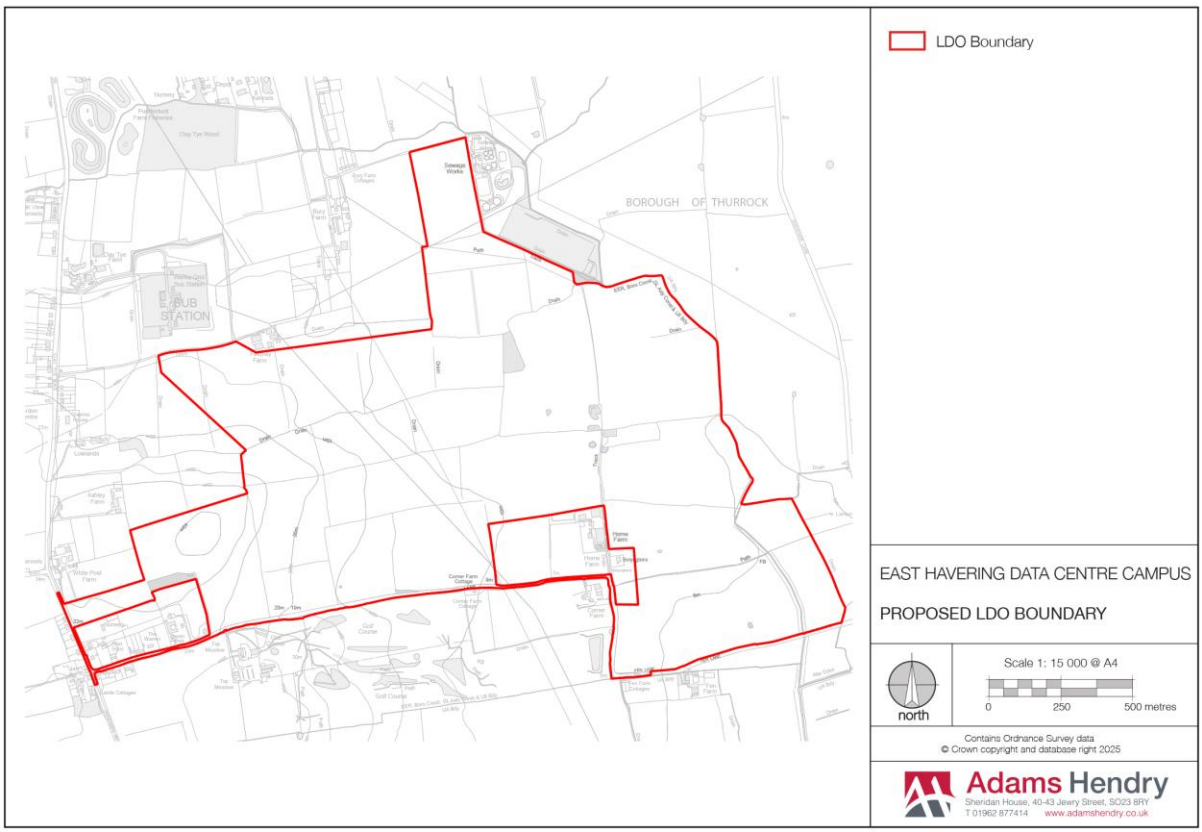


Figure 4.1: Site Location Plan

5. PROPOSED DEVELOPMENT

5.1 Proposed Development Overview

The proposed development would consist of up to 400,000 m^2 of gross external area (GEA) comprising the following:

- Erection of buildings up to a maximum of 400,000 m^2 (GEA) including the following:
  - Data centre uses up to 340,000 m^2;
  - Indoor horticulture of 50,000 m^2;
  - Visitor centre up to 600 m^2 (and no less than 300 m^2);
  - District heating centre up to 3,300 m^2;
  - Campus management facilities up to 2,700 m^2; and
  - Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2.
- Installation of electrical infrastructure and associated plant equipment to serve the proposed development.
- Creation of an 'ecology park'.
- Any operations or engineering works necessary to enable the delivery of the proposed development including the following:
  - Excavation and earthworks (e.g. 'cut and fill');
  - Formation of compounds for the stockpiling and sorting of excavated materials;
  - Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
  - Creation of estate roads and associated infrastructure for access for all modes of transport;
  - Site security measures including fencing, gates and gate houses;
  - Works to install underground services and utilities;
  - Provision of temporary site offices and welfare facilities; and
  - Highway works on Fen Lane and Ockendon Road.

The proposed data centre campus would be constructed in a series of build zones (Build Zones A – G) and enclosed within a steel security fence, as illustrated on **Figure 5.1**. The main entrance to the campus would be from Fen Lane via a security check point.

The primary infrastructure corridor would serve Build Zones A - F and would accommodate the main spine road, a shared cycleway and footpath, drainage swales and associated landscaping. The swale would discharge into three attenuation ponds in the east of the site. Build Zone G would be served by an access road including a shared pedestrian and cycleway to the west of the main entrance on Fen Lane. Access to Build Zone G would be via a separate security check point.

Build Zone H would comprise indoor horticulture uses, a visitor centre and a district heating centre. An eastern access road including a shared pedestrian and cycleway to the east of the main entrance on Fen Lane would serve Build Zone H and provide access to a network of footpaths and cycleways within the ecology park. A proposed reservoir south of Build Zone H would store water for irrigation purposes within the indoor horticulture uses.

The ecology park would extend around the whole of the secure data centre campus.

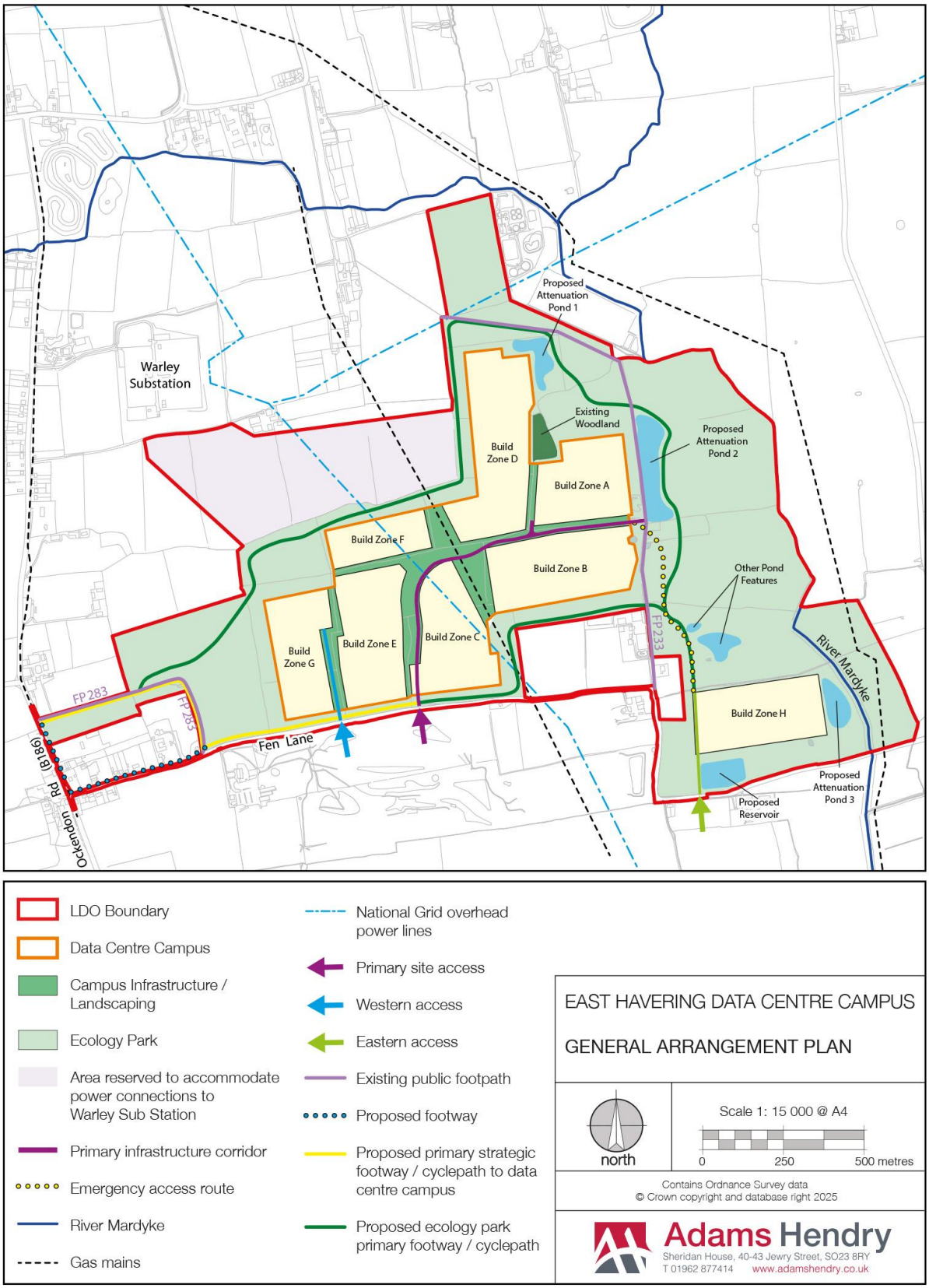


Figure 5.1: Build Zone Plan

Conditions would be attached to the LDO requiring the proposed development to accord with the design parameters, standards, limitations and control measures which would be set out in the following compliance documents:

- East Havering Data Centre Campus LDO Design Code;
- East Havering Data Centre Campus Code of Construction Practice (CoCP);
- East Havering Data Centre Campus Landscape and Ecological Management and Monitoring Plan (LEMMP); and
- East Havering Data Centre Campus Travel Plan.

6. KEY HEALTH STATISTICS

The site is located in the Upminster ward, wholly within the administrative boundary of the London Borough of Havering (hereafter referred to as Havering). The site lies immediately adjacent to (and shares a boundary with) the borough of Thurrock, Essex.

This section provides a high-level summary of the key health statistics for the local ward (Upminster), where available. Where relevant, statistics are provided at the local authority level (Havering and Thurrock), relative to the national level (England).

6.1 Demographic Information

According to the ONS Census 2021[18], Upminster has a total population of 13,347, which represents 5.09 % of the total population of Havering, which has a population 262,052.

Upminster's age distribution profile of those aged 0-15, 16-64 and 65+ is 17.3 %, 58.1% and 24.5 % respectively. Comparatively, Upminster has a notably older population than the areas it sits within. Its 65+ share of 24.5 % is significantly higher than Havering (17.7 %), London (11.9 %), and England as a whole (18.3 %), making it one of the older wards in the region. Conversely, its working-age population (16-64) of 58.1 % falls below all three comparators, particularly London's 68.8 %, reflecting the ward's more retirement-age demographic. The proportion of children and young people (0-15) at 17.3 %, is also slightly lower than Havering, London, and England, further reinforcing Upminster's profile as an area with a comparatively older age structure.

The population density of Upminster is 592.2 usual residents per square kilometre (km^2), which is significantly lower than the population densities of Havering, Thurrock and London (2,332.3 residents, 1,074.2 residents, and 5,597.6 residents per km^2 respectively) but greater than the national average (433.5 people per km^2)[19].

Population projections released by the Office of National Statistics (ONS)[20] estimate the population of Havering to increase by 12.02 % from 2022 to 2043 (expected year of completion)[21].

6.2 Health Statistics

Upminster (Ward Level)

Fingertips data[22] relating to the ward of Upminster shows a mixed health profile for the smallest spatial scale relevant to the proposed development:

- The prevalence of Year 6 (ages 10–11) obesity (including severe obesity) in Upminster is 16.5 % (2021 data, 3-year combined rate), which is notably lower than the Havering rate of 24.5 %, the Thurrock rate of 25.2 %, and the national average of 22.1 %.
- Overall cancer incidence in Upminster is broadly at the national average level (standardised ratio of 100.4, 2015). Prostate cancer incidence is notably elevated at a standardised ratio of 156.5, and colorectal cancer incidence is also above average at 120.0, whilst lung cancer incidence (76.6) and breast cancer incidence (91.7) are below the national average. This contrasts with Thurrock, where the estimated percentage of cancers diagnosed at stages 1 and 2 is 51.6 %,

[18] Office for National Statistics, 2021. Nomis. Official Census and Labour Market Statistics. Census 2021. Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=93&subgrp=-. Accessed on: 09/10/2025.

[20] Office for National Statistics, 2025. Subnational population projections for England: 2022-based. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/latest. Accessed on 14/10/2025.

[21] Office for National Statistics, 2020. Population projections for local authorities: Table 2. 2018 based edition of this dataset. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2. Accessed on: 08/04/2024.

[22] Public Health England, 2025. Fingertips: Local health, public health data for small geographic areas - Ward data (October 2025). Available at: https://fingertips.phe.org.uk/profile/local-health. Accessed on 18/02/2025

below the national average of 54.4 %, suggesting later-stage diagnosis remains a concern in the wider area.
- Life expectancy at birth in Upminster is 80.2 years for males and 85.2 years for females (2016), which is above the national average (79.3 and 83.2 years respectively) and comparable to Havering's figures of 80.4 and 84.4 years. Both areas perform notably better than Thurrock on this indicator.
- Under-75 mortality from all causes in Upminster shows a standardised ratio of 68.1 (2016), significantly below the national average, consistent with Havering's under-75 mortality rate of 299.9 per 100,000, which is also lower than the national average of 341.6 per 100,000.
- Mortality from preventable causes (under 75) in Upminster also shows a ratio of 64.1, further indicating a lower burden of premature avoidable death compared to the national average
- Emergency hospital admissions for coronary heart disease (ratio 54.4), stroke (72.8), heart attack (60.4), and COPD (38.0) in Upminster are all well below the national average, suggesting relatively good cardiovascular and respiratory health outcomes at the ward level — a picture broadly consistent with Havering's stronger performance across major disease categories compared to both Thurrock and national benchmarks.

At ward level, Fingertips ward-level health data for Upminster presents a broadly positive picture compared to Havering, Thurrock, and national benchmarks. Life expectancy exceeds the national average and is comparable to Havering, with both areas outperforming Thurrock, reflected in Upminster's well below-average under-75 and preventable mortality ratios. Emergency admissions for major cardiovascular and respiratory conditions are similarly below the national average. Year 6 obesity prevalence (16.5 %) is markedly lower than in Havering (24.5 %), Thurrock (25.2 %), and nationally (22.1 %). The principal area of concern is elevated prostate and colorectal cancer incidence, though overall cancer incidence remains broadly at the national average.

Havering (District Level)

In terms of Havering's general health, the 2021 Census revealed that 48.2 % and 34.8 % of all usual residents have very good health and good health, respectively, whilst 12.3 % have fair health, 3.6 % have bad health and 1.1 % have very bad health.

The 2021 Census also reported that 15.3 % of Havering's residents identify as disabled under the Equality Act. 6.6 % of Havering residents' day-to-day activities are limited a lot, whilst 8.7 % of Havering residents' day-to-day activities are limited a little.

The Havering Local Authority Health Profile[23] indicates that health in Havering is better than the national average for the majority of health indicators, but is worse for some indicators.

In 2023, life expectancy at birth for males and females in Havering was 80.4 and 84.4 years respectively, slightly greater than the national average of 79.3 and 83.2 years respectively. This is reflected in the fact that Havering's under 75 mortality rate (from all causes) in 2023 is lower than the national average (299.9 per 100,000 in comparison to the national average of 341.6 per 100,000).

From the Havering Local Authority Health Profile, the following indicators have been identified, as being worse than the national average:

- Hip fractures in people aged 65 and over (2023/2024) in Havering is 582 per 100,000, which is higher than the national average of 547 per 100,000.
- The percentage of physically fit adults (2023/2024) in Havering is 57.0 %, significantly lower than the national average of 67.4 %.

[23] Office for Health Improvement & Disparities, online. Local Authority Health Profiles. Havering. Available at: https://fingertips.phe.org.uk/profile/health-profiles/data#page/1/gid/1938132701/pat/6/par/E12000007/ati/501/are/E09000016/yrr/3/cid/4/tbm/1. Accessed on: 09/04/2024.

- Overweight (including obesity) prevalence in adults, (using adjusted self-reported height and weight, 18+ years) (2023/2024) is 65.8 % in Havering, compared to a national average of 64.5 %.
- The prevalence of Year 6 (ages 10-11 years) obesity (including severe obesity) (2023/2024) in Havering is 24.5 %, significantly higher than the national average of 22.1 %.
- The indicator for homelessness (households owed a duty under the Homelessness Reduction Act) (2023/2024) is 17.0 per 1,000 in Havering, higher than the national average of 13.4 per 1,000.

However, the Havering Local Authority Health Profile[23] shows that Havering's health is better than the national average for the other recorded indicators, including but not limited to percentage of cancers diagnosed at stages 1 and 2, smoking prevalence in adults, infant mortality rate, inequality in life expectancy at birth, percentage of children in relative and absolute low-income families, percentage of people in employment, Average Attainment 8 score and (emergency) hospital admissions for intentional self-harm, alcohol-related conditions and violence (including sexual violence).

Thurrock (District Level)

In terms of Thurrock's general health, the 2021 Census revealed that 46.4 % of residents have very good health, 34.7 % have good health, 13.6 % have fair health, 4.1 % have bad health and 1.2 % have very bad health.

The 2021 Census also reported that 16.7 % of Thurrock's residents identify as disabled under the Equality Act. 7.2 % of Thurrock residents' day-to-day activities are limited a lot, whilst 9.5 % of Thurrock residents' day-to-day activities are limited a little.

The Thurrock Local Authority Health Profile[24] indicates that health in Thurrock is varied in comparison to England, as Thurrock is shown to be better than the national average for some health indicators, but worse for others.

In 2023, life expectancy at birth for males and females in Thurrock was 78.1 and 83.1 years respectively, slightly less than the national average of 79.1 for males and 83.2 years respectively. In accordance with this, the under 75 mortality rate (from all causes, 2023) in Thurrock is higher than the national average (351.9 per 100,000 in comparison to the national average of 341.6 per 100,000). Specifically, the under 75 mortality rate from cancer (2023) is 146.8 per 100,000, which is significantly higher than the national average of 120.8 per 100,000.

The Thurrock Local Authority Health Profile shows that Thurrock's health is worse than the national average for some indicators, including:

- The estimated percentage of cancers diagnosed at stages 1 and 2 (2021) in Thurrock is 51.6 %, below the national average of 54.4 %.
- Hip fractures in people aged 65 and over (2023/2024) in Thurrock is 710 per 100,000, which is significantly higher than the national average of 547 per 100,000.
- The estimated dementia diagnosis rate (aged 65 and older, in 2025) is 66.7 per 100, compared to the national rate of 65.5 per 100.
- The smoking prevalence in adults (18+, in 2023) in Thurrock is 14.6 %, higher than the national average of 11.6 %.
- The percentage of physically fit adults (2023/2024) in Thurrock is 57.2 %, significantly lower than the national average of 67.4 %.
- The prevalence of adults classified as overweight or obese (using adjusted self-reported height and weight, 18+, in 2023/2024) in Thurrock is 68.7 %, higher than the national average of 64.5

[24] Office for Health Improvement & Disparities, online. Local Authority Health Profiles. Thurrock. Available at: https://fingertips.phe.org.uk/profile/health-profiles/data#page/1/gid/1938132701/pat/6/ati/501/are/E06000034/iid/90366/age/1/sex/1/cat/-1/ctp/-1/yrr/3/cid/4/tbm/1. Accessed on: 10/10/2024.

%; similarly, the prevalence of Year 6 (ages 10-11 years, in 2023/2024) obesity (including severe obesity) in Thurrock is 25.2 %, significantly higher than the national average of 22.1 %.
- The infant mortality rate (2021 to 2023) in Thurrock is 6.0 per 1,000, higher than the national average of 4.1 per 1,000.
- Smoking status at the time of delivery (2024/2025) is 8.1 % in Thurrock, which is significantly greater than 6.1 % nationally.
- The indicator for violent crime (hospital admissions for violence, including sexual violence, in 2021/2022 - 2023/2024) is 43.8 per 100,000 in Thurrock is significantly greater than the national average of 34.2 per 100,000.
- The winter mortality index (Aug 2021 - Jul 2022) in Thurrock is 12.9 %, worse than the national average of 8.1 %.

Like Havering, Thurrock's health is better than the national average for some indicators, such as inequality in life expectancy at birth (male and female), percentage of children in relative and absolute low-income families, percentage of people in employment, suicide rate, emergency hospital admissions for intentional self-harm and admission episodes for alcohol-specific conditions (under 18 years).

Summary

At ward level, Fingertips data for Upminster presents a broadly positive health profile relative to Havering, Thurrock, and national benchmarks. Life expectancy at birth (80.2 years for males and 85.2 years for females) exceeds the national average, and is comparable to Havering, with both areas outperforming Thurrock, where life expectancy falls marginally below the national average. This is reflected in Upminster's well below-average under-75 mortality ratio of 68.1 and preventable mortality ratio of 64.1, and is consistent with Havering's under-75 mortality rate of 299.9 per 100,000, which also compares favourably to the national average of 341.6 per 100,000.

Emergency hospital admissions for major cardiovascular and respiratory conditions - including coronary heart disease, stroke, heart attack, and COPD - are all well below the national average at ward level. Year 6 obesity prevalence in Upminster (16.5 %) is markedly lower than in Havering (24.5 %), Thurrock (25.2 %), and nationally (22.1 %), though adult overweight and obesity prevalence is elevated in both local authority areas. The principal area of concern within Upminster's otherwise favourable profile is elevated prostate and colorectal cancer incidence, though overall cancer incidence remains broadly at the national average.

Both Havering and Thurrock face challenges around physical inactivity, with physically fit adult prevalence (57.0 % and 57.2 % respectively) significantly below the national average of 67.4 %. Thurrock presents a more concerning picture across a broader range of indicators, including higher rates of smoking, infant mortality, hip fractures, and winter mortality, alongside a below-average rate of early-stage cancer diagnosis. Taken together, the baseline health profile underscores the relative advantage of the Upminster ward area, whilst highlighting wider public health challenges across the broader locality.

6.3 Socio-Economic and Employment Information

The 2019 Index of Multiple Deprivation (IMD)[25] shows that the Lower Super Output Area (LSOA) within which the site is located (Havering 018E) is ranked 23,815 out of the 32,844 LSOAs in England (where 1 is the most deprived LSOA), meaning it is amongst the 30% least deprived neighbourhoods nationally. Havering local authority district consists of 150 LSOAs and ranked 179 out of 317 local authorities in 2019.

The 2021 Census[19] recorded that there were 163,627 working age residents in Havering. Of these working age residents at borough level, 84.5% were economically active, which is a higher rate than

[25] Ministry of Housing, Communities and Local Government, 2019. Indices of Deprivation 2019 Explorer. Available at: https://dclgapps.communities.gov.uk/imd/iod_index.html. Accessed on: 08/04/2024.

the economic activity at regional (80.0%) and national (78.8 %) levels. According to data from the Annual Population Survey (Oct 2023 – Sep 2024)[26], Havering also had the lowest unemployment rate for the working age population at 2.4 % and lowest proportion of economically inactive who want a job at 12.2 % of the different spatial scales. Comparatively, London had the highest unemployment rate for the working age population at 5.2 % and the highest proportion of economically inactive who want a job at 21.0 %.

Claimant count data[27] provides the most recent information on the number of people claiming unemployment-related benefits in a particular spatial area, which includes Jobseekers' Allowance and Universal Credit. This dataset is unable to capture all unemployed individuals as some local residents may not claim these benefits or may be ineligible. Claimant count data from December 2024 indicates that, of the different spatial levels, London has the highest proportion of Claimants (16+) as a proportion of the working age population at 5.9 %. Comparatively, Havering has the lowest proportion at 4.2 %.

6.4 Baseline Summary and Vulnerable Groups Identification

Overall, the baseline health profile for the Upminster ward indicates a generally favourable picture when compared to Havering, Thurrock and national benchmarks, although several wider determinants of health remain relevant to the assessment.

Upminster demonstrates comparatively positive health outcomes, including life expectancy above national averages, lower rates of premature mortality and preventable deaths, and lower emergency hospital admissions for major cardiovascular and respiratory conditions. Childhood obesity prevalence is notably lower than borough and national averages, suggesting relatively favourable early-life health outcomes within the ward.

However, the demographic profile indicates a significantly older population structure compared to both London and national averages, with residents aged 65 and over accounting for approximately 24.5 % of the population. This has important implications for health planning, as older populations are more sensitive to environmental changes, mobility barriers, accessibility issues and environmental stressors such as noise or temperature extremes. Elevated incidence rates for certain cancers, particularly prostate and colorectal cancers, further highlight the importance of maintaining accessible healthcare, supportive environments and opportunities for healthy living.

At the borough level, Havering demonstrates generally strong health outcomes relative to national averages, including higher life expectancy and lower premature mortality rates. However, several public health challenges remain, particularly relating to physical inactivity, overweight and obesity prevalence, and higher rates of hip fractures among older adults. These indicators suggest that improving opportunities for everyday physical activity, safe movement and age-friendly environments remains an important local priority.

The adjacent borough of Thurrock presents a more mixed and, in some areas, less favourable health profile, including lower life expectancy, higher premature mortality and higher prevalence of risk factors such as smoking and obesity. Given the site's proximity to Thurrock and potential cross-boundary use of the ecology park and employment opportunities, these wider health inequalities are relevant to the assessment.

Socio-economic data indicates relatively low deprivation levels within the immediate locality and strong economic activity rates within Havering. However, public health evidence demonstrates that

[26] Office for National Statistics, Annual Population Survey from Oct 2023 - September 2024. Available at: https://www.nomisweb.co.uk/datasets/apsnew. Accessed on: 10/10/2025.
[27] Office for National Statistics, Claimant Count 2024. Available at: https://www.ons.gov.uk/explore-local-statistics/indicators/claimant-count. Accessed on: 10/10/2025.

even areas with relatively good health outcomes may contain vulnerable sub-groups whose needs require consideration within development design and mitigation strategies.

Taken together, the baseline health profile indicates a population with generally positive health outcomes but with identifiable vulnerabilities linked to ageing demographics, physical inactivity, and wider regional health inequalities.

Vulnerable Population Groups

Based on demographic characteristics, health indicators and wider determinants of health identified through baseline analysis, the following groups are considered particularly relevant for assessment within this HIA:

- **Older adults (65+ years)**: Upminster has a significantly older age profile than London and national averages. Older adults may be more sensitive to environmental changes including noise, accessibility barriers, temperature extremes and safety perceptions. Age-friendly design, accessible routes and safe public spaces are therefore important considerations.
- **People with disabilities or mobility limitations**: Approximately 15–17 % of residents in Havering and Thurrock identify as disabled under the Equality Act. Ensuring inclusive design, step-free access and accessible natural environments is important to reduce health inequalities and support independent participation.
- **Children and young people**: Although the proportion of younger residents is slightly lower than comparator areas, opportunities for play, outdoor recreation and safe active travel remain important determinants of long-term health outcomes. Nature-based play and accessible green space can support physical activity, cognitive development and mental wellbeing.
- **Individuals with existing long-term health conditions**: Elevated cancer incidence and broader chronic disease considerations highlight the importance of environments that support healthy behaviours, access to nature, clean air and opportunities for physical activity.
- **People experiencing health inequalities across the wider area (including Thurrock)**: Given the site's location near the borough boundary, users may include individuals from neighbouring areas with poorer health outcomes, including higher rates of smoking, obesity and premature mortality. Accessible green infrastructure and employment opportunities may therefore contribute positively to addressing wider health inequalities.
- **Shift workers and employees**: Operational characteristics of the proposed development introduce a workforce with potentially non-standard working hours. Access to safe routes, public transport connectivity and outdoor environments may support wellbeing and reduce risks associated with shift-based working patterns.

Overall Interpretation for the HIA

The baseline health profile indicates that while the local population experiences relatively good overall health outcomes, there remain identifiable vulnerabilities linked to ageing demographics, physical inactivity and wider regional inequalities. The proposed development therefore has an opportunity to support positive health outcomes through improvements to access to nature, active travel infrastructure, inclusive design and employment opportunities, while ensuring that potential adverse environmental effects are carefully managed for sensitive population groups.

7. HEALTHY URBAN DEVELOPMENT UNIT ASSESSMENT

The HUDU framework identifies 11 topics representing broad planning-related determinants of health. Under each topic, the framework sets out assessment criteria relevant to how development proposals may influence health and wellbeing. The HUDU framework is used in this HIA as a comprehensive structure for assessing health determinants relevant to the proposed LDO, integrating evidence from the ES and supporting submissions, and identifying mitigation and enhancement measures that can be embedded through the LDO compliance framework.

Health impacts may arise during construction (short-term/temporary or repeated over time) and during operation (long-term/permanent). The assessment considers receptor sensitivity and distributional effects, particularly where impacts may affect vulnerable groups or those living closest to the site and associated highway works.

The HUDU checklist enables the proposed development to be assessed against the following broad range of disciplines:

- Housing quality and design;
- Access to healthcare services and other social infrastructure;
- Access to open space and nature;
- Air quality, noise and neighbourhood amenity;
- Accessibility and active travel;
- Crime reduction and community safety;
- Access to healthy food;
- Access to work and training;
- Social cohesion and lifetime neighbourhoods;
- Minimising the use of resources; and
- Climate change.

The HUDU checklist has been completed for the proposed development and is presented in Section 8 of this report.

Where criteria are not considered relevant, the concluding potential health effect is stated as Neutral.

The potential impact on health and wellbeing column is colour coded as follows:

- positive = green;
- negative = red;
- neutral = grey; and
- uncertain = white.

The assessment draws information from the various assessments and reports that support the consultation documentation for the potential LDO. While relevant sections from these reports have been summarised within the assessment, further detailed information is provided within these accompanying reports and should be referred to where necessary.

8. HUDU HIA FRAMEWORK:

Tables 8.1 to 8.11 present the results for each of the 11 broad health determinants that have been examined as part of the HIA assessment.

Table 8.1: Housing Quality and Design

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal seek to suitable housing standards, such as BRE's Home Quality Mark, or Building Regulation requirement M4(2) 'Accessible and Adaptable Dwellings'?	Yes **No** N/A	**Construction Impact:** N/A **Operational Impact:** No housing would be delivered as part of the proposed development.	N/A	None required.
Does the proposal address the housing needs of older people, i.e. extra care housing, sheltered housing, and wheelchair accessible homes?	Yes **No** N/A		N/A	None required.
Does the proposal include homes that can be adapted to support independent living for older and disabled people?	Yes **No** N/A		N/A	None required.
Does the proposal promote good design through layout and orientation, meeting internal space standards and consider the risk of falling from height?	Yes **No** N/A		N/A	None required.
Does the proposal meet the housing mix requirements set out in the local plan?	Yes **No** N/A		N/A	None required.
Does the proposal contain homes that are highly energy efficient (e.g. a high SAP rating)?	Yes **No** N/A		N/A	None required.

Table 8.2: Access to Healthcare Services and Other Social Infrastructure				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
Does the proposal lose, retain or re-provide existing social infrastructure?	Yes **No** N/A	**Construction Impact:** N/A **Operational Impact:** No existing social and/or healthcare infrastructure would be lost as a result of the proposed development and no new facilities would be delivered. No new residential population would be introduced that would increase demand on existing social infrastructure, healthcare or educational services.	N/A	None required.
Does the proposal assess the impact on health and social care services and have NHS organisations been contacted regarding existing and planned healthcare capacity?	Yes **No** N/A		N/A	None required.
Does the proposal include the provision, or replacement of a healthcare facility and does the facility meet NHS requirements?	Yes **No** N/A		N/A	None required.
Does the proposal assess the capacity, location and accessibility of other social infrastructure, e.g. schools, social care and community facilities?	Yes **No** N/A		N/A	None required.
Does the proposal explore opportunities for shared community use and co-location of services?	Yes **No** N/A		N/A	None required.
Does the proposal contribute to meeting education needs, including early years, primary, secondary and post 19 education needs?	Yes **No** N/A		N/A	None required.
Does the proposal influence people's ability to live healthy lifestyles?	Yes **No** N/A		N/A	None required.
Will the proposal have any impact on mental health and wellbeing?	Yes **No** N/A		N/A	None required.

Table 8.3: Access to Open Space and Nature

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal retain and enhance existing open and natural spaces?	**Yes** No N/A	The site comprises an area of open agricultural land in arable use, associated with four operational farms. The majority of the site is therefore not publicly accessible, however two Public Rights of Way (PRoW) cross the site: Footpath 233 from Fen Lane to Bury Farm which crosses through the centre of the site; and Footpath 283 from Fen Lane to Ockendon Road which crosses the western most confines of the site. The site is within the London Metropolitan Green Belt, a Countryside Conservation Area and also within the Thames Chase Community Forest designated in the Havering Local Plan 2016-2031 (November 2021). The site is not located in an area of open space deficiency[28]. Consideration of the effects of the proposed development on the London Metropolitan Green Belt are beyond the scope of the HIA and therefore, an assessment has not been undertaken here. This has however been addressed in other consultation documents. **Construction Impact:** The majority of the site is not publicly accessible open space. It is anticipated that the existing PRoWs would be retained throughout the majority of the construction period. **Operational Impact:** Much of the existing agricultural land would be lost to new development. However, a substantial proportion of the site would also be enhanced with strategic landscaping zones in the west and north of the site a dedicated ecology park of at least 113 ha surrounding the data centre campus. The existing PRoWs would be enhanced as part of the proposed development and a new network of pedestrian and cycle routes established to improve access to and within the site, encouraging visitors to the area and to take advantage of the enhanced landscape and natural space. The design proposes newly established woodlands, wetlands and meadows that would encompass the data centre campus. The key focus for the landscaping strategy is to create a mosaic of habitat typologies that would significantly boost local biodiversity, encourage human engagement and promote sustainable landscape management practices, moving away from the current unsustainable practices associated with intensive arable farming. The landscaping strategy for the site comprises several landscape and ecology focused character zones including strategic edge and mounds, Ponds, Neutral Grassland and Woodlands (including wet woodlands) to provide a diverse range of habitats. The open space brought forward by the proposed development would be publicly accessible and served by improved and new pedestrian and cycle access. The proposed development would therefore increase public access to green spaces and blue infrastructure within the site to promote health and wellbeing by providing attractive opportunities for recreation including the promotion of walking /running circuits. Amenity areas such as lookouts and picnic areas would also be delivered for public and local community enjoyment. The ecology park's health benefits would depend on equitable access, perceived safety, and the usability of routes for people with disabilities, older residents and families. The inclusive design commitments set out in the Design Code and the management commitments in the LEMMP are therefore important health delivery mechanisms. Where routes intersect with access controls (e.g. locked gates at night), careful design of opening hours, signage and wayfinding would be important to support safe use while maintaining security.	**Positive** Negative Neutral Uncertain	None required.
In areas of deficiency, does the proposal provide new open or natural space, or improve access to existing spaces?	Yes No **N/A**		**Positive** Negative Neutral Uncertain	None required.
Does the proposal provide a range of play spaces for children and young people?	**Yes** No N/A	**Construction Impact:** N/A. No play spaces would be affected during the construction period. **Operational Impact:** A visitor centre would be delivered which provides an opportunity to include a small play area within any external amenity areas. The visitor centre would function as the main recreational hub of the Ecology Park that can be used by families and educational / youth groups. The focal point to the area is the central pond, with rest and play opportunities provide to the southern edge. Play is to be provided through a combination of natural, informal materials and formal equipment and to use the form of the landscape. Extensive shared access routes and informal nature trails would also grant year round access to the site for both recreational and educational purposes with engagement enhanced through features such as: • Interpretation Boards; • Pond Dipping Stations; • View Points; • Bird Hides / Observation Towers;	**Positive** Negative Neutral Uncertain	None required.

[28] London Borough of Havering, 2024. Open Space Assessment. June 2024.

Table 8.3: Access to Open Space and Nature

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		• Nature Trails & Informal Play; and • Picnic Spots & Seating Areas. From a health perspective, the provision of play opportunities supports physical, social and cognitive development for children and young people, contributing to increased physical activity, improved mental wellbeing and opportunities for social interaction. Access to safe and engaging outdoor play environments is particularly important in supporting healthy childhood development and encouraging lifelong active behaviours. The integration of play opportunities within the visitor centre and the proposed Locally Equipped Area for Play (LEAP) within ecology park, including both formal play equipment and informal nature-based play features, provides a varied play environment that can appeal to a range of age groups and abilities. Nature-based play elements, such as pond dipping areas, nature trails and observation points, can support exploratory learning and engagement with the natural environment, which has been associated with improved attention, creativity and emotional wellbeing in children. In a rural context where dedicated play provision may be limited or dispersed, the creation of a new recreational destination that is accessible to families and youth groups represents a positive contribution to local community infrastructure. The combination of seating areas, picnic spaces and educational features may also encourage intergenerational use, supporting family-based recreation and social cohesion. The availability of accessible routes and inclusive public realm design supports participation by children with disabilities and families with pushchairs, contributing to equitable access to play and recreation opportunities. Opportunities for educational engagement through interpretation boards and ecological features may further enhance health benefits by promoting outdoor learning and environmental awareness. Overall, the proposal is likely to result in positive health outcomes for children and young people by providing opportunities for active play, nature engagement and social interaction. No additional mitigation is considered necessary beyond the embedded design measures.		
Does the proposal provide links between open and natural spaces and the public realm?	**Yes** No N/A	**Construction Impact:** N/A. There are no existing links associated with public realm within the site or surrounding area that would be impacted during the construction period. **Operational Impact:** The proposed development would deliver a new ecology park incorporating new and enhanced access routes throughout. One of the primary aims of the landscape strategy is to improve the public accessibility of the green space network and use the landscape to link sustainable transport routes within and surrounding the site together. The hard landscape strategy proposes a network of path types that would provide accessible public routes throughout the site outside of the main development area of the data campus with entrance points at a number of locations to allow ease of access from the surrounding area. From a health perspective, the integration of open and natural spaces with the wider public realm is an important determinant influencing physical activity, mental wellbeing and social interaction. Providing clear, accessible links between green infrastructure and surrounding routes encourages regular use of outdoor environments, supporting opportunities for walking, cycling and informal recreation. Improved permeability across the site may also reduce barriers to movement and enhance connectivity between surrounding communities and natural spaces. Access to connected green spaces is associated with a range of positive health outcomes, including reduced stress, improved mood and increased opportunities for social engagement. The proposed ecology park, together with enhanced public access routes, creates a coherent network that allows users to move seamlessly between natural landscapes and the wider public realm, supporting both recreational and functional journeys. This integration may encourage greater use of green infrastructure as part of everyday activities rather than solely as a destination. In a rural context, where existing access to natural environments may be limited by land ownership or lack of formal routes, the creation of accessible and well-connected paths represents a meaningful enhancement to local green infrastructure. The provision of multiple entrance points and varied path types supports inclusive access for a wide range of users, including families, older people and individuals with mobility impairments. Overall, the proposal is likely to result in positive health outcomes by strengthening connections between natural spaces and the public realm, encouraging physical activity, supporting mental wellbeing and enhancing accessibility to green infrastructure. No additional mitigation is considered necessary beyond the embedded landscape and access strategy.	**Positive** Negative Neutral Uncertain	None required.

Table 8.3: Access to Open Space and Nature				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
Are the open and natural spaces welcoming and safe and accessible for all?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The ecology park is designed to be inviting and accessible to all, where people from the local surrounding area are encouraged to spend time, be active and connect with nature. A visitor centre would be provided which would be community and educational facility providing access to the Ecology park. Table 8.5 and 8.6 provides further information on inclusive design and safety. From a health perspective, perceptions of safety, accessibility and inclusivity are key determinants influencing whether people choose to use public open spaces. Environments that are legible, well-connected and welcoming are more likely to encourage regular use for recreation, walking and social interaction, supporting both physical and mental wellbeing. The provision of accessible routes, inclusive design measures and clear access points helps reduce physical barriers to participation for older people, individuals with disabilities and families with young children, supporting equitable access to green space. Design features such as clear sightlines, appropriate lighting along key routes, defined entrances and wayfinding signage contribute to perceived and actual safety, which is particularly important in rural or semi-rural settings where lower natural surveillance could otherwise discourage use. The visitor centre provides an identifiable focal point and activity hub, which may increase footfall and enhance natural surveillance, supporting a sense of safety and encouraging community engagement. Welcoming and inclusive natural environments can support social cohesion by providing shared spaces where people of different ages and backgrounds can interact informally. Access to safe and attractive natural spaces is also associated with reduced stress, improved mood and opportunities for restorative experiences. Overall, the design approach is likely to result in positive health outcomes by creating open and natural spaces that are welcoming, safe and accessible, supporting regular use and encouraging engagement with nature. No additional mitigation is considered necessary beyond the embedded design and management measures.	**Positive** Negative Neutral Uncertain	None required.
Does the proposal set out how new open space would be managed and maintained?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** Details of the management and maintenance of the Ecology Park are set out within the Landscape and Ecological Management and Monitoring Plan (LEMMP). The LEMMP identifies: • when and how monitoring shall be undertaken to track progress toward meeting target habitat conditions; • when and how monitoring results shall be reported to the Local Planning Authority (LPA); and • the mechanism for agreeing any necessary changes to management practices with the LPA to ensure that agreed outcomes are met. • The LEMMP provides a coherent, strategic and integrated approach to the management and maintenance of the ecology park to ensure the successful establishment and integration of new planting and habitats with the surrounding landscaping and to maximise its biodiversity value. LEMMP ensures long-term health benefit through sustained quality and biodiversity.	**Positive** Negative Neutral Uncertain	None required.

Table 8.4: Air Quality, Noise and Neighbourhood Amenity

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal minimise impacts such as dust, noise, vibration, odours, soil and water pollution?	**Yes** No N/A	**Construction Impact:** An overview of construction works is provided within ES Chapter 4: Proposed Development and Construction. Construction works would extend over a long programme and would give rise to noise and dust emissions from both on-site activities and construction traffic accessing the site via the M25 (junction 29), the A127 Southend Arterial Road and B186 Ockendon Road onto Fen Lane. Conditions attached to the LDO would require the proposed development to accord with defined design parameters, standards, limitations and control measures set out within the LDO compliance documents. Construction mitigation measures would be secured through the East Havering Data Centre Campus Code of Construction Practice (CoCP), which establishes the framework for managing potential impacts relating to dust, noise, vibration, odours, soil and water pollution during construction. With regard to dust, good site management and mitigation techniques would be implemented to reduce emissions and limit dispersion. These include the desirable and highly recommended mitigation measures for high-risk sites identified within IAQM guidance. A Framework Dust Management Plan (DMP) forms part of the CoCP, setting out suppression measures such as damping down, use of temporary screens and covering of stockpiles. In addition, a detailed DMP would be required via condition prior to the commencement of works. Dust flux or real-time PM10 continuous monitoring would be undertaken during baseline conditions (minimum three months prior to construction) and throughout earthworks activities within 250 m of sensitive receptors. These requirements would be secured through the LDO compliance documents. With implementation of these measures, construction-stage dust effects are assessed within ES Chapter 9: Air Quality as temporary, reversible, long-term, direct, adverse and not significant (minor). An assessment of construction noise effects is presented within ES Chapter 10: Noise and Vibration. The assessment identifies that, even with standard mitigation measures and best practice construction methods, residential receptors within 50 m of Fen Lane highway works (13 dwellings) and within 50 m of Ockendon Road highway works (19 dwellings) would experience a major adverse effect arising from construction activity noise. These effects are predicted to be temporary and short- to medium-term in duration. Additional mitigation secured through the LDO compliance documents would include restrictions on piling methods, temporary acoustic screening at specific build zones, restrictions on on-site steel cutting, temporary screening for earthworks near sensitive receptors, and real-time noise monitoring with alert systems. Residential receptors within 50 m of Fen Lane would also experience major adverse effects associated with construction-stage road traffic noise and completed development road traffic noise. The ES concludes that no additional physical mitigation for these effects is feasible. From a health perspective, the primary pathways of relevance relate to potential disturbance of residential amenity, annoyance and temporary stress responses associated with increased noise levels, particularly within the existing rural context where baseline sound levels are comparatively low and changes may therefore be more perceptible. The long duration of the construction programme means that predictability and effective management of construction activities are important in minimising the extent to which temporary disturbance translates into wider wellbeing effects. Dust exposure pathways are primarily associated with short-term respiratory irritation and nuisance effects; however, the embedded IAQM-aligned mitigation and monitoring regime provides a structured mechanism for maintaining acceptable environmental conditions. Taking account of the secured mitigation measures within the CoCP and the control framework embedded within the LDO, the overall health implications associated with dust, noise and vibration are expected to remain localised, temporary and appropriately managed. Accordingly, while some receptors would experience temporary adverse effects, residual health impacts are considered to be limited and the overall conclusion of minor and not significant effects is supported. **Operational Impact:** The proposed development would not give rise to dust, vibration, odours or pollution during operation. Impacts relating to operational noise are discussed below.	Positive **Negative** Neutral Uncertain	CoCP including the 'desirable and highly recommended dust mitigation measures for high-risk sites' recommended in the IAQM Guidance.
Does the proposal minimise air pollution caused by traffic and energy facilities?	**Yes** No N/A	**Construction Impact:** An assessment of air pollution effects associated with traffic and operational emissions has been undertaken as part of the air quality assessment accompanying the LDO submission. Construction traffic emissions generated by Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) have been evaluated, with the largest increases occurring on road links west and east of the proposed main site entrance on Fen Lane. These locations represent the only areas exceeding the EPUK/IAQM screening thresholds for further assessment outside of areas of existing poor air quality. During the worst-case construction year, increases of up to 696 construction vehicle daily movements (583 LGVs and 113 HGVs) are predicted west of the proposed site entrance on Fen Lane, with additional increases of up to 310 LGV daily movements along	Positive Negative **Neutral** Uncertain	None required.

Table 8.4: Air Quality, Noise and Neighbourhood Amenity				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		B186 North Lane. Baseline air quality modelling demonstrates that pollutant concentrations within the study area are currently well below National Air Quality Objectives (NAQOs), reflecting the relatively rural setting and low existing traffic volumes. From a health perspective, this low baseline exposure is an important contextual factor, as incremental increases in emissions are less likely to result in meaningful changes in population health risk where existing concentrations are well within health-based thresholds. Future baseline traffic flows on Fen Lane without development are predicted to remain low (approximately 1,139 AADT), and even with construction traffic included, total traffic flows would remain below 2,000 AADT. Consequently, construction-related traffic emissions are assessed as unlikely to result in significant deterioration of local air quality. In health terms, this suggests limited potential for measurable changes in respiratory or cardiovascular risk among nearby residents, although temporary perceptual effects such as increased vehicle presence may influence perceived environmental quality and residential amenity, particularly for receptors located close to Fen Lane. **Operational Impact:** Operational traffic increases are similarly concentrated around Fen Lane, with a maximum increase of approximately 768 daily vehicle movements (721 LGVs and 47 HGVs). Despite these increases, overall traffic flows would remain relatively low, and modelling concludes that operational traffic emissions would not give rise to significant air quality effects. Embedded mitigation measures within the Travel Plan aim to encourage sustainable travel behaviours, which supports long-term health outcomes by reducing reliance on private car use and promoting active and public transport modes where feasible. Operational emissions from energy infrastructure have also been assessed. The enclosed district heating centre would house plant and machinery associated with heat recovery and distribution, contributing to energy efficiency and climate mitigation benefits which have indirect positive health implications through reduced greenhouse gas emissions. Backup emergency generators have been modelled using a conservative worst-case scenario assuming operation of up to 288 generators at full load. In practice, such operation is highly unlikely, as sustained operation at full capacity would risk damaging equipment. Dispersion modelling considered emissions of Nitrogen Oxides, particulate matter, sulphur dioxide and carbon monoxide, identifying receptors to the south of the proposed development as experiencing the highest predicted impacts. However, predicted concentrations remain within acceptable limits, and overall effects during both testing and emergency scenarios are assessed as minor and not significant. In health terms, the main exposure pathways relate to potential respiratory irritation from particulate matter and nitrogen oxides, particularly among sensitive groups such as older residents, children, or those with pre-existing respiratory conditions. However, given the low baseline pollutant levels, limited duration of generator testing, and modelling results demonstrating compliance with health-based standards, the likelihood of meaningful adverse health outcomes is considered low. The rural baseline context further reduces the risk of cumulative exposure compared to urban environments with existing air quality pressures. Taking account of the embedded mitigation measures, modelling assumptions, and baseline environmental conditions, the proposed development is considered to minimise air pollution impacts associated with traffic and energy facilities. Residual health effects are therefore expected to be neutral to minor, and no additional mitigation beyond that secured through the LDO compliance framework is required.		
Does the proposal minimise noise pollution caused by traffic and commercial uses?	**Yes** No N/A	**Construction Impact:** The construction traffic noise assessment is set out in ES Chapter 10: Noise and Vibration. The assessment demonstrates that effects would be negligible for most receptors, with the exception of dwellings located within approximately 50 m of Fen Lane, where resulting effects are predicted to be major adverse (significant). These receptors are located immediately adjacent to the carriageway, which also functions as the sole access route to properties, limiting the feasibility of conventional mitigation measures such as acoustic barriers without compromising access and highway safety. Similarly, the use of low-noise road surfacing would be unlikely to provide meaningful benefit due to relatively low traffic speeds, and internal insulation measures would not address external amenity impacts where outdoor noise exposure is the primary pathway. From a health perspective, noise exposure represents a potential pathway influencing wellbeing through mechanisms such as annoyance, sleep disturbance, stress responses and reduced residential amenity. The rural baseline character of the surrounding area is likely to be associated with relatively low existing background noise levels, meaning that perceptible increases in traffic noise may be more noticeable to residents even where absolute noise levels remain below thresholds typically associated with significant physiological health outcomes. This may contribute to subjective impacts on quality of life, particularly for those spending extended periods at home, including older residents or individuals working from home. During the construction phase, increased traffic associated with development activity may therefore result in temporary adverse effects on nearby residents' acoustic environment, particularly along Fen Lane. However, the ES indicates that indoor noise levels	Positive Negative **Neutral** Uncertain	None required.

Table 8.4: Air Quality, Noise and Neighbourhood Amenity				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		would remain acceptable where typical double glazing is present, suggesting that risks relating to sleep disturbance or prolonged exposure within internal environments are likely to remain limited. The absence of feasible additional mitigation reflects the physical constraints of the local highway environment rather than a lack of mitigation consideration. **Operational Impact:** Operational traffic noise effects are similarly predicted to be negligible across the wider road network, with the exception of receptors within 50 m of Fen Lane where perceptible changes in road traffic noise are predicted and classified as permanent major adverse effects. From a health perspective, long-term exposure to increased environmental noise has the potential to influence wellbeing through chronic annoyance or reduced enjoyment of outdoor amenity space, although the ES findings indicate that indoor environments would continue to achieve acceptable noise conditions. The relatively small number of affected dwellings and the rural context reduce the scale of potential population-level health effects. With regard to operational noise from commercial uses, including mechanical and electrical plant and backup generators, the proposed development incorporates a framework approach to noise control due to the inherent flexibility of future data centre configurations. Operational noise limits have been established for the overall development and will be allocated as an "operational noise budget" across individual build zones. The Framework for Managing Operational Noise (FMON), secured through the LDO compliance documents, requires detailed assessment at the design stage, verification during construction, and monitoring during commissioning to ensure that operational noise remains within acceptable limits. From a health perspective, this adaptive management approach is important in reducing uncertainty associated with long-term operational noise exposure, ensuring that cumulative noise emissions from multiple facilities do not result in unintended increases in community exposure. Continuous monitoring and staged assessment support early identification of potential issues, thereby reducing the risk of prolonged exposure to noise levels that could adversely affect wellbeing. Overall, while significant effects are predicted for a small number of receptors close to Fen Lane, the combination of acceptable indoor noise environments, embedded management controls secured through the LDO, and ongoing monitoring means that broader community health risks associated with noise are expected to remain limited. No additional mitigation beyond that already secured through the LDO compliance framework is considered necessary.		

Table 8.5: Accessibility and Active Travel

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal address TfL's ten Healthy Streets Indicators?	**Yes** No N/A	**Construction Impact:** N/A **Operational Impact:** The Healthy Streets Approach puts people and their health at the centre of decisions about how we design, manage and use public spaces. It aims to make our streets healthy, safe and welcoming for everyone. The Approach is based on ten indicators of a Healthy Street which focus on the experience of people using streets. The proposed development responds to the Approach as follows: • Pedestrians from all walks of life: Provision of a network of walking and cycling routes within the proposed ecology park, which would be suitably graded (maximum gradient of 1:21), surfaced and lit where appropriate, to maximise accessibility on foot for all and widen the catchment area for pedestrians. • Easy to cross: Informal crossings are proposed on Ockendon Road and Fen Lane. The Ockendon Road crossing is to be adjacent to the proposed walk/cycle entrance, achieved through extension of the existing footway, re-provision of the existing chicane to the north to serve as a pedestrian refuge, and appropriate signage and road markings. The crossing on Fen Len would be provided at Top Meadow Golf club and would be achieved through the provision of the new footway on the northern side. • Shade and shelter: Tree cover on pedestrian and cycle routes within the proposed ecology park. • Places to stop and rest: Seating to be provided within the proposed ecology park, including on the proposed walk/cycle route connecting to Ockendon Road. • Not too noisy: Provision of an ecology park (including walk/cycle routes) provides opportunity for exposure to a quiet environment. • People choose to walk, cycle and use public transport: Provision of a network of walking and cycling routes within the proposed ecology park, including a dedicated walk/cycle route to Ockendon Road where the nearest bus stops are located, and would increase propensity for people to walk, cycle and use public transport. Provision of a shuttle bus service for data centre staff connecting the proposed development to Upminster railway and London Underground station would further enable and encourage public transport use. • People feel safe: Dedicated accesses and internal routes for people walking and cycling would provide segregation from motorised traffic. Suitable lighting on walk/cycle and vehicle routes within the site, including the walk/cycle route connecting to Ockendon Road, would be provided to increase sense of safety. • Things to see and do: Provision of an ecology park (including walk/cycle routes) and visitor centre provides a leisure facility, capitalising on the attractive local landscape and biodiversity. • People feel relaxed: Dedicated accesses and internal routes for people walking and cycling would provide segregation from motorised traffic; and provision of an ecology park (including walk/cycle routes) and visitor centre would provide a leisure facility. • Clean Air: Provision of an ecology park (including walk/cycle routes) would provide opportunity for exposure to a clean air environment; and provision of charging facilities for electric vehicles maximises opportunity for access by ultra-low emission vehicles.	**Positive** Negative Neutral Uncertain	None required.
Does the proposal encourage walking (such as through the use of shared spaces?)	**Yes** No N/A	**Construction Impact:** N/A **Operational Impact:** Four site accesses are provided for pedestrians and cyclists (including public transport users) as follows: • Dedicated pedestrian/cycle access off Ockendon Road through the Ecology Park to the Data Centre Campus; • Dedicated pedestrian/cycle access via a new footway on the northern side of Fen Lane from Ockendon Road; • Dedicated pedestrian/cycle access from the access road to Bury Farm to the north of the site; and • Shared pedestrian/cycle and vehicle access off Fen Lane via the eastern access road.	**Positive** Negative Neutral Uncertain	None required.
Does the proposal prioritise and encourage cycling (for example by providing secure cycle parking, showers and cycle lanes)?	**Yes** No N/A		**Positive** Negative Neutral Uncertain	None required.

Table 8.5: Accessibility and Active Travel				
		The compliance documents include a Travel Plan. One of the main objectives of the plan is to ensure safe, comfortable and convenient access to the site by non-car modes; removing barriers, both perceived and actual, to walking, cycling and public transport. The following measures have been incorporated into the design of the development to encourage walking and cycling: • Provision of a primary, strategic segregated walk/cycle path connecting Ockendon Road to the main entrance of the data centre campus; • Provision of a.1.5 m wide footway on the northern side of Fen Lane between Ockendon Road and east of the Ladyville Lodge Care Home, where tie-in to the primary, strategy walk/cycle path is achieved; • Provision of continuous footway on eastern side of Ockendon Road providing a continuous footpath connection to the southbound bus stop on Ockendon Road. A new informal crossing on Ockendon Road with associated dropped kerbs and tactile paving would also provide safe access to the northbound bus stop on Ockendon Road; • Provision of internal walk/cycle routes (minimum of 3.0 m wide) within the data centre campus and to the visitors centre and horticultural uses to provide safe and convenient access to building entrances and cycle parking facilities; • Safe, secure and convenient staff cycle parking and facilities (such as lockers, showers and changing rooms) provided from the outset. Cycle parking for data centre employees would be provided at a minimum or 1 space per 10 staff (based on the anticipated maximum number of staff per shift) for long stay parking, and 1 space per 20 staff for short stay parking; and • Provision of seating, lighting, things to see/do (e.g. play areas), and attractive landscaping along walk/cycle routes throughout the proposed Ecology Park as appropriate, particularly for leisure use. From a health perspective, the proposed walking and cycling infrastructure has the potential to support increased levels of physical activity among both employees and visitors by improving accessibility, safety and environmental quality of active travel routes. Baseline health indicators for Havering and neighbouring Thurrock identify lower-than-average levels of physical activity and higher prevalence of overweight and obesity compared to national averages. Improvements to walkability and connectivity therefore represent an important opportunity to address underlying determinants of health by enabling routine physical activity through everyday travel behaviours. The rural context of the site presents both opportunities and constraints in relation to active travel uptake. Existing pedestrian and cycle infrastructure in the surrounding area is relatively limited, and distances between settlements may discourage walking without safe and attractive routes. The provision of dedicated, segregated paths linking Ockendon Road to the site and through the ecology park therefore represents a meaningful enhancement to local connectivity, potentially supporting both utilitarian walking (e.g. access to work or public transport) and recreational activity. The inclusion of seating, landscaping, lighting and features that create visual interest may positively influence perceptions of safety and attractiveness, which are key determinants of whether people choose to walk or cycle. Integration with public transport through improved pedestrian connections and informal crossings may also support multimodal travel, enabling staff to combine walking with bus or rail journeys. This may contribute to wider health benefits through reduced reliance on private car use, improved air quality and increased incidental physical activity. However, given the operational characteristics of a data centre campus, including shift-based working patterns and a potentially dispersed workforce, there may be practical limits on the proportion of journeys made by active modes. The Travel Plan therefore plays an important role in supporting behavioural change by addressing perceived barriers and promoting sustainable travel options. Overall, the design approach demonstrates a clear intention to encourage walking and cycling through infrastructure provision and environmental quality improvements. While uptake will depend on behavioural factors beyond the control of the development, the proposed measures are likely to have a positive effect on opportunities for physical activity and access to green space, supporting mental wellbeing and healthy lifestyles within the surrounding community.		
Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** From a health perspective, connectivity between internal routes and wider strategic walking and cycling networks is a key determinant of whether infrastructure translates into meaningful behaviour change. The integration of upgraded Public Rights of Way (PRoWs) with new strategic routes linking to Ockendon Road, North Ockendon village and surrounding settlements improves permeability across the site and reduces physical barriers to movement. This has the potential to support increased levels of	**Positive** Negative Neutral Uncertain	None required.

Table 8.5: Accessibility and Active Travel				
		everyday physical activity by enabling walking and cycling for both recreational and functional purposes, including access to public transport, employment opportunities and local destinations. Baseline health data for Havering and neighbouring Thurrock indicate lower levels of physical activity and higher rates of overweight and obesity compared to national averages. Enhancing connectivity through safe, continuous and legible routes therefore contributes positively to addressing these wider determinants of health. The upgrading of existing PRoWs and provision of family-friendly accessible paths may also broaden access for a wider range of users, including older people, individuals with reduced mobility, and families with children, supporting inclusive access to outdoor environments and nature. The creation of a coherent network linking green infrastructure within the ecology park to surrounding communities also has potential mental health and wellbeing benefits. Evidence indicates that accessible natural environments can support stress reduction, improved mood and opportunities for social interaction. By creating a new publicly accessible destination, the development may encourage increased use of walking and cycling routes beyond purely transport-related journeys, supporting leisure activity and social cohesion. In the rural context, connectivity is particularly important given existing gaps in pedestrian and cycling infrastructure and the potential for severance created by agricultural land and dispersed settlement patterns. The proposed improvements therefore represent a meaningful enhancement to local active travel networks. However, uptake may still be influenced by distance to residential areas and individual travel behaviour patterns, meaning that the health benefits are likely to be moderate rather than transformative at a population scale. Overall, the integration of internal routes with existing and strategic walking and cycling networks is likely to result in positive health outcomes by improving access to green space, enabling physical activity and supporting active travel choices, without introducing identifiable adverse health effects.		
Does the proposal include traffic management and calming measures to help reduce and minimise road injuries?	**Yes** No N/A	**Construction Impact:** An Outline Construction Logistics Plan (CLP) has been prepared and would be secured through the CoCP as part of the potential LDO. One of the objectives of the CLP is to prioritise the safety of vulnerable road users in the management of construction vehicle movements in line with the Construction Logistics and Community Safety (CLOCS) Standard[29]. All reasonably practicable measures shall be taken to mitigate the risks and impacts to vulnerable road users from construction logistics activities through adherence to: • CLOCS standard; • FORS (Fleet Operator Recognition Scheme) Silver accreditation; • Work Related Road Risk (WRRR) - managed through requirements of FORS; and • Direct Vision Standard (DVS). **Operational Impact:** Proposed vehicle routes would serve the Visitor Centre car park and data centre campus car parks and accordingly there would be no through-traffic through the site. At this stage specific measures to reduce traffic speeds are not known. However, all new access roads and junctions' geometry would be agreed with the Highways Authority and would follow modern design standards to prioritise pedestrians and cyclists.	**Positive** Negative Neutral Uncertain	None required.
Is the proposal well connected to public transport, local services and facilities?	**Yes** No N/A	The site is served by local bus which connect to the wider transport network and railway (national rail, underground and overground) services. The closest bus stops to the site are on B186 Ockendon Road in North Ockendon. The closest railway stations are South Ockendon, approximately a 15-minute cycle from the site, and West Horndon, approximately a 20-minute cycle from the site, both of which provide services to London Fenchurch Street, Basildon, Stanford-le-Hope, Southend Central, and Shoeburyness. The journey time from Ockendon/West Horndon to London Fenchurch Street is approximately 30-minutes. The closest London Underground station to the development site is Upminster, served by the District Line trains towards Barking, Ealing Broadway and Richmond. Upminster is also served by Overground services to Romford providing connectivity to the Elizabeth Line and by rail services on the line between London Fenchurch Street and both Southend and Shoeburyness. **Construction Impact:** As set out in the Outline CLP, the Contractor would implement a staff travel plan to enable and encourage all construction staff (employed by the Contractor and their subcontractors) to travel to the site by non-car modes. This would include provision of shuttle bus services operated by 60-seater bus/coaches between the site and both South Ockendon and Upminster stations, to	**Positive** Negative Neutral Uncertain	None required.

[29] CLOCS Construction Logistics Planning Guidance, April 2021. Available at: https://content.tfl.gov.uk/clp-guidance-clocs.pdf

Table 8.5: Accessibility and Active Travel				
		enable access by public transport. In line with requirements of the employment and skills plan, 20% of the construction workforce would be recruited locally, further strengthening propensity for access by non-car modes. **Operational Impact:** It is noted that data centre shift changeovers are scheduled such that all staff would be able to use rail services from Ockendon and Upminster, including those working the night shift (beginning at 23:00). In order to encourage the use of public transport to and from the site, a number of measures are proposed in the Travel Plan: • Accessible last-mile transport would be available to staff from the first day of data centre operation at shift change-over times. This would operate between the main site entrance and a safe and convenient collection / drop-off location near to the Ockendon Road bus stops, with drop-off and pick-up to be coordinated with rail service timetabling. The route, mode and location of pick-up / drop-off facilities for this transport would be agreed be LBH Highways ahead of site occupation. • To support first/last-mile accessibility to National Rail and London Underground services, a complimentary shuttle bus should be provided during shift changeover times, for use by data centre staff. This is to be a legal obligation from the first day of data centre operation and is secured within the Section 106 agreement. The continued operation of the shuttle bus would be the responsibility of the developer via the Estate Management Team. The service is to be provided for the duration of the LDO. Dedicated parking and charging facilities are provided on-site for these vehicles. The shuttle bus services should be scheduled to align with rail service timetabling and kept under review accordingly. • Demand for, and utilisation of, the proposed shuttle bus service should be monitored through the Travel Plan. Any amendments to the service would be reviewed and agreed by a Travel Plan Steering Group. This would require formal approval from the LPA to any proposed variation to the Section 106 agreement. Staff associated with the indoor horticulture facility would be produce workers and management staff. All produce workers would be transported to/from the site via assigned coaches which would be provided by the occupier. Only management staff would travel to/from the site by private means. With the above measures in place, the proposed development actively seeks to encourage use of public transport to access the site and reduce reliance on private car usage. From a health perspective, connectivity to public transport is an important determinant of both physical and mental wellbeing, influencing access to employment opportunities, services, social networks and opportunities for active travel. The provision of bus and rail connections within cycling distance of the site, together with planned last-mile transport measures, supports accessibility to the development for a wider range of users, including those without access to private vehicles. This is particularly relevant in addressing health inequalities by enabling equitable access to employment and reducing barriers for lower-income groups who may be more reliant on public transport. Baseline socio-economic and health data indicate that although Havering generally performs well on some indicators, physical inactivity and obesity rates are higher than national averages. Improved integration with public transport may support incidental physical activity through walking or cycling to stations and stops, contributing to healthier daily routines. The inclusion of shuttle bus services aligned with shift changeovers is particularly important given the operational characteristics of a data centre campus, where atypical working hours could otherwise limit access to public transport and increase reliance on private cars. In the rural context surrounding the site, distance from settlements and relatively limited existing public transport accessibility present potential constraints to sustainable travel behaviour. The introduction of dedicated last-mile connections and staff shuttle services therefore represents a key mitigation measure, reducing transport-related exclusion and supporting accessibility during early morning, evening or night shifts. These measures may also contribute indirectly to improved air quality and reduced traffic-related noise exposure by encouraging modal shift away from private vehicle use. The use of assigned coach transport for indoor horticulture workers further supports sustainable travel by reducing the number of individual car journeys associated with workforce access. However, the overall success of public transport integration will depend on continued monitoring and adaptation of services through the Travel Plan and Travel Plan Steering Group to ensure services remain responsive to demand and operational needs over the lifetime of the LDO. Overall, the proposed development demonstrates a proactive approach to integrating public transport connectivity within a rural development context. While inherent spatial constraints may limit high levels of modal shift, the embedded measures are likely to result in positive health outcomes through improved access to employment, reduced transport inequalities and increased opportunities for active travel.		
Does the proposal seek to reduce car use by reducing car parking provision, supported by the controlled parking	**Yes** No	**Construction Impact:**	**Positive** Negative	None required.

Table 8.5: Accessibility and Active Travel				
zones, car clubs and travel plans measures?	N/A	As set out above a staff travel plan would be implemented by the Contractor to enable and encourage all construction staff to travel to the site by non-car modes. This would include provision of shuttle bus services between the site and both South Ockendon and Upminster stations, to enable access by public transport. **Operational Impact:** Car parking would be provided in accordance with Havering Local Plan 2016-31 (2021) and London Plan 2021 parking standards. The Public Transport Accessibility Level (PTAL) is a TfL-approved quantitative measure of public transport accessibility, based on distance to public transport stops and the number and frequency of public transport services from those stops. The index produces a score that ranges between 0 (worst) to 6b (best). The site has a PTAL of 0, representing the lowest possible PTAL score. The village of North Ockendon has a PTAL score of 1a to 1b. Therefore, the site is in an area of very poor public transport accessibility. The site is also on the boundary of Greater London, beyond which PTAL scores are not calculated. A Travel Plan accompanies the LDO submission. The primary aim of the plan is to reduce the reduce the proportion of users travelling to the site by single-occupancy private car. A Travel Plan specific to each occupier (consistent with the overarching Travel Plan) would be produced. These would be informed by a baseline staff/visitor Travel Survey, compliant with the TRICS Standard Assessment Methodology (SAM) and covering both staff and visitors. The survey would include the following data: • Mode of travel (i.e. the ways in which people travel to and from the site (e.g. by car, bus, cycle), including use of the dedicated shuttle bus for data centre staff; • Attitudes to travel; • Trip origin and distance travelled; • Typical time of arrival and departure; and • Feedback on travel measures provided on the site (e.g. staff shuttle bus, vehicle and cycle parking provision, walking/cycling routes, and other incentives). An individual Travel Plan specific to each occupier would then be produced and submitted to the LPA within 3 months of completion of the Travel Survey. Numerous measures are proposed in the Travel Plan to reduce car use: • Provision of a primary, strategic segregated walk/cycle path connecting with Ockendon Road; • Provision of footways on Ockendon Road and Fen Lan to provide a continuous footpath connection from within the site to bus stops on Ockendon Road • Provision of internal walk/cycle routes (minimum of 3.0m wide) within the data centre campus and to the visitors centre and horticultural uses to provide safe and convenient access to building entrances and cycle parking facilities; • Safe, secure and convenient staff cycle parking and facilities; • Implementation of a car sharing database to identify opportunities for staff on similar shift patterns and travelling similar routes to travel together; • Provide dedicated parking spaces for those who are car sharing; • Consider providing incentives for those who car share, e.g. gift vouchers; • Implementation of a Car Parking Management Plan to ensure that the car parking spaces within the development are available for intended employees and visitors only; and • Measures to encourage walking, cycling and public transport use, as discussed above. One of the key aims of the Travel Plan is to increase understanding among site users of the travel options that are available to them, providing information to allow site users to understand the benefits of and opportunities for sustainable transport, actively promoting non-car travel choices and car sharing, and marketing and raising awareness of the Travel Plan and its purpose.	Neutral Uncertain	
Does the proposal allow people with mobility problems or a disability to access buildings and places?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** Each build zone within the proposed development would be designed in accordance with BS8300-1:2018 (BS8300: 2018 'Design of an accessible and inclusive built environment – Code of Practice'). All primary strategic pedestrian and cyclepaths through the site would be wheelchair accessible. Accessible setting down and pick-up points would be provided as close to the principal entrances of buildings as is reasonably feasible. All building entrances would	**Positive** Negative Neutral Uncertain	None required.

Table 8.5: Accessibility and Active Travel				
		be suitable for wheelchair users and step free access would be provided to all floors. Accessible WCs would be provided on all floors, lifts would be suitable for wheelchairs and accessible showers would also be provided. A minimum of 5 % of total staff/visitor parking provision for data centres (including campus management facilities) and indoor horticulture would be disabled parking. A minimum of 6 % of total staff/visitor parking provision for the visitor centre / ecology park would be disabled parking. Step-free and safe routes to entrances would be provided from external accessible parking bays. Within the public realm, seating with space at the side for a wheelchair user to sidle and transfer onto the seat, or simply sit and not obstruct the pavement, would be provided. External tables would also be provided with full access for wheelchair user and prams etc. From a health and wellbeing perspective, inclusive and accessible design plays an important role in reducing health inequalities by enabling people with mobility impairments, disabilities or reduced physical capacity to access employment opportunities, public spaces and natural environments independently. Census data indicates that approximately 15–17 % of residents in Havering and neighbouring Thurrock identify as disabled under the Equality Act, highlighting the importance of designing environments that are accessible to a wide range of users. The commitment to BS8300 inclusive design standards, provision of step-free routes, accessible parking, wheelchair-friendly entrances and accessible internal facilities supports equitable access across the development. Accessible pedestrian and cycle routes within the ecology park are particularly significant from a health perspective, as access to outdoor green space and opportunities for physical activity are often disproportionately limited for individuals with mobility impairments. Enabling inclusive access to nature can support both physical and mental wellbeing, contributing to improved social participation, reduced isolation and enhanced quality of life. The rural context of the site presents potential challenges for accessibility due to greater distances between destinations and limited existing infrastructure. The provision of accessible drop-off points, seating opportunities, and inclusive public realm design therefore represents an important mitigation against potential exclusion, supporting rest opportunities and enabling longer journeys to be broken into manageable stages. Inclusive design measures may also benefit a broader range of users beyond those with formal disabilities, including older people, parents with pushchairs and individuals with temporary injuries, supporting a “lifetime neighbourhood” approach. By embedding accessibility within the design of buildings, routes and open spaces, the proposed development contributes positively to health outcomes through increased independence, improved access to employment and recreation, and enhanced social inclusion. Overall, the proposal demonstrates strong alignment with inclusive design principles and is likely to result in positive health outcomes by reducing physical barriers to participation and supporting equitable access to the site’s facilities and green infrastructure.		

Table 8.6: Crime Reduction and Community Safety

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal meet Secure by Design to reduce crime?	**Yes** No N/A	**Construction Impact:** All reasonably practicable measures shall be taken to mitigate the risks and impacts to the community from construction activities through adherence to the CLOCS standard. **Operational Impact:** The data centre campus would be accessed via a new site access road from Fen Lane and would include management, maintenance and security accommodation together with security check point barriers and gates and a perimeter steel security fence to restrict public access to the area, with access controlled at main entrance points. The vehicle gates to the data centre campus would have rising arm barriers overlocked by a manned guarding position. The perimeter fence would be of a minimum height of 2.4 m and should have a 2 m minimum standoff between the fence and any trees and tree canopies, video surveillance columns, light columns, etc. Individual plot tenants would be responsible for their own security on the individual building plots. The wider ecology park site would have boundary treatments in the form of timber post and rail fencing, hedge rows and ditches to provide natural impassable boundaries. More formal vertical bar fencing and gates are proposed at all site pedestrian and cycle entrances and to the visitor centre and horticulture centre to be locked at night. Video surveillance would be provided throughout cycle store areas, whether internal or external. Cycle store areas would comply with Secure by Design requirements. Suitable lighting on all pedestrian/cycle and vehicle routes within the site would be provided, including the pedestrian/cycle route connecting to Ockendon Road, ensuring a sense of safety throughout the site during the hours of darkness. Additionally, the Designing out crime officer has been engaged during the development of the proposed development From a health and wellbeing perspective, perceptions of safety and security within the built environment are key determinants influencing mental wellbeing, social interaction and willingness to use public spaces and active travel routes. The incorporation of Secure by Design principles, including controlled access points, perimeter security, lighting and surveillance, may contribute positively to reducing opportunities for crime and antisocial behaviour, thereby supporting a safer environment for staff and visitors. Within the ecology park and public access areas, the combination of defined boundaries, clear access points, appropriate lighting and natural surveillance through well-designed routes is likely to enhance users' sense of safety. Perceived safety is particularly important in encouraging use of walking and cycling infrastructure, especially during early morning or evening hours associated with shift-based working patterns. Improved perceptions of safety may therefore indirectly support increased physical activity and social interaction, contributing to broader health benefits. The rural context of the site means that isolation and low natural footfall could otherwise contribute to feelings of vulnerability or reduced use of public spaces. The proposed measures, including lighting, managed entrances and monitored cycle storage areas, help address these potential barriers by providing reassurance and clear wayfinding. This may be particularly beneficial for groups who are more sensitive to perceived safety risks, such as women, older people or individuals travelling alone. While the data centre campus itself requires higher levels of security due to operational requirements, the separation between secure operational areas and publicly accessible ecology park spaces helps maintain openness and accessibility, avoiding the creation of environments perceived as exclusionary. Balancing robust security with inclusive public realm design is important in supporting positive community perceptions and encouraging engagement with the site. Overall, the proposed development demonstrates a proactive approach to designing out crime and promoting safety through environmental design. These measures are likely to have positive health outcomes by supporting mental wellbeing, encouraging use of public spaces and enabling safe active travel, without introducing identifiable adverse health effects. No additional mitigation is considered necessary beyond the embedded design measures.	**Positive** Negative Neutral Uncertain	
Does the proposal incorporate elements to help design out crime?	**Yes** No N/A		**Positive** Negative Neutral Uncertain	None required.
Does the proposal incorporate design techniques to help people feel secure and avoid creating 'gated communities'?	Yes **No** N/A	The concept of gated communities is not considered relevant given the nature of the proposed development. There are no existing or proposed residents or communities on-site.	N/A	None required.
Does the proposal include attractive, multi-use public spaces and buildings?	Yes No **N/A**	**Construction Impact:** N/A. **Operational Impact:**	N/A	None required.

Table 8.6: Crime Reduction and Community Safety				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		The proposed development includes an extensive ecology park with extensive landscaping and a visitor centre (minimum 300 m^2) which would include external amenity areas and further landscaping. The remainder of the proposed development would comprise data centre buildings, data centre campus management and security facilities, and indoor horticulture facilities, none of which would include public spaces. The ecology park would include a network of path types to provide accessible public pedestrian and cycle routes throughout the site and allow ease of access from the surrounding area. A series of informal paths are also proposed in the form of natural trails and mown strips. The visitor centre would provide the main hub for people actively visiting and managing the site, however, the site should also provide for passive recreation and those who are passing through.		
Has engagement and consultation been carried out with the local community and voluntary sector?	Yes **No** N/A	At this stage of the planning process, no formal consultation with the local community has been undertaken in relation to the proposed development. There has been some informal engagement undertaken by the developer, an overview of which is contained in the Equalities Impact Assessment. For the purposes of this HHIA, these informal engagement activities are not relevant. Additionally, the LDO process includes a consultation stage during which both consultees and members of the public can provide comments on the proposed development. **Construction Impact:** In accordance with the CoCP, a Project Environmental Manager (PEM) shall be named and contact telephone number provided at all entrances to the construction site. The PEM shall have primary responsibility for liaising with the LPA and other stakeholders on environmental matters and shall keep neighbours, and other relevant parties informed of the nature of the on-going works, their duration and programme. The PEM will deal with enquiries from the general public, including any complaints. Any complaints shall be logged and reported to the LPA as soon as practicable. The PEM will coordinate responses to queries and address issues in a timely and satisfactory manner. **Operational Impact:** N/A	Positive Negative **Neutral** Uncertain	
Have the local community identified any particular issues (positive or negative) about the scheme?	Yes **No** N/A		Positive Negative **Neutral** Uncertain	

Table 8.7: Access to Healthy Food				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
Does the proposal facilitate the supply of local food, e.g. allotments?	Yes **No** N/A	**Construction Impact:** N/A. **Operational Impact:** The proposed development would result in the loss of agricultural land however, it would also include a maximum of 50,000 m^2 GEA of indoor horticultural facilities, however it is not anticipated that this would be publicly accessible or necessarily contribute to the availability of 'local' food within the context of this assessment.	N/A	None required.
Does the proposal include a range of retail uses, including food stores and smaller affordable shops for social enterprises?	Yes **No** N/A	**Construction Impact:** N/A. **Operational Impact:** There are no existing or proposed retail uses that would impact upon the local availability or consumption of healthy or unhealthy food.	N/A	None required.
Does the proposal avoid contributing towards an over-concentration of hot food takeaways in the local area?	Yes **No** N/A		N/A	None required.

Page 684

Table 8.8: Access to Work and Training

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal provide access to local employment and training opportunities, including temporary construction and permanent 'end-use' jobs?	**Yes** No N/A	The site is currently under agricultural use from four existing arable farms. The construction, and subsequent operation of the completed development, would not result in the closure of those farms but would result in the loss of productive land area and reduced yields which could have a knock on effect on employment requirements. There are currently 3.5 permanent employees at the plant nursery and associated small holdings, and 200 days of seasonal agricultural employment (approximately 0.5FTE) which would be impacted. From a health perspective, access to stable employment is a key social determinant influencing physical and mental wellbeing through pathways including income security, reduced financial stress, improved housing stability and enhanced social participation. The provision of both temporary construction employment and long-term operational jobs therefore represents an important positive health outcome associated with the proposed development. Baseline socio-economic data indicates relatively strong employment rates within Havering; however, local health indicators highlight issues such as lower physical activity levels and higher prevalence of overweight and obesity, which may be indirectly influenced by wider socio-economic conditions. Increased employment opportunities, particularly where local recruitment is prioritised, may contribute to reducing health inequalities by improving economic resilience and supporting access to healthier lifestyles. **Construction Impact:** The construction stage of the proposed development would generate employment within the construction industry over the construction period, generating direct and indirect social and economic impacts, with temporary, long-term effects. During construction, the proposed development is estimated to generate 1,340 job years of employment in the UK, and 330 job years of employment (per year) at the borough level. According to the 2023 Business Register and Employment Survey (BRES), there were 8,000 people employed in the construction sector in Havering in 2021. The 330 jobs created or sustained as a result of the construction stage, represents a 4 % increase, if all employment was realised in that sector, or 0.4 % across the whole local economy. In order to maximise the retention of employment within Havering, an employment and skills strategy would be secured through a s106 agreement. Chapter 7: Socio-Economics of the ES concludes that construction employment and associated GVA would generate a temporary, long-term direct moderate Beneficial (significant) effect at the borough level. The construction stage is predicted to generate significant temporary employment opportunities, including roles across a range of skill levels. This diversity of roles may allow access to employment for individuals with different qualifications and experience levels, supporting inclusive economic participation. However, construction employment is inherently temporary, and associated health benefits may therefore be time-limited unless supported by skills development and training opportunities that enhance longer-term employability. The proposed employment and skills strategy secured through the Section 106 agreement is therefore an important mitigation measure, supporting pathways into sustained employment and maximising local benefits. **Operational Impact:** Once completed, the proposed development is predicted to give rise to approximately 350 direct jobs at the Borough level together with a further 260 jobs supported via indirect or induced spending at the borough level. Employment generated is expected to be dispersed across a variety of sectors in Havering with over half the total created or sustained employment in the Information & Communication sector. Once fully operational in 2045, it is estimated that the completed development could generate 2.3 % increase in Havering's total GVA, and a 0.5 % uplift to employment across the local economy by that time. Chapter 7: Socio-Economics of the ES concludes that the operational effect on the local economy is considered to be a permanent, long-term, direct, major beneficial (significant) effect at the borough level. The transition from agricultural land use to a data centre campus may result in limited displacement effects for existing agricultural workers, including the loss of approximately 3.5 permanent roles and seasonal employment. While relatively small in scale, this represents a potential localised negative impact, particularly where agricultural employment may provide accessible opportunities for individuals without specialist technical skills. Ensuring that training and recruitment initiatives support local workforce transition into new roles may help mitigate this risk. Operational employment associated with the completed development is predicted to provide long-term economic benefits, particularly within the Information and Communication sector. These roles may contribute positively to local economic growth and health outcomes through increased income opportunities and job stability. However, higher-skilled employment roles may require specialist training or qualifications, and the extent to which local residents benefit will depend on the effectiveness of recruitment and training programmes in enabling local access. Overall, the proposed development is likely to result in positive health outcomes through increased employment opportunities, economic growth and associated social benefits. The secured employment and skills strategy is particularly important in ensuring	**Positive** Negative Neutral Uncertain	Development of a employment and skills strategy should be secured through a s106 agreement.
Will the proposal affect local employment levels?	**Yes** No N/A		**Positive** Negative Neutral Uncertain	

Table 8.8: Access to Work and Training				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		that these benefits are equitably distributed and that potential negative effects associated with land use change are appropriately mitigated.		
Does the proposal provide for childcare or assist parents in seeking childcare facilities?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** Due to the nature of the proposed development, there are no existing or proposed childcare facilities.	N/A	None required.
Does the proposal include managed and affordable workspace for local businesses?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** Due to the nature of the proposed development, there are no existing or proposed workspaces.	N/A	None required.
Does the proposal include opportunities for work for local people via local procurement arrangements?	**Yes** No N/A	The proposed development would result in a net increase in the number of local jobs across a range of occupation types, as set out above. **Construction Impact:** The jobs likely to be created during construction of the proposed development would be varied, from low-skilled labouring through a range of skilled construction trades to technical and professional work. It is likely that the principal contracts would be put out to tender on a regional or national basis although there may be sub-contract opportunities for local firms and skills. Opportunities for local people to access jobs would depend on both successful bidding for contracts by local contractors and local people with appropriate skills and experience applying for the small proportion of jobs that may be advertised locally. The LPA would seek to maximise local recruitment through enhancement measures through, for example, advertising job vacancies in local job agencies and newspapers in accordance with 'local and relevant postcodes' to maximise those employed locally. Development of an employment and skills strategy would be secured through a s106 agreement. From a health perspective, local procurement and recruitment practices influence the extent to which economic benefits are distributed within the surrounding community. Access to employment opportunities for local residents supports wider determinants of health by improving income stability, reducing financial stress and enhancing social inclusion. Where procurement arrangements prioritise local labour and supply chains, economic benefits are more likely to remain within the local area, contributing to community resilience and potentially reducing health inequalities. The range of roles anticipated during construction, spanning from entry-level labouring positions to skilled and professional occupations, presents opportunities for individuals with different levels of experience and qualifications. However, the extent to which local residents benefit would depend on accessibility to recruitment processes, awareness of opportunities and alignment between workforce skills and job requirements. Without targeted measures, there is a risk that employment benefits may be captured primarily by regional or national labour markets rather than local communities. The proposed employment and skills strategy secured through the Section 106 agreement is therefore important from a health perspective, as it may help ensure that local residents are supported in accessing employment opportunities through targeted advertising, skills development and engagement with local job agencies. Supporting local participation in the workforce may also have indirect health benefits by strengthening social cohesion and community identity through shared economic participation. Local procurement opportunities for subcontractors and local businesses may further contribute to positive health outcomes by supporting local economic activity, sustaining small and medium enterprises and enhancing community wealth building. These indirect economic effects can influence health through improved local economic stability and increased opportunities for local employment across supply chains. Overall, the proposed development demonstrates potential to generate positive health outcomes through local employment and procurement pathways. The effectiveness of these benefits would depend on the implementation of the employment and skills strategy and ongoing monitoring to ensure that opportunities are accessible to local residents. **Operational Impact:**	Positive Negative **Neutral** Uncertain	Development of a employment and skills strategy should be secured through a s106 agreement.

Table 8.8: Access to Work and Training				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		As with the construction phase, development of an employment and skills strategy would be secured through a s106 agreement to encourage local training and procurement opportunities. The extent of any benefits would depend on the implementation of the strategy and ongoing monitoring to ensure that opportunities are accessible to local residents.		

Table 8.9: Social Cohesion and Lifetime Neighbourhoods

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal consider health inequalities by addressing local needs through community engagement?	Yes **No** N/A	At this stage of the planning process, no formal consultation with the local community has been undertaken in relation to the proposed development. There has been some informal engagement undertaken by the developer, an overview of which is contained in the Equalities Impact Assessment. For the purposes of this HHIA, these informal engagement activities are not relevant. Additionally, the LDO process includes a consultation stage during which both consultees and members of the public can provide comments on the proposed development.	N/A	
Does the proposal connect with existing communities, i.e. layout and movement which avoids physical barriers and severance and land uses and spaces which encourage social interaction?	**Yes** No N/A	**Construction Impact:** Given the existing use of the site, it is not considered that construction activities of the proposed development would result in severance between existing communities or physical barriers. **Operational Impact:** Strategic Cycle and Pedestrian routes are proposed across the site creating and promoting sustainable transport and connecting to routes into the surrounding roads and communities. The primary cycle and pedestrian access routes on to and across the site would be provided to link the proposed development with surrounding communities and public transport links, as discussed further in Table 8.5. Other dedicated pedestrian routes and nature walking tracks would be incorporated into the ecology park which would extend around the whole of the secure data centre campus and a network of footpaths and cycleways through the ecology park would be provided including a primary strategic footway/cycleway link to the Data Centre Campus from the B186 Ockendon Road in North Ockendon. Existing public footpath FP233 through the site would be upgraded and run through the new ecology park from Bury Farm Walk entrance to the Discovery Zone Link on Fen Lane. Existing public footpath FP283 would also be upgraded with an upgraded entrance on Ockendon Road though new meadows and the West Lookout all the way to Fen Lane on the south where a completely new route would run parallel to the road. This footpath would also branch off at the West lookout to continue towards the further Bury Farm Walk. All existing footpaths on site would be maintained to be more accessible and family friendly. The proposed development would be a catalyst to the enhancement of pedestrian and cycle route connections from north to south and from east to west and would contribute to a good network of access routes for public use which encourages movements through the site and local area and avoids severance. Highway works would be carried out to provide a footway on the northern side of Fen Lane between the junction with Ockendon Road and east of the Ladyville Lodge Care Home. The new footpath would tie-in to the proposed primary strategic footway/cycleway through the ecology park. The development of the visitor centre and ecology park would also provide a new publicly accessible destination which would be open to all and encourage visitors to the site and social interaction. From a health and wellbeing perspective, the extent to which development connects with existing communities and avoids physical or social severance is an important determinant influencing social cohesion, accessibility and opportunities for everyday physical activity. The enhancement of existing Public Rights of Way and provision of new strategic pedestrian and cycle connections linking surrounding settlements to the site reduces potential barriers to movement and helps integrate the development within the wider landscape rather than creating an isolated or inaccessible destination. In rural contexts such as this, dispersed settlement patterns and limited pedestrian infrastructure can contribute to reduced social interaction and increased reliance on private vehicles. The proposed network of upgraded footpaths and cycle routes therefore represents a meaningful enhancement to local connectivity, enabling more direct and safer access between communities, public transport nodes and recreational spaces. By facilitating movement through the site from north to south and east to west, the development reduces the risk of physical severance that can arise from large-scale infrastructure projects. The ecology park and visitor centre provide opportunities for shared public space and social interaction, which may support mental wellbeing through increased opportunities for outdoor recreation, informal social contact and engagement with nature. Accessible natural environments are associated with improved mood, reduced stress and enhanced community cohesion. The creation of a new destination that is publicly accessible may also encourage wider community use of the site, supporting a sense of ownership and place. However, the presence of a secure data centre campus within the wider landscape introduces a degree of spatial separation between operational areas and publicly accessible spaces. While necessary for operational and security reasons, the design	**Positive** Negative Neutral Uncertain	None required.

Table 8.9: Social Cohesion and Lifetime Neighbourhoods

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		approach, including clear routes around and through the ecology park, helps ensure that public movement is maintained and that the development does not create a barrier within the local movement network. Overall, the proposed development is likely to result in positive health outcomes by improving connectivity, enhancing opportunities for social interaction and supporting access to green space, while avoiding significant severance effects. No additional mitigation is considered necessary beyond the embedded design measures.		
Does the proposal include a mix of uses and a range of community facilities?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** A visitor's centre would be delivered which be located in Build Zone H and would include: • a flexible/multi-purpose room or space that can accommodate 25-50 people (a minimum GIA of 70 m^2) suitable for educational purposes; • a dedicated area for educational exhibits; • ancillary office space and food/beverage provision (vending machines as a minimum); • storage space; and • staff restroom including kitchen facilities. The visitor centre and ecology park would provide opportunities for education and community engagement, through features including information and interpretation boards, viewpoints and observation towers, and through the maintenance and management of the park. It is anticipated that local wildlife groups would be engaged to aid in implementation and management of the site, with volunteer programmes providing local community support and a sense of local ownership. Suitable facilities could also be provided for schools and youth groups, enhancing the educational function of the ecology park. From a health perspective, the inclusion of community-oriented facilities within the visitor centre and ecology park supports important social determinants of health by creating opportunities for education, community engagement and social interaction. Access to shared spaces that facilitate learning, volunteering and recreational activities can contribute positively to mental wellbeing by reducing social isolation, promoting community participation and strengthening local identity. The provision of a flexible multi-purpose space capable of hosting educational activities, community events or small gatherings introduces an element of social infrastructure within an otherwise employment-focused development. This may be particularly beneficial within a rural context where community facilities are often limited and dispersed, and where new accessible spaces can encourage wider participation across different age groups and interests. Engagement opportunities with local wildlife groups and volunteer programmes may further enhance community ownership of the ecology park, supporting a sense of belonging and collective stewardship that has been associated with improved wellbeing outcomes. Educational features, interpretation boards and opportunities for school and youth group engagement also provide indirect health benefits by encouraging outdoor learning and contact with nature. Exposure to natural environments has been shown to support cognitive development in younger populations and reduce stress levels among all age groups. The integration of these functions within the ecology park may therefore broaden the appeal of the site beyond its primary operational function, contributing to inclusive access and social interaction. Opportunities for voluntary sector involvement may also enhance social capital by enabling collaboration between local organisations, community groups and site management. Increased social capital is associated with improved resilience, stronger support networks and positive mental health outcomes. Overall, while the proposed development is not primarily focused on delivering traditional community infrastructure, the inclusion of the visitor centre and associated educational and engagement features represents a positive contribution to community wellbeing and social cohesion. No additional mitigation is considered necessary beyond the embedded design and management measures.	**Positive** Negative Neutral Uncertain	None required.
Does the proposal provide opportunities for the voluntary and community sectors?	**Yes** No N/A		**Positive** Negative Neutral Uncertain	None required.
Does the proposal take into account issues and principles of inclusive and age-friendly design?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The development of the visitor centre, ecology park and strategic landscaping would ensure free and easy access for all users and would be an inviting destination for all.	**Positive** Negative Neutral Uncertain	None required.

Table 8.9: Social Cohesion and Lifetime Neighbourhoods				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		All buildings and new infrastructure would be designed to be inclusive in respect of providing access and facilities for wheelchair users and people with limited mobility. An accessible bird hide would be provided near to the Visitor Centre that can accommodate a minimum of six people including wheelchair users. From a health and wellbeing perspective, inclusive and age-friendly design supports equitable access to environments and services across the life course, enabling individuals of different ages and abilities to participate fully in work, recreation and community life. Havering has a relatively older population profile compared to the London average, and inclusive design principles are therefore particularly important in supporting healthy ageing, independence and continued social participation. The commitment to accessible infrastructure throughout the visitor centre, ecology park and wider development, including step-free access, inclusive routes and facilities designed for wheelchair users and individuals with reduced mobility, supports physical accessibility and reduces barriers that can otherwise contribute to social isolation or reduced physical activity among older people and those with mobility impairments. Age-friendly design features such as accessible seating, clear routes and rest opportunities within the landscape can enable users to engage with the environment at their own pace, supporting both physical and mental wellbeing. Access to natural environments has been associated with improved mental health outcomes, reduced stress and increased opportunities for low-impact physical activity, which may be particularly beneficial for older adults or individuals with chronic health conditions. The provision of an accessible bird hide and inclusive public realm features supports meaningful engagement with nature and enhances opportunities for inclusive outdoor recreation. Inclusive design measures also benefit a wider range of users beyond older adults or those with disabilities, including families with young children, individuals with temporary injuries and those using mobility aids or pushchairs. By embedding age-friendly and inclusive principles within the design of buildings and public spaces, the proposal contributes positively to creating a welcoming environment that supports wellbeing and accessibility for all. Overall, the proposed development demonstrates a positive approach to inclusive and age-friendly design that is likely to support health outcomes through increased accessibility, social participation and opportunities for engagement with nature. No additional mitigation is considered necessary beyond the embedded design measures.		

Table 8.10: Minimising the use of Resources				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
Does the proposal make best use of existing land?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The site currently comprises four agricultural farms. The land has a character of open agricultural land interspersed by trees, field boundaries, hedgerows and ditches. There is a significant need for additional data centre capacity in the UK and London. Whilst data centres continue to be developed throughout Greater London, Knight Frank[30]notes that 95 % of the end user demand is from cloud customers who require interconnectivity within pre-defined 'Availability Zones'. Therefore, the proximity of any new data centre to the public cloud region and its users is a key consideration in evaluation site suitability. The London Cloud market is now experiencing severe supply constraints within its core AZs as demand continues to outpace available supply. While the London market has secured substantial power for future development, there is a shortage of readily available and confirmed power to meet cloud demand over the next five years. Savills was appointed by Digital Reef to provide advice based on their knowledge of the data centre market in the UK. The data relied upon in the Woodlands Park appeal, which originated from JLL, more closely reflects Savills view of the underlying market requirement driven by strong structural factors which are primarily cloud migration and digital infrastructure adoption. Savills state that there is currently 1,289 MW[31] of secured data centre capacity within the principal sub-markets in London i.e. where the site has been acquired, planning permission obtained and power secured. A significant portion of this power depends on the new Iver B substation at Uxbridge Moor which has faced significant delays and is not anticipated to be completed until 2029. Delays in power delivery are limiting the ability to meet the current need for public cloud services in London. It is clear that even if the current amount of secured data centre capacity in London was doubled (based on the quantum of need accepted in the Abbots Langley case) there would still be a significant shortfall at 2029. There is therefore an urgent need for additional data centre capacity to meet demand in the London cloud region and to ensure that the UK retains its competitive edge in attracting data centre investment and maintaining its leading position in Europe's digital economy. Data centres are built in specific locations based on factors like connectivity, accessibility to end users, and access to power. Power and fibre are the two fundamental prerequisites necessary for data centre functionality. The Savillls UK Data Centre Need and Supply Assessment identified a general area of search based on the existing West London Availability Zone, and the assessment of available power identified only one suitable location at the Warley Grid Supply Point ('GSP'). Warley GSP which is the only GSP with sufficient power that can be delivered within the required timescales for the proposed development. An extensive site search exercise was undertaken and a comprehensive assessment completed for seven different site options which could reasonably receive power from the Warley GSP and accommodate the need for a 'hyperscale' data centre campus and associated key infrastructure (electricity and back-up generators). The chosen site for the proposed development was deemed most suitable for a number of reasons but fundamentally its proximity to the GSP was a key determining factor. From a health perspective, land use decisions influence a range of environmental and social determinants of health, including access to green space, environmental quality, employment opportunities and climate resilience. The transition from agricultural land to a data centre campus represents a significant change in land function; however, the proposal incorporates extensive ecological landscaping and publicly accessible open space, which may enhance opportunities for recreation, physical activity and contact with nature compared to the existing private agricultural use where public access is currently limited. The provision of a large-scale ecology park surrounding the secure operational areas has the potential to deliver positive health outcomes by increasing access to natural environments, supporting mental wellbeing and encouraging physical activity. Evidence suggests that accessible green infrastructure contributes to reduced stress levels, improved mood and increased opportunities for social interaction. The enhancement of biodiversity and natural habitats may further contribute to environmental quality and long-term ecosystem resilience, which indirectly supports population health. At a wider strategic level, the proposed development responds to increasing demand for digital infrastructure, which has indirect health implications through supporting economic growth, technological connectivity and access to digital services. Digital infrastructure underpins	**Positive** Negative Neutral Uncertain	None required.

[30] Data Centre Development Report – Land to the East of South Mimms Service Station – Knight Frank (September 2024)
[31] East Havering Data Centre Campus – UK Data Centre Need and Supply Assessment (August 2025)

Table 8.10: Minimising the use of Resources

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		modern healthcare delivery, remote working and social connectivity, all of which can influence health outcomes and resilience, particularly following shifts toward digital services and hybrid working patterns. However, the change from agricultural land use may result in the loss of certain landscape characteristics and agricultural productivity, which can influence local identity and perceptions of place. The design approach, including strategic landscaping, habitat creation and retention of natural features, helps mitigate potential negative effects by maintaining elements of rural character and integrating the development within the surrounding landscape. Overall, the proposed development demonstrates a balanced approach to land use by responding to strategic infrastructure needs while incorporating significant ecological and public access enhancements. From a health perspective, the resulting effects are considered positive, particularly through improved access to green space, economic opportunities and climate-resilient deign measures. No additional mitigation is considered necessary beyond the embedded design and landscape strategies.		
Does the proposal encourage recycling (including building materials)?	**Yes** No N/A	**Construction Impact:** All waste material generated on-site during the construction process would be handled and disposed of in accordance with Waste Management legislation. The following measures would be considered to ensure that waste is minimised: • Avoidance of waste at the design stage; • Use of materials with recycled content; • Provision of construction material cut to size to reduce waste generated on-site; • Just-in-time deliveries; • Safe and secure storage of materials; • Minimisation of packaging; • Reuse or recycling of unwanted packaging e.g. pallets; and • Reuse of waste on-site. All waste produced on-site would be appropriately stored to prevent escape or leakage whilst on-site or in transit. Waste storage facilities would be suitable to contain waste and labelled. Vehicles used for transporting waste shall be suitable to prevent escape during transit. No wastes would be burnt or disposed on-site. At this stage it is anticipated that approximately 29,326 m^3 of recyclable construction waste would arise from the data centre campus and associated buildings, and approximately 2,405 m^3 of recyclable construction waste would arise from the ecology park. As set out in the Whole Life Carbon Assessment (WLCA)[32] there is a commitment for 100 % excavation material to be diverted from landfill. There are also intentions to divert 95% of construction waste from landfill for reuse, recycling or recovery. **Operational Impact:** Operational waste from the proposed development would include a mixture of waste streams from the data centre, horticultural use, and visitor centre uses, as well as municipal waste streams from publicly accessible areas. Dedicated bin storage areas would ensure the separate storage and collection of waste, reusable items, recyclable materials, compostable waste and green waste from the horticulture uses. Bin storage areas would be located internally or externally in fenced or screened compounds for private refuse collection and management. Green waste (such as grass and wood clippings, pruning, branches, twigs, leaves, tree trimmings) from the routine long-term management of the ecology park would be collected and disposed at the time the maintenance works were undertaken and would not be stored on-site. From a health perspective, effective waste management and recycling practices contribute to maintaining environmental quality by reducing risks associated with pollution, odour, vermin and visual nuisance, all of which can influence community wellbeing and residential amenity. The implementation of waste minimisation measures during construction, including avoidance of waste at the design stage, reuse of materials and recycling of packaging, supports a reduction in environmental impacts that could otherwise affect local air quality, soil and water conditions.	**Positive** Negative Neutral Uncertain	None required.

[32] Mainer Associates, 2025. Digital Reef Limited: East Havering Data Centre Campus: Local Development Order – Whole Life Carbon Assessment. Revision N.

Table 8.10: Minimising the use of Resources

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		Proper storage, segregation and handling of waste materials reduce the risk of accidental release or contamination, helping to protect both environmental receptors and human health. The commitment to preventing on-site burning of waste is particularly relevant in avoiding localised air quality impacts and associated respiratory health risks. Operational waste management arrangements that provide dedicated storage and separation of waste streams, including recyclable and compostable materials, support sustainable waste practices and reduce reliance on landfill. From a health perspective, this contributes indirectly to climate mitigation and environmental sustainability, which are recognised determinants of long-term population health. The management of green waste associated with the ecology park also supports good environmental stewardship by ensuring that maintenance activities do not create nuisance or hygiene issues. Well-managed waste systems within publicly accessible areas are important in maintaining perceptions of cleanliness and safety, which may influence the willingness of visitors to use and enjoy outdoor spaces. Overall, the proposed development demonstrates a comprehensive approach to waste minimisation and recycling that supports environmental protection and contributes positively to health outcomes by reducing potential exposure to pollutants and maintaining high-quality public environments. No additional mitigation is considered necessary beyond the embedded waste management measures.		
Does the proposal incorporate sustainable design and construction techniques?	**Yes** No N/A	Each data centre building would be required to achieve at least BREEAM Excellent rating. All data centre buildings would aim to be net zero carbon Where this is not possible, buildings would achieve an on-site carbon reduction of at least 40 per cent beyond Building Regulations. Where it is clearly demonstrated that it is not possible to achieve the zero-carbon target on site, any shortfall would be provided through a cash in lieu contribution to the borough's carbon offset fund to be secured through a planning obligation. The proposed data centre buildings would have relatively low heat demand requirements, but high cooling demands due to the server equipment present; they are typically a net generator of heat rather than a net consumer. There are no opportunities for the proposed development to import district heat, however there are opportunities to export waste heat from site. Accordingly, the proposed development would be served by an enclosed district heating centre which would both collect some of the waste heat from all of the data centre buildings on the campus and distribute it to on-site and potential offsite uses. The district heating energy centre would utilise the surplus heat being generated from the on-site electrical infrastructure and data buildings. The main district heating pipes would deliver the bulk of collected heat to an energy centre. The proposed energy centre would provide plant equipment to allow the surplus heat to be reused on-site in the heated indoor horticulture, visitor centre and other accommodation requiring heating. As detailed in the Sustainability and Energy Statement, horticultural buildings would be provided with waste heat from the data centres through underground pipework and a heat pump would be utilised to lift heat from 28 °C to required pipe temperatures of between 35 and 45°C. Building fabric insulation levels and U values would exceed current part L standards of the Building Regulations (2021) to minimise heating and cooling requirements. Energy efficient lighting and controls are specified throughout the development and passive building fabric design measures have been specified to reduce energy consumption. As set out in the WLCA, sustainable material sourcing and waste management would be considered throughout the life of the proposed development to ensure the it's environmental footprint is minimised as far as possible. The proposed development aims to rely on locally manufactured products where this meets the necessary quality standards. The visitor centre building would achieve a BREEAM rating of outstanding and be net zero carbon in line with the definition included in Policy SI 2 of The London Plan (2021) achieving an on-site carbon reduction of at least 100 per cent beyond Building Regulations, with at least 10 % of this carbon reduction being achieved via energy efficiency measures alone. Modular construction design would be explored to reduce building waste and embodied carbon. Systems in the building would be specified to have low energy and low water usage. The materials in the building would be as environmentally responsible as possible; all timber from managed sources, paint/varnish finishes kept to a minimum and are to a green specification. Rainwater harvesting measures would be adopted across the site to reduce potable water consumption. Water consumption across the site is estimated to be 62.5 million litres per annum due to process cooling requirements for the data centres, 41.4 million litres per annum irrigation requirements of the horticulture and 17.4 million litres per annum domestic water use in the administrative areas. Rainwater from all the available roof areas of the buildings would be channelled into above or below ground rainwater storage tanks situated close to the plant gantry. The water from the tanks would be filtered and treated prior to use for the data centre adiabatic cooling process. Rainwater	**Positive** Negative Neutral Uncertain	None required.

Table 8.10: Minimising the use of Resources

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		harvesting is estimated to yield up to between 43,786,752[33] and 51,094,800[34] l/annum and is therefore predicted to meet up to 53 %[35] of annual cooling process water demand. Rainwater harvesting for horticultural uses is estimated to yield between 30,000,000 l/annum)[36] and 25,700,952 l/annum[37] and is therefore predicted to meet up to 85%[38] of annual water demand with the remaining demand met from utility potable water. To minimise the consumption of utility potable water for the data centre cooling process, rainwater harvesting would be prioritised and potable water would only be used to meet any shortfall in water demand. Measures million litres per annum also be incorporated into the welfare areas to improve efficiencies, including the use of water meters and reporting software to enable effective monitoring, leak detection systems and alarms, minimum water efficiency standards for all fixtures and fittings, dual flush WCs with a flush volume of 4.5 litres or less and electronic sensor taps. From a health perspective, sustainable design and construction techniques contribute to both immediate environmental health protection and long-term population wellbeing through reduced greenhouse gas emissions, improved resource efficiency and enhanced climate resilience. The commitment to achieving BREEAM Excellent ratings and targeting net zero carbon performance reflects a design approach aligned with reducing environmental impacts that are increasingly recognised as determinants of public health, including air quality, climate change and resource security. Energy efficiency measures, including enhanced building fabric performance, passive design strategies and efficient lighting systems, support reduced operational energy demand and associated emissions. Although data centres have inherently high energy requirements, the integration of waste heat recovery and reuse within the district heating system represents a significant sustainability feature. By capturing and redistributing surplus heat to horticultural buildings and other on-site uses, the development reduces wasted energy and contributes to more efficient resource use, which indirectly supports environmental conditions linked to improved health outcomes. Climate change mitigation measures have wider health implications by contributing to reduced carbon emissions and supporting adaptation to future climate risks. Energy-efficient buildings and infrastructure can also support thermal comfort and reduce exposure to extreme temperatures for building users. Rainwater harvesting and water efficiency measures enhance resource resilience by reducing reliance on potable water supplies, which is particularly relevant in the context of increasing climate variability and water scarcity pressures. From a community perspective, sustainable construction practices, including modular construction approaches, responsible material sourcing and waste reduction strategies, may reduce construction-related environmental impacts such as noise, dust and emissions, thereby supporting local environmental quality during development phases. The integration of sustainability principles throughout the scheme therefore contributes positively to environmental determinants of health. Overall, the proposed development demonstrates a comprehensive approach to sustainable design and construction, incorporating energy efficiency, carbon reduction, water management and resource reuse measures that support both environmental sustainability and long-term health outcomes. No additional mitigation is considered necessary beyond the embedded sustainability strategy.		

33 Publicly available calculator provided by Rainwater Harvesting.co.uk.
34 Standard Average Annual Rainfall (SAAR) for the period 1941 to 1970 in mm.
35 Actual % is subject to data centre load and ambient conditions and actual rainfall coinciding with water demand.
36 Standard Average Annual Rainfall (SAAR) for the period 1941 to 1970 in mm.
37 Publicly available calculator provided by Rainwater Harvesting.co.uk.
38 Actual % is subject to daylight hours and actual rainfall coinciding with water demand.

Table 8.11: Climate Change

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
Does the proposal incorporate renewable energy?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The proposed development would provide for a variety of green energy technology to support the proposed data use and achieve on-site renewable energy and future Zero carbon targets. As discussed in Table 8.10, each data centre building would be required to achieve at least BREEAM Excellent rating. All data centre buildings would aim to be net zero carbon but as a minimum would achieve 40 % improvement over Building Regulations Part L 2021 Target Emission Rates and a 20 % reduction through renewable energy and other low carbon technologies and/or energy efficiency measures. The proposed development would be served by an enclosed district heating centre. This would both collect some of the waste heat from all of the data centre buildings on the campus and distribute it to on-site and potential offsite uses. Waste heat would be exported for use in the proposed indoor horticulture facilities. The district heating centre would have the potential to export surplus waste heat to serve off-site heat networks should a third party user be identified in the future. Low-carbon adiabatic cooling systems are proposed. These would comprise a high-temperature chilled water system with free-cooling adiabatic coolers to optimise both efficiency and heat export potential. Solar PV renewable energy is also proposed. Analysis of available roof top space on the data centres identifies that they could accommodate in total 11.4 MWp of roof mounted PV, this would generate 11,428 MWh per annum of electricity and substantially reduce emissions. From a health perspective, the incorporation of renewable and low-carbon energy technologies supports improved environmental conditions through reduced greenhouse gas emissions and decreased reliance on fossil fuel energy sources. Climate change is increasingly recognised as a significant determinant of population health, influencing risks associated with heat stress, air pollution, extreme weather events and resource security. Measures that reduce operational carbon emissions therefore contribute indirectly to protecting long-term community health and resilience. The integration of solar photovoltaic generation and low-carbon cooling technologies supports reduced operational emissions and improved energy efficiency, which may also contribute to wider air quality benefits at a regional scale. The reuse and export of waste heat through the district heating system represents an efficient use of energy that would otherwise be lost, potentially supporting decarbonisation of heating demand both on-site and in the surrounding area. From a health perspective, more efficient energy systems can contribute to reduced environmental impacts associated with energy generation and support sustainable urban infrastructure. Energy resilience is also relevant to health outcomes, as reliable energy infrastructure underpins essential services, digital connectivity and economic stability. The inclusion of renewable energy and low-carbon technologies strengthens the resilience of the development's energy strategy and supports broader sustainability objectives aligned with public health priorities. While the direct health benefits of renewable energy integration may not be immediately perceptible at a local level, the cumulative effects of reduced emissions, improved environmental performance and contribution to climate mitigation represent positive determinants of health at both local and wider scales. Overall, the proposed development demonstrates a strong commitment to incorporating renewable energy and low-carbon technologies, contributing positively to environmental sustainability and long-term health outcomes. No additional mitigation is considered necessary beyond the embedded design measures.	**Positive** Negative Neutral Uncertain	None required.
Does the proposal ensure that buildings and public spaces are designed to respond to winter and summer temperatures, i.e. ventilation, shading and landscaping?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The proposed development would incorporate the following: • Adiabatic Air-Cooled Chillers with dry air coolers have been selected as the preferred cooling technology, representing the 'Best Available Technology" (BAT) for cooling coupled with close controlled air distribution (Fan Wall) and Hot Isle Containment; • A diverse mains water would be supplied for cooling purposes that would be supplemented by rainwater harvesting; • An enclosed district heating centre would house plant and machinery to collect waste heat from the data centre buildings on the campus and redistribute it to the on-site horticulture and other off-site heat networks; and	**Positive** Negative Neutral Uncertain	None required.

Table 8.11: Climate Change

Assessment Criteria	Relevant?	Details/Evidence	Potential Health Impact?	Recommended Mitigation or Enhancement Actions
		• Each data centre building would be required to achieve at least BREEAM 'Excellent' rating, which would require designers to address heating, cooling and ventilation through the ''energy' and 'health and wellbeing' credits in the BREEAM manual. There are minimum standards to achieve for BREEAM Excellent (for example six credits in Energy 01 reduction of energy use and carbon emissions). With regard to landscaping, tree planting would be provided along cycle and pedestrian walkways where appropriate through the Ecology Park to provide shade to users. The LDO Landscape Proposal includes a variety of proposed tree planting species including climate resilient and native UK tree and grassland species. Detailed planting lists are set out within the Design Code and Habitat Strategy. From a health perspective, building and landscape design that responds effectively to seasonal temperature variation supports thermal comfort, reduces risks associated with overheating or cold exposure and enhances usability of both indoor and outdoor environments. Climate change projections indicate increasing frequency and intensity of hot weather events in London, making passive cooling, shading and climate-resilient design important considerations for protecting health and wellbeing. The incorporation of energy-efficient cooling technologies, ventilation strategies and waste heat recovery systems contributes to maintaining stable indoor environmental conditions for building occupants. Maintaining appropriate thermal comfort can reduce risks associated with heat stress, fatigue and reduced productivity, while also supporting overall wellbeing. The requirement to achieve BREEAM Excellent ratings ensures that heating, cooling and ventilation performance is addressed through recognised health and wellbeing standards. Landscape design measures, including tree planting along pedestrian and cycle routes, play an important role in moderating microclimate conditions by providing shade, reducing surface temperatures and improving outdoor thermal comfort during warmer periods. Comfortable outdoor environments are more likely to encourage walking, cycling and use of public spaces, supporting physical activity and social interaction. Climate-resilient planting strategies also contribute to long-term environmental sustainability and resilience to changing weather patterns. The integration of rainwater harvesting and sustainable cooling systems supports resource efficiency and resilience during periods of water stress, indirectly supporting environmental conditions linked to population health. The reuse of waste heat within the district heating system further enhances overall energy efficiency, reducing unnecessary energy loss and supporting sustainable temperature management across the site. Overall, the proposed development demonstrates a comprehensive approach to responding to seasonal temperature variation through building design and landscape strategies. These measures are likely to result in positive health outcomes by supporting thermal comfort, encouraging use of outdoor spaces and enhancing climate resilience. No additional mitigation is considered necessary beyond the embedded design measures.		
Does the proposal maintain or enhance biodiversity?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** The proposed data centre campus would be set in an ecology park, which would provide benefits to local biodiversity. Where possible, important habitats have been retained and incorporated into the design, with the woodland, with the majority of hedgerows retained. Where habitats cannot be retained, the landscape strategy includes provision of new habitat of similar and better quality in adjacent areas. A mosaic of habitat typologies would be created incorporating existing/retained and proposed broadleaf woodland, wet woodland, existing/retained and new mixed native hedgerows, seasonally wet grasslands, meadow and natural grassland, permanent water bodies and new ditches and reed beds to provide a diverse range of habitats for national key target species such as: • Curlew and other wetland bird species; • Snakes; • Bats; • Hedgehog; • Water vole; • Dormouse; and • Great Crested Newts. The eastern part of the Ecology Park would feature wetlands within the existing Mardyke tributary floodplain and would incorporate existing ditches and a proposed new network of ditches to help manage flooding through water retention. The wetland area would incorporate several permanent water bodies which would incorporate shallow margins and wetland scrapes creating new habitat for a range of species.	**Positive** Negative Neutral Uncertain	None required.

Table 8.11: Climate Change				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		Species rich seasonally wet grassland and meadows would be created adjacent to the ponds providing suitable habitats for reptiles and insects. Existing and proposed broadleaf woodland would help to filter views from the surrounding area reducing water runoff and improving soil quality. The outer perimeter boundary of the ecology park would comprise mixed native hedgerows. A number of ecological enhancements features are also proposed including invertebrate boxes, hotels and bee banks, artificial refugia for amphibians, bird boxes and bat boxes. These enhancements together with the retention of existing ditches and hedgerows and the provision of new habitat suitable for a range of species would enhance ecological connectivity through the wider landscape. From a health perspective, the maintenance and enhancement of biodiversity contributes positively to environmental quality, mental wellbeing and opportunities for nature-based recreation. Access to biodiverse natural environments has been associated with reduced stress, improved mood and increased opportunities for restorative experiences, which can support overall mental health. The integration of the data centre campus within a surrounding ecology park therefore represents a significant opportunity to deliver health benefits alongside ecological enhancement. The retention of existing habitats and creation of a diverse mosaic of woodland, wetland and grassland environments increases ecological richness and visual interest, which may encourage greater use of outdoor spaces for walking, cycling and informal recreation. Increased engagement with nature is associated with higher levels of physical activity and improved wellbeing outcomes. The provision of varied habitat types also supports seasonal variation and educational opportunities, which may enhance community engagement with the environment through volunteering, learning and stewardship activities. Wetland habitats and natural drainage features contribute to climate resilience by supporting natural flood management and improving water quality, which indirectly benefits human health by reducing environmental risks associated with flooding and supporting sustainable landscape management. Tree planting and vegetation also contribute to improved air quality, shade provision and microclimate regulation, enhancing environmental comfort for users of the site. From a community perspective, biodiversity enhancements may strengthen local identity and sense of place by retaining elements of the rural landscape while introducing new ecological features. The inclusion of habitat features such as bird boxes, bat boxes and pollinator habitats may also encourage wildlife observation and nature connection, which can support wellbeing across different age groups. Overall, the proposed development is likely to result in significant positive health outcomes through enhanced biodiversity, improved access to nature and strengthened environmental resilience. No additional mitigation is considered necessary beyond the embedded ecological design and management measures.		
Does the proposal incorporate sustainable urban drainage techniques?	**Yes** No N/A	**Construction Impact:** The construction activities on-site would include the removal of vegetation and compaction of the ground leading to an increase in surface water runoff. However, any increases in surface water volumes would be managed through the drainage infrastructure works to be implemented as the first phase of works. As part of the enabling works, temporary drainage arrangements/measures, flow control devices and attenuation features would be installed in accordance with the principles of the drainage strategy. These arrangements/measures would restrict flow into the sitewide drainage network, which would enable the site to operate at peak efficiency and discharge surface water into the Mardyke, as discussed further below. **Operational Impact:** The proposed development would introduce permanent impermeable surfaces and accordingly has the potential to increase surface water run off rates associated with the site. A drainage strategy for the proposed development comprises two proposed levels of water storage: • Build zone attenuation (excluding rainwater harvesting) – on plot attenuation tanks within the build zones which would release water at a fixed maximum discharge rate into the site wide drainage system which would ultimately flow into the attenuation ponds. • Site-wide attenuation – three attenuation ponds which would manage surface water runoff from the build zones, highways and footpaths controlling both restricted and unrestricted flows. Rainwater from all the available roof areas of the buildings would be channelled into above or below ground rainwater storage tanks situated close to the plant gantry. The design flood event is based on a 1-in-100-year rainfall event with a 40 % climate change allowance, which the surface water network and its attenuation measures have been specifically designed to accommodate. Various SuDS features have been employed in the site wide network to manage surface water volume and quality. Swales have been proposed to manage surface water from the highways and	**Positive** Negative Neutral Uncertain	None required.

Table 8.11: Climate Change				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		hardstanding, discharging into the three attenuation basins which would be located within the wetland area to the east of the data centre campus. Water would then be discharged to the Mardyke along the eastern boundary of the site. The eastern area of the site would feature wetlands within the existing Mardyke tributary floodplain and in additional to the three permanent attenuation basins, would incorporate the existing and proposed new ditch network to help manage flooding through water retention. A riparian woodland corridor would be established along the eastern boundary that would be planted either side of the Mardyke tributary, to further enhance water management whilst improving soil quality and creating a buffer to the site. Drainage in the ecology park would be managed naturally, using permeable surfaces and the site topography to direct water to nearby ditches and swales. From a health perspective, sustainable urban drainage systems (SuDS) play an important role in reducing risks associated with flooding, protecting water quality and supporting climate resilience. Flooding can have significant direct and indirect health impacts, including injury risk, stress, disruption to daily life and damage to homes and infrastructure. The incorporation of attenuation ponds, swales and wetland-based drainage features therefore contributes positively to health outcomes by reducing surface water runoff and managing stormwater effectively, particularly in the context of increasing rainfall intensity associated with climate change. The design approach, including attenuation designed for a 1-in-100-year rainfall event with climate change allowance, provides resilience against future extreme weather conditions, helping to protect surrounding communities and infrastructure from flood-related risks. Naturalistic drainage features within the ecology park, including wetlands and riparian woodland corridors, also support improved water quality by filtering pollutants and reducing sediment transport, which contributes to wider environmental health. Beyond functional drainage performance, SuDS features integrated into landscaped environments can provide additional health benefits by enhancing biodiversity, improving visual amenity and creating attractive natural environments that support wellbeing. The incorporation of wetlands and natural drainage within publicly accessible areas may therefore contribute to improved mental wellbeing through increased opportunities for contact with nature. Rainwater harvesting and permeable surface strategies further support sustainable water management by reducing pressure on potable water supplies and improving resource efficiency, which contributes to long-term environmental sustainability and population health resilience. Overall, the proposed development demonstrates a comprehensive approach to sustainable drainage that supports flood risk management, environmental protection and climate resilience, with associated positive health outcomes. No additional mitigation is considered necessary beyond the embedded SuDS strategy.		
Does the proposal seek to minimise potential to spread infection through adequate ventilation and open spaces?	**Yes** No N/A	**Construction Impact:** N/A. **Operational Impact:** As discussed previously, all buildings would be designed to achieve BREEAM Excellent rating or above. As part of this goal, natural ventilation would be provided to offices and other workspaces via openable windows, trickle vents or other forms of natural ventilation where appropriate. The ecology park and open space delivered by the proposed development would provide an inviting and natural space for both employees of the proposed development and wider community to benefit from time outdoors and with nature. From a health perspective, building design that incorporates adequate ventilation and access to open space can help reduce the risk of airborne infection transmission by improving indoor air quality and reducing concentrations of airborne pathogens. The commitment to achieving BREEAM Excellent ratings ensures that indoor environmental quality, including ventilation performance and occupant comfort, is addressed through recognised standards. Provision of natural ventilation where appropriate supports air exchange and may contribute to improved respiratory health and overall wellbeing for building users. The inclusion of extensive outdoor spaces within the ecology park also provides opportunities for employees and visitors to spend time outdoors, where infection risks associated with airborne transmission are generally lower compared to enclosed indoor environments. Access to high-quality open space can support flexible working and recreational opportunities, enabling informal meetings, breaks and social interaction in well-ventilated outdoor settings. This may contribute to both infection risk reduction and improved mental wellbeing. The availability of generous open space and landscape areas may also reduce perceptions of crowding, which is associated with stress and discomfort and can influence how people use shared environments. Designing routes and public spaces that allow for adequate movement and dispersal of users supports safer use during periods of heightened infection risk.	**Positive** Negative Neutral Uncertain	None required.

Table 8.11: Climate Change				
Assessment Criteria	**Relevant?**	**Details/Evidence**	**Potential Health Impact?**	**Recommended Mitigation or Enhancement Actions**
		Overall, the proposed development incorporates design features that support healthy indoor environments and access to open space, which together may contribute to reduced infection transmission risk and improved wellbeing. No additional mitigation is considered necessary beyond the embedded design and landscape measures.		

9. CONCLUSION

What are your key findings from the HIA?

The Health Impact Assessment (HIA) has evaluated the potential health and wellbeing implications of the proposed development across a range of environmental, social and economic determinants of health, drawing on the Environmental Statement (ES), LDO compliance framework and supporting technical documents. The assessment identifies that the proposed development is likely to result in a range of positive health outcomes, alongside some localised adverse effects that are appropriately mitigated through embedded design and management measures.

Environmental health

The primary environmental health considerations relate to construction and operational impacts including noise, air quality, traffic and changes to the existing landscape. The ES concludes that air quality effects associated with both construction and operation are not significant, reflecting low baseline pollutant concentrations and relatively modest traffic increases. From a health perspective, this suggests limited potential for measurable respiratory or cardiovascular impacts.

Construction noise and road traffic noise along Fen Lane may result in temporary and, for a small number of receptors, locally significant adverse effects. These impacts primarily relate to disturbance and potential annoyance rather than long-term health risks. The implementation of mitigation measures through the Code of Construction Practice (CoCP) is expected to minimise exposure and maintain acceptable living conditions.

Sustainable drainage strategies, climate-responsive design and energy efficiency measures contribute to environmental resilience and support long-term health outcomes by reducing flood risk, improving environmental quality and responding to future climate pressures.

Active environments and accessibility

The proposed development introduces extensive new walking and cycling infrastructure integrated with surrounding public rights of way and public transport connections. These measures improve connectivity within a rural context where active travel infrastructure is currently limited, creating opportunities for increased physical activity, improved access to green space and reduced reliance on private vehicles.

Inclusive and age-friendly design principles embedded throughout the development, including accessible routes, facilities and public spaces, support equitable access for people with mobility impairments, older adults and families, contributing positively to independence, participation and wellbeing.

Social cohesion and community infrastructure

The creation of a publicly accessible ecology park and visitor centre introduces new opportunities for community engagement, recreation, education and volunteering. These elements support mental wellbeing through increased access to nature, social interaction and community participation. Design approaches that minimise severance and enhance connectivity ensure that the development integrates with surrounding communities rather than creating physical or social barriers.

Secure by Design principles and appropriate lighting, surveillance and access arrangements are expected to enhance perceptions of safety, which may encourage use of public spaces and active travel routes.

Economic and wider determinants of health

The proposed development is predicted to deliver significant employment and economic benefits at both borough and regional levels, including temporary construction employment and long-term operational jobs. Access to stable employment is a key determinant of health, contributing to improved income security and social wellbeing. The proposed employment and skills strategy secured through planning obligations is important in ensuring that local communities are able to access these opportunities and that benefits are distributed equitably.

Sustainability, climate and long-term health resilience

The incorporation of renewable energy, waste heat recovery, sustainable construction practices and biodiversity enhancement contributes to climate mitigation and environmental sustainability. These measures support long-term population health by reducing greenhouse gas emissions, improving environmental quality and enhancing resilience to climate change. The ecology park and associated habitat creation represent significant positive contributions to biodiversity, nature access and environmental wellbeing.

Overall conclusion

Taking account of embedded mitigation measures, design features and operational management frameworks secured through the LDO, the overall health effects of the proposed development are considered to be predominantly positive. Adverse effects are expected to be localised, temporary or appropriately managed, with no significant residual health risks identified.

The proposed development demonstrates a comprehensive approach to integrating health considerations within design, environmental management and community infrastructure, supporting positive outcomes across multiple determinants of health including environmental quality, physical activity, social cohesion, economic opportunity and climate resilience.

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East Havering Data Centre Campus

Draft Equality Impact Assessment

London Borough of Havering

February 2026

Delivering a better world

Quality information

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V2 Draft EqIA	27/11/25	Draft EqIA for legal review	EK	Dr Eva Kleinert	Associate Director
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Updated Draft EqIA	19/02/26	Final Draft EqIA (including CoCP updates)	CT	Cat Thornton	Social Impact Consultant

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Table of Contents

1. Introduction 5
2. Methodology 7
2.1 Introduction 7
2.2 Desk-based review 7
2.3 Assessment of impacts 7
3. Policy and legislation context 9
3.1 Legislation 9
3.2 National policy 9
3.3 Regional policy 10
3.4 Local policy 11
4. Summary of Proposed Development 15
4.1 The Local Development Order 15
4.2 The Site and surrounding context 15
4.3 Overview of the Proposed Development 18
4.4 Operation 27
5. Evidence Base 28
6. Consultation and Engagement 40
7. Assessment of equality impacts 42
8. Conclusions and next steps 48

Figures

Figure 4-1: Site Location 16
Figure 4-2: Site surroundings 17
Figure 4-3: General Arrangement Plan 19
Figure 4-4: Site Connectivity Plan 24
Figure 4-5 Proposed Construction Route 26

Tables

Table 3-1: Local Plan policies relevant to the Proposed Development 12
Table 4-1: Overview of site-wide infrastructure 20
Table 4-2: Indicative construction programme 25
Table 4-3: Operational employment estimates 27
Table 5-1: Sex breakdown (%) across geographies, 2021 28
Table 5-2 Age breakdown (%) across geographies, 2021 29
Table 5-3 Disability or long-term health condition & breakdown across geographies, 2021 29
Table 5-4 Ethnic group % breakdown across geographies, 2021 30
Table 5-5 Religion % breakdown across geographies, 2021 31
Table 5-6: Economic activity status (%) by geographical area, 2021 34
Table 5-7: Educational attainment (%) by geographical area, 2021 35
Table 5-8: General health rating by geographical area (%), 2021 36
Table 5-9 Travel to work method across geographies, 2021 38
Table 7-1: Overview of potential equality impacts 42

1. Introduction

1.1 Purpose

AECOM has been commissioned by the London Borough of Havering in their function as a Local Planning Authority (LPA) to prepare an Equality Impact Assessment (EqIA) to support East Havering Data Centre Campus Draft Local Development Order (LDO), ('the Proposed Development').

The London Borough of Havering's Economic Development Service has been in discussions with a private sector developer, Digital Reef (the 'potential beneficiary of the LDO') in respect of Digital Reef's proposal to build a data centre campus on land at North Ockendon within East Havering ('the Site').

As a statutory planning authority, the LPA would permit development rights through the adoption of the LDO. Whilst the LPA sits within the Council, it has a distinct statutory role to exercise urban planning functions for the Borough and must act independently of other Council departments. Throughout the EqIA, reference to 'the Council' refers to any part of the Council other than the Local Planning Authority.

The LPA, as a public body, has a duty under the Equality Act 2010 and the associated Public Sector Equality Duty (PSED) to ensure that the Proposed Development does not lead to unlawful discrimination, and that it advances equality of opportunity and fosters good relations between those with a protected characteristic[1] and all others. This EqIA demonstrates how the aims of the PSED have been considered by the LPA as part of the LDO and will support the LPA in decision-making and having regard to the needs under the PSED on the basis of an informed, evidenced understanding of relevant equality issues going forward.

An EqIA is a systematic assessment of the effects of plans, policies, or proposals on groups with protected characteristics as defined by the Equality Act 2010. This EqIA is based on professional judgement and provides a consideration of potential direct and indirect equality impacts (both adverse and beneficial) associated with the construction and operational phases of the Proposed Development. The approach draws on evidence from secondary data sources to identify how due regard has been paid to equality issues and effects, describing any interventions to optimise the potential positive effects of the Proposed Development and mitigation to minimise or remove negative effects.

1.2 Context

The Proposed Development would deliver up to a maximum of 400,000 square metres (m^2) gross external floor area comprising data centres, indoor horticulture facilities, district heating energy centre, visitor centre, campus management and security facilities; the installation of electrical infrastructure and associated plan equipment; and the creation of an ecology park.

The Proposed Development was presented to the Council's Cabinet in November 2022[2], where approval was given by the Director of Regeneration for the Council, in its capacity as LPA, to progress the initiative. The Council's Strategic Planning Committee (SPC) was

[1] Protected characteristics are defined under the Equality Act 2010: age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation and marriage/civil partnership.
[2] London Borough of Havering (2022). Cabinet to consider £5.3bn investment opportunity for Havering. Available at: Agenda for Cabinet on Wednesday, 9th November, 2022, 7.30 pm | London Borough of Havering [accessed: 09/04/25].

briefed about the Proposed Development later in April 2023[3] and a further report was presented to the SPC in June 2023 at which point it was confirmed that the Proposed Development would be explored through the lens of an LDO.[4] A further update to SPC was made in May 2024 confirming to residents that full public consultation will take place prior to making a decision on the LDO permission.[5]

LDOs were introduced under Section 40 of the Planning and Compulsory Purchase Act 2004[6] which has the effect of amending the Town and Country Planning Act 1990.[7] This measure was promoted by the Government as a means of simplifying the planning permission process and providing certainty for prospective developers. An LDO grants permission for the type of development specified in the LDO and by so doing, removes the need for the submission of a planning application. An LDO must be accompanied by a Statement of Reasons that includes the description of the permitted development and that defines the area that it affects and must also be subject to formal consultation before it can be adopted.

1.3 Report structure

Following on from this introduction section, the remainder of this report is structured as follows:

- **Section 2: Methodology –** sets out the approach to collecting evidence and assessment of impacts;
- **Section 3: Policy and legislation review** – provides context through review of relevant national, regional and local policy and legislation associated with equalities;
- **Section 4: Summary of the Proposed Development** – presents an overview of the Proposed Development;
- **Section 5: Equalities baseline** – presents baseline information using secondary data sources such as Census 2021 to form an understanding of residents living within the area;
- **Section 6**: Consultation and engagement – presents an overview of community engagement undertaken to date and planned consultation on the draft LDO;
- **Section 7: Assessment of potential equality effects** – presents an assessment of equality effects of the Proposed Development using the evidence gathered; and
- **Section 8: Conclusions and next steps** – provides a summary of the key findings and next steps for the EqIA.

[3] London Borough of Havering (2023). Plans for East Havering Data Centre shared at strategic planning meeting. Available at: Plans for East Havering Data Centre shared at strategic planning committee | London Borough of Havering [accessed: 09/04/25].
[4] London Borough of Havering (2023). Strategic Planning Committee updated on East Havering Data Centre plans. Available at: Strategic Planning Committee updated on East Havering Data Centre plans | London Borough of Havering [accessed: 09/04/25].
[5] London Borough of Havering (2024). Strategic Planning Committee updated on East Havering Data Centre plans. Available at: Strategic Planning Committee updated on East Havering Data Centre plans | London Borough of Havering [accessed: 09/04/25].
[6] Secretary of State (2004). Planning and Compulsory Purchase Act 2004. Available at: Planning and Compulsory Purchase Act 2004 [accessed: 10/04/25].
[7] Secretary of State (1990). Town and Country Planning Act 1990 (as amended). Available at: Town and Country Planning Act 1990 [accessed: 10/04/25].

2. Methodology

2.1 Introduction

This section sets out the approach to assessing the equality impacts of the Proposed Development. The assessment considers how the Proposed Development could impact (both positively and negatively) current residents and future residents and visitors to the area who share protected characteristics.

The approach for undertaking this EqIA and compiling this report follows a two-stage process:

- **Desk-based review** - including review of relevant national, regional and local policies and legislation, documents prepared for the proposed LDO and secondary datasets relating to groups with protected characteristics; and
- **Assessment of potential impacts** - informed by a consideration of the policy context and equalities baseline data.

The approach is based on AECOM's understanding of the Equality Act 2010, particularly section 149 regarding the PSED, as well as AECOM's in-house approach to conducting EqIAs.

2.2 Desk-based review

In addition to a review of recent relevant national, London-wide and local policies and legislation, the desk-based review included the following:

- Review of all relevant accompanying LDO submission documents including the Environmental Statement; and
- Review of national and local datasets to develop an equality baseline profile of the resident population and groups with protected characteristics within and surrounding the Site including Census 2021 data.

2.3 Assessment of impacts

The assessment of equality impacts takes into account the information gathered through the above activities. A judgement has been made as to how the Proposed Development would contribute to the realisation of effects for people with protected characteristics as defined in the Equality Act 2010. These protected characteristics are:

- **Age:** this refers to persons defined by either a particular age or a range of ages. This can include children (aged under 16), young people (aged 16-25), older people or pensioners (i.e. those aged 65+), the elderly/very old (i.e. those aged 85+);
- **Disability:** a disabled person is defined as someone who has a physical or mental impairment that has a substantial and long-term adverse effect on their ability to carry out normal day-to-day activities. It can also include people who have progressive conditions such as HIV, cancer, or multiple sclerosis (MS) - even where someone is able to carry out day to day activities;
- **Gender reassignment:** this refers to people who are proposing to undergo, are undergoing, or have undergone a process for the purpose of reassigning their gender identity;
- **Marriage and civil partnership:** marriage or civil partnership can be between a man and a woman or between two people of the same sex;

- **Pregnancy and maternity:** pregnancy is the condition of being pregnant or expecting a baby. Maternity refers to the period after the birth. In the non-work context, protection against maternity discrimination is for 26 weeks after giving birth;
- **Race:** the Equality Act 2010 defines race as encompassing colour, nationality (including citizenship) and ethnic or national origins;
- **Religion or belief**: religion means any religion a person follows. Belief means any religious or philosophical belief, and includes those people who have no formal religion or belief;
- **Sex:** this refers to a man or to a woman or a group of people of the same sex, while gender refers to the wider social roles and relationships that structure men's and women's, boys' and girls' lives;
- **Sexual orientation:** a person's sexual orientation relates to their emotional, physical and/or sexual attraction and the expression of that attraction.

Although income is not classed as a protected characteristic under the Equality Act 2010, the assessment also considers the additional impact of disproportionate and differential effects on socio-economically disadvantaged groups with protected characteristics.

The assessment considers both disproportionate and differential impacts on groups with protected characteristics. A disproportionate equality effect arises when an impact has a proportionately greater effect on protected characteristic groups than on the general population overall at a particular location. For the purposes of this EqIA, disproportionate impact arises:

- Where an impact is predicted for the study area, where protected characteristic groups are known to make up a greater proportion of the affected resident population than their representation in London; or
- Where an impact is predicted on a community resource which is predominantly or heavily used by protected characteristic groups (e.g. primary schools attended by children; care homes catering for elderly people).

A differential equality effect is one which affects members of a protected characteristic group differently from the rest of the general population because of specific needs, or a recognised vulnerability associated with their protected characteristic.

In some cases, protected characteristic groups are subject to both disproportionate *and* differential equality effects. The EqIA considers impacts on groups of people and not those on specific individuals.

2.4 Conclusions and next steps

The final section of this report sets out conclusions on the potential equality impacts as well as setting out next steps pursuant to the proposed LDO.

3. Policy and legislation context

3.1 Legislation

Equality Act 2010 and the Public Sector Equality Duty (PSED)

The Equality Act 2010 (the 'Act') provides the framework to protect the rights of individuals against unlawful discrimination and to advance equal opportunities for all. Section 149 of the Equality Act sets out the PSED to which the Council, as a public body, is subject in carrying out all its functions.

Those subject to the PSED must, in the exercise of their functions, have due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act;
- Advance equality of opportunity between people who share a protected characteristic and those who do not; and
- Foster good relations between people who share a protected characteristic and those who do not.

These are sometimes referred to as the three aims or arms of the PSED. The Act explains that having due regard for advancing equality involves:

- Removing or minimising disadvantages suffered by people due to their protected characteristics,
- Taking steps to meet the needs of people from protected groups where these are different from the needs of other people, and
- Encouraging people from protected characteristics groups to participate in public life or in other activities where their participation is disproportionately low.

The Act states that meeting different needs involves taking steps to take account of disabled people's disabilities. It describes fostering good relations as tackling prejudice and promoting understanding between people from different groups. It states that compliance with the duty may involve treating some people more favourably than others.

The duty covers the following eight protected characteristics: age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation as described Section 2.5 of this report.

Public authorities also need to have due regard to the need to eliminate unlawful discrimination against someone because of their marriage or civil partnership status. This means that the first arm of the duty applies to this characteristic, but that the other arms (advancing equality and fostering good relations) do not apply.

3.2 National policy

National Planning Policy Framework (December 2024)

The National Planning Policy Framework (NPPF)[8] was published in December 2024.

The NPPF sets out the Government's planning policies for England and how they should be applied, providing a framework within which locally prepared plans can provide for sufficient

[8] Department for Levelling Up, Housing & Communities (2024). National Planning Policy Framework. Available at: https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf

housing and other development in a sustainable manner. While the NPPF does not contain specific guidance on equalities, it does emphasise the importance of sustainable development and the need to support a healthy and just society. This is reflected in the key overarching objectives of sustainable development which relate to the economic, social and environmental roles of the planning system:

- The economic role contributes to building *"a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure";*
- The social role supports strong, vibrant and healthy communities by *"ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being"; and*
- The environmental role contributes to protecting and enhancing the *"natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy".*

The NPPF states that strategic policies should make sufficient provision for multiple factors, including:

- Homes, employment, retail, leisure and other commercial development; and
- Conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.

3.3 Regional policy

The London Plan 2021[9]

The London Plan 2021 aims to be more ambitious and focused than previous London Plans It is underpinned by the concept of Good Growth – growth that is socially and economically inclusive and environmentally sustainable. As the overall strategic policy framework for London, it sets out integrated economic, environmental, transport and social goals for the development of the capital over the next 20-25 years. A number of policies outlined in the Plan are relevant to the Proposed Development, specifically:

- GG5 'Growing a good economy': aims to boost London's global economic competitiveness and ensure all Londoners benefit from its success. It focuses on diversifying the economy, providing affordable infrastructure, supporting innovation and promoting a low carbon economy;
- D8 'Public realm': aims to create new public spaces where appropriate and ensure these spaces are well-designed, safe, accessible and attractive, with a focus on how public spaces function at different times and cater to the needs of pedestrians and cyclists.
- E11 'Skills and opportunities for all': Skills and Opportunities for all requires that strategic development proposals should support local employment, skills development, apprenticeships, and other education and training opportunities in both the construction and end-use phases, including through Section 106 obligations where appropriate. The Plan notes continuing large inequalities in access to jobs and

[9] Mayor of London (2021). The London Plan 2021. Available at: The London Plan 2021 | London City Hall

levels of worklessness, and that low pay and gender and ethnicity pay gaps are critical issues;

- G1 ‘Green infrastructure’: protection and enhancement of London’s green spaces and features with green infrastructure through Boroughs creating strategies for green infrastructure and identification of green assets and opportunities for addressing environmental and social challenges; and

- G2 ‘Green Belt’: protection of Green Belt land from inappropriate development with proposals that harm it being refused unless very special circumstances exist and the enhancement of Green Belt should provide multi-functional beneficial uses for Londoners should be supported.

Inclusive London: Mayor’s Equality, Diversity and Inclusion Strategy (2022) [10]

The Mayor’s Equality, Diversity and Inclusion Strategy (EDIS) was published in May 2018. It sets out how inequalities, barriers and discrimination experienced by groups protected by the Equality Act will be addressed.

The Strategy presents 39 equality, diversity and inclusion strategic objectives. These were replaced in November 2022 by the Mayor who published a set of 14 equality objectives.[11] These include working with councils and other partners to:

- Objective 4: Improve Londoners’ air quality and access to green space and lower the city’s carbon emissions so that inequalities in exposure to harmful pollution and climate risks are reduced.
- Objective 9: To ensure London's workforce reflects its population at all levels and in all sectors.
- Objective 12: To address the reasons for health inequalities that cause some groups to experience poorer physical and mental health outcomes.

Objectives also include working with employers, education and skills providers, and voluntary and community organisations, so that as many Londoners as possible can participate in, and benefit from, employment opportunities in London. This includes providing employability and skills support for those who are disadvantaged in London’s enterprise and jobs market and increasing the diversity of the workforces in vital sectors in London. These include the digital, construction, creative and built environment sectors.

3.4 Local policy

Havering Local Plan 2021[12]

Havering Local Plan (2016-2031) was adopted in 2021. During examination, the LPA committed to an immediate update of the Local Plan to reflect national and regional policy changes. The LPA is currently reviewing the evidence base to support the preparation of an updated Local Plan and new evidence base documents are published online.[13]

As the population of Havering is growing and becoming more diverse, the Local Plan aims to position Havering as an attractive and successful outer London Borough. The Council’s

[10] GLA (2018). Mayor’s Equality, Diversity and Inclusion Strategy. Available at: https://www.london.gov.uk/what-we-do/communities/mayors-strategy-equality-diversity-inclusion
[11] GLA (2022). Mayor’s Equality, Diversity and Inclusion Strategy. Available at: https://www.london.gov.uk/programmes-strategies/communities-and-social-justice/mayors-strategy-equality-diversity-and-inclusion/mayors-equality-diversity-and-inclusion-strategy-objectives-2022
[12] London Borough of Havering (2021). Havering Local Plan 2016-2031 adopted November 2021. Available at: Local Plan 2016-2031 Adopted 2021 [accessed: 10/04/25].
[13] London Borough of Havering (no date). Local Plan update. Available at: Local Plan update | Planning policy | London Borough of Havering [accessed: 10/04/25].

vision for Havering highlights four priorities: Communities, Places, Connections and, of particular interest to the Proposed Development, Opportunities:

- **Opportunities** – provision of first-class business opportunities by supporting the commercial development of companies within the borough, as well as being a hub for start-ups and expanding businesses. We will ensure sustainable economic growth that generates local wealth and opportunities, as well as securing investment in high-quality skills and careers.

The Local Plan has four overarching aims as listed below, that are being delivered through 23 Strategic Objectives.

1. To enable vibrant, inclusive, healthy and happy communities
2. To provide opportunities for businesses and local people to thrive
3. To create successful, high-quality places where people choose to live, work and spend time
4. To enhance physical and digital connections between places, communities and opportunities

These Strategic Objectives align with the Local Plan policies covering: Successful Places to Live, Thriving Communities, Opportunities to Prosper, Connections, High Quality Places, Green Places and Minerals. In particular, **Table 3-1** highlights the Local Plan policies of particular interest pursuant to the LDO for the Proposed Development.

Table 3-1: Local Plan policies relevant to the Proposed Development

Policy theme	Policy number	Policy
Opportunities to Prosper	Policy 19: Business Growth	The Council is committed to building a strong and prosperous economy in Havering and will encourage and promote business growth by: • Supporting the sustainable growth and expansion of business and enterprise in rural areas
	Policy 22: Skills and training	The Council will promote employment and skills development opportunities for local residents through supporting major development proposals that commit to: • Minimum local labour target of 20% during construction and end user phase for major commercial developments, including a proportion of apprenticeships where length of construction allows; • Notification of vacancies associated with developments through the Council's employment services • Offer opportunities to local businesses within their supply chains Major development proposals will be expected to submit an Employment & Skills Plan for agreement with the Council to detail how these targets will be met.
High Quality Places	Policy 27: Landscaping	The Council will support development proposals that incorporate a detailed and high-quality landscape scheme which: • Takes full account of the landscape character of the site and its wider setting; • Retains and enhances existing landscape features that contribute positively to the setting and character of the local area;

		• Demonstrates how existing landscape features will be protected during the construction phase; • Supports natural habitats and opportunities for enhancing biodiversity All proposals will be required to demonstrate that adequate arrangements have been made for future maintenance and management, and major development proposals should be supported by a comprehensive Management Plan.
Green Places	Policy 29: Green Infrastructure	The Council will seek to maintain and expand the network of green spaces and natural features in Havering and optimise the benefits of green infrastructure to the environment, economy and community.

Over the 15-year plan period Havering's residents and businesses will benefit from modern, high-quality infrastructure that enables economic and social growth, as well as the continued enhancement and value of Havering's Green Belt assets offering recreation and leisure opportunities.

Havering Resident engagement and participation strategy 2024-2027[14]

Havering's Resident Engagement and Participation Strategy (2024-2027) sets out a clear framework for how the Council plans to involve residents in shaping services and decisions. The strategy prioritises inclusive, transparent, and meaningful engagement, ensuring that all communities – particularly those with protected characteristics – can participate effectively.

The Strategy commits to applying best practice '*Gunning'* Principles of Consultation to ensure that residents have sufficient information and that there is adequate time given to responses before a decision is made. This requires proposals to be at a formative stage as at consultation.

To achieve the Strategy, a range of practices are outlined including (but not limited to):

- **Use varied engagement methods:** a mix of digital and face-to-face methods, and other accessible communication channels to tailor approaches to diverse needs;
- **Develop a consistent approach to consultation and engagement**, embedding *Gunning* Principles for fair consultation;
- **Demonstrate community leadership** through visible engagement;
- **Demonstrate how residents feedback influences decisions** with a 'You said, we did' approach and monitoring outcomes annually; and
- **Coordinate campaigns and projects** to increase involvement and reduce duplication across council services.

Havering Statement of Community Involvement 2021[15]

The Statement of Community Involvement (SCI) outlines the Council's framework for engaging with the local community in planning policy and decision making. There is an emphasis on early and meaningful participation to ensure that residents, businesses and underrepresented groups are actively involved in the engagement process. The SCI

[14] London Borough of Havering (2024). Havering Resident engagement and participation strategy 2024 to 2027. Available at: Havering Resident Engagement and Participation Strategy 2024 to 2027

[15]

highlights the need for communication methods that maximise accessibility by using both digital and traditional approaches and offer alternative formats and translation services to remove barriers for disabled people and those with limited English proficiency. The Council have a consultation database which is used to reach out to ‘quiet communities’ to encourage broad participation and that all voices are heard.

4. Summary of Proposed Development

4.1 The Local Development Order

The Proposed Development would consist of:

1. The erection of buildings up to a maximum of 400,000 m^2 Gross External Area (GEA) including:
    a) Data centre uses up to 340,000 m^2;
    b) Indoor horticulture of 50,000 m^2;
    c) Visitor centre up to 600 m^2 (and no less than 300 m^2); and
    d) Campus management facilities up to 2,700 m^2;
    e) Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2; and
    f) District heating up to 3,300 m^2;
2. Installation of electrical infrastructure and associated plant equipment solely to serve the development;
3. Creation of an ecology park; and
4. Any operations or engineering works necessary to enable the delivery of the development including:
    a) Excavation and earthworks (e.g. 'cut and fill');
    b) Formation of compounds for the stockpiling and sorting of excavated materials;
    c) Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
    d) Creation of estate roads and associated infrastructure for access for all modes of transport;
    e) Site security measures including fencing, gates and gate houses;
    f) Works to install underground services and utilities; and
    g) Provision of temporary site offices and welfare facilities.
    h) Highway works on Fen Lane and Ockendon Road.

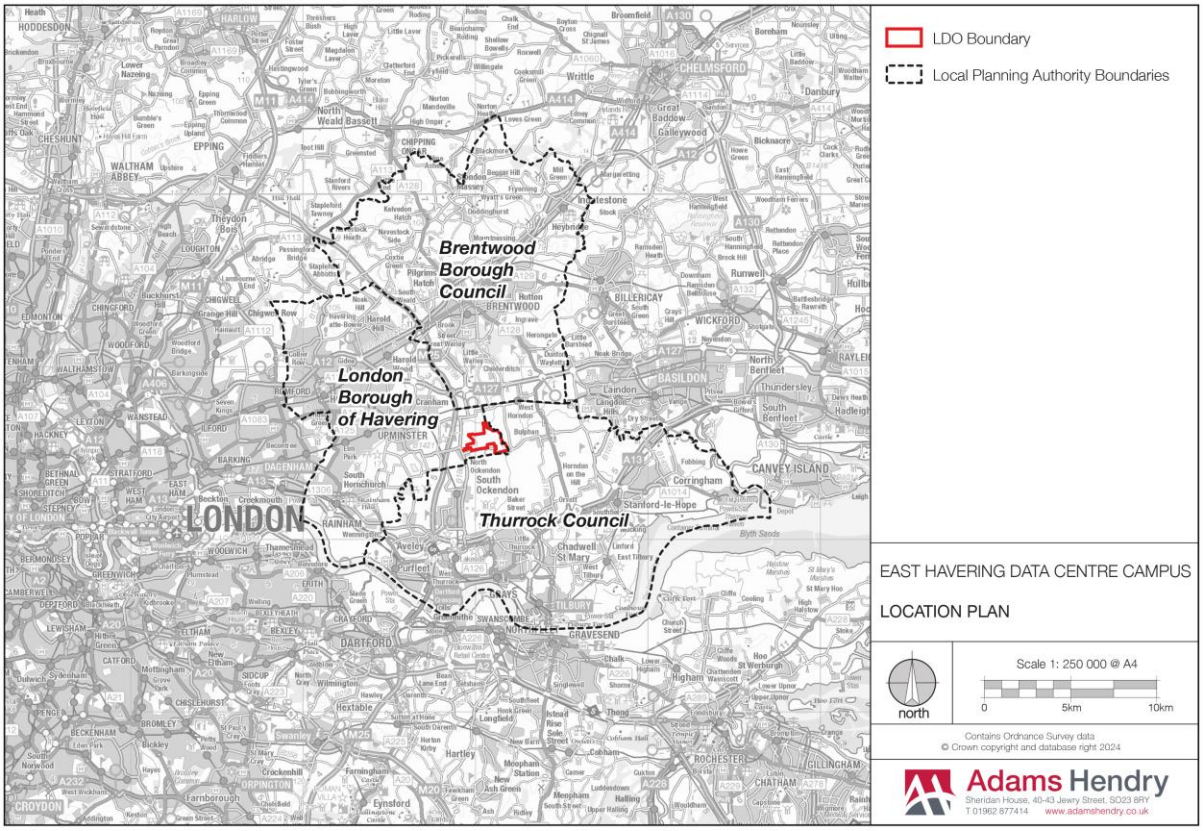
4.2 The Site and surrounding context

The Site is located within the administrative boundary of the London Borough of Havering within the London Metropolitan Green Belt, approximately 30km east of central London and 4km east of Upminster. The site boundary is bordered by the administrative area Thurrock Council to the east and is approximately 1.4km from the administrative boundary of Brentwood Borough Council to the north as shown in **Figure 4-1**.

The Site also forms part of the Thames Freeport economic zone[16] established by the UK Government in 2021. Located in the Thames Estuary, this economic zone has the ambition to stimulate trade, foster innovation, support the energy transition and improve the lives of those in London and the surrounding eastern boroughs.

The Site comprises of agricultural green belt land that is the subject of an Option Agreement[17] with the relevant landowners, enabling the delivery of the Proposed Development. At present, there are 3.5 permanent employees at the plant nursery and associated small holdings and 200 days of seasonal agricultural employment (approximately 0.5 FTE).

Figure 4-1: Site Location



The Site surroundings comprise agricultural land to the north, and suburban towns, villages and settlements, including:

- **North Ockendon** within the London Borough of Havering to the north-east, approximately 100m west of the site boundary;
- The village of **West Horndon** within the Borough of Brentwood to the north-east, approximately 2km from the site boundary;
- **Bulphan** within the Borough of Thurrock Council to the east, approximately 1.7km from the site boundary;
- **South Ockendon** within the Borough of Thurrock Council to the south west, approximately 3.5km from the site boundary; and

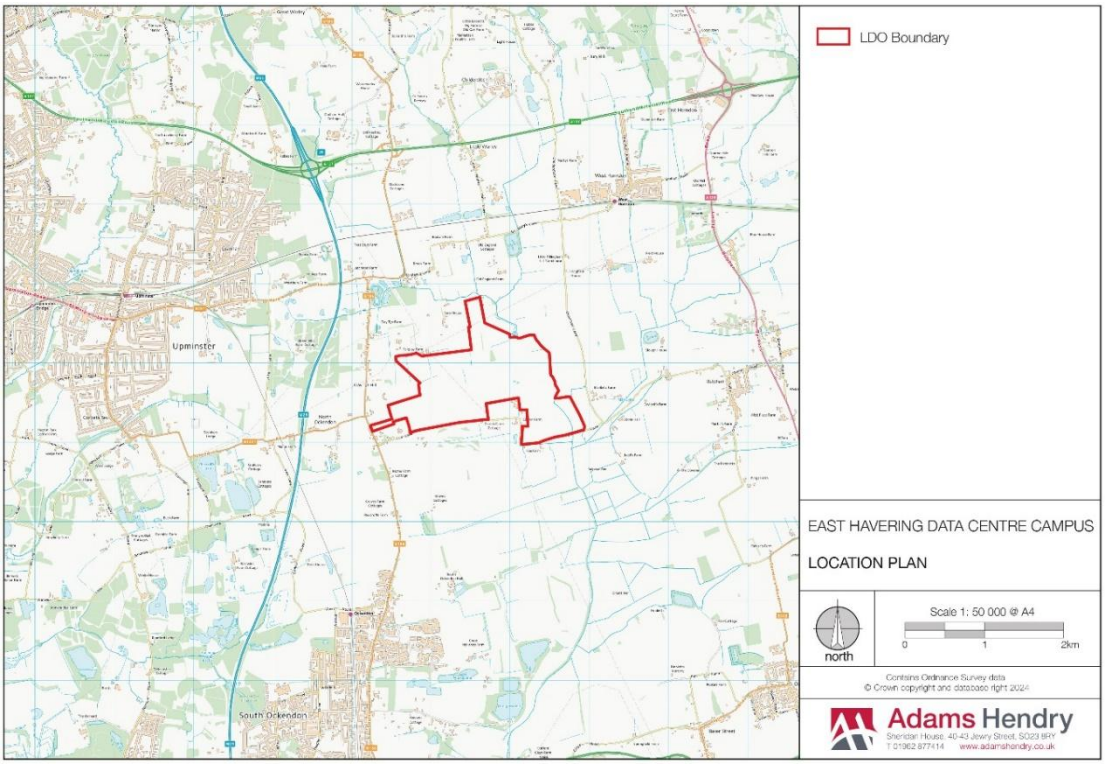
[16] Thames Freeport (no date). Thames Freeport: Global Opportunity, Shared Future. Available at: Thames Freeport: A Gateway to Economic Growth and Development
[17] An option agreement is a contract between a landowner and a developer where the developer has the opportunity (but not an obligation) to purchase land from the landowner with a certain time frame.

- **Upminster** within the London Borough of Havering to the west, approximately 4km from the site boundary.

The surrounding land uses comprise residential, commercial, recreational and energy infrastructure uses, including:

- The closest residential properties of Home Farm located immediately adjacent to the southern boundary of the Site and north of Fen Lane. This land includes commercial buildings that are part of the wider Home Farm Estate and Bolyngtons that are accessed via an unnamed road off Fen Lane.
- Top Meadow Golf Course, Corner Farm and Fen Farm and Fen Farm Cottages to the south of Fen Lane.
- Agricultural fields and woodlands adjacent to the south-western boundary of the site, beyond which is a small cluster of residential properties, Ladyville Lodge Care Home and Fenlands Nursery.
- Adjacent to the far west boundary is Ockendon Road/Clay Tye Road (B186), with further residential properties beyond.
- Agricultural fields, Fairplay farm and an unnamed access road to Fairplay farm are adjacent to the north-western boundary, beyond which is Warley substation, a battery storage scheme (approximately 1.7 ha), Clay Tye Road (B186) and further residential properties.
- Bury Farm is located appropriately 250m to the north-west of the site boundary.
- The Warley substation covers an area of approximately 4.6 ha and consists of a National Grid 275 KV four-switch mesh sub-station and a UKPN 132 kV sub-station. The National Grid sub-station provides the power supplies to the UKPN sub-station. The National Grid sub-station is supplied by 2 x 275 kV circuits from Tilbury grid supply point (GSP) and Elstree GSP.

Figure 4-2: Site surroundings



4.3 Overview of the Proposed Development

General Arrangement

Figure 4-3 below presents the general arrangement of the Proposed Development.

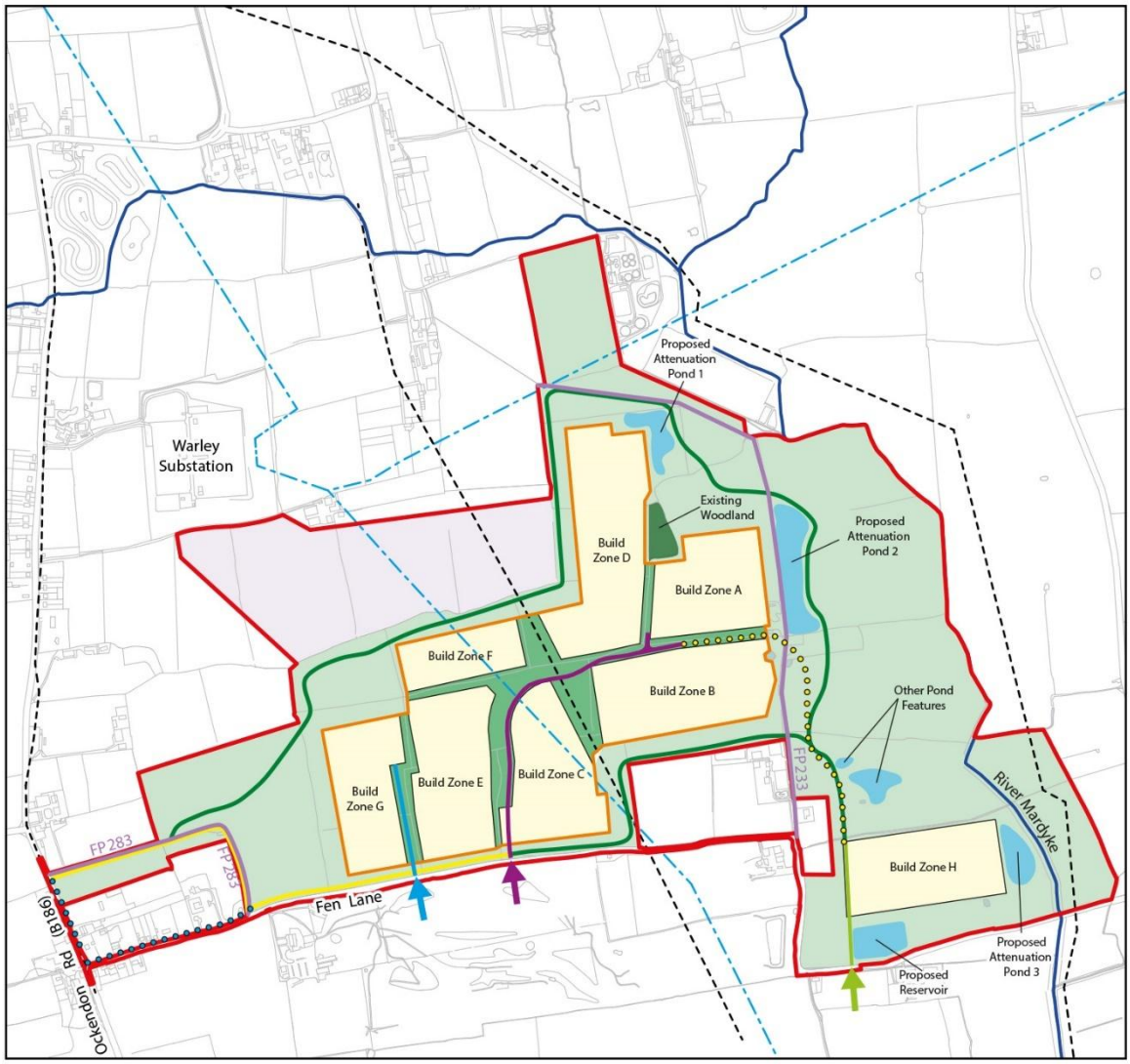
The data centre campus will be constructed in a series of build zones (Build Zones A – G) and enclosed within a steel security fence. The proposed build zones are included below. The LDO sets the parameters for what can be built, rather than permitting only one fixed design. The LDO essentially sets the rules for development, meaning the proposal could be brought forward in a number of different ways as long as it is compliant with the requirements of the LDO.

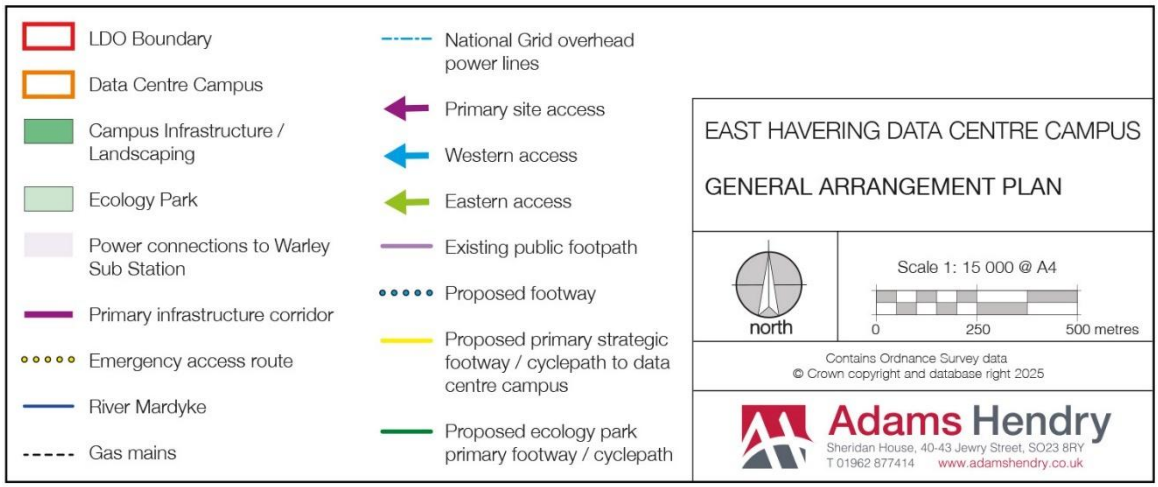
- **Build Zones A-F** would serve the primary infrastructure for the data centre campus and accommodate the spine road, shared cycleway and footpath, drainage swales and associated landscaping. These build zones would be accessed via the main central access road on Fen Lane located south of the Site and require a security check point.

- **Build Zone G** would also serve the primary infrastructure for the data centre campus but via a secure secondary access road to the west of the main entrance on Fen Lane, including a shared cycleway and footpath.

- **Build Zone H** would provide entry to the indoor horticulture, visitor centre and a wider network of cycleways and footpaths within the ecology park. Build Zone H would be accessed via a new eastern access road. The ecology park would extend around the whole of the secure data centre campus.

Figure 4-3: General Arrangement Plan





Site-wide Infrastructure

Table 4-1 outlines a high-level overview of the site-wide infrastructure for the Proposed Development. The table has been informed by Chapter 4 of the ES 'Proposed Development and Construction' and the draft LDO documents.

Table 4-1: Overview of site-wide infrastructure

Site-wide Infrastructure	Overview
Data Centre	• The Proposed Development includes up to a maximum of 400,000 m^2 of data centre floorspace • Each Build Zone could accommodate a number of data centre buildings ranging in size. None of the data centre buildings in any of the build zones will exceed 200m in length. • Each data centre building would be required to achieve at least BREEAM Excellent rating[18] • Each data centre would be operational 24 hours a day • Each data centre plot would include a car park and cycle bays • A gated access point and small security hut would be provided for the data centre campus • Soft and hard landscaping would be provided within the data centre campus, including a buffer zone around each Build Zone comprising natural grassland and shrub planting to provide an area of transition between the plot-based development and primary and secondary infrastructure corridors and/or the wider ecology park
Campus management facilities	• The Proposed Development includes the provision of up to 2,700 m^2 of campus management facilities and up to 3,400 m^2 of campus security facilities • The size of the facilities would be dependent on the requirements of future occupier(s) of the Site. Should a single occupier operate and manage the whole Site, a centralised campus welfare building with facilities for employees and authorised visitors would be permitted by the LDO • Irrespective of the occupier(s), there would be a dedicated site-wide Security Control Facility (SCF) to provide oversight and management of security for the whole Site, including CCTV monitoring rooms, storage and welfare facilities, meeting rooms, offices and maintenance. This would be located at the main entrance to the data centre campus • The Campus management facilities would be required to achieve at least BREEAM Excellent rating
Indoor horticulture	• The Proposed Development includes the provision of up to 50,000 m^2 of heated horticultural facilities located within Build Zone H accessed via Fen Lane • Waste heat would be exported via an underground pipe network for use in the indoor horticulture facilities • The horticultural buildings are estimated to require over 35 million litres of water per year. Rainwater harvesting is estimated to yield between 25-30 million litres of water and could therefore meet up to 85% of demand

[18] BREEAM is used to measure the sustainability performance of buildings. This framework assists projects in meeting their sustainability goals and optimal performance over time. An Excellent score more than or equal to a 70% score: What is BREEAM | Sustainable Building Certification

	• The greenhouses would be lit up to 20 hours a day during the winter months. During the hours of darkness, blackout screens would be provided overhead and side screens along the walls to prevent light pollution • The facility would require a small service yard for movement of goods together with the provision of employee car and cycle parking bays • The greenhouses(s) may include ancillary offices, welfare facilities and a packing and storage area
District Heating Energy Centre	• The Proposed Development would provide a district heating centre up to 3,300 m^2 • The enclosed green energy district heating centre would house all plant and machinery required to collect the waste heat from data centre buildings on the campus and distribute it to the indoor horticulture and other potential offsite heat networks in the future • The District Heating Energy Centre facilities would be required to achieve at least BREEAM Excellent rating
Electrical infrastructure	• New electrical infrastructure would comprise high and low voltage substations, switch rooms and other network distribution equipment located within separate fences compounds within the Build Zones and underground cable networks • A new substation within Build Zone F would connect the data centre campus to Warley substation via diverse cable routes to facilitate power to the Proposed Development • In addition, operation of the Proposed Development would require new fibre optic connections, utilising existing Openreach infrastructure. New ducts and a series of related standoff/ access chambers would be constructed to allow these connections
Ecology Park	• The Proposed Development would be set in an ecology park providing public access to natural landscapes incorporating wetland, grassland and meadow, wet woodland, hedgerows and permanent water bodies to provide a diverse range of habitats for national key target species The eastern area of the Site would feature wetlands and woodland along the eastern boundary. Existing and proposed woodland would wrap around the data centre campus to help screen the site from the surrounding area, while meadows would be created to break up areas of woodland to the west of the Site • Approximately 56,687 trees would be planted across the ecology park • A network of cycleways and footpaths would create access through the ecology park, including links to the data centre campus from the B186 Ockendon Road in North Ockendon. • The outer perimeter boundary of the ecology park would comprise informal post and rail gates, including wheelchair accessible kissing gates to pedestrian routes • Water for use in the greenhouses shall be drawn from a new reservoir (maximum capacity of 40,000 m^3 located within the Ecology Park
Visitor Centre	• The Proposed Development includes the provision of space for a visitor centre within Build Zone H to accommodate 25-50 people (with a minimum GIA of 70m^2). • The visitor centre would include discovery and learning facilities in association with the proposed ecology park and the ecology park management offices, welfare and storage facilities and external amenity areas • The visitor centre would be fully accessible in accordance with Part M of the Building Regulations (or as subsequently amended) • The visitor centre would have shared use of the proposed ecology park car park including car, cycle and coach parking spaces

	• The visitor centre is expected to be open between 09:00-17:00 every day • The visitor centre would be required achieve at least BREEAM Outstanding rating

Access and Parking

Figure 4-4 shows the connectivity plan for the Proposed Development, including the internal network of pedestrian and cycle paths across the Site.

There would be three fixed points of vehicles access into the Site: primary central spine road from Fen Lane; access from Fen Lane to the west of primary central spine road to serve Build Zone G; and eastern access to serve Build Zone H including the proposed ecology park and visitor centre. These three fixed access routes would also include a shared pedestrian footpath and cycleway with a minimum width of 3 metres which would extend on plot to the entrance of the proposed buildings, including the primary strategic pedestrian/ cycleway through the ecology park from the eastern access point.

To improve the connectivity of the primary strategic pedestrian footpath/ cycleway through the ecology park to the existing highway and active travel network, the following works would be completed:

- Highway works would be carried out to provide 1.5m wide footpath on the northern side of Fen Lane between Ockendon Road and east of the Ladyville Lodge Care Home (the path may be 1.2m at pinch points). The new footpath would tie-in to the proposed primary strategic pedestrian/ cycleway through the ecology park via a new access point to the east of existing footpath 283 on Fen Lane.

- The primary strategic pedestrian footpath/ cycleway would be connected to the adjacent northbound bus stop on Ockendon Road via an informal crossing comprising a kerbed central island reservation with associated dropped kerbs and tactile paving on each side of Ockendon Road. This new central island would replace the existing traffic chicane.

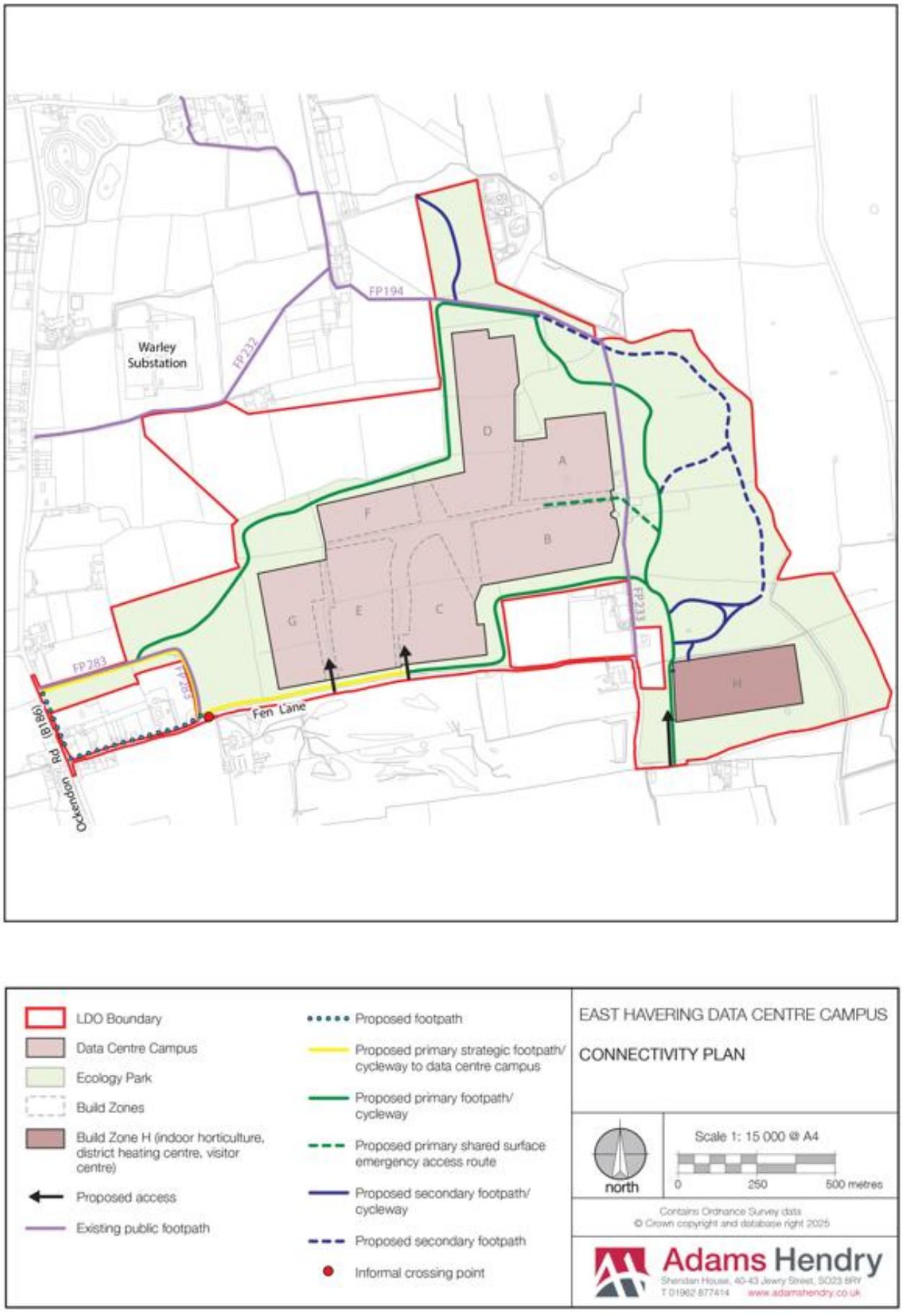
- A continuous connection of the primary strategic pedestrian footpath/ cycleway to the southbound bus stop on Ockendon Road via an extension of the footway on the eastern side to the southern boundary of Fenland Nursery.

New lighting would also be provided along existing and proposed shared pedestrian footpath and cycleways along the three fixed points of access from Fen Lane, new footpaths and the entrance to the ecology park on Ockendon Road, the new proposed central island reservation and crossing points to Top Meadow Golf Course.

Emergency access would also be accommodated via the eastern access road continuing north through the ecology park to a connection point on the eastern boundary of the data centre campus, north of Build Zone B. This emergency access crosses a public right of way within the ecology park.

A minimum of 5% of the total staff/ visitor parking provision for data centre and indoor horticulture would be assigned as disabled parking spaces for Blue Badge Holders, and a minimum of 6% for the visitor centre and ecology park. The Proposed Development would also provide at least one enlarged space per plot and 4% of total staff/ visitor parking provision for the visitor centre and ecology park. These spaces are large enough to become disabled parking spaces quickly and easily via marking up of hatchings and signage.

Figure 4-4: Site Connectivity Plan



4.3 Construction

Programme

The duration of the LDO is proposed to be 20 years and therefore construction would be permitted throughout this period. However, the proposed development could be delivered within 17 years assuming the fastest reasonable programme. Based on a 17-year programme, the works are anticipated to commence in 2026 and to be completed in 2043. The indicative construction programme for key components of the Proposed Development is outlined in **Table 4-2** below in order of completion.

A more detailed breakdown of the three construction phases is available within the ***Environment Statement 'Chapter 4: Proposed Development and Construction'***

It is anticipated that the construction site will operate between 08:00 – 18:00 weekdays; 08:00 – 13:00 Saturday; and no working is to be formally undertaken on Sundays or Bank Holidays.

Table 4-2: Indicative construction programme

Proposed Development	Indicative Programme
Initial Site set up and Highway Works on Fen Lane and Ockendon Road	April 2026 – July 2026
Phase 1	
Site wide infrastructure including earthworks	July 2026 – April 2027
Electrical infrastructure on Build Zone F	July 2027 – February 2028
Data Centre uses up to 100, 000 m^2 (Build Zone D)	September 2026 – November 2032
Campus Security at main site entrance	May 2027 – February 2028
Ecology Park Part 1a and Part 1 Planting	Completed by July 2028
Phase 2	
Site wide infrastructure including earthworks	November 2030 – August 3031
Data Centre uses 100, 000 – 200, 000 m^2 (Build Zones E and G)	August 2031 – October 2036
Indoor Horticulture	January 2032 – October 2034
District Heating Centre	November 2032 - October 2034
Ecology Park Part 2 Planting	Completed by November 2032
Ecology Park Part 4 Planting	Completed by December 2036 (worst case)
Visitors Centre	August 2035 – October 2036
Phase 3	
Site wide infrastructure including earthworks	October 2024 – July 2035
Data centre uses 200, 000 m^2 – 340, 000 m^2 (Build Zones A, B and C)	July 2035 – February 2043
Campus Management Building	December 2037 – October 2038
Ecology Park Part 3 Planting	Completed by October 2036

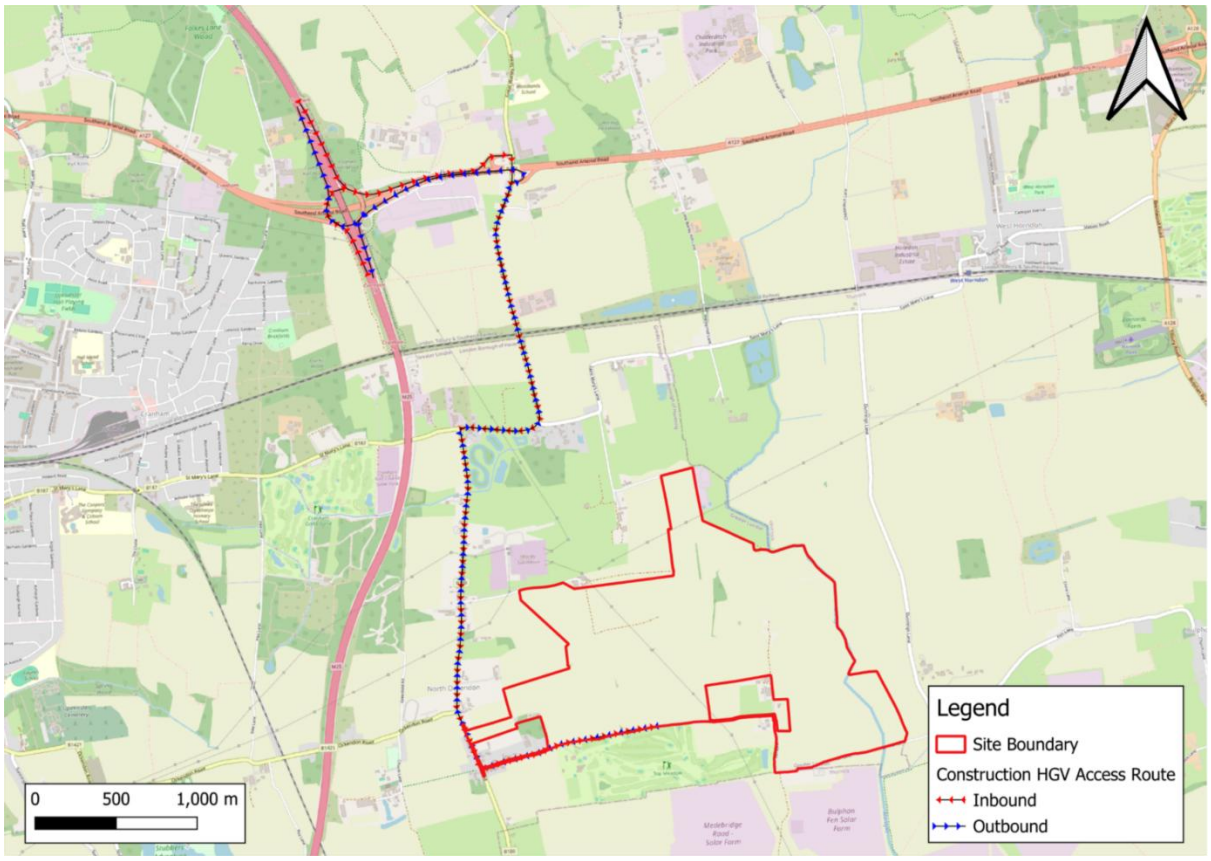
Construction traffic

The construction workforce would arrive and depart from Fen Lane via Ockendon Road or the A128. An electric shuttle bus service for construction workers would be provided to enable connection to rail and London underground services at Upminster and South Ockendon stations. The construction workforce would arrive predominantly between 06:30-08:30 and depart between 16:00-18:00.

Construction traffic comprising Heavy Goods Vehicles (HGV) would arrive from the north via the M25 (junction 29), the A127 Southend Arterial Road and Ockendon Road onto Fen Lane. The Fen Lane carriageway will be widened to a uniform width of approximately 6.2 m between the junction with Ockendon Road and the eastern site. This is required to enable two-way running for HGV traffic along Fen Lane prior to the commencement of any works on the Site. The proposed construction route for HGVs is presented in **Figure 4-5**.

Based on construction trip generation estimates, HGV arrivals and departures would occur between the hours of 06:00-18:00, with the majority of trips taking place during the operational hours of the construction site (08:00-18:00). Two-way vehicle trips generated by the Proposed Development are expected to peak in December 2035 at 1,243 two-way vehicle movements per day, of which there would be approximately 152 two-way HGV movements.

Figure 4-5 Proposed Construction Route



Construction employment

Over the construction period it is estimated that a total of 1,340 job-years of employment would be generated across the UK, including 330 annual job-years at the Borough Level.

4.4 Operation

Operational traffic

During operation, an electric shuttle bus service to/from Upminster Station would be provided to enable staff to access public transport services. The service would operate to align with the three shift patterns proposed at the data centres between 07.00-15.00, 15.00-23.00 and 23.00-07.00 daily.

A separate coach service operated directly by commercial horticultural businesses would transport horticultural workers to the site daily to align with shift patterns anticipated to be between 06.00-15.00 during the summer months and 07.30-16.30 during winter months. Indoor horticultural greenhouses would typically be operational seven days a week.

On-street parking on the public highway particularly on Fen Lane and Ockendon Road would be prohibited and measures to manage overspill parking on internal estate roads would also be in place.

4.3.1 Operational employment

Table 4-3 below outlines the estimated direct and indirect employment opportunities once operational. It is anticipated that there will be 350 direct jobs locally (in Havering). At the national level, it is anticipated that there will be approximately 1,780 direct and indirect jobs once the data centre is operational.

Table 4-3: Operational employment estimates

Effect	Havering	London (excluding Havering)	UK (excluding Havering and London)	Total
Direct employment	350	0	0	350
Indirect/induced employment	280	420	730	1,430
Total job created or sustained	620	420	730	1,780

5. Evidence Base

5.1 Introduction

This section outlines the equalities baseline relevant to the location of the Proposed Development. This includes analysis of the 2021 Census and other datasets from the Office for National Statistics (ONS). Where possible, the most recent data is presented at three geographical levels. These are, in increasing size:

- **Direct Impact Area (DIA)**: comprised of the five Lower-level Super Output Areas (LSOAs) (Brentwood 008D and 009B, Thurrock 004B and 006B, and Havering 018E);
- **Wider Impact Area (WIA)**: comprised of six wards Herongate, Ingrave and West Horndon Ward and Warley Ward (in Brentwood), Ockendon Ward and Orsett Ward (in Thurrock) and Cranham Ward and Upminster Ward (in Havering).
- **Local Authority**: Brentwood Council, Thurrock Council and Havering Council; and
- **Country**: England is used as a national comparison.

Data is also used from the Indices of Multiple Deprivation (IMD) to provide local insights into socioeconomic deprivation within the local area to the Proposed Development. In addition, local context is provided through the presentation of evidence on local education, skills and training, local services and sensitive receptors, the existing transport context, health and wellbeing, and key equalities issues relating to data centres.

5.2 Protected characteristics

This evidence base provides an overview of the protected characteristics that are pertinent to the Proposed Development, this includes: sex, age, disability, race, religion or belief, sexual orientation, gender reassignment, marriage and civil partnership, and pregnancy and maternity.

Understanding the demographics of the local population in relation to the protected characteristic groups enables the identification of groups within the area and how they may be impacted by the Proposed Development.

Sex

The proportion of male and female residents is similar across the geographies. Within the DIA, 49.3% of the population are male while 50.7% are female. **Table 5-1** provides a breakdown across all geographies.

Table 5-1: Sex breakdown (%) across geographies, 2021

Sex	DIA	WIA	Brentwood	Thurrock	Havering	England
Male	49.3	48.4	48.6	49.0	48.2	49.0
Female	50.7	51.6	51.4	51.0	51.8	51.0

Age

Table 5-2 provides a breakdown of the ages of the population for all geographies. In the DIA and WIA, 20.8% and 20.0% of the respective populations are over the age of 65 which is slightly higher than the national figure (18.4%) and surrounding local authorities of Thurrock (13.6%) and Havering (17.6%).

A similar proportion of the DIA and WIA populations are aged 0-15 (18.3% and 18.9% respectively) compared to the national figure (18.6%), while Thurrock and Havering have a slightly higher percentage (22.5% and 20% respectively). In terms of the working age population (aged 16-64), the DIA and WIA have the lowest representation (60.8% and 61.1% respectively).

Table 5-2 Age breakdown (%) across geographies, 2021

Age	DIA	WIA	Brentwood	Thurrock	Havering	England
0-15	18.3	18.9	18.4	22.5	20.0	18.6
16-64	60.8	61.1	61.4	63.9	62.4	63.1
65+	20.8	20.0	20.2	13.6	17.6	18.4

Disability

A smaller proportion of the DIA and WIA populations have a disability (15.8% and 14.0% respectively) compared to England as a whole (17.3%). The figures for Brentwood, Thurrock and Havering are also lower than the figure for England.

Table 5-3 Disability or long-term health condition & breakdown across geographies, 2021

Disability	DIA	WIA	Brentwood	Thurrock	Havering	England
Disabled under Equality Act (daily activities limited 'a lot')	6.4	5.6	5.7	6.1	6.3	7.3
Disabled under Equality Act (daily activities limited 'a little')	9.4	8.4	8.4	8.4	8.3	10.0
Not disabled under Equality Act (has long term health condition but daily activities not limited)	6.4	6.4	6.8	5.5	5.7	6.8
Not disabled under Equality Act and no long-term conditions	79.2	79.6	80.1	79.2	79.6	75.9

Ethnic group

A larger proportion of the DIA and the WIA are White British (82.2% and 80.2%) compared to England as a whole (73.5%). A slightly larger proportion of the DIA are Gypsy or Irish Traveller (0.3%) compared to the average across England (0.1%). There are no formal traveller sites in Havering, however, the Havering Local Plan Gypsy and Traveller Position Statement in 2017[19] identified Tyas Stud Farm rear of Latchford Farm as a site as the occupants meet the planning definition of a Traveller. This site is located in close proximity to the Proposed Development to the north of St Marys Lane.

A smaller percentage of the DIA and WIA population belong to minority ethnic groups compared to national figures. However, the largest minority ethnic groups in the DIA and WIA are Indian (2.3% and 2.1% compared to 3.3% nationally) and African (2.5% and 3.1% compared to 2.6% nationally).

[19] Havering London borough Cabinet Meeting (2017) Havering Local Plan Gypsy and Traveller Position Statement 2017. Available at: https://democracy.havering.gov.uk/documents/s24078/Annex%2024%20-%20Gypsy%20and%20Traveller%20Position%20Statement.pdf

Across the local authorities, there is a relatively larger African population in Thurrock (9.2%) and Havering (5.4%) which is higher than the national average (2.6%). In Thurrock, 9.6% of the population are 'Other White' along with 7.4% in Havering which is slightly higher than England (6.3%).

Table 5-4 Ethnic group % breakdown across geographies, 2021

Ethnic Group	DIA	WIA	Brentwood	Thurrock	Havering	England
White						
English, Welsh, Scottish, Norther Irish or British	82.2	80.2	82.7	66.2	66.5	73.5
Irish	1.1	1.2	1.3	0.6	1.1	0.9
Gypsy or Irish Traveller	0.3	0.2	0.1	0.2	0.1	0.1
Roma	<0.1	0.1	0.1	0.2	0.2	0.2
Other White	4.6	5.0	4.3	9.6	7.4	6.3
Asian, Asian British or Asian Welsh						
Bangladeshi	0.3	0.6	0.4	1.4	1.8	1.1
Chinese	0.5	0.7	0.7	0.6	0.8	0.8
Indian	2.3	2.1	2.6	2.3	4.3	3.3
Pakistani	0.7	0.6	0.3	1.2	2.2	2.8
Other Asian	0.7	1.0	1.1	1.5	1.7	1.7
Black, Black British, Black Welsh, Caribbean or African						
African	2.5	3.4	1.5	9.2	5.4	2.6
Caribbean	0.5	0.7	0.5	1.2	1.8	1.1
Other Black	0.7	0.6	0.3	1.4	1.0	0.5
Mixed or Multiple Ethnic Groups						
White and Asian	0.8	0.9	1.0	0.6	0.9	0.8
White and Black African	0.5	0.5	0.4	0.6	0.6	0.4
White and Black Caribbean	0.9	0.8	0.8	1.0	1.2	0.9
Other Mixed or Multiple ethnic groups	0.5	0.7	0.8	0.8	1.0	0.8
Other ethnic group						
Arab	0.1	0.1	0.2	0.2	0.3	0.6
Any other ethnic group	0.6	0.8	0.9	1.3	1.7	1.6

Religion

Across all geographies, the most common religious group is Christian. In the DIA, 55.5% of the population are Christian and in the WIA, 57.4% of the population are Christian which is higher than the figure for England (46.3%). Across the local authorities, there is also a large proportion of Christians (56% in Brentwood, 51.7% in Thurrock and 52.2% in Havering).

The largest minority religious group in the DIA and WIA is Muslim (2.0% of the DIA and 2.3% of the WIA). However, this is lower than the national figure (6.7%). In Thurrock, 4.9% of the population are Muslim, and in Havering, 6.2% of the population are Muslim.

Table 5-5 Religion % breakdown across geographies, 2021

Religion	DIA	WIA	Brentwood	Thurrock	Havering	England
No religion	33.7	32.1	33.3	34.7	30.6	36.7
Christian	55.5	57.4	56.0	51.7	52.2	46.3
Buddhist	0.8	0.4	0.4	0.4	0.4	0.5
Hindu	1.3	1.3	1.8	1.4	2.5	1.8
Jewish	0.4	0.3	0.4	0.1	0.5	0.5
Muslim	2.0	2.3	1.6	4.9	6.2	6.7
Sikh	0.6	0.6	0.5	1.2	1.7	0.9
Other religion	0.1	0.4	0.5	0.5	0.4	0.6
Not answered	5.9	5.3	5.6	5.2	5.5	6.0

Pregnancy and maternity

The total fertility rate (TFR) was slightly higher for the three local authorities of Brentwood (1.65), Thurrock (1.62) and Havering (1.64) compared to England (1.41)[20]. In 2024, there was a crude birth rate (CBR) of 9.6 in England (594,677 births). The CBR was higher in Brentwood at 11.3 (894 births)[21]. In 2024, there were 1,717 births in Havering and 1,034 in Thurrock, although CBRs are not available[22].

5.3 Socio-economic disadvantage

The socio-economic profile considers several factors including levels of deprivation, employment, education, health, housing, transport, and connectivity; as well as access to services and facilities; public realm and open space; safety, security and well-being; and community cohesion. These factors are pertinent to those with protected characteristics and inequality and, as such, provide additional baseline information relevant to the assessment of equality impacts.

Index of Multiple Deprivation (IMD)

Deprivation is measured by the 2025 English Indices of Deprivation.[23] This provides an overall deprivation score and rank for 33,755 LSOAs across England by building upon seven distinct 'domains' of deprivation:

- Income - measures the proportion of the population experiencing deprivation relating to low income. The definition of low income used includes both those people that are out of work, and those that are in work but who have low earnings.
- Employment - measures the proportion of the working age population in an area involuntarily excluded from the labour market. This includes people who would like to

[20] ONS (2025) Births in England and Wales. Available at: Births in England and Wales - Office for National Statistics
[21] ONS (2025) Births in England and Wales: birth registrations. Available at: Births in England and Wales: birth registrations - Office for National Statistics
[22] ONS (2025) Births in England and Wales: birth registrations. Available at: Births in England and Wales: birth registrations - Office for National Statistics
[23] Ministry of Housing, Communities and Local Government (2025) English indices of deprivation 2025: English indices of deprivation 2025: statistical release. Available at: English indices of deprivation 2025: statistical release - GOV.UK

work, but are unable to do so due to unemployment, sickness or disability, or caring responsibilities.

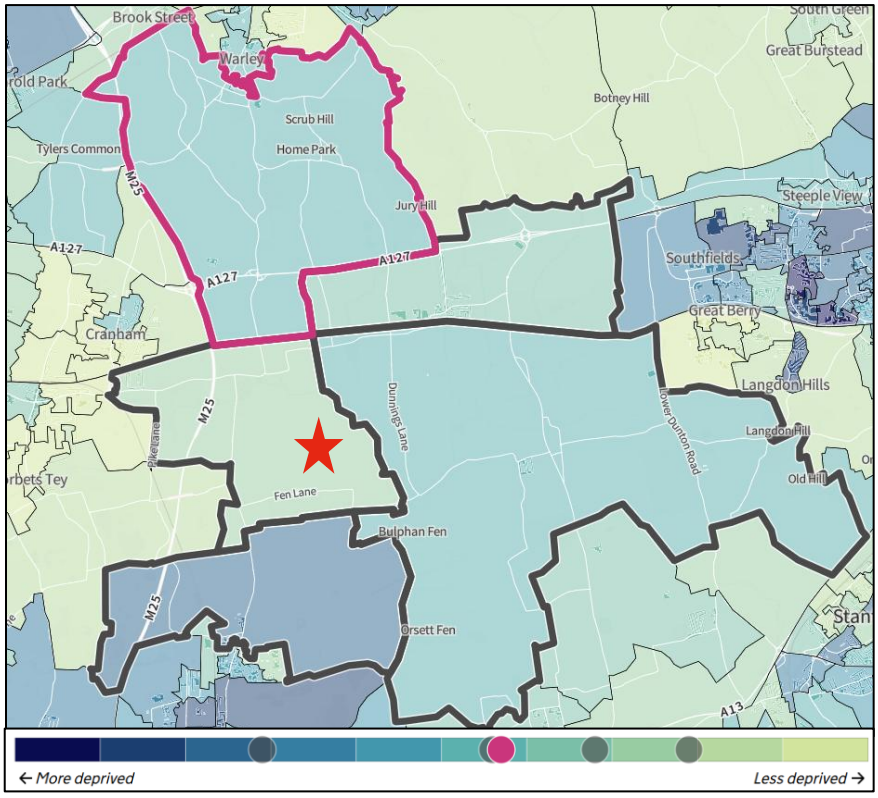
- Education, skills, and training – measures the lack of attainment and skills in the local population.
- Health deprivation and disability – measures the risk of premature death and the impairment of quality of life through poor physical and mental health.
- Crime – measures the risk of personal and material victimisation at a local level.
- Barriers to housing and services – measures the physical and financial accessibility of housing and local services.
- Living environment – measures the quality of the local environment.

The overall IMD score generated by the combination of these domains provides a rank for all the LSOAs, rank 1 being the most deprived LSOA in England, and a rank of 33.755 being the least deprived LSOA in England. For ease of comparison, this socio-economic profile uses the respective decile ranking of the LSOA; a decile ranking of 1 means that the LSOA is in the top 10% most deprived nationally, and a decile ranking of 10 means it is in the 10% least deprived nationally.

The scores provided against each domain are a measure of relative deprivation rather than affluence. As such, it is important to recognise that not every person in a deprived area will themselves be deprived and likewise, that there will be some deprived people living in the least deprived areas.

Figure 5-1 presents a map of the DIA (central point of the Proposed Development is marked by the red star). The map highlights that area local to the Proposed Development experiences low levels of deprivation.[24] Thurrock 006B was ranked in the 30% most deprived LSOAs in England while the remaining three LSOAs in the DIA were ranked in the 20-50% least deprived.

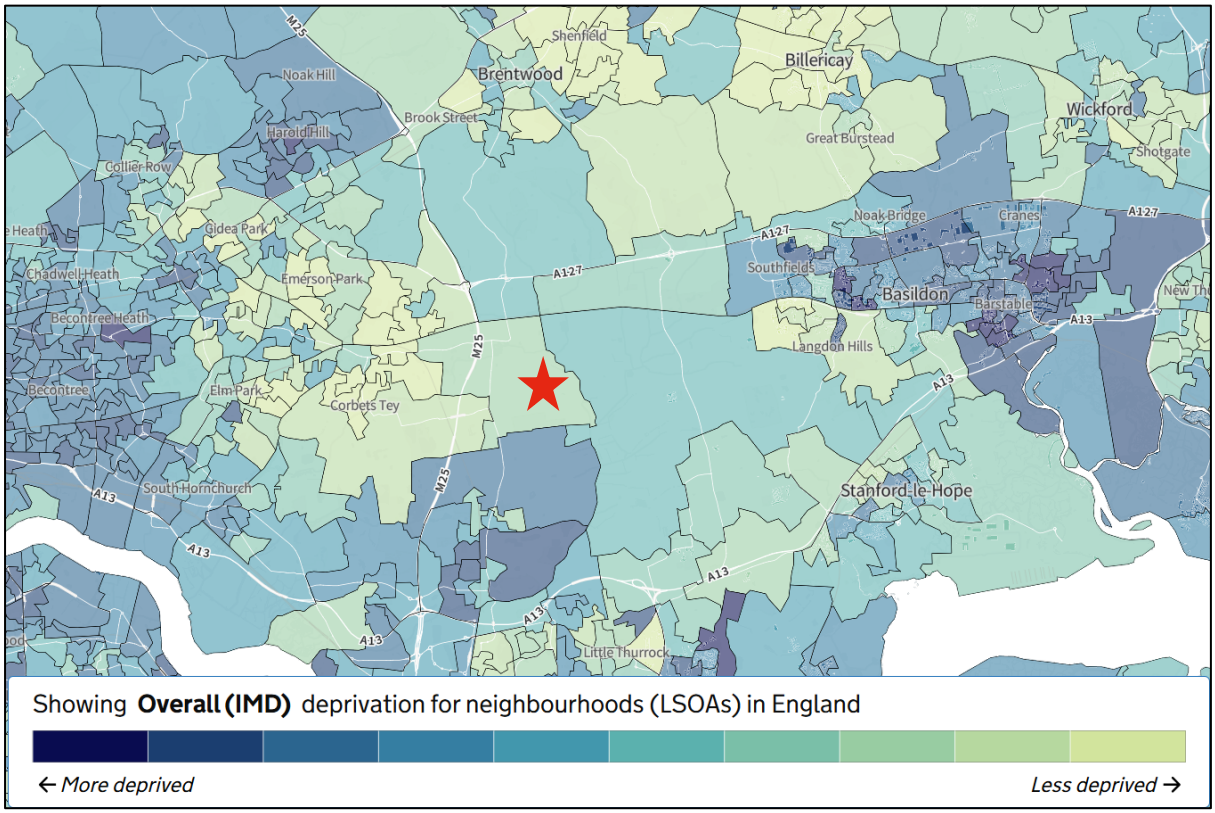
Figure 5-1: IMD Overview map of the Direct Impact Area



[24] Ministry of Housing, Communities and Local Government (2025). English indices of deprivation 2025: Maps. Available at: Health & Disability | Local Deprivation Explorer

Figure 5-2 presents an overview of the IMD in the WIA (the approximate location of the Proposed Development marked by the red star). While the rural area surrounding the Proposed Development experience low levels of deprivation, the urban areas in the wider vicinity and in closer proximity to Greater London experience greater levels of deprivation. This includes Dagenham and East London to the East, Basildon to the West, and South Ockenden to the South.

Figure 5-2: IMD Overview map of the Wider Impact Area



Income

The prevalence of income deprivation is also relatively low across the DIA. Thurrock 006B was ranked in the 30% most deprived LSOAs in England – more deprived than 74% of neighbourhoods. Brentwood 008D was ranked in the 50% least deprived LSOAs in England, while the remaining three LSOAs were ranked in the 20% least deprived.

The median annual gross income for all employees was highest in Brentwood at £43,504, followed by Havering at £39,002, while Thurrock had the lowest median income at £35,346.[25] However, all three local authorities sit above the national median of £31,840.

At the local authority level, the number of children living in relative poverty[26] has been steadily increasing across all geographies between 2020/21-2023/24.[27] Based on the population of children (under 16) recorded in the 2021 Census, Thurrock has the highest prevalence of children living in low income families at 20.8%, compared to Havering at 16.2% and Brentwood with the lowest prevalence of 12.2%. However, these sit below the national average of 23.9%.

[25] Earnings Team (2024). Earnings and hours worked, place of residence by local authority: ASHE Table 8.7a. Available at: Earnings and hours worked, place of residence by local authority: ASHE Table 8 - Office for National Statistics
[26] Relative low-income is defined as a family whose equivalised income is below 60 per cent of contemporary median income. Gross income measure is Before Housing Costs (BHC) and includes contributions from earnings, state support and pensions.
[27] Department for Work and Pensions (2025). Children in low income families: local area statistics. Available at: Children in low income families: local area statistics - GOV.UK

Employment

Similarly to the IMD and income, there are low levels of employment deprivation across the DIA. Thurrock 006B was the most deprived LSOA in the DIA - ranking in the 40% most deprived nationally – while the remaining four LSOAs ranked in the 10-50% least deprived.

Census 2021 data in **Table 5-6** indicates that economic activity across the local and wider geographies sits above the national average, in particular Thurrock has the highest levels of economic activity (64.4%). Consequently, the percentage of full-time students and economically inactive are similar levels across the other geographies and sit lower than England.

Table 5-6: Economic activity status (%) by geographical area, 2021[28]

Status	DIA	WIA	Brentwood	Thurrock	Havering	England
Economically active (excluding full-time students)	60.8	61.5	61.5	64.4	61.3	58.6
Economically active and a full-time student	1.4	1.5	1.3	2.5	1.9	2.3
Economically inactive	37.9	37.0	37.2	33.2	36.9	39.1

In terms of occupation, professional occupations comprise the majority of jobs across all geographies. This includes a range of sectors including engineering, environmental, research and development, medical, legal and financial professionals. These may comprise some of the specialist roles employed in the operational data centres. The WIA (20.7%) and Brentwood (23.5%) sit above the national average of 20.3%, while the DIA has a lower representation of these occupations (17.7%).

Of further interest to the Proposed Development are construction occupations within the skilled trades occupations. The DIA (11.4%) and Havering (11.5%) have the highest proportions of these occupations, sitting above the national average (10.2%).

Figure 5-7: Occupation (%) by geographical area, 2021[29]

Occupation	DIA	WIA	Brentwood	Thurrock	Havering	England
Managers, directors and senior officials	17.0	15.7	18.5	11.0	12.4	12.9
Professional occupations	17.7	20.7	23.5	14.6	19.5	20.3
Associate professional and technical occupations	14.3	15.0	16.0	11.3	13.4	13.3
Administrative and secretarial occupations	14.5	14.0	12.2	11.9	13.4	9.3
Skilled trades occupations	11.4	10.1	8.6	11.2	11.5	10.2

[28] ONS (2021) Census 2021: TS066 – Economic activity status. Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=
[29] ONS (2021) Census 2021: TS063 – Occupation. Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=

Caring, leisure and other service occupations	7.2	6.8	6.7	8.4	8.2	9.3
Sales and customer service occupations	6.2	5.8	5.0	8.2	6.5	7.5
Process, plant and machine operatives	5.8	5.3	3.9	10.0	6.5	6.9
Elementary occupations	5.9	6.7	5.6	13.4	8.2	10.5

Education, skills and training

There is some prevalence of educational deprivation across the DIA compared to other IMD domains. Thurrock 006B and 004B are ranked in the 40% most deprived neighbourhoods nationally in terms of education, skill, and training deprivation. The remaining LSOAs ranked in the 40-50% least deprived. However, the higher representation of older residents may have lower qualifications, contributing to these higher education deprivation scores[30].

These rankings are reflected in **Table 5-7** with Thurrock indicating the largest proportion of residents with no qualifications (21.6%). Contrastingly, Brentwood has the lowest proportion of residents with no qualifications (15.1%) and highest proportion with Level 4 qualifications (35.4%) and the WIA has similar proportions of Level 4 qualifications at 31.2%.

Table 5-7: Educational attainment (%) by geographical area, 2021[31]

Qualification	DIA	WIA	Brentwood	Thurrock	Havering	England
No qualifications	19.4	17.1	15.1	21.6	20.0	18.1
Level 1 and entry level qualifications	11.4	11.0	9.7	12.2	11.2	9.7
Level 2 qualifications	15.4	15.9	15.4	15.6	14.9	13.3
Apprenticeships	5.6	4.8	4.7	5.0	5.1	5.3
Level 3 qualifications	16.8	17.2	17.2	16.2	16.3	16.9
Level 4 qualifications	28.6	31.2	35.4	26.2	29.5	33.9
Other qualifications	2.8	2.8	2.6	3.2	3.0	2.8

Health

The DIA experiences low levels of heath deprivation, with Thurrock 006B ranked in the 50% most deprived nationally while remaining LSOAs are ranked in the 20-50% least deprived.

These rankings are reflected in the Census data presented in **Table 5-8**, with the largest proportion of residents ranking general health as 'very good' across the geographies. While

[30] Trust for London (2019). Comparing the Index of Multiple Deprivation with its Education Domain. Available at: Comparing the Index of Multiple Deprivation with its Education Domain | Trust for London
[31] ONS (2021) Census 2021: TS067 – Highest level of qualification. Available at: https://www.nomisweb.co.uk/query/construct/submit.asp?forward=yes&menuopt=201&subcomp=

Havering has the lowest proportion with 'very good health' (49.9%) locally, the DIA represents the largest percentage with 'bad' or 'very bad' health (4.8%).

Table 5-8: General health rating by geographical area (%), 2021[32]

Rating	DIA	WIA	Brentwood	Thurrock	Havering	England
Very good health	50.6	52.6	54.0	50.8	49.9	48.5
Good health	32.6	32.8	31.7	33.3	34.0	33.7
Fair health	12.0	10.9	10.6	11.5	11.7	12.7
Bad health	3.7	2.9	2.9	3.4	3.4	4.0
Very bad health	1.1	0.9	0.9	1.0	1.0	1.2

Thurrock and Havering sit below the national average for the percentage of the adult population meet the recommended levels of physical activity[33], at 57.2% in Thurrock, 57% in Havering and 67.4% nationally.[34] However, the residents of Brentwood sit above the national average with 70.6% of adults achieving the recommended physical activity levels.

This aligns with the prevalence of obesity in adults (aged 18+). Brentwood has the lowest proportion of adults with obesity (61.6%) compared to Thurrock (68.7%) and Havering (65.8%).[35] Brentwood also sits below the national average of 64.5%, while the other local authorities are overrepresented.

The standardised mortality rate from Cardiovascular disease for those under 75 is highest in Thurrock at 76.9 per 100,000 and lowest in Brentwood (67 per 100,000).[36] In Havering, the mortality rate is 69.6 per 100,000. All three local authority areas sit below the national average of 77.4 per 100.000.

5.4 Local services and amenities

Leisure facilities and green spaces:

- To the south of Fen Lane is the Top Meadow Golf Course, Top Meadow Hotel and Top Meadow Golf Course Driving Range.
- Glass House Retreat and Fen Farm lodgings are also located further east along Fen Lane. Berry Lodge Farmhouse is located to the north of the Scheme on St Marys Lane.
- The Thames Chase Forest Centre and Cranham Golf Course are located just south of the Scheme on the south side of the M25. The Fanatic Aquatic Design (Aquarium) and The Reptile Reserve are located on the east side of the M25, just to the South of the Scheme.
- Cranham Brickfields Open Space and Local Nature Reserve are located to the north of Cranham Golf Course.

[32] ONS (2021) Census 2021: TS037 – General health. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=2055
[33] The number of respondents aged 19 and over, with valid responses to questions on physical activity, doing at least 150 moderate intensity equivalent (MIE) minutes physical activity per week in bouts of 10 minutes or more in the previous 28 days expressed as a percentage of the total number of respondents aged 19 and over.
[34] Department of Health and Social Care (2025). Local Authority Health Profiles. Available at: Local Authority Health Profiles | Fingertips | Department of Health and Social Care [accessed 30/05/2025].
[35] Department of Health and Social Care (2025). Local Authority Health Profiles. Available at: Local Authority Health Profiles | Fingertips | Department of Health and Social Care [accessed 30/05/2025].
[36] Department of Health and Social Care (2025). Local Authority Health Profiles. Available at: Local Authority Health Profiles | Fingertips | Department of Health and Social Care [accessed 30/05/2025].

- There are several other golf courses, green spaces and leisure facilities in the wider surrounding areas, including Langdon Hills Golf Country Club and Hotel, Westly Heights Country Park, Northlands Wood Country Park, Langdon Hills Country Park, Basildon Golf Course, Langdon Nature Discovery Park and Dunton Hills Family Golf Centre to the east of the Scheme.
- Orsett Golf Course, St Cleres Hall Golf Club, Lorkins Farm Caravan and Camping Site, Mardyke Valley Golf Club, Well Dog Field, Thurrock Rugby Football Club, Belhus Woods Country Park, Stubbers Adventure Centre, Ingrebourn and Links Golf and Country Club, and Hornchurch Country Park are located to the south and east of the Scheme.
- Thurrock Airfield is located to the southeast of the Scheme and Adventure 001 Helicopter flights is located to the southwest.

Schools and nurseries:

- Fenlands Nursery is located in close proximity of the Scheme in North Ockendon.
- Thames Chase Community Tree Nursery is located to the east of the Scheme on the edge of Upminster.
- Quince Tree Day Nursery and Headstart Nursery 2 are located in South Ockendon along with several schools including Benyon Primary, Bonnygate Primary, Harris Academy Ockendon, Beacon Hill Academy, Shaw Primary Academy, Holy Cross Catholic Primary, Harris Academy Ockendon (secondary school) and Sixth Form, and Somers Health Primary School.
- William Edwards School and Orsett Church of England Primary School are located to the south of the Scheme.
- Bulphan CofE Academy and Acorns Pre-School and Bulphan are located in close proximity to the Scheme in Bulphan.
- There are multiple schools to the east of the Scheme in Upminster and Hornchurch. The closest schools to the east are The James Oglethorpe Primary, Gaynes School, Corbets Tay School, Oakfield's Preparatory School, The Coopers Company and Coborn School (secondary school), Upminster Infant School and Hall Mead School.
- Woodlands Preparatory School is located just north of the Scheme.
- There are multiple schools and nurseries located in Brentwood to the north, Laindon and Basildon to the East, Little Thurrock and North Ockendon to the South.

Healthcare and age facilities:

- Upminster Nursing Home is located on Clay Tye Road to the west of the Scheme and Ladyville Lodge Care Home is located on Fen Lane.
- Holmes Care Ltd (care home) is located on Cranham Court to the east of the Scheme.
- The Peartree Surgery (GP) is located in South Ockendon.
- The Haiderian Medical Centre, Little Gaynes Surgery, Rainham and Upminster Medical Centre, Cranham Village Surgery, Haiderian Medical Centre, Cranham Health Centre and Avon Road Surgery in Upminster are located to the north east of the Scheme.

- Orsett Hospital and South Essex Partnership NHS Foundation Trust are hospitals located to the South of the Scheme, with Basildon hospital located to the East.

5.5 Existing transport access and servicing

The DIA benefits from local and regional transport connectivity, situated less than 1 kilometre from the London Orbital Motorway (M25) providing access to the national motorway network. The M25 runs to the west of the site, with its closest point just 900 metres away. Direct access is available via Fen Lane to the south of the site, which links to Junction 29 of the M25 through the B186/B187 and the A127. The A127 itself lies approximately 1.9 kilometres north of the site boundary, offering an additional strategic route.

Further, the site is located within the Thames Freeport economic zone, which offers multimodal connectivity across the UK and Europe. The Freeport provides access ports in international markets and serves a large consumer base within a 120-kilometre radius, enhancing the site's appeal for logistics and distribution operations.

5.5.1 Public and active travel network

There are a number of train stations surrounding the Site, connecting suburban towns, villages and settlements to the wider transport network. This includes West Horndon Station to the north, Laindon Station to the east, Ockendon to the south and Upminster to the west.

The London public transport network offers connections to the nearby area. Upminster Bridge, Hornchurch and Elm Park Underground Stations served by the District Line and Emerson Park Overground Station served by the Liberty Line is also located to the West of the Site.

The Site is also intersected by the following Public Rights of Way (PRoW):

- Footpath 233 from Fen Lane to Bury Farm which crosses through the centre of the site; and
- Footpath 283 from Fen Lane to Ockendon Road which crosses the western most confines of the site.

5.5.2 Travel to work

Table 5-9 provides a breakdown of method used to travel to work across the geographies. As shown, a slightly larger proportion of the DIA (36.4%) and the WIA (39.5%) work from home compared to England as a whole (31.5%). A smaller proportion of the DIA and WIA cycle or walk to work compared to England as a whole, whilst larger proportions (7.1% in the DIA and 7.4% in the WIA) use the train to get to work compared to England (2%). A similar proportion of the DIA drive a car or van to work (43.7%) compared to England (44.5%), whilst this figure is lower for the WIA (38.8%).

Table 5-9 Travel to work method across geographies, 2021

Travel to work	DIA	WIA	Brentwood	Thurrock	Havering	England
Work mainly at or from home	36.4	39.5	44.3	24.5	33.4	31.5
Underground, metro, light rail, tram	2.2	3.2	1.4	2.3	6.7	1.9
Train	7.1	7.4	6.5	7.0	7.0	2.0
Bus, minibus or coach	1.3	2.0	1.0	3.0	5.6	4.3

Taxi	0.4	0.5	0.5	0.6	0.6	0.7
Motorcycle. Scooter, or moped	0.4	0.5	0.3	0.65	0.5	0.5
Driving a car or van	43.7	38.8	37.4	50.3	36.8	44.5
Passenger in car or van	2.5	2.4	2.3	4.1	2.7	3.9
Bicycle	0.6	0.5	0.5	1.2	0.7	2.1
On foot	4.0	4.1	4.8	5.1	4.9	7.6
Other method of travel to work	1.4	1.1	1.0	1.2	1.2	1.0

5.6 Summary of key issues

- A larger proportion of residents living within the DIA and WIA of the Proposed Development are over the age of 65 compared to the average in England.
- While there are relatively low levels of overall deprivation across the DIA and WIA, this increases in wider urban areas and LSOAs in closer proximity to Greater London.
- A slightly higher proportion of the populations in the DIA and WIA are ‘economically active’ compared to England as a whole. However, the number of children living in relative poverty has been steadily increasing across the local authorities between 2020/21 and 2023/24. The highest proportion of children living in low-income families is in Thurrock (20.8%).
- In the DIA and WIA, the most common occupations include: managers, directors and senior officials, professional occupations, associate professional and technical occupations, and administrative and secretarial occupations.
- Population health in the DIA and WIA is slightly higher on average than England with larger proportions of residents reporting their health as ‘very good’ and ‘good’. A slightly smaller proportion of the DIA and WIA (15.8% and 14%) have a disability that impacts activity compared to the national figure (17.3%).
- There are several leisure facilities and green spaces in proximity to the Proposed Development, including golf courses, sports clubs, parks and hotel accommodation. There are also schools, nurseries and health and age care facilities located in proximity.
- Within the DIA and WIA, the most common mode of transport to travel to work is driving a car or van, although the figures were slightly lower than the national average. The second most popular method was travelling by train, with the figures across all study geographies higher than the national average. A larger proportion of the DIA and WIA work from home compared to England as a whole.

6. Consultation and Engagement

6.1 Introduction

This section provides an overview of engagement activities undertaken to date. Digital Reef Ltd (the potential beneficiary of the LDO) and the Council's Economic Development Team have undertaken **informal engagement** to inform the local community about the proposal. This engagement was not by the LPA and was independent from the statutory consultation that will be undertaken by the LPA on the draft LDO. The LPA will carry out **formal consultation**, in accordance with planning regulations which will provide residents and stakeholders the opportunity to formally comment on the draft LDO.

6.2 Community engagement

Table 6-1 below outlines engagement activities undertaken by the potential beneficiary of the LDO and the Havering Council's Economic Development Team to engage local residents.

Table 6-1: Overview of community engagement activities undertaken to date

Overview of **community** engagement	
Digital Reef	The potential beneficiary of the LDO has undertaken a series of informal engagement activities within the local community to inform near neighbours about the data centre proposals, including: • Attendance to local schools and business events; • Developed a dedicated website that includes details of the Proposed Development[37]; and • Visualisation tool of the Proposed Development.
Havering Council Economic Development Team	On Monday 29th July 2025, the Leader of Havering Council met with local residents to discuss the proposed data centre, including the delivery of local growth, new businesses and job opportunities.[38] Residents were advised that the Council will continually work with the local community to secure the maximum benefits for local residents and Havering as a whole.

6.3 Consultation on draft LDO

The LPA is undertaking a formal consultation period in Spring 2026 to seek feedback on the draft LDO from members of the public and statutory stakeholders.

Consultees will be provided with consultation documents including the Draft LDO and compliance documents (such as the Design Code and Code of Construction Practice), Statement of Reasons, Environmental Statement, Health Impact Assessment, and EqIA as well as a number of other planning and technical document.

[37] Digital Reef (2025). East Havering Data Centre Campus. Available at: Our Proposal — East Havering Data Centre [accessed: 27/11/25]
[38] East Havering Council (2024). Leader's Statement following the proposed East Havering datacentre neighbours meeting. Available at: Leader's Statement following the proposed East Havering datacentre neighbours meeting | London Borough of Havering

When the consultation is launched, local residents will be notified letter drops in local area, the Living in Havering Newsletter, site notices in the local area, publications on social media and a statutory notice in local newspapers. There will also be a dedicated website for consultation documents and printed copies of the key consultation documents at Havering Town Hall and Upminster library

All consultation procedures will be in line with the Town and Country Planning regulations including the minimum consultation period, availability of documents and consultation with prescribed bodies.

The LPA are planning to hold two public engagement events and stakeholder event, mainly for statutory consultees outlined in the Development Management Procedure Order (2015) including the Greater London Authority, Environment Agency and Historic England among others.[39]

[39] UK Government (2015). Town and Country Planning: Development Management Procedure (England) Order 2015. Available at: The Town and Country Planning (Development Management Procedure) (England) Order 2015

7. Assessment of equality impacts

7.1 Introduction

The assessment of equality effects considers the potential impacts on affected people sharing protected characteristics arising from the Proposed Development and associated ecology park. It considers the beneficial and adverse construction impacts on protected characteristic groups; and beneficial and adverse operational impacts on protected characteristic groups.

Table 7-1: Overview of potential equality impacts

Potential Impact		Key groups affected	Description of effects	Planned and further actions
Jobs, skills and training				
Beneficial	New employment opportunities during construction	**All groups, in particular young people, minority ethnic groups, people with disabilities, lower-income households**	The Proposed Development creates an opportunity for new employment opportunities including construction-related jobs. Construction employment could cover entry-level jobs, skilled trades and technical and specialised roles; including professional and construction occupations that are overrepresented in the DIA and WIA. The Proposed Development is estimated to create 1,340 construction-related job-years over the construction period, including 330 annual job-years across Havering Borough. The groups who benefit from this new employment may vary depending on the type of jobs and skills available. For example, creation of temporary job opportunities may benefit protected characteristic groups overrepresented in unemployment or individuals who face barriers to entering or re-entering the labour market, such as young people, disabled people, women, older workers and certain ethnic minority groups[40] who are overrepresented in surrounding local authorities. Workers living in more deprived areas of London may access construction employment opportunities due to the proximity to Upminster Station and availability of the public transport network. Although there are relatively low levels of deprivation in the direct study area, the wider urban areas and neighbourhoods closer to London experience higher levels of deprivation and therefore may experience positive socio-economic impacts from construction jobs. However, negative equality effects may arise where employment opportunities are not accessible to individuals with protected characteristics. For example, roles that require high levels of skill or specific educational qualifications may create indirect barriers for groups that have historically or systemically faced limited access to education or training. This may include disabled people who may need reasonable adjustments, older workers who may not have accessed higher education or modern skill development, and ethnic minority groups who face systemic barriers to educational attainment. Reasonable adjustments and alternative pathways may be considered to mitigate these effects.	**Planned action:** A shuttle bus will be available from the site and South Ockendon and Upminster railway stations for construction workers commuting by rail or London Underground. During the peak construction period, a minimum of seven transfers will be provided during three-hour peak morning and evening travel periods. To mitigate the risk of negative equality effects, an Employment and Skills Plan will be required through the S106 agreement. This Plan will set out how the Proposed Development will create local job opportunities and support skills development in the community. In particular there is a requirement for the Plan to secure apprenticeship opportunities and 20% of the workforce to be local (within 10miles) during the construction phase.
	Net increase in permanent jobs created in the Proposed Development	**All groups, in particular young people, minority ethnic groups, people with**	Once operational, it is anticipated that the data centre could deliver positive socioeconomic benefits through the generation of 350 direct jobs within Havering.	**Planned action:** A coach service will operate to transport all produce workers associated with indoor horticulture use to and from site, aligning with shift patterns.

[40] Department for Work and Pensions (2025) The Employment of Disabled People 2024. Available at: The employment of disabled people 2024 - GOV.UK; and UK Government (2023) Employment: Ethnicity Facts and Figures. Available at: Employment - GOV.UK Ethnicity facts and figures

Potential Impact		Key groups affected	Description of effects	Planned and further actions
		disabilities, lower-income households	These jobs are likely to be in specialised roles such as technicians, managers, engineers and system administrators, and therefore require specific qualifications. There may be positive equality impacts for groups underrepresented in employment figures if these opportunities are advertised effectively and they are able to benefit from employment opportunities to establish a new generation of workers. There may be positive socio-economic impacts for those residing in wider areas such as London due to proximity to Upminster Station and the availability of the public transport network. Whilst the immediate local area has low levels of deprivation, the employment opportunities may be particularly impactful for people living in more deprived urban areas closer to London. Negative equality issues may arise where groups are excluded from these opportunities, such as disabled individuals that require reasonable adjustments, older workers lacking modern skills and qualifications, and ethnic minority groups facing systemic educational disadvantages. However, it is also anticipated that there will be 1,430 indirect jobs created, including 280 within Havering. These opportunities may cover a range of alternative sectors with varying skill and education levels.	To mitigate the risk of negative equality effects, an Employment and Skills Plan will be required through the S106 agreement. This will set out how the Proposed Development would create local employment and opportunities for skills and training. In particular there is a requirement for the Plan to secure Bursary and Grant Funding for 10 students from Havering a year in relevant technical qualifications for period of 20 years and a minimum of 20% of the workforce to be local.
	New skills and training opportunities during construction and operation	**All groups, in particular Age, Race, Disability**	The Proposed Development presents the opportunity for upskilling and retraining initiatives to nurture a new generation of workers. The provision of training (such as engagement at schools, work experience and apprenticeships) during construction and operation can positively impact the local community. Protected characteristic groups can benefit from these targeted initiatives which foster skills and career opportunities. There may be positive impacts for children and young people through engagement with schools and work experience opportunities. There may also be positive impacts for groups underrepresented in employment, particularly disabled people by providing access to training that buildings confidence, workplace awareness and transferable skills that could bridge the employment and skills gap compared to non-disabled people.[41]	**Planned action:** The S106 HoT[42] requires the Employment and Skills Plan to secure apprenticeship opportunities, upskill the construction workforce and engage with schools and colleges. The agreement also states that there should be supported employment opportunities for Havering residents and that care leavers should be given priority consideration for all opportunities. **Further action:** The Employment and Skills Plan should consider how the process for selecting schools for engagement sessions can maximise opportunities for individuals with protected characteristics (for example, this could include special education schools). Those underrepresented in unemployment figures could be prioritised in apprenticeships and learning opportunities to develop new skills and access employment. A Social Value Strategy will also be developed to support volunteering initiatives, with the number of volunteer hours monitored annually using the Social Value Portal. Depending on the volunteer initiatives supported, there may be positive impacts for skills developments for protected characteristic groups and lower-income households.

[41] Department for Work & Pensions (2025). The employment of disabled people 2024. Available at: The employment of disabled people 2024 - GOV.UK [accessed 08/01/26]
[42] Section 106 agreements are legally binding agreements that the Council makes with developers in connection with planning permissions.

Potential Impact		Key groups affected	Description of effects	Planned and further actions
Health and wellbeing				
Beneficial	Mental health and wellbeing benefits of the ecology park	**All groups, in particular older people, children and people with disabilities**	The ecology park could deliver positive mental health and wellbeing impacts through providing local residents and visitors with enhanced accessibility of open green space for recreation and exercise, that could support community well-being through socialising with others and promoting healthier lifestyles. Part 3 of the LDO documents (Design Code Ecology Park) sets out the provision of a Locally Equipped Area for Play (LEAP) on the western side of the park. Children and young families in particular may benefit from recreational days out at the ecology park including the LEAP and visitor's centre. In addition, the ecology park may benefit older people who are at greater risk of social isolation[43] and are overrepresented in the local population. Further, the provision of the shared pedestrian footpaths and cycleways could encourage the uptake of walking, wheeling and cycling within the local population. This could increase the levels of physical activity and deliver wider benefits, such as reducing local levels of obesity. This could be of particular benefit for wider visitors from Thurrock and Havering that do not meet the recommended levels of physical activity and are overrepresented in adult obesity figures.	Not applicable
Adverse	Construction-related environmental impacts	**All groups, particularly older people, children, people with disabilities, pregnant women**	During construction, there may be increased noise and vibration and poor air quality due to construction works and construction traffic. As set out in the Noise and Vibration Assessment within the ES, once mitigation measures are in place, there may be major adverse noise impacts from three phases of highway works for dwellings at Fen Lane and Ockendon Road. It is anticipated that there may be minor adverse vibration effects at all sensitive receptors within the local area. There may be major adverse noise impacts resulting from changes in road traffic within 50m of Fen Lane and negligible adverse noise from road traffic at receptors near all roads within the study area. Once operational, equipment such as cooling systems, generators and ventilation units can produce continuous low-level noise, which over a long-term period may have negative health and wellbeing impacts on employees and nearby residents. Overall, the operational noise and vibration impacts are anticipated to be minor. However, due to additional road traffic, it is anticipated that there may be major adverse impacts due to changes in road traffic noise at high sensitivity receptors within 50m of Fen Lane and minor to negligible impacts at other receptors across the study area. Protected characteristic groups may be disproportionately impacted by these environmental impacts. Older people, children, pregnant women and people with disabilities can be more sensitive to increased noise and vibration[44][45]. Therefore, residents near Fen Lane and Ockendon Road represent these protected characteristic groups may be disproportionately impacted by negative noise and vibration effects. Further, older residents are nearby Care Homes such as Ladyville Lodge Care Home located on Fen Lane, and children attending nurseries in close proximity may be disproportionately impacted.	**Planned action**: The Environmental Statement sets out mitigation measures for noise, vibration and dust emissions for nearby receptors. For example, using noise control equipment and monitoring dust, noise and vibration levels throughout construction. The Code of Construction Practice (CoCP) sets core hours of working (8am-6pm Monday to Friday and 8am-1pm on Saturdays). The CoCP states that work completed outside of the core hours would only take place in accordance with a license provided by the Environmental Health Authority. The CoCP also states that temporary acoustic screening will be used on Build Zone C which should reduce noise impacts for nearby residences. In addition, the appointed contractor is expected to produce a full Construction Environment Management Plan (CEMP) confirming mitigation and monitoring measures to address these environmental impacts. Contractors and sub-contractors will have a responsibility to monitor safety during construction. A Project Environmental Manager (PEM) will be nominated and contact number disclosed at all entrances to the construction site for local residents and details will be provided to all relevant

[43] NHS (2025) Loneliness in Older People. Available at: Loneliness in older people - NHS
[44] Hahad, O. et al (2022) Cerebral consequences of environmental noise exposure. Available at: Cerebral consequences of environmental noise exposure - ScienceDirect
[45] Ritz, B. (2021) Noise exposure and dementia: a rising concern in ageing populations. Available at: Noise exposure and dementia: a rising concern in ageing populations | The BMJ

Potential Impact		Key groups affected	Description of effects	Planned and further actions
			Older people, children, some people with disabilities and pregnant women can also be particularly vulnerable to the negative health impacts of poor air quality[4647]. However, overall, it is considered that the construction of the Proposed Development will not give rise to significant adverse effects on air quality at sensitive receptors.	stakeholders. The PEM will be responsible for logging any enquiries or complaints from the public and will coordinate responses in a timely and satisfactory manner.
	Increased traffic flows during construction and operation	**All groups, particularly older people, children, people with disabilities and pregnant people**	It is anticipated that there will be increased traffic flows during construction as a result of HGV vehicle movements, other construction vehicles and staff access. Increased traffic flows can lead to congestion and increased journey times which can have negative impacts for those accessing key services identified in the surrounding area such as hospitals, schools, nurseries and care homes. This can disproportionately impact groups more reliant on these services, such as older people that are overrepresented in the local area, children, people with disabilities and pregnant women. However, the Transport and Accessibility Chapter of the ES concludes that the effects on driver delay during construction are not anticipated to be significant. Similarly, during operation there may be increased traffic flows on local roads including Ockendon Road to accommodate Data Centre and Horticulture staff members and visitors to the ecology park and visitor centre. Increased traffic flows can present accessibility barriers for residents living in close proximity to the site, especially those reliant on those key services. However, the Transport and Accessibility Chapter of the ES finds that whilst the effects on driver delay are adverse, the impacts are not anticipated to be significant.	**Planned action:** A Framework Travel Plan has been developed, outlining the 'hard' engineering measures and 'soft' management to implement throughout the operation of the Proposed Development including: • Set up Travel Plan Steering Group to regularly review and identify ongoing issues with sustainable travel or delivery of measures outlined in the Travel Plan; and • Appoint a Travel Plan Coordinator responsible for the implementation of measures, ongoing monitoring and chairing the Travel Plan Steering Group. As established in the CoCP, construction vehicle routing will be strictly controlled, with designated routes, directional signage and delivery and deliveries scheduled to avoid peak hours. **Further action:** The Travel Plan Steering Group should include representative of protected characteristic groups to allow the specific accessibility needs of these groups to be considered throughout the implementation of the Travel Plan.
	Visual impact of the Proposed Development on surrounding residences	**Older people, people with disabilities, pregnant people**	The visual impacts of the Proposed Development may have negative impacts for people living in nearby residences. They may experience a loss of place attachment and a reduced sense of wellbeing due to landscape changes. Those who may spend more time at home, such as older people, people with disabilities, pregnant women and young families, as well as Care Home residents such as Ladyville Lodge on Fen Lane, may experience disproportionate negative visual impacts from their residences dependent on individual circumstances (e.g. employment status, caring responsibilities, health conditions).	**Planned action:** A number of landscape mounds will be used at strategic locations to make use of earth arisings and help screen views of the Proposed Development. The design and placement of these mounds have been shaped through an iterative design process, informed by ongoing landscape and visual assessments as well as stakeholder feedback Mounds will be planted with trees and integrated into the surrounding ecology park.
Accessibility, Safety and Security				
Beneficial	Accessible pedestrian and cycle network	**Older people, people with disabilities, pregnant women and young children**	The ecology park will have a 3-metre-wide primary strategic shared pedestrian footpath/ cycleway accessible via wheelchair accessible kissing gates. Inaccessible infrastructure often acts as a barrier for people who are reliant on mobility aids, such as older people and people with disabilities[48]. Therefore, the provision of accessible pedestrian footpaths/ cycleways with a width that allows two wheelchairs to pass alongside each other could improve access to green open space and nature for these groups. This may further contribute to the aforementioned physical and mental well-being	**Planned action:** Enhancements will be carried out to make sure that all pedestrian routes fulfil minimum design requirements. For example, highway works will be undertaken to provide a 1.5-metre-wide footway on the northern side of Fen Lane. This is the minimum width required to allow a wheelchair user to pass a pedestrian on foot.

[46] Simoni, M. et al (2015) Adverse effects of outdoor pollution in the elderly. Available at: Adverse effects of outdoor pollution in the elderly - PubMed
[47] Aguilera, J. et al (2023) Air pollution and pregnancy. Available at: AIR POLLUTION AND PREGNANCY - PMC
[48] British Ecological Society (2022) Nature is for Everyone yet People with Disabilities Face Many Barriers. Here's What Needs to Change. Available at: Nature is for everyone yet people with disabilities face many barriers. Here's what needs to change. - British Ecological Society

Potential Impact	Key groups affected	Description of effects	Planned and further actions
		benefits and reduce the risk of social isolation. Similar benefits may also be felt by young families with pushchairs.	
Accessible transport links	**People with disabilities, pregnant women, young children, older people and lower-income groups**	While there is an existing public transport network surrounding the Proposed Development, highway works are planned to better connect the primary strategic shared pedestrian footpath/ cycleway to existing bus stops, including the northbound and southbound bus stops on Ockendon Road. This improved access to public transport may positively impact groups who are less likely to have access to a private car and allow these groups to realise the benefits of the Proposed Development, such as elderly people, children and young people, people with disabilities and lower-income households[49]. The provision of a continuous connection between the primary strategic pedestrian footpath/ cycleway to the southbound bus stop may also benefit young families travelling to Fenland Nursery by bus through an extension of the footpath on the eastern side of the bus stop to the southern boundary of the Nursery. Further, highway works will be undertaken to make sure that new connections are accessible for all users. For example, informal crossing points to access the northern and southern bus stops will include dropped kerbs and tactile paving on each side of the road to support visually impaired and wheelchair user's access. The ecology park also has provision for at least 6% of parking spaces to be blue badge spaces for disabled and elderly users. This provides alternative access to the ecology park for people with disabilities who are unable to use public transport and require a car as a mobility aid.	Not applicable
Improved safety due to lighting	**All groups, in particular women, people with disabilities, minority ethnic and religious groups, minority genders and sexualities**	There may be positive safety impacts due to the introduction of lighting along pedestrian footpaths and connection corridors. New lighting will be provided along both the existing and newly proposed footpaths on the east side of Ockendon Road and the north side of Fen Lane, along junctions, at the entrance to the ecology park and at the crossing point facilitating access to Top Meadow Golf Course. This may disproportionately benefit women who may feel less safe when making journeys during darker hours due to the risk of discrimination, harassment and assault. Lighting has been shown to improve perceptions of safety for this group[50]. This may also benefit other groups who are at greater risk of discrimination, harassment and assault, such as minority ethnic and religious groups, members of the LGBTQ+ community and people with disabilities. In addition, the introduction of lighting can make it easier to view the ground and detect surface irregularities (such as cracks, steps or loose paving) or obstacles. This can reduce the risk of slipping and tripping which may particularly benefit older adults and people with mobility or sensory impairments.	**Planned action:** New lighting will be designed to meet the specific requirements of the London Borough of Havering's Developer's Street Lighting Guide.

[49] Government Office for Science (2019) Inequalities in Mobility and Access in the UK Transport System. Available at: Future of mobility: inequalities in mobility and access in the UK Transport System
[50] YouGov (2021) Women feel less safe walking home alone at night than in 2018. Available at: Women feel less safe walking home alone at night than in 2018 | YouGov

Potential Impact		Key groups affected	Description of effects	Planned and further actions
Adverse	Diversions during construction	**Older people, children, people with disabilities, pregnant women**	Temporary diversions may be required to facilitate construction. Temporary diversions can impact people walking, wheeling or cycling, particularly people with reduced mobility such as older people, people with disabilities, pregnant women and young children due to increased travel distances. Whilst there are services located within proximity to the PRoWs (such as a care home and a nursery), it is assumed that the PRoW are primarily used for recreation. Should temporary diversions be required, they would increase journey lengths by less than 250m and therefore impacts are not considered significant.	**Planned action:** The two existing PRoW will be kept open for as long as possible with dedicated and manned crossing points in place. If diversions are required, they will be temporary and in place for no longer than two months. In addition, the CoCP states that whilst PRoWs may be crossed by construction traffic, they must otherwise not be used for construction traffic. Any damage to PRoWs caused from plant crossings shall be rectified immediately once the crossings have ceased.
	Safety and security risks during construction	**Children, older people, people with disabilities**	The ecology park will be implemented in phases and parts of the ecology park will be completed prior to full build out of the campus. Prior to completion, the Build Zones will be active construction sites which could pose safety and security risks. Older people may have slower reaction times which may increase the risk of trips or falls if walkways are uneven or obstructed, this could also negatively impact people with mobility impairments. Children may be more likely to enter restricted areas due to a lower awareness of the dangers of construction sites and therefore may be at greater risk of safety impacts. For people with sensory impairments, they may be less able to detect warnings (visual and alarms). It is anticipated that safeguarding measures implemented throughout construction will minimise the likelihood of safety and security risks arising.	**Planned action:** To mitigate these safety and security risks, clear signage will be used to indicate construction zones, exclusion zones, safety protocols, emergency exits and site rules. Comprehensive testing of all installed systems and components will be carried out to ensure functionality, safety and compliance with specifications and regulations. Contractors and sub-contractors will also have a responsibility to monitor safety. A PEM will be appointed to monitor and report any resident or visitor concerns during the construction phase. In addition, as set out in the CoCP, there will be a temporary security hut and manned security checkpoint at the entrance to control access and monitor site activities.
Wider impacts				
Beneficial	Development of local skills and cumulative employment impacts	**All groups, particularly lower-income households**	There may be positive cumulative impacts from employment opportunities in the Proposed Development. Employment opportunities may increase local knowledge and skills. These skills may be transferrable to other long-term jobs created through increased demand in related industries. Therefore, this could improve employment security within the surrounding area, particularly due to its proximity to the Thames Freeport Economic Zone which could attract technology and digital firms in the future. This may be particularly beneficial for lower-income households and those overrepresented in unemployment through providing training opportunities in transferable skills which could also bring wider benefits for the local economy.	**Further action:** A Social Value Strategy will be developed to support volunteering initiatives, with the number of volunteer hours monitored annually using the Social Value Portal. Depending on the volunteer initiatives supported, there may be positive impacts for skills developments for protected characteristic groups and lower-income households.
Adverse	Cumulative health and wellbeing impacts	**All groups, particularly older people children, people with disabilities, pregnant women**	As a result of additional local infrastructure projects (such as improvements or changes to railway stations, transport corridors, energy hubs, storage facilities, and the electricity grid), there may be cumulative health and wellbeing impacts. This can result in cumulative environmental impacts (such as increased noise and vibration, reduced air quality), increased construction traffic and visual impacts. This can negatively impact groups more sensitive to negative environmental impacts, such as older people, children, people with disabilities and pregnant women.	**Planned action:** The Environmental Statement has undertaken an assessment of the potential for cumulative impacts.

8. Conclusions and next steps

8.1 Conclusions

This EqIA has presented an overview of the potential impacts on protected characteristic groups of the Proposed Development. The EqIA has identified potential beneficial equality effects as follows:

- During construction and operation increased employment opportunities may benefit local populations, particularly those underrepresented in employment statistics. Increased employment opportunities may have positive socio-economic impacts for lower-income households in more deprived urban areas near London.
- The Proposed Development may have positive impacts through new skills and training opportunities provided as part of the Employment and Skills Plan, such as outreach and engagement with schools.
- There may be wider long-term benefits generated through employment, skills and training opportunities which may be transferrable to other long-term jobs created through increased demand in related industries. The ecology park and accessible footways may have positive mental and physical health benefits for local residents, particularly for those who are mobility impaired who may typically face barriers when accessing green space.
- The connections between footpaths and public transport may positively impact the local community, particularly those more reliant on public transport. The introduction of lighting along pathways may also improve perceptions of safety for protected characteristic groups, particularly women.

However, there remains some potential negative equality impacts resulting from the Proposed Development. The majority of these are anticipated during the demolition and construction stage. These include:

- During construction and operation there may be negative environmental impacts including increased noise, vibration and air pollution. This may disproportionately impact people with disabilities, older people, children and pregnant women who can be more sensitive to environmental impacts.
- The data centre may have negative visual impacts which may disproportionately impact groups who may spend more time at home, such as older people, people with disabilities, pregnant women and young children.

The LPA has demonstrated due regard to their PSED throughout the LDO stage. These include:

- Preparation of an Environmental Statement assessing the potential impacts of key themes – such as socioeconomics, transport, noise and air quality, and landscape and visual effects – that intersect with equality considerations;
- Development of a Travel Plan outlining ‘hard; engineering measures and ‘soft’ management measures to implement throughout the operation of the Proposed Development and management actions including setting up a Travel Plan Steering Group and appointing a Travel Plan Coordinator;

- Requiring an Employment and Skills Plan to be submitted setting out how the Proposed Development will create local employment opportunities and support skills development in the community; and
- Development of the Code of Construction Practice establishing frameworks for health and safety, stakeholder engagement and protection of vulnerable groups during construction, ensuring that activities are carried out with the needs of vulnerable and diverse community members in mind.

8.2 Next steps

The key equality impacts identified through this EqIA for different groups with protected characteristics are summarised in **Chapter 7**. This identifies priority groups for which there are differential and disproportionate impacts as a result of the proposals, covering all protected characteristic groups but particularly age and disability.

The ongoing Proposed Development should reflect the planned mitigation and further actions outlined in **Chapter 7** of this EqIA and it should be shared across relevant residents and stakeholders for review and awareness.

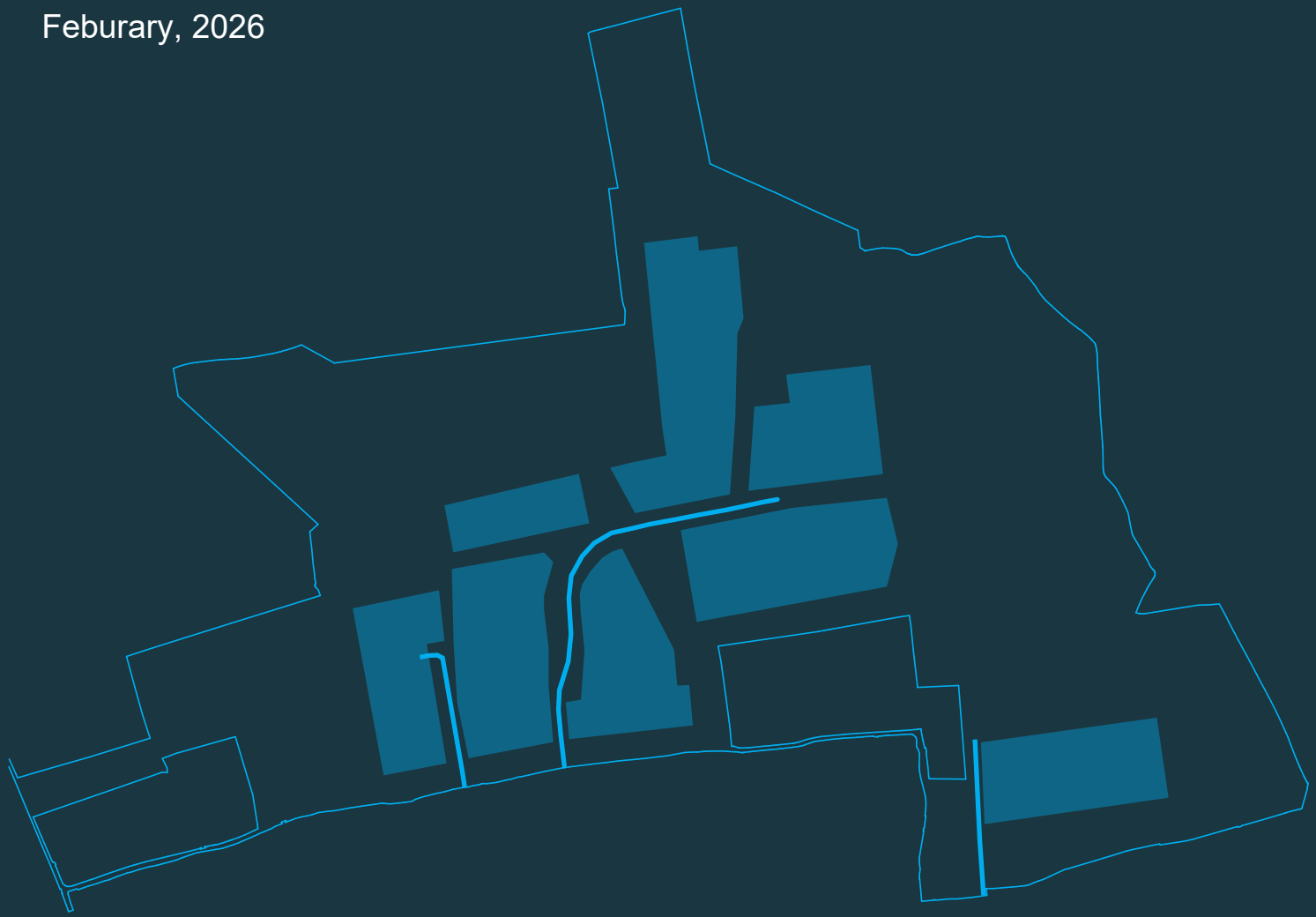
This EqIA should be considered as a live document and should be updated on a regular basis. This should include an update to reflect feedback from Statutory Consultation in Spring 2026 and following approval a monitoring update on the status of identified potential impacts and associated mitigation. This may result in updates both to assessment of the impacts and to the actions and recommendations relating to the proposed mitigation measures.

East Havering Data Centre Campus

Non-Technical Summary

North Ockendon, Havering

Feburary, 2026



Havering
LONDON BOROUGH

Adams Hendry
Chartered Town Planners

RAMBOLL
Bright ideas.
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Contents

1.	Introduction	2
2.	Environmental Impact Assessment	4
3.	Existing Site and Surrounding Context	8
4.	Need and Alternatives	14
5.	Proposed Development	19
6.	Construction Works	28
7.	Likely Significant Environmental Effects	33
8.	Cumulative Effects	60
9.	Summary	61

1. Introduction

1.1 Purpose of Non-Technical Summary

This Non-Technical Summary (NTS) of the Environmental Statement (ES) has been prepared by Ramboll UK Limited ('Ramboll') and a team of technical specialists to accompany the proposed Local Development Order (LDO)[1] in respect of the proposal to build a data centre campus (the 'proposed development') on land at North Ockendon within East Havering (the 'site').

The ES has been prepared on behalf of the London Borough of Havering in its capacity as Local Planning Authority (LPA) in accordance with the statutory procedures set out in the Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (the 'EIA Regulations')[2]. Reference to the London Borough of Havering (LBH) and the Council have been used interchangeably throughout the ES and refer to any part of the Council other than the LPA. Whilst the LPA sits within the LBH, it has a distinct statutory role to exercise urban planning functions for the Borough and must act independently of other Council departments.

The proposed development consists of the construction and operation of up to 400,000 m^2 of gross external floor area (GEA) comprising the following:

1. The erection of buildings up to a maximum of 400,000 m^2 (GEA) including:
    a. Data centre uses up to 340,000 m^2;
    b. Indoor horticulture of 50,000 m^2;
    c. Visitor Centre up to 600 m^2 (and no less than 300 m^2);
    d. District heating centre up to 3,300 m^2;
    e. Campus management facilities up to 2,700 m^2;
    f. Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2;
2. Installation of electrical infrastructure and associated plant equipment to serve the proposed development;
3. Creation of an 'ecology park';
4. Any operations or engineering works necessary to enable the delivery of the proposed development including:
    a. Excavation and earthworks (e.g. 'cut and fill');
    b. Formation of compounds for the stockpiling and sorting of excavated materials;
    c. Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
    d. Creation of estate roads and associated infrastructure for access by all modes of transport;
    e. Site security measures including fencing, gates and gate houses;
    f. Works to install underground services and utilities;
    g. Provision of temporary site offices and welfare facilities; and
    h. Highway works on Fen Lane and Ockendon Road.

[1] LDOs were introduced under Section 40 of the Planning and Compulsory Purchase Act 20041 which has the effect of amending the Town and Country Planning Act 19901. This measure was promoted by the Government as a means of simplifying the planning permission process and providing certainty for prospective developers, thereby promoting economic growth. An LDO grants permission for the type of development specified in the LDO and by so doing, removes the need for the submission of a planning application. An LDO must be accompanied by a Statement of Reasons that includes the description of the permitted development and defines the area that it affects, and must also be subject to formal consultation before it can be adopted.

[2] Secretary of State, 2017. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, London HMSO.

The purpose of the NTS is to provide a summary of the main findings of the Environmental Impact Assessment (EIA) that has been undertaken of the proposed development and that has been reported in the ES. The NTS provides:

- a description of the site and surrounding context;
- an outline of the reasonable development alternatives considered and an indication of the main reasons for their choice, taking into account the potential environmental impacts;
- a description of the proposed development; and
- a summary of the likely significant environmental effects predicted and key mitigation measures (as relevant).

The aim of the NTS is to summarise the main findings of the ES in a clear and concise manner to assist the public in understanding what the significant environmental effects of the proposed development are likely to be.

1.2 Viewing of and Commenting on ES and Supporting Documents

The full ES comprises the following documents:

- Volume 1: Main Environmental Statement Report;
- Volume 2: Technical Appendices; and
- Non-Technical Summary (this document).

The full ES, together with other supporting documents are available for viewing on the Council's website

Digital versions of the full ES are available in the form of a CD or USB Memory Stick are available for purchase from Ramboll at:

240 Blackfriars Road

London, SE1 8NW

Tel: 020 7631 5291

The cost of a CD or USB Memory Stick would be £25 + VAT.

1.3 Commenting on LDO

Comments on the LDO should be submitted to LBH at:

London Borough of Havering
Town Hall
Main Road
Romford
RM1 3BB

Email: planning@havering.gov.uk

Or via the Council website.

2. Environmental Impact Assessment

1.4 EIA Process and Methodology

EIA is a process that identifies the likely significant effects on the environment (both beneficial and adverse) of a proposed development and proposed mitigation to avoid, reduce or off-set any likely significant adverse environmental effects, and where possible enhance any beneficial effects. It is an iterative process which proactively seeks to integrate mitigation within the development proposals so as to avoid significant effects from arising.

The EIA process adopted for the proposed development has followed best practice guidelines, as set out by the Institute of Sustainability and Environmental Professionals ('ISEP') (formerly the Institute of Environmental Management and Assessment (IEMA)) Quality Mark Scheme. The process involved the following key steps:

- Consultation with key stakeholders such as, but not limited to, the Council, Historic England (HE), Environment Agency (EA), Thames Water (TW) and Transport for London (TfL) on the issues to be considered within the EIA;
- Collection, use and assessment of the most up-to-date information on the baseline conditions and likely evolution of that baseline without the proposed development or in the future;
- Interpretation of the proposed development planning drawings and schedules, as well as the formulation of assumptions in the absence of information, as the basis for the individual technical assessments;
- Use of relevant guidance and good practice methods to predict the likely nature, scale and significance of any environmental change; and
- Reporting of the results of the EIA process in the ES in a transparent way, to provide the information required to inform the decision-making process.

1.5 EIA Screening

Screening describes the process by which the need for EIA is considered. The proposed development falls under the definitions and thresholds set out within Schedule 2 (10(b) Urban Development Projects) of the EIA Regulations and, by virtue of factors such as its size, nature or location, has the potential to have significant effects on the environment.

On 22 May 2024, the LPA adopted an EIA Screening Opinion to the effect that the proposals constitute EIA development in accordance with Regulation 32 (2) of the EIA Regulations.

1.6 EIA Scoping

An EIA Scoping Request Report was submitted to the Council in March 2024 in support of a request for an EIA Scoping Opinion pursuant to Regulation 15(1) of the EIA Regulations. The EIA Scoping Opinion Request Report set out a description of the then emerging development proposals; the environmental topics where significant environmental effects were considered likely and required consideration within the ES ('scoped in'); the environmental topics where significant effects were considered unlikely ('scoped out'), as well as the proposed assessment approaches to be adopted for the EIA including the proposed assessment methodologies.

The LPA adopted their EIA Scoping Opinion on 23 May 2024 confirming the scope of the EIA and ES as proposed in the EIA Scoping Opinion Request Report, with no requests for additional technical assessment chapters to be included in the ES. The EIA has been undertaken and the ES prepared based on the EIA Scoping Opinion.

Since the receipt of the EIA Scoping Opinion, there have been refinements to the emerging development proposals; the boundary of the site has been amended to include proposed highway

works; and the assumptions related to electrical connections and off-site/on-site infrastructure have been updated due to ongoing consultations. Given the scale and nature of these refinements, amendments and updates, the proposed development is considered to remain materially the same as the emerging development proposals which were the subject of the EIA Scoping Opinion. Accordingly, the adopted and agreed scope of the EIA and ES is considered to remain valid and it has not been considered necessary to rescope the proposed development.

For completeness, consideration has been given to the relationship of the proposed development in respect of proposed upgrades to the existing Warley GSP substation and the proposed new Warley GSP substation.

1.7 Topics Included in ES

The following environmental topics were scoped into the ES, as confirmed during the EIA Scoping process, and their technical assessments are presented within discrete ES chapters:

- Archaeology and Cultural Heritage;
- Socio-Economics;
- Transport and Accessibility;
- Air Quality;
- Noise and Vibration;
- Ecology;
- Water Resources and Flood Risk;
- Soil and Agriculture;
- Climate Change; and
- Landscape and Visual.

1.8 Topics Excluded from ES

The following environmental topics were scoped out of the ES during the EIA Scoping process:

- Ground Contamination;
- Aviation;
- Human Health;
- Telecommunication Interference;
- Utilities;
- Major Accidents and Disasters; and
- Waste.

1.9 Assessment Approach

As the proposed development is to be implemented under an LDO, based on a set of defined parameters, the precise details and form of the final development are not known at this stage. In order to address this uncertainty, the EIA adopts a reasonable 'worst-case' assessment approach for each technical assessment scoped within the EIA and ES. Each technical assessment chapter provides detail as to how the reasonable worst-case has been derived, drawing on professional experience of developments of a similar nature and scale.

In addition to the proposed development parameters, an illustrative scheme has been developed. The illustrative scheme is just one example of how the development could come forward in compliance with the LDO. Some technical assessments include consideration of the illustrative scheme in order to provide additional commentary on the more realistic environmental effects of the development as expressed within the defined parameters.

The ES provides assessments of potential significant environmental effects during the construction works and once the proposed development is complete and operational. Each technical assessment considers different types of effects including direct, indirect, secondary and cumulative; short-, medium- and long-term; temporary and permanent; beneficial, neutral and adverse effects.

Assessments have been undertaken against the existing baseline (typically 2024/2025) or a defined year in the future ('future baseline').

Consideration has been given to the temporal and spatial nature of effects including permanent or temporary; reversible and irreversible; short- (up to 5 years), medium- (5 - 10 year) or long-term (more than 10 years).

In respect of the temporal scope, the lifespan of the LDO is proposed to be 20 years and construction would be permitted throughout this period. However, it is considered that the proposed development would be delivered within 17 years assuming the fastest reasonable programme. The approach to construction and sequencing of the proposed development would be unchanged if the construction were to take longer than 17 years.

Each of the scoped-in environmental topics have been reported on in a separate technical assessment chapter within ES Volume 1. Typically, in each chapter, a description of the assessment methodology is given together with existing site and study area conditions or predicted future conditions. This is followed by an assessment of the likely effects of the proposed development taking into account mitigation measures that are embedded in the proposed development; the consideration of additional mitigation or any enhancement measures; and a further assessment of the residual effects that would remain following the inclusion of additional mitigation measures, if relevant. Where scoped in, the chapter concludes with an assessment of the combined or additive effects of the proposed development together with or in addition to cumulative schemes that may be delivered concurrently. A summary of the assessment is then provided.

Mitigation is the term used to refer to the process of avoiding where possible and, if not, minimising, controlling and/or offsetting the potentially significant effects of a development. As part of the iterative process, mitigation measures have been integrated (embedded) into the design stage, the construction stage, and the completed development stage. The embedded mitigation measures are described in the following ES chapters:

- Chapter 3: Need and Alternatives; and
- Chapter 4: Proposed Development and Construction.

The technical chapters in ES Volume 1 report upon the scale (i.e. typically Negligible, Minor, Moderate or Major) and nature (Beneficial, Neutral and Adverse) of effects in order to determine what the likely significant effects of the proposed development would be. Significance has been determined based on published thresholds and/or the application of professional judgement and experience. Where published industry guidance (e.g. ecology and air quality) adopts a binary approach to significance reporting (i.e. the effect is either significant or not significant, with no scales of effects applied), assessment conclusions have been translated into the EIA significance terminology/criteria adopted across the EIA as a whole based on professional judgement, for consistency and to enable intra-cumulative assessment. The results of these technical assessments have been summarised in this NTS.

Consideration has also been given to the cumulative effects of the proposed development. The following two types of cumulative effects have been assessed:

- Intra-Project effects are different types of impacts from the proposed development that could interact to jointly affect a particular receptor or receptor group at the site. Potential impact interactions could include the combined effects of noise and dust during construction activities on a particular sensitive receptor; and
- Inter-Project effects which are combined or additional effects generated from the proposed development together with other 'approved or existing projects' ('cumulative schemes') as defined by the EIA Regulations. These cumulative schemes may generate their own individually insignificant effects but when considered together could amount to a significant cumulative effect, for example, combined transport and accessibility impacts from two or more schemes. A total of nine cumulative schemes (consented up to January 2026) were identified and agreed with the LPA for assessment during the EIA Scoping process. The locations of these cumulative schemes are presented in Figure 2.1.

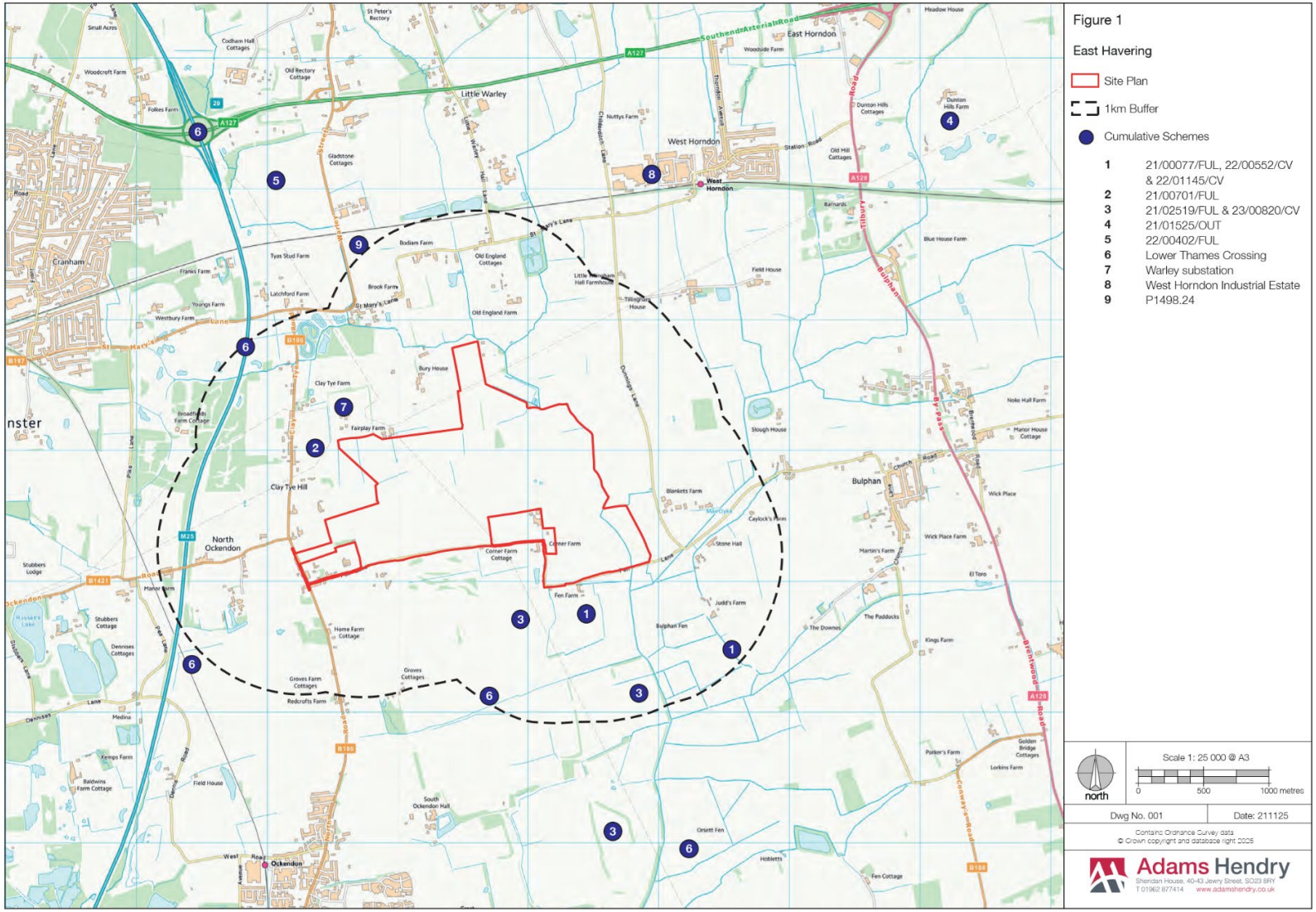


Figure 2.1: Cumulative Schemes

3. Existing Site and Surrounding Context

1.10 Site Location

The site is located within the London Metropolitan Green Belt and is situated approximately 30 km (18 miles) east of Central London within the administrative boundary of Havering Council (centred approximately at national grid reference of TQ 60005 85431), as presented in Figure 3.1.

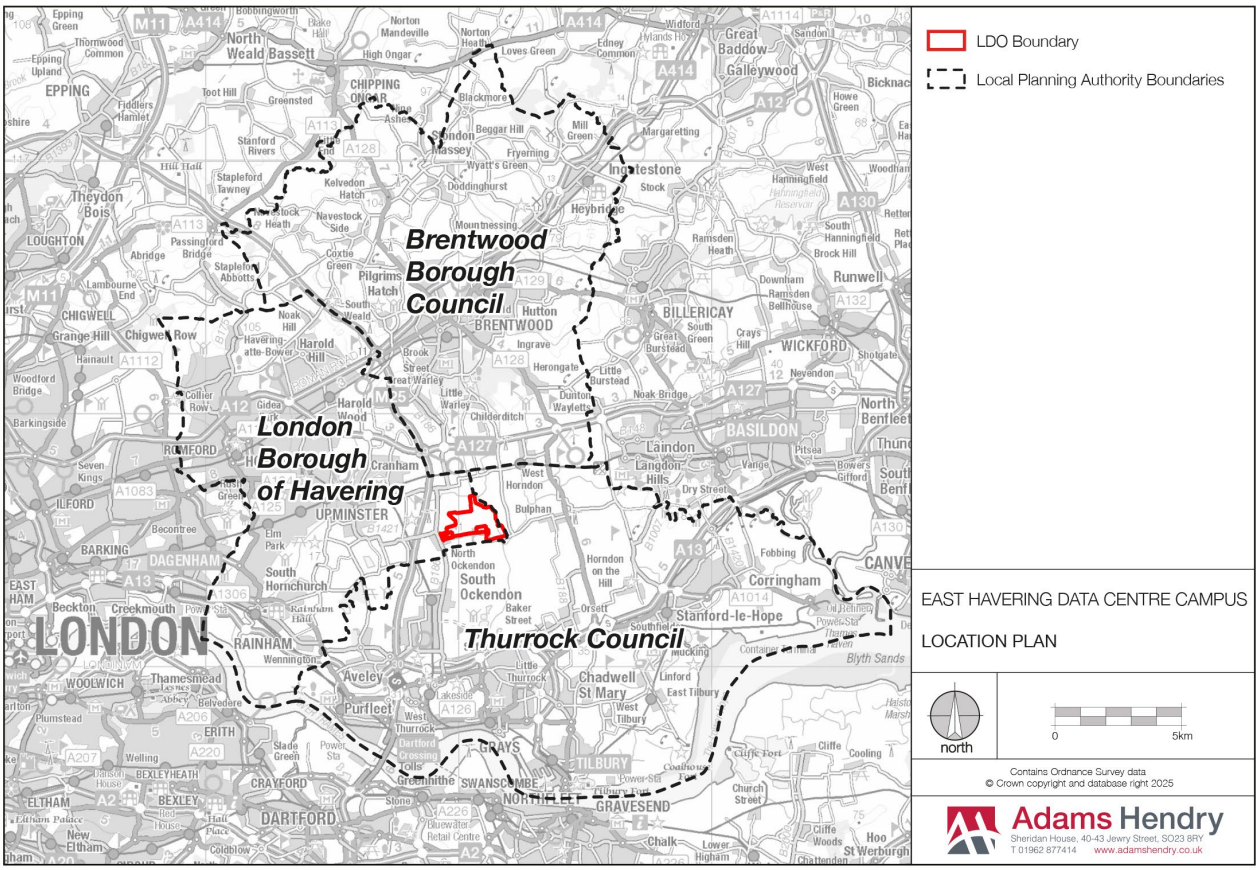


Figure 3.1: Site Location Plan

The location forms part of the Thames Freeport[3] economic zone established by the Government in 2021 to help boost global trade, attract inward investment and to generate employment opportunities.

The site boundary adjoins the administrative boundary of Thurrock Council to the east. The boundary with Brentwood Borough Council lies approximately 1.4 km to the north of the site boundary.

The site is located in an area of open agricultural land in arable use to the north and north-east of the village of North Ockendon and includes Fen Lane from its junction with B186 Ockendon Road to a location approximately 50 m east of Fen Farm Cottages; and B186 Ockendon Road extending to approximately 260 m to the north and approximately 40 m south of the junction with Fen Lane.

At their closest points, South Ockendon and the village of Bulphan, both within the jurisdiction of Thurrock Council, are located approximately 3.5 km south-west of the site and 1.7 km to the east

[3] https://thamesfreeport.com/: Thames Freeport is an economic zone located in the Thames Estuary, benefitting from excellent connectivity across the UK via road and rail. It offers easy access to Europe's largest consumer market of 18 million people within 120 km and connects to over 130 ports in over 65 international markets.

respectively. Upminster, within the administrative boundary of LBH, is approximately 4 km to the west and the village of West Horndon within the borough of Brentwood is approximately 2 km north-east.

The site has direct access to Fen Lane which forms the southern boundary of the site and connects to Junction 29 of the M25 via the B186/B187 and the A127. The A127 is approximately 1.9 km to the north of the site boundary. Junction 30 of the M25 can be accessed via the B186, the A1306 (Arterial Road North Stifford), approximately 5.5 km south, and the A126. The M25 is to the west of the site at a distance of 900 m at its closest point.

The whole of the London Borough of Havering has been declared as an Air Quality Management Area (AQMA)[4].

1.11 Site Description

As presented in Figure 3.2, the site comprises approximately 218.8 hectares (ha) and is a shape and configuration that allows for its practical development for the purposes proposed.

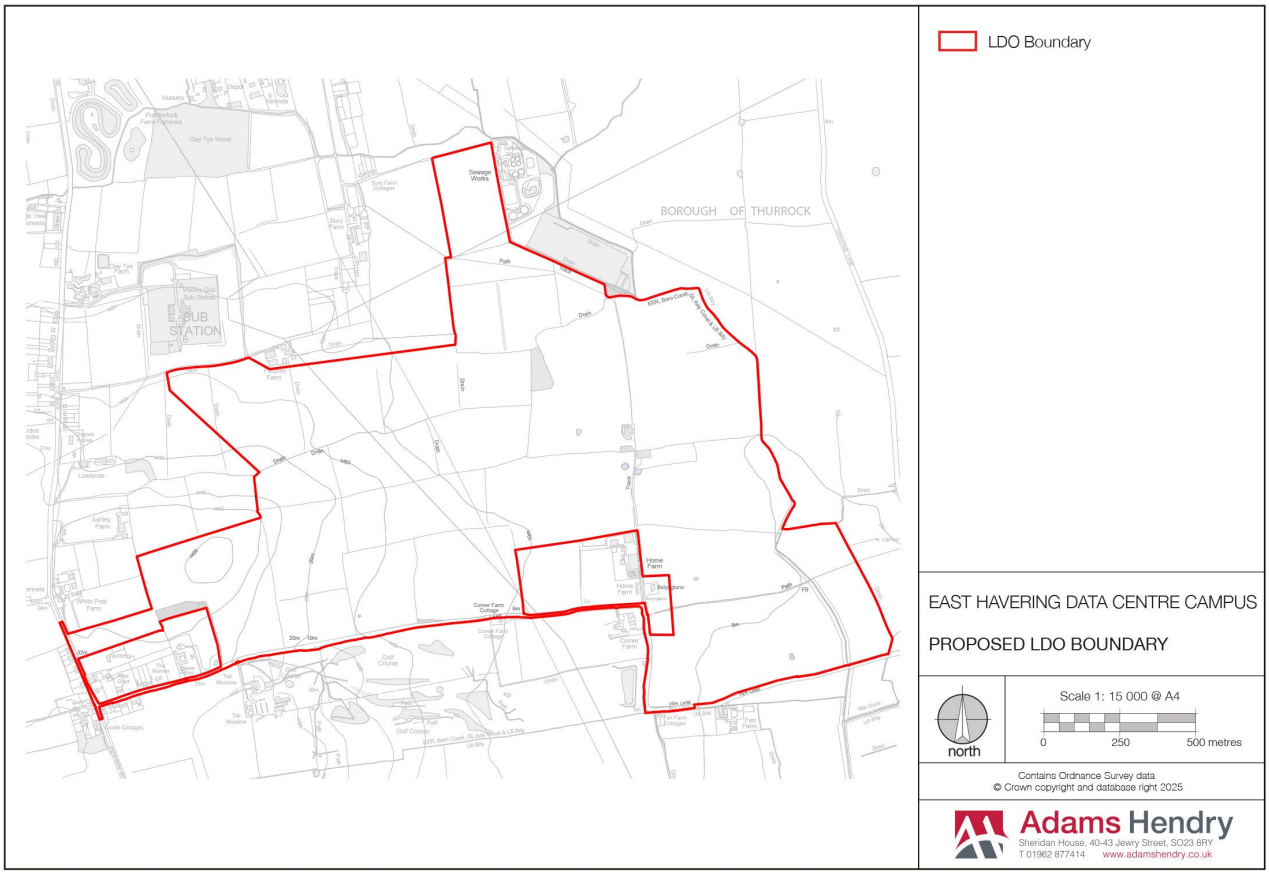


Figure 3.2: Site Redline Boundary

British Geological Survey (BGS) records indicate the site is underlain by superficial deposits of Head and Alluvium, overlying solid deposits of London Clay on Chalk at significant depth.

The site is predominantly in agricultural use and currently consists of four individual working arable farms, with associated field boundaries, ditches and vehicular access tracks/roads. Associated, minor, structures and facilities include a small field shelter, a small agricultural building and two storage

[4] London Borough of Havering, Air Quality Action Plan 2018-2023, London Borough of Havering.

areas (including waste stockpiles and bulk above ground storage tanks) located adjacent to the end of the main access track from Fen Lane. There are also remnants of old farm buildings that have been demolished.

The part of Fen Lane within the site is a narrow single-carriageway rural road providing access to several residential properties, farms, Ladyville Lodge Care Home and Top Meadows Golf Club and Hotel. Fen Lane has no footways along most of its length, except for a very narrow footway on the north side of the carriageway which extends approximately 45 m back from the junction with B186 Ockendon Road.

The part of B186 Ockendon Road within the site is a single-carriageway rural road providing access to Fenlands Nursery and residential properties. It also includes a priority chicane (traffic calming measure) approximately 260 m to the north of the junction with Fen Lane.

There is a narrow pedestrian footway along the western side of B186 Ockendon Road which varies in condition along its length. On the eastern side of the road, the pedestrian footway extends approximately 105 m north of the junction with Fen Lane (stopping at southern boundary to Fenland Nursey). A bus stop and bus shelter is located approximately 35 m north of the junction. South of the junction with Fen Lane, the footway extends approximately 25 m to serve a single residential property.

The site is situated adjacent to a watercourse, the Mardyke, which flows south along the north-east and crosses the south-east corner of the site. The Mardyke flows into the Thames Estuary at Purfleet and is designated as a Main River by the Environment Agency (EA).

A review of EA data indicates that parts of the site to the east are within Flood Zones 2 and 3 as presented in the LBH Policies Map in Figure 3.3.

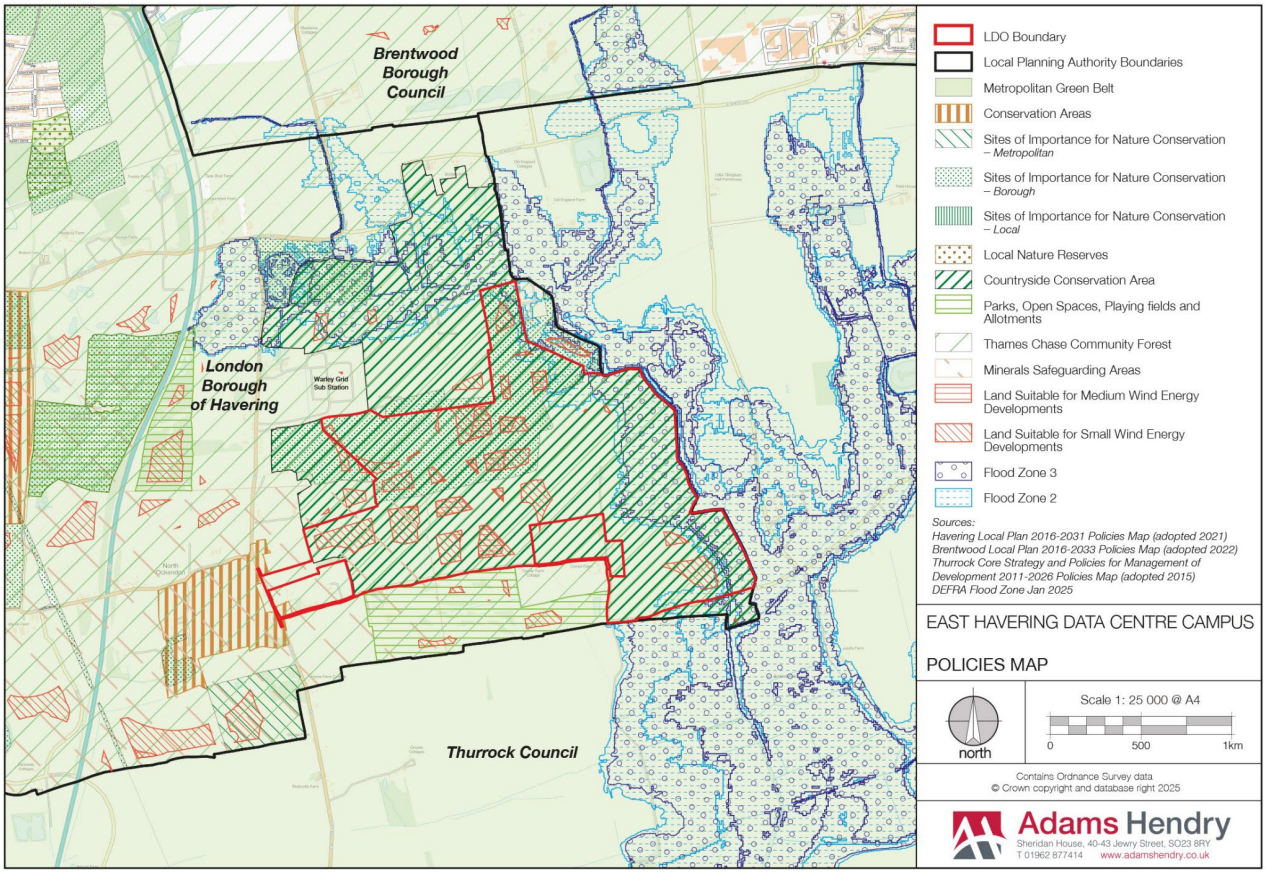


Figure 3.3: Planning Policy Map

The site is located within a Zone 3 Source Protection Zone (SPZ) for groundwater defined by the EA.

Two UK Power Networks (UKPN) overhead power lines cross the site which distribute power to and from the Warley substation to the north-west of the site as presented in Figure 3.4. A powerline crosses the centre of the site in a north-west to south-east alignment, crossing Fen Lane and across the eastern confines of the Top Meadow Golf Course. The other power line briefly crosses the northernmost part of the site in an east to west alignment, abutting the southern edge of Fen Farm Sewage Works.

The site is also crossed by the Hordon to Abridge High Pressure Gas Pipeline and is therefore within a Health and Safety Executive (HSE) major hazard zone. A further low pressure gas main crosses the westernmost confines of the site in a north-south alignment (see Figure 3.4).

As presented in Figure 3.4, the following Public Rights of Way (PRoW) cross the site:

- Footpath 233 from Fen Lane to Bury Farm which crosses through the centre of the site; and
- Footpath 283 from Fen Lane to Ockendon Road which crosses the western most confines of the site.

The site contains no listed buildings.

The western and eastern edges of the site are located within an Alluvium Deposits Archaeological Priority Zone (APZ). The proposed North Ockendon Archaeological Priority Area (APA) is located approximately 200 m south of the western site boundary.

In addition to being located within the Metropolitan Green Belt, the site is also within a Countryside Conservation Area and within the Thames Chase Community Forest designated in the adopted Havering Local Plan 2016-2031 as presented in Figure 3.3.

A small part of Fen Lane and Ockendon Road is within the North Ockendon Conservation Area as presented in Figure 3.3.

There are a number of areas suitable for wind energy developments within the site as defined in the Havering Local Plan 2016-2031 where proposals for wind turbines will in principle be supported.

Ecological surveys of the site were undertaken in 2021, 2022, 2023, 2024 and 2025 and a site visit by Ramboll ecologists in 2023. Ramboll undertook a verification survey in December 2023. The site consists of 25 different UK habitat types, with the majority of the site comprising of arable land (cereal crops, other cereal crops, other non-cereal crops and temporary grass and clover keys). The remaining habitat comprises a variety of grasslands, woodlands, the Mardyke and their associated features. Priority habitat includes other lowland mixed deciduous woodland, hedgerows and reedbeds.

The Mardyke was classified as ‘fairly poor’ following a river condition assessment.

No ‘important’ hedgerows were identified on-site following the hedgerow assessment.

As presented in Figure 3.3, the Fairplay Farm Borough Site of Importance for Nature Conservation (SINC) is partially within the site boundary.

The western part of the site is within an allocated minerals safeguarding area in the Adopted Havering Plan (2016-2031) (November 2021) also presented in Figure 3.3.

Tree Preservation Order (TPO) ref. 12/93 is located immediately adjacent to the south-western boundary of the site.

1.12 Surrounding Land Uses

The surrounding land uses are presented on Figure 3.4.

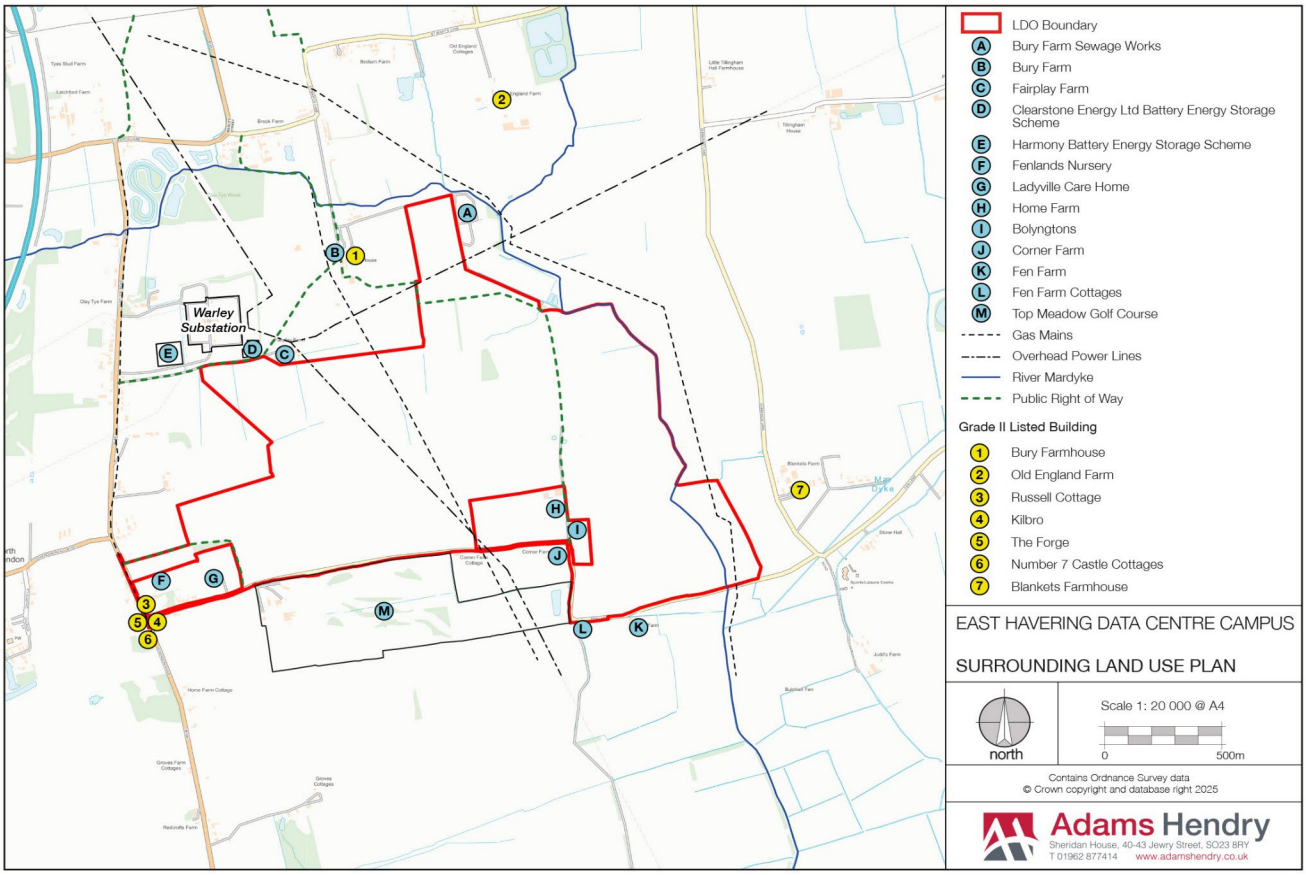


Figure 3.4: Surrounding Land Uses

The boundaries and immediate surroundings of the site comprise the following:

- North: Agricultural fields and an unnamed road. Bury Farm sewage works is immediately adjacent to the north-east site boundary;
- North-east: The Upminster sewage works grass beds SINC;
- East: Further agricultural fields beyond which is Dunnings Lane. The Grade II Blankets farmhouse is located approximately 300 m to the east of the site;
- South-east: A small cluster of industrial buildings;
- South: Home Farm adjacent to the site, including commercial buildings which are part of the wider Home Farm Estate, and Bolyngtons, accessed via an unnamed road off Fen Lane. To the south of Fen Lane is the Top Meadow Golf Course, Corner Farm and Fen Farm and Fen Farm Cottages;
- South-west: Agricultural fields and woodlands, beyond which is a small cluster of residential properties, Ladyville Lodge Care Home and Fenlands Nursery. The closest listed building to the site is the Grade II Russell Cottage approximately 130 m to the south-west of the site boundary;
- West: The Clay Tye Wood (SINC), an area of Ancient Woodland; and
- North-west: Agricultural fields, Fairplay farm and an unnamed access road to Fairplay farm, beyond which is Warley Grid Supply Point (GSP) substation. A battery storage scheme (approximately 1.7 ha), the B186 Clay Tye Road and further residential properties are also located north-west of the site. Bury Farm is appropriately 250 m to the north-west of the site boundary.

The Warley GSP substation covers an area of approximately 4.6 ha and consists of a National Grid 275 kilovolt (kV) sub-station and a UKPN 132 kV substation. The National Grid substation provides

the power supplies to the UKPN substation. The National Grid substation is supplied by 2 x 275 kV circuits from Tilbury GSP and Elstree GSP.

No Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs) are located within 2 km of the site boundary.

However, there are two Local Nature Reserves (LNRs) within 2 km of the site boundary as presented in Figure 3.3:

- Cranham Marsh; and
- Cranham Brickfields.

4. Need and Alternatives

1.13 Need for Data Centres

ES Chapter 3 presents the reasonable site and development alternatives considered and the main reasons for selecting the chosen option including a comparison of the environmental effects. In order to identify reasonable alternatives, it is necessary to define the need that the proposed development is seeking to meet.

Data centres underpin the world's digital economy. Transportation, energy, finance, national security, health systems, and other essential services all rely on real-time data stored in and accessed through data centres. The sensitivity and importance of this information shapes the facility's requirements, while the communication needs dictate the data centre's connectivity to the world.

Post Covid-19 pandemic, the demand for internet-based services has increased and therefore the demand for data centre space, with public cloud currently accounting for more than 75 % of all demand in the UK.

Cloud computing is in essence, the storage of and access to data and programs over the internet instead of a computer's hard drive. Public cloud facilities are physical data centres in specific geographic locations containing servers, storage systems and other equipment.

Hyperscale data centres are typically the largest form of data centre in terms of space and power. Due to the exponential growth in the market, hyperscale demand has resulted in increasingly larger requirements with new facilities frequently exceeding 100 megawatt (MW) of IT power.

Cloud Service Providers usually organise their cloud infrastructure into different geographical regions, known as cloud regions. A region is a set of availability zones (AZs) in a designated geographical area. Each AZ within a region is connected independently to all other AZ within the same region.

The physical distance between public cloud data centres within cloud regions is limited by the speed at which data can physically travel i.e. latency, which is dependent on distance and the fibre infrastructure. Major cloud providers (e.g. AWS, Microsoft, Google) select regions and AZs closest to business operations to achieve the highest performance possible.

The principal need within the UK market centres around the London cloud region. This is as a result of several factors including London's role as a major financial and business centre in Europe, excellent connectivity, power supplies and the largest concentration of IT personnel and data centre expertise in Europe.

1.14 Need for Data Centre Capacity in London

The London data centre market, which has over 1.4 gigawatt (GW) of live IT power, is now experiencing severe supply constraints within its core AZs as demand continues to outpace available supply. Whilst it has secured substantial power for future development, there is a shortage of readily available and confirmed power to meet cloud demand over the next five years.

There is accepted evidence which indicates a very substantial growth in the need for data centre capacity across London, with a central forecast of 3,824 MW during the period 2024-2029, 95 % of which is for public cloud data centres.

The potential beneficiary of the LDO appointed Savills to undertake a site selection assessment. As part of this assessment, it was identified that there is currently 1,289 MW of secured data centre capacity within the principal sub-markets in London. Accordingly, there is an urgent need for

additional data centre capacity to meet demand in the London cloud region and to ensure that the UK retains its competitive edge in attracting data centre investment and maintaining its leading position in Europe's digital economy.

The extent of the need for new data centres is such that additional hyperscale public cloud data centres, within existing or new AZs, are the only realistic option for meeting the demand. However, there are few sites that can serve the London cloud region with secured power for scalable growth.

The significant constraints in power and land availability within core locations are pushing demand for expansion beyond the traditional AZs.

The Slough AZ and adjacent AZs in Hayes and West London have the largest quantum of public cloud infrastructure serving the London Cloud Region and include provision from all of the major public cloud providers. The search for available power to facilitate new data centre capacity should therefore be as close as possible to the Slough AZ and with good access to the existing fibre network.

A 'reasonable distance' for hyperscalers will be a product both of actual distance and the quality (i.e. capacity and speed) of the fibre infrastructure. Access to essential utilities, including a Grid Supply Point (GSP)[5], power transmission infrastructure and major fibre routes are always critical considerations. Based on how fast the system must work to meet the requirements of the user, and supported by analysis of the Frankfurt, London, Amsterdam, Paris and Dublin (FLAPD) markets, a new deployment capable of contributing to meeting the needs of the London cloud region within approximately 60 km from the AZ clusters in Slough and West London would be functionally and commercially acceptable.

1.15 Power Availability

Digital Reef has entered into a contract with UKPN to deliver 600 mega volt amperes (MVA) of power. It has been agreed between Digital Reef and UKPN that there would be a phased release of the power, with a minimum of 160 MVA to be delivered from the existing Warley GSP substation by 31 December 2029 and the total of 600 MVA available by 31 December 2033.

Consideration has therefore been given to whether there are any other GSPs closer to the Slough AZ that could deliver the same amount of power within the same or better timescale as provided for in the agreement between Digital Reef and UKPN.

At January 2025 (the latest date for which data is available pending the outcome of Connections Reform), there was no GSP closer to the Slough AZ that had sufficient power to support a hyperscale facility by 2029 than that already contracted to Digital Reef at Warley.

The timescales for constructing a new GSP or upgrading the transmission or distribution network are significant. It can take from between just under five years to nearly eight years from entering into a contract before power would be available.

1.16 Consideration of Alternative Sites

Proximity to available power is a key factor when considering alternative sites. As energy is lost as it travels, a shorter cable route minimises risk and optimises efficiency. Data centres should therefore be as near to a GSP as possible to provide maximum resilience and security for the power supplies. Whilst the commercially preferred maximum separation distance between a data centre

[5] A Grid Supply Point is the point where electricity is transferred from the transmission network (high-voltage national grid) to the distribution network (local network supplying homes and businesses).

and relevant GSP would be up to 5 km, a search area of 10 km from the Warley GSP substation has been used in the assessment of alternative sites for added robustness.

As part of the initial site screening exercise, sites that were below 40 ha were excluded on the basis that they would be too small to accommodate the proposed development.

A total of 16 sites were identified by Savills. Each site was red-amber-green (RAG) rated against a set of minimum requirements including developable area, shape and topography, flood risk, proximity to power and fibre connections, ownership and availability. Sites that scored red against any of the minimum requirements were excluded from further assessment.

The remaining sites were then considered against a number of planning and environmental constraints. All of the shortlisted sites are located in the Green Belt and therefore consideration was given to whether the shortlisted sites included previously developed land, if they were Grey Belt and if so, whether development would be considered to be appropriate development.

None of the sites were considered to comprise to any material extent previously developed land and neither were they considered to be Grey Belt. An assessment was therefore undertaken on the harm to the Green Belt from the development of a data centre campus on each of the shortlisted sites.

Finally, an assessment was undertaken on the overall suitability and availability of the shortlisted sites. The conclusion of the assessment undertaken by Savills was that the only site that is demonstrably available and potentially suitable is the proposed development site.

1.17 Do-Nothing Scenario

In the 'Do-Nothing' alternative, the proposed development would not come forward and the site would be left in its current state as agricultural land. The consequences of this are that the substantial need for data centre capacity to serve the London cloud region would be unchanged and the economic benefits, employment and training opportunities would not be forthcoming. Failure to deliver data centre floorspace will also jeopardise the UK's leading position in Europe's digital economy.

The 'Do-Nothing' scenario, where the site is left in its current agricultural state, is not considered to be a reasonable alternative.

1.18 Development Layout and Design Iteration Alternatives

The proposed LDO development parameters have been subject to an iterative design process to reduce environmental impacts. The primary objective was to reduce the landscape and visual effects of the proposed development as far as possible given the site's location within the Green Belt.

The initial layout of the proposed development was designed to:

- retain existing hedges, trees and ditches including the extensive network of ditches in the eastern side of the site;
- create a network of ecological corridors within the site and enhance connectivity between the existing site-wide hedgerow and ditch network;
- keep flood zones 2 and 3 on the eastern side of the site free from built development;
- take account of the existing topography of the site (i.e. the western extent of the site is at a higher elevation than the centre of the site); and
- maintain a corridor free from development along the route of the underground gas pipeline that crosses the site.

This initial environmentally led design approach resulted in the definition of 11 build zones (A-K) occupying the central part of the site and the creation of an ecology park around the proposed build zones including a large wetland area on the eastern side of the site and ecological corridors retained between the build zones.

Three dimensional digital software technology was used to create views of the potential massing (shape and form of development) and layout options within the build zones. The design was subsequently evaluated, improved and refined through an iterative design process at a series of collaborative workshops with the LPA and potential beneficiary of the LDO, to minimise as far as possible the likely significance of the landscape and visual effects of the proposed development. Further design changes were made following a review of the initial findings of the Landscape and Visual Impact Assessment to improve assessment outcomes. This led to a greater degree of visual permeability, more views to the open countryside and ridgelines and wider separation distances between buildings.

In addition, the landscaping strategy for the proposed ecology park and data centre campus was refined to reflect the surrounding landscape character and naturalistic and organic mounding introduced to provide optimal screening of the proposed development and filtering of views from the surrounding area.

1.19 Technology Alternatives

A Best Available Technology (BAT) assessment was carried out of the technologies capable of providing back-up power at the data centres. Based on this assessment, hydrotreated vegetable oil (HVO) generators were selected over diesel, natural gas (spark ignition), gas turbine or aeroderivative gas turbine generators.

In respect of horticultural uses, liquid carbon dioxide ($CO_{2)}$ was selected over burning natural gas to avoid use of and reliance on fossil fuels in pursuit of carbon-neutral operations.

1.20 Environmental Comparison

When considering the key environmental effects between the initial development layout and the final proposed development layout, the built footprint has been maintained outside of the key flood zones, the landscape and visual effects reduced and ecological/biodiversity benefits increased.

1.21 Preferred Option

The initial development layout was principally informed by the existing site features and by existing environmental considerations (primarily site topography, flood zones, ecological features, site access points, on-site utilities). Therefore, the design evolution process did not comprise wide ranging and divergent layout options.

The initial development layout evolved and was refined in response to iterative visual, landscape and residential amenity modelling and assessment to arrive at the final proposed development layout and massing, which has formed the basis of the development parameters assessed within the EIA and reported upon in the ES.

The site and final development layout option is the ‘preferred option’ and has been selected for the following reasons:

- Contributes towards meeting the pressing need for data centre capacity in the short term;
- Is the only deliverable site with a contracted power supply in sufficiently close proximity to the Slough AZ;

- Responds to site and environmental considerations, taking into consideration the technical and logistical requirements of the proposed land uses;
- Proactively integrates mitigation measures to avoid and/or minimise significant adverse environmental effects;
- Maximises beneficial effects; and
- Demonstrates best available technology.

5. Proposed Development

1.22 Proposed Development Description

In summary, the proposed development would comprise the following:

1. The erection of buildings up to a maximum of 400,000 m^2 (GEA) including:
   a. Data centre uses up to 340,000 m^2;
   b. Indoor horticulture of 50,000 m^2;
   c. Visitor Centre up to 600 m^2 (and no less than 300 m^2);
   d. District heating centre up to 3,300 m^2;
   e. Campus management facilities up to 2,700 m^2;
   f. Campus security facilities (not including local facilities ancillary to individual data centres) up to 3,400 m^2;
2. Installation of electrical infrastructure and associated plant equipment;
3. Creation of an 'ecology park';
4. Operations or engineering works including:
   a. Excavation and earthworks (e.g. 'cut and fill');
   b. Formation of compounds for the stockpiling and sorting of excavated materials;
   c. Foundations and piling, and any other operations or engineering necessary for site mobilisation and new buildings / structures;
   d. Creation of estate roads and associated infrastructure for access by all modes of transport;
   e. Site security measures including fencing, gates and gate houses;
   f. Works to install underground services and utilities;
   g. Provision of temporary site offices and welfare facilities; and
   h. Highway works on Fen Lane and Ockendon Road.

1.23 Site arrangement

The general site arrangement is presented in Figure 5.1.

The proposed data centre campus would be constructed in a series of build zones (Build Zones A – H) and enclosed within a steel security fence. The main entrance to the campus would be from Fen Lane via a security check point.

The primary infrastructure corridor would serve Build Zones A - F and would accommodate the primary access road, a shared cycleway and footpath, drainage swales and associated landscaping. The swale would discharge into three attenuation ponds as presented in Figure 5.1.

Build Zone G would be served by an access road including a shared pedestrian and cycleway to the west of the main entrance on Fen Lane. Access to Build Zone G would be via a security check point. The primary strategic footpaths/cycleways through the ecology park are presented in Figure 5.1. Existing public rights of way across the site would be retained.

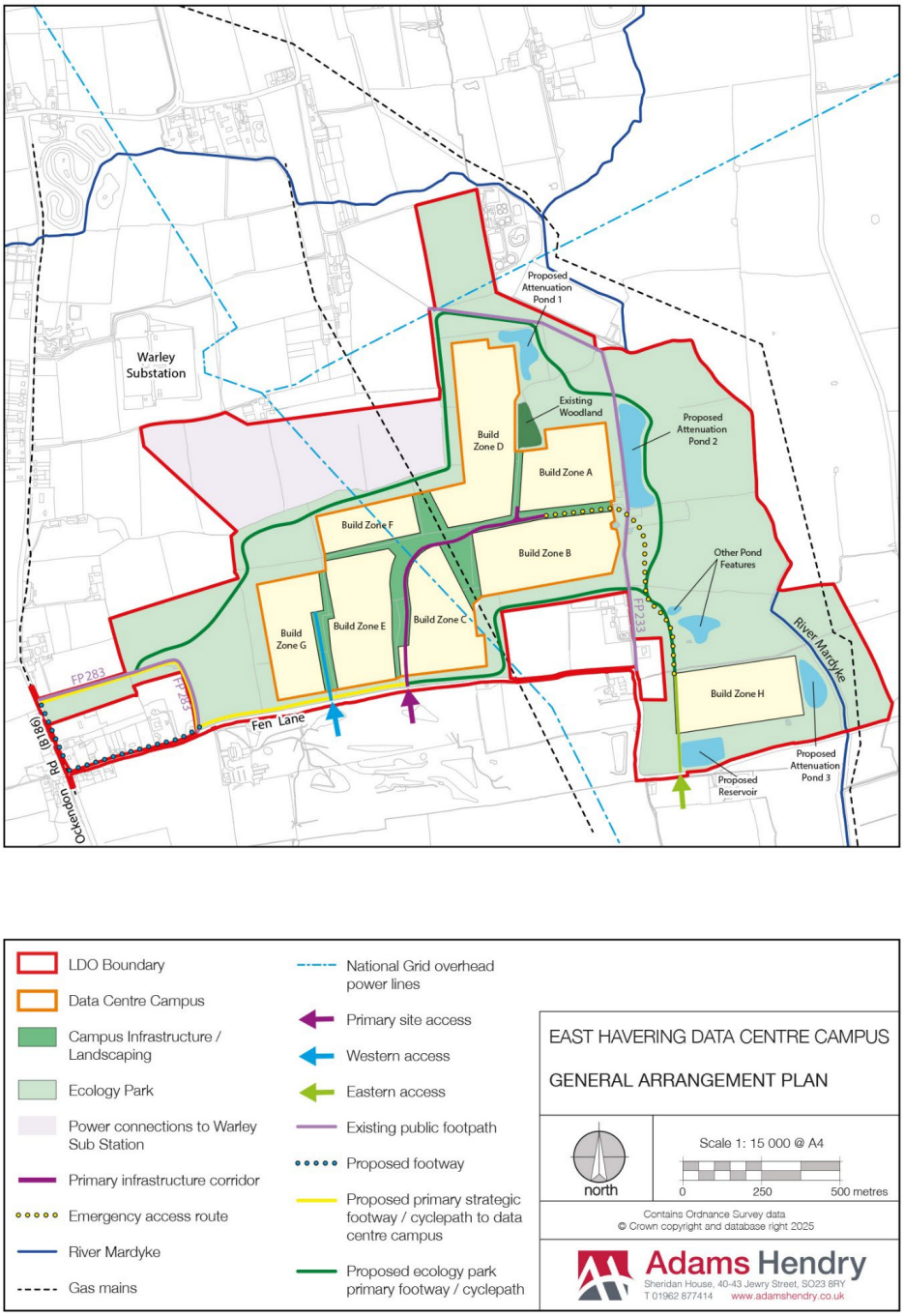


Figure 5.1: General Arrangement Plan

1.24 Data Centre Campus

Data Centres

The proposed development would include up to 340,000 m^2 GEA of data centre floorspace. The data centres would be operational 24 hours a day. The maximum length of a data centre would not exceed 200 m. External plant would include generators, heating and cooling plant, rainwater harvesting and photo voltaic (PV) renewable energy systems together with other related support tanks, plant and electrical equipment. Plant would generally be located on or under gantry support systems both on the roof and/or external to the building.

HVO generators would provide backup power for continued essential systems use in the event of a power failure. The size and number of generators required for each data centre would vary depending on the building size and required backup power load.

The standard operation of generators would be limited to testing and maintenance only, as total black-out grid outage is very unlikely. Generators would be tested weekly for a duration of 15 minutes, monthly for a duration of one hour and yearly for a duration of four hours during normal day-time operational hours. During an emergency scenario (an unplanned power outage), the anticipated maximum number of generators on-site would operate simultaneously and continuously for up to 72 hours.

Other ancillary plant within a data centre compound would include:

- low voltage (LV) substations and switch gear infrastructure;
- sprinkler tanks and associated pump houses; and
- water attenuation/rainwater tank storage (above or below ground).

Each data centre compound would include a car park, cycle bays and on-plot landscaping.

Each data centre building would be required to achieve at least BREEAM Excellent rating.

All data centre buildings would aim to be net zero carbon (i.e. cause no net release of carbon dioxide and other greenhouse emissions into the atmosphere). Where this is not possible, buildings would achieve an on-site carbon reduction of at least 40% beyond Building Regulations. Where it is clearly demonstrated that it is not possible to achieve the zero-carbon target on-site, any shortfall would be provided through a cash in lieu contribution to the borough's carbon offset fund to be secured through a planning obligation.

Data Centre Campus Landscaping

All soft and hard landscaping would be selected from a palette of plants and materials for use within the data centre campus to provide interest and a coherent landscape scheme across the proposed development whilst also optimising wildlife benefit and the potential for habitat creation.

A buffer zone would be created around each build zone comprising natural grassland with boundary shrub planting to provide an area of transition between the plot based development and internal access roads and/or the wider ecology park.

Located landscape mounds would be created within the ecology park and Data Centre Campus (if required) to make beneficial use of earth arisings generated during the construction period and to help screen views of the proposed development. Proposed tree planting is summarised in Table 5.1.

1.25 Campus Management

There would be a dedicated site wide Campus Management Security Control Facility (SCF) located at the main entrance to the data centre campus that would have oversight and management of the security of the whole site. A small generator (approximately <200 kVA) would provide backup power if required.

Provision has also been made for centralised campus management facilities which would only be constructed if 150,000 m^2 of data centre floorspace had been occupied by a single operator and would not be occupied unless 200,000 m^2 of data centre floorspace had been occupied by a single operator. A small generator (approximately <200 kVA) would provide backup power if required.

1.26 Indoor Horticulture

The proposed development would include 50,000 m^2 GEA of heated horticultural facilities. Horticultural buildings would be provided with waste heat from the data centres. Water for use in the greenhouses would be drawn from a new reservoir that would be treated and rainwater harvested. The required capacity of tank(s) for on-site water storage would be 600 m^3.

Carbon dioxide enrichment through the supply of pure (liquid) carbon dioxide within the greenhouses would be used to increase the yield of horticultural crops. A 60 tonne tank of liquid carbon dioxide would be stored on-site. A 2,000 m^3 hot water tank and reverse osmosis machine would also be required. All external plant would be within an appropriately screened compound. The greenhouses would be lit up to 20 hours a day during the winter months. During the hours of darkness, blackout screens would be provided.

The facility would require a small service yard for the delivery of goods together with the provision of employee car and cycle parking bays and two spaces for coaches. A small generator would be required to provide backup power if required.

1.27 District Heating Energy Centre

An enclosed district heating centre would house all plant and machinery required to both collect the waste heat from all of the data centre buildings on the campus and to distribute it to the indoor horticulture and to other potential offsite heat networks in the future.

1.28 Electrical Infrastructure

New electrical infrastructure would be required including up to six high and low voltage substations (up to 15 m in height including the Line Landing Gantry[6]), switch rooms, transformers (approximately 15 m in height), energy centres (approximately 8m in height) and other network distribution equipment. This electrical distribution equipment would be located within separate fenced compounds within the proposed build zones with cable network below ground. Each compound would have a mixture of external equipment and buildings with switch rooms and other indoor equipment.

The proposed substation would be connected to the existing Warley GSP substation via four diverse cable routes to facilitate power to the proposed development.

1.29 Fibre Connections

Operation of the proposed development would require new fibre optic connections, utilising existing Openreach infrastructure (ducting):

- One from the west of the site, running along the B1421 before crossing the B186 at White Post Farm to the west of the site (approximately 4.9 km in length); and
- A second from the south of the site, running northwards along the B186 and then east along Fen Lane (approximately 2.5 km in length).

New ducts and a series of related standoff/access chambers would be constructed on-site to connect the existing Openreach infrastructure to the proposed development. The precise route of the new two connections is currently unknown.

[6] Line Landing Gantry is a heavy-duty steel structure located within an electrical substation or a sealing end compound designed to receive high-voltage overhead transmission lines.

1.30 Ecology Park

The proposed data centre campus would be set in an ecology park, which would provide public access to natural landscapes that would benefit both local biodiversity and the local community.

A mosaic of habitat typologies, as depicted in Figure 5.2, would be created incorporating existing/retained and proposed broadleaf woodland, wet woodland, existing/retained and new mixed native hedgerows, seasonally wet grasslands, meadow and natural grassland, permanent water bodies and new ditches and reed beds.

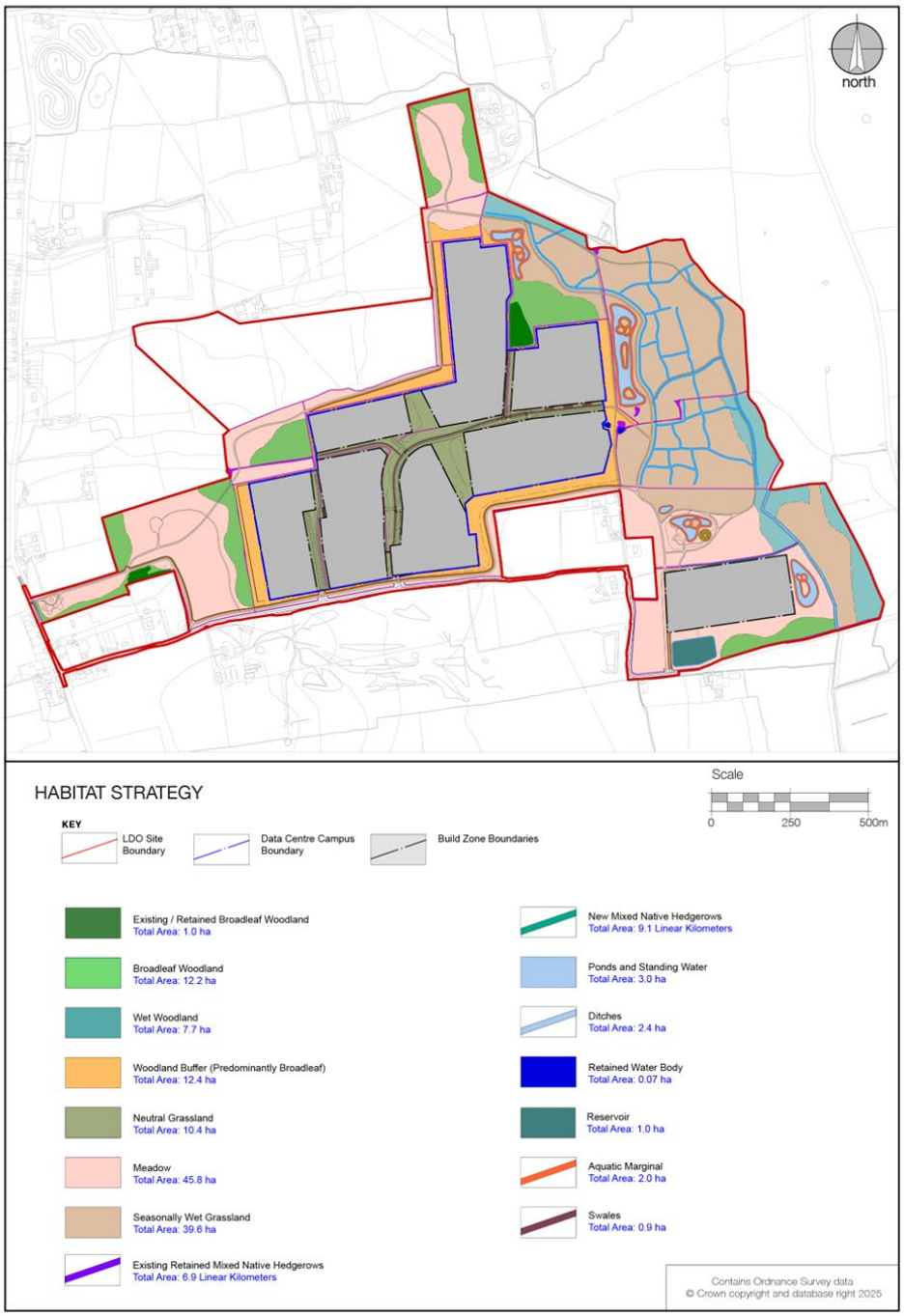


Figure 5.2: Proposed Habitats Plan

A diverse range of habitats would be provided for national key target species such as:

- Wetland bird species;
- Reptiles;
- Bats;
- Hedgehog;
- Water Vole;
- Dormouse; and
- Great Crested Newts.

The eastern part of the ecology park would feature wetlands within the existing Mardyke tributary floodplain and would incorporate existing ditches and a proposed new network of ditches (approximately 4.65 km in length).

The wetland area would incorporate several permanent water bodies including three attenuation ponds to increase flood water storage capacity. The ponds would create new habitat for a range of species. Species rich seasonally wet grassland and meadows would be created adjacent to the ponds providing suitable habitats for reptiles and insects.

Existing and proposed broadleaf woodland would help to filter views from the surrounding area, reduce water runoff and improve soil quality. The outer perimeter boundary of the ecology park would comprise mixed native hedgerows.

Tree Planting (Ecology Park and Data Centre Campus)

Tree planting would be carried out in the appropriate planting season in accordance with Table 5.1.

Table 5.1: Proposed Tree Planting Densities

Planting Area	Total Area (ha)	Total Trees
Wet woodland/broad leaf woodland/buffer woodland	32.3	53,101
Meadow/ grassland trees	4.3 (5 % of total meadow/seasonally wet grassland area)	3,210
Natural grassland trees (Data Centre Campus)	0.5	376
Total Trees		56,687

All trees and plants would be certified as UK provenance and locally sourced where possible. All plant stock would include disease resistant varieties and would be a mix of standard and semi-mature trees.

Public Access

A network of footpaths and cycleways through the ecology park would be provided including a primary strategic footway/cycleway link to the data centre campus from the B186 Ockendon Road in North Ockendon. Wheelchair accessible kissing gates would be provided at the footpath and cycleway access points to the ecology park.

Long-Term Management and Monitoring

A coherent, strategic and integrated approach to the management and maintenance of the ecology park would be secured through a Landscape and Ecological Management and Monitoring Plan.

1.31 Visitor Centre

The proposed visitor centre would provide information, discovery and learning facilities in association with the proposed ecology park and would include the ecology park management offices and welfare and storage facilities together with external amenity areas and landscaping.

1.32 Design Parameters and Standards

Data Centre Separation Distances

There would be a minimum separation distance (separation corridor) of 15 m as measured from the façade of data centre buildings (excluding gantries) in all build zones where development would be restricted.

A 45 m fixed separation corridor is defined on Build Zone B. No development would be permitted within 10 m from the western elevation of the westernmost data centre adjoining the separation corridors on Build Zones D and G.

Height

Development permitted under the LDO including buildings, roof top plant and associated acoustic screens would not exceed the maximum height (mAOD) for the build zone in which it is to be located. Exhaust flues in all height restriction zones would extend no more than 5 m above roof top plant or 5 m above the restricted building height in all other cases.

Highways, Access and Parking

Access

There would be three vehicle access points into the site, comprising:

- the primary site access from Fen Lane to serve the Build Zones A - F;
- a separate access from Fen Lane to the west of the main primary site access which would serve Build Zone G only;
- an eastern access to serve Build Zone H including the proposed ecology park, visitor centre, indoor horticulture facilities and district energy centre.

The primary site access and western and eastern access roads would include a shared pedestrian/cycleway.

Emergency access would be via the eastern access road continuing north through the ecology park to a connection point on the eastern boundary of the data centre campus, north of Build Zone B.

Highway Works on Fen Lane and Ockendon Road

The widening of the Fen Lane carriageway to a uniform width of approximately 6.2 m between the junction with Ockendon Road and the eastern site access would be required to enable two-way movement of heavy goods vehicle (HGV) traffic. Highway works would also be carried out to provide a footway on the northern side of Fen Lane between Ockendon Road and east of the Ladyville Lodge Care Home.

On Ockendon Road, an informal crossing comprising a kerbed central island reservation would replace the existing traffic chicane. The footway on the eastern side of Ockendon Road would be extended southwards from the westernmost entrance to the southern boundary. New Lighting would be provided along footpaths; at key junctions around the proposed development.

Site Security and Access

Vehicle control measures would be in place. For example, security gates, arm barriers, turnstiles, security check-in point and a rejection lane at the main entrance. A 2.4 m high (with up to 1 m anti-climb topping) perimeter security fence would be erected around Build Zones A-G.

Parking

The proposed development would include: car parking; Light Goods Vehicle (LGV) / HGV parking; cycle parking; passive and active electric vehicle (EV) parking; Blue Badge and enlarged parking; and car sharing parking measures.

Surface and Foul Drainage Works

Foul Water Drainage

Foul flows would be discharged to the existing Anglian Water public foul sewer to the north of the site. Two underground pumping stations situ would provide 24-hour storage volume to mitigate against flooding in the event of pump failure. Anglian Water has confirmed that there is currently sufficient capacity within the network for the proposed flow rates.

Surface Water Drainage

There would be two proposed levels of water storage:

- Site-wide attenuation – three attenuation ponds would manage surface water runoff from the proposed build zones; and
- Build Zone attenuation (excluding rainwater harvesting) – on plot attenuation tanks within the build zones would release water at a fixed rate into the site wide drainage system which would ultimately flow into the attenuation ponds.

A total attenuation volume of 69,560 m^3 would be required site wide; 37,641 m^3 on plot attenuation tanks and 31,919 m^3 in the three proposed attenuation ponds.

Drainage in the ecology park would be managed naturally, using permeable surfaces and the site topography to direct water to nearby ditches and swales.

Surface Water Quality

Surface water would be treated prior to discharge to the Mardyke via the attenuation ponds to maintain water quality. A fuel separator, vortex separator, filter, or green feature, such as a swale or filter strip would be used to maintain water quality. Other equipment to contain spillages, including oil booms, drain blockers and dams to contain soluble pollutants would also be used. In all areas where there is a high risk of spills, penstocks would be installed.

Lighting

Lighting installations would not exceed the level of light intrusion, sky glow and luminaire intensity (glare). The luminaires selected would be a combination of column, bollards and wall mounted fittings. All communal lighting (except for safety and security lighting) would be switched off between 23.00 and 07.00 hours. Any lighting would be directed to avoid spillage onto sensitive areas and security lighting would be controlled using timers wherever possible avoiding movement sensors adjacent to sensitive areas.

Operational Traffic and Management Measures

The proposed development is expected to generate 1,035 daily predicted Two-Way Vehicle Trips (39 HGVs). Trips would be generated through:

- an electric shuttle bus service to/from Upminster Station which would enable staff to access public transport to and from the site and would align with the three shift patterns;
- a separate coach service operated directly by commercial horticultural businesses, which would transport horticultural workers to the site daily to align with shift patterns; and
- HGV arrivals/departures (including deliveries and waste collections), which would be carefully scheduled and managed to minimise trips made in peak hours, and to avoid multiple HGV arrivals/departures at one time.

Operational Jobs

It is estimated that the proposed development would generate a minimum of 350 jobs on-site. Approximately 320 of these jobs would be from the data centre use with the remaining 30 associated with the indoor horticulture and campus management facilities.

Water Usage

The data centres would require up to 96,245,820 litres (l) of water / per annum (pa) for data centre cooling if operating at 100 % IT load (i.e. all servers operating at maximum capacity). However, the potable water usage is estimated to be 62,560,000 l/pa. The LDO would include a condition limiting the use of potable water for cooling to 62,560,000 l/pa.

It is estimated that the horticultural buildings would require approximately 41,409,000 l/pa.

Domestic water usage across the proposed development is estimated to be no more than 17,453,350 l/pa

Rainwater Harvesting

Rainwater harvesting is estimated to yield up to between 43,786,752 and 51,094,800 l/annum and is therefore predicted to meet up to 82 % of annual cooling process water demand. Rainwater harvesting for horticultural uses is estimated to yield between 30,000,000 l/annum and 25,700,952 l/annum and is therefore predicted to meet up to 85 % of annual water demand.

Operational Noise Emissions

Operational noise from the proposed development during normal operations, and in an emergency scenario (when power back-up generator would be required), would be suitably controlled.

Operational Waste

Operational waste from the proposed development would include a mixture of waste streams from the data centre, horticultural use and visitor centre, as well as municipal waste streams from publicly accessible areas. Bin storage areas would ensure the separate storage and collection of waste, reusable items, recyclable materials, compostable waste and green waste from the horticulture uses.

6. Construction Works

1.33 Construction Programme

A detailed development programme has not yet been finalised. However, an indicative, but feasible, programme has been developed. The duration of the LDO is proposed to be 20 years and therefore construction would be permitted throughout this period. However, the proposed development could be delivered within 17 years assuming the fastest reasonable programme.

The proposed development would be delivered over a number of phases as shown in Table 6.1. Based on a 17 year indicative programme, the works are anticipated to commence in 2026 and to be completed in 2043.

Table 6.1 Indicative Construction Programme	
Proposed Development	
Initial Site set up and Highway Works on Fen Lane and Ockendon Road	April 2026 – July 2026
Phase 1	
Site wide infrastructure including earthworks	July 2026 – April 2027
Electrical infrastructure on Build Zone F	July 2027 – February 2028
Data Centre uses up to 100,000 m^2 (Build Zone D)	September 2026 – November 2032
Campus Security at main site entrance	May 2027 – February 2028
Ecology Park Part 1a and Part 1 Planting	Completed by July 2028
Phase 2	
Site wide infrastructure including earthworks	November 2030 – August 3031
Data Centre uses 100,000 – 200,000 m^2 (Build Zones E and G)	August 2031 – October 2036
Indoor Horticulture	January 2032 – October 2034
District Heating Centre	November 2032 - October 2034
Ecology Park Part 2 Planting	Completed by November 2032
Ecology Park Part 4 Planting	Completed by December 2036 (worst-case)
Visitors Centre	August 2035 – October 2036
Phase 3	
Site wide infrastructure including earthworks	October 2024 – July 2035
Data centre uses 200, 000 m^2 – 340, 000 m^2 (Build Zones A, B and C)	July 2035 – February 2043
Campus Management Building	December 2037 – October 2038
Ecology Park Part 3 Planting	Completed by October 2036

Highway works to Fen Lane and Ockendon Road would be completed prior to commencement of development on the site other than works to establish a temporary construction compound. Site-wide infrastructure works would be completed in Phase 1. Land would remain in agricultural use until it is required for development.

1.34 Construction Working Hours

Core working hours would be as follows:

- 08.00 am to 19.00 pm Monday to Friday; and
- 08.00 am – 13.00 pm on Saturday.

There would be no working on Sundays, bank or public holidays.

1.35 Construction Access Arrangements

Construction Routes

HGV and LGV traffic would arrive and depart from the north via the M25 (Junction 29), the A127 Southend Arterial Road and B186 Ockendon Road onto Fen Lane. The construction workforce would arrive and depart from Fen Lane via the B186 Ockendon Road or the A128.

An alternative redundancy access route to the site from the south on Ockendon Road via Junction 31 (Purfleet Interchange) of the M25 would be available for use by abnormal loads and/or should the proposed construction HGV and LGV route be unavailable for any reason. From Junction 31 of the M25, vehicles would head eastbound on the A1306 Arterial Road West Thurrock and then turn left onto the B186 Pilgrims Lane and continue north along the B186 through South Ockendon and up to Fen Lane.

Permits for abnormal load movements, and associated works and road closures, would be obtained from the relevant highway authorities for each abnormal load movement.

1.36 Construction traffic movements

The combined construction and operational, two-way vehicle trips generated by the proposed development is predicted to generate 885 daily two-way vehicle trips during the construction peak (December 2035) of which 127 two-way trips would be by HGVs.

1.37 Main Construction Works

Enabling Works

Enabling works would comprise the following:

- Establishment of main compound at Build Zone E (including Temporary office, Welfare Facilities, Canteen, Parking, HGV Parking, Laydown and storage, Temporary security hut);
- Highway Works on Fen Lane;
- Temporary services connection;
- Establishment of wheel washing facilities; and
- Establishment of monitoring infrastructure.

Portable cabins would be a maximum of three storeys in height. Temporary heras fencing, hoarding and gates would be erected to all site access points or site boundaries.

Earthworks and Site-wide Infrastructure Works

Earthworks would be undertaken through a cut and fill exercise and anticipated to be 642,504 m^3 assuming a worst-case. Earth arisings would be beneficially reused to create a series of landscape mounds in the ecology park, and if required, at the build zones.

Appropriate controls would be in place throughout the earthworks. Excavators would be used to carefully strip the topsoil layer in the areas where earthworks are proposed. The topsoil would be separately stored and separated from other earth arisings.

1.38 Construction Materials and Waste

The proposed development is estimated to require 1,052,500 m^3 of construction materials. Specifically, the substructure and superstructure works are anticipated to generate 1,009,100 m^3 of waste. Site wide infrastructure works are estimated to require 31,900 m^3 of construction materials. Meanwhile, the ecology park is anticipated to generate 2,417 m^3 of waste.

1.39 Construction Jobs

The proposed development would generate per year;

- 330 jobs in brough (Havering);
- 790 jobs in the region (London); and
- 1,340 nationwide (UK).

1.40 Public Liaison

The contractors would be expected to nominate a manager who would act as the Project Environmental Manager (PEM), who would be named at all entrances to the site, with a contact telephone number. The contact's name and details would be provided to all the relevant stakeholders by the principal contractors prior to the start of the construction works.

The PEM would deal with enquiries from the public, including any complaints. Any complaints would be logged and reported to the LPA as soon as practicable.

1.41 Construction Mitigation Measures

The following standard mitigation measures would be employed during the construction works and outlined within the LDO compliance documents (Code of Construction Practice):

- Monitoring:
  - Protocols to be implemented on-site in instances of emergencies and incidence;
  - Housekeeping and General Site Management such as hoardings or similar segregation measures would be erected to provide a clear and secure demarcation between operational and construction activities;
  - A 'clean site' policy would be maintained;
  - Wheel wash facilities would be provided on-site before vehicles exit on Fen Lane;
- Arboriculture:
  - All required works to trees would be undertaken in accordance with the British Standard 'Recommendations for Tree Work BS3998:2010' by suitably, qualified and experienced professional arborists;
  - Retained trees would be protected during construction works in accordance with BS 5837:2012 to reduce the possibility of any damage, to both crown and roots of trees;
- Lighting:
  - Artificial lighting would be provided to maintain sufficient security and health and safety;
  - Temporary lighting would be installed on posts around the construction compounds, along temporary access roads, in parking areas and on the perimeter heras fencing;
  - Lighting fixtures would be selected to minimise light pollution and environmental impact;
- Ecology:
  - An Ecological Clerk of Works (ECoW) would oversee construction works on the site and best practice environmental measures affecting biodiversity;

  - Where bat roosts are identified, monitoring of roosts may be required;
- Transport:
  - HGV arrivals/departures would be carefully scheduled and managed to minimise trips;
  - Where commercially viable, materials not forming a full load would be collected and condensed at pre agreed consolidation centres; and
  - Off-site manufacture would be encouraged to reduce waste;
- Noise and vibration:
  - All plant would conform to relevant standards and directives;
  - Noise control equipment, such as enclosures, shrouds and silencers on plant would be fitted;
  - Electrically powered plant would be used where possible;
  - All plant would be operated correctly, turned off when not in use and regularly inspected;
  - Vibrating machinery would be fixed on anti-vibration mountings;
  - Temporary screens would be used to reduce noise propagation at the nearest noise-sensitive receptors;
- Air quality:
  - Good site management and mitigation techniques would be employed to reduce emissions of dust and limit dispersion;
  - A record of all noise and dust complaints would be maintained and responded to;
- Water quality:
  - Potential for impacts to occur as a result of on-site storage of materials and contamination of water by oil or other liquids would be minimised by storage compounds, spill kits, and drums and barrels with flow control taps;
  - Control measures would be in place to manage silt generation and maintain water quality, including using cut off ditches to prevent entry of surface water and groundwater where possible, using silt fences and stockpile management;
  - Existing watercourses would be visually inspected at least on a weekly basis to identify whether there have been any changes in water quality. Where areas of concern are identified, more detailed scientific tests would be carried out where necessary;
  - A wheel wash facility would be provided for all HGVs that enter working zones;
  - Diesel bunds would be provided for the storage and transfer of petroleum products to equipment including diggers, dumpers and generators;
  - Petroleum spill kits would be readily available on-site to deal with any spillages. Any contaminated soil identified via testing would be collected and stored in hazardous waste containers prior to transport and treatment at a suitable, licenced facility;
- Climate Change:
  - Specify low carbon materials in design, where possible;
  - Use of reused and recycled materials;
  - Source materials locally;
  - Use of electrically powered plant, where possible;
- Waste Material Management:
  - Waste material generated on-site during the construction process would be handled and disposed of in accordance with Waste Management legislation;
  - The following measures would be considered to ensure that waste is minimised:
    - Avoidance of waste at the design stage;

- Just-in-time deliveries;
- Minimisation of packaging;
- Reuse of waste; and
- No wastes would be burnt or disposed on-site.

7. Likely Significant Environmental Effects

The assessments presented within technical assessment chapters have accounted for the embedded mitigation set out within ES Chapter 4: Proposed Development and Construction.

1.42 Archaeology and Cultural Heritage

Background

ES Chapter 6: Archaeology and Cultural Heritage reports on the potential archaeology and cultural heritage impacts and likely effects due to the construction and completed development stages of the proposed development. The assessment has taken into account the relevant national and local guidance and regulations.

Baseline

There are no nationally designated or non-designated cultural heritage assets within the site. Within 2 km from the site boundary there are two Scheduled Ancient Monuments (very high heritage significance), the North Ockendon and Cranham Conservation Areas, three parcels of Ancient Woodland, 25 Statutorily listed buildings, either Grade I, Grade II* (both high heritage significance) or Grade II listed (medium heritage significance) and nine locally Listed buildings.

The study area for this assessment is considered to be 1 km for archaeology and 500 m for cultural heritage, as there would be very limited visibility of the site from distances beyond this for the latter.

Archaeology

Two current Archaeological Priority Areas (APA) extend into the site. The entirety of the site lies within the new Tier 3 Havering Prehistoric Potential APA. A small part of the western part of the site, along Fen Lane and Clay Tye Road also lies within Tier 2 North Ockenden APA which overlaps with the Tier 3 APA.

There have been no archaeological investigations on the site. Previous investigation in the archaeological study area have recorded remains from the Prehistoric and Roman periods.

Buried heritage assets that may be affected by the proposed development comprise:

- Palaeoenvironmental remains, e.g. seeds etc, of low heritage significance, within alluvial deposits in the eastern part of the site;
- Prehistoric remains such as evidence of settlement (high heritage significance), flint tools or pottery (low heritage significance), ditches or field boundaries (medium heritage significance) for which there is a high potential to be found;
- Roman remains such as evidence of settlement (high heritage significance), ditches or field boundaries (medium heritage significance), and isolated finds (low heritage significance) for which there is a moderate potential to be found;
- Later medieval remains (low heritage significance) of the buried footings of two farmhouses, and ditches or field boundaries for which there is a high potential to be found; and
- Post-medieval remains (low heritage significance) such as field boundaries for which there is a high potential to be found, and remains associated with a World War II anti-aircraft battery for which there is a moderate potential to be found.

Cultural Heritage

The study area of the assessment was initially scoped as a 2 km area from the site boundary. Following site visits and desktop study, nine cultural heritage assets within 500 m of the site boundary were confirmed as sensitive receptors likely to be affected by the proposed development.

The nine cultural heritage assets comprise:

- North Ockendon Conservation Area (NOCA): Low Sensitivity;
- Four Grade II Listed Buildings (Kilbro, Russell Cottage, The Forge, no 7 Castle Cottages): Low Sensitivity;
- Two Grade II Listed Buildings (Old England and Blankets Farmhouse England): Medium Sensitivity;
- One Grade II Listed Building (Bury Farmhouse): High Sensitivity; and
- One Local Listed Building (White Post Farm): Low Sensitivity.

All other above ground heritage assets considered to be of low sensitivity to setting changes, due to a combination of visibility and their distance from the site, have not been assessed further.

Construction Stage Effects

Archaeology

During the construction stage, there is a predicted potential for the truncation or complete removal of archaeological remains. It is considered that the adverse effects on buried heritage assets could be offset by a staged programme of archaeological evaluation (Stages 1 and 2) and were necessary, mitigation (Stage 3), with dissemination at an appropriate level to increase knowledge and appreciation of the buried heritage assets. The aims and methodology of each stage would be set out in a Written Scheme of Investigation (WSI) subject to prior approval by the LPA/Greater London Archaeological Advisory Service (GLAAS).

Stage 1 would comprise:

- a programme of geophysical survey to identify anomalies indicative of buried features, which would inform the scope of Stage 2;

Stage 2 would comprise:

- a targeted archaeological trenched and/or geoarchaeological evaluation in order to confirm the underlying deposits and the nature, extent, condition and heritage significance of predicted archaeological remains at the site.

The results of Stages 1 and 2 would allow confirmation of the mitigation strategy (in particular on the need for targeted archaeological excavation in advance of construction, and/or a watching brief during earthworks) for any significant archaeological assets in order to offset the effects and ensure public benefit from the archaeological process. The scope and method of each stage of the archaeological work would be as set out in a separate archaeological WSI approved in advance by the LPA and their GLAAS archaeological advisor.

Following the implementation of archaeological mitigation the proposed development would not give rise to significant residual effects for most archaeological remains, apart from Prehistoric and/or Roman settlement remains for which there would likely be a significant adverse residual effect.

Cultural Heritage

The construction stage effects on cultural heritage assets would be restricted to changes to their setting caused by noise and dust from works on the site, an increase in road traffic and the possible visibility of construction machinery and buildings under construction.

The resulting effects caused by noise and dust from works on the site and an increase in road traffic on their settings would vary throughout the construction programme. The effects would be greater on the North Ockendon Conservation Area, Kilbro, Russell Cottage, the Forge, No 7 Castle Cottages, White Post Farm and Blankets Farmhouse as all of these lie closer to the proposed access route along Fen Lane and the B186. These effects would be variable depending on the location of the receptor to the sources of impacts.

The effect from the visibility of construction machinery would be limited to proposed enabling works, cut and fill earthworks, mound formation and the implementation of preliminary strategic landscaping.

As result of the work to be undertaken in the preliminary landscaping phase, visibility of the construction works would be reduced throughout the construction stage. In addition, standard Code of Construction Practice measures would be adopted to minimise construction impacts and effects.

Taking into consideration the nature and duration of works, the local topography, intervening built form and vegetation, separation distances, as well as the embedded mitigation measures, the effects on the setting of cultural heritage assets would be short-to medium-term adverse, but not significant, with the exception of the setting of Bury Farmhouse. This is due to the higher sensitivity of this receptor to change.

Completed Development Stage Effects

Archaeology

As no new ground disturbance would occur, there would be no effects arising from the completed development on archaeology.

Cultural Heritage

The proposed development would introduce new buildings, utility infrastructure, landscaping and green infrastructure, and an increase in traffic and other noise from day-to-day use and operation of the proposed development.

As the build zones would be located towards the approximate centre of the site, the separation distance between proposed development and the identified sensitive cultural heritage assets has been maximised.

The requirements set out in ES Chapter 4 would minimise the visual, transport and noise impact of the new buildings on the cultural heritage assets in the study area, with the result that no significant adverse residual effects would arise from changes to the settings of the majority of the assets, with the exception of Bury Farmhouse, for which the effects would be significant adverse.

Cumulative Effects

It is considered that there would be limited or no potential for cumulative effects from six of the cumulative schemes on cultural heritage. Although construction stage periods may overlap, Schemes 4, 5, 6 and 8 are at sufficient distance from the cultural heritage assets within the study area to be considered of very low impact. Schemes 1, 2, 3 and 7, having been constructed would have no cumulative impact. Taking into consideration the standard practice embedded mitigation

measures that would be adopted by the cumulative schemes, the scale of effects as reported in the main assessment would remain unchanged.

Cumulative adverse effects on setting may arise from the completed development stage of the proposed development and those cumulative schemes where the scale/mass of new buildings is greater than those of the proposed development in isolation and would be visible within the setting of heritage assets. Given the locations of the considered cumulative schemes and taking account of the reduced intervisibility as a result of the existing/proposed landscaping, as well as the screening/setting afforded by the proposed development, it is considered unlikely that the cumulative schemes would affect the settings of cultural heritage assets. With regard to scheme 7 (Warley Substation) the new infrastructure would be perceptible in the context of the existing Warley Substation and the proposed development. On this basis there would be no combined effects and therefore, effects would remain as reported in the main assessment.

1.43 Socio-Economics

Background

ES Chapter 7: Socio-Economics reports on the potential socio-economic impacts and likely effects due to the construction and completed development stages of the proposed development. The assessment has been undertaken taking into account relevant national and local policy and guidance.

The likely effects that have been considered as part of the assessment comprise the following:

- Construction stage:
  - Loss/displacement of existing on-site employment;
  - Construction employment, gross value added (GVA)[7] and training opportunities; and
  - Construction supply chain spending and local opportunities.
- Completed Development stage:
  - Completed development employment and gross value added;
  - Additional spending in the local economy; and
  - Effects on additional recreational use, public access and PRoW.

The assessment of how the proposed development would affect jobs and the local economy has been based on analysis by Oxford Economics (OE). To be cautious, the lowest likely investment figures were used wherever possible, meaning the benefits may be underestimated. The extent to which these benefits are spread across the borough and the wider region depends on OE's modelling. While this does not represent the absolute worst-case for Havering, it is based on reasonable and cautious assumptions.

Baseline

The baseline highlights key information relevant to assessment, in particular setting the employment and economic impacts in context.

Havering has a lower unemployment rate compared to London and a lower proportion of economically inactive people who want a job.

[7] Gross Value Added (GVA) measures the value of goods and services produced in an industry, sector, or region of an economy, calculated as total output minus intermediate consumption (costs of production). It reflects the net contribution to an economy by subtracting input costs from revenue,

The most common 'sought occupation' at all spatial scales (Ward, Borough, Regional (London and Essex) and National) is elementary trades, plant and storage related occupations. This includes a range of occupations that are being promoted as part of the proposed development such as security, administration and construction.

In respect of education, skills, training, health, disability, crime, living environment, the site is located within an area that is not considered particularly deprived.

There are two on-site PRoWs, but no others within 500 m of the site boundary.

In respect of the national cycle network (NCN) there are no routes within 500 m of the site. The closest route to the site is National Route 136, approximately 3.2 km from the site boundary.

All settlements within the borough that had a population density of 8,500 people per km^2 or greater have access to a public park and garden within 710 m of their homes.

There is a large area of land surrounding the site that is not within 710 m of a public park or garden. However, the population density within this area is low.

Construction Stage Effects

There would be four existing on-site jobs affected as a result of the land use change. While the effect would be adverse, it would not be of a significant scale.

It is estimated that the proposed development would generate an additional 330 construction job years of employment over the 20-year construction period. The construction stage would facilitate further spending across Havering, as well as increasing GVA by 0.5 % annually.

The impact of increased construction employment and training, as well as the associated GVA and local spending would be significantly beneficial at the borough level.

The potential beneficiary's economic consultant, OE, cite a total investment of £1.87 billion into the Havering economy over the 20-year construction period, which in turn indirectly increases GVA by £3 million annually and local spending by an additional £2 million annually. The construction supply chain spending would generate beneficial, but not significant, effects at the borough level.

Completed Development Stage Effects

It is estimated that the completed proposed development could generate 620 new or sustained jobs at the borough level. Given the sector specific growth, it is considered to be a high magnitude of impact at a borough level. Accordingly, the effect on the local economy is assessed as beneficial and significant.

Additional spending in the local economy as a result of new and sustained jobs is estimated to be beneficial but not significant at the borough level.

At the borough level there is a relatively high amount of accessible public parks and gardens. However, as stated in the baseline, there is a large area surrounding the site that is not within 710 m of a public park or garden, though the population density of this area is very low. As a result of the improved access to recreational areas and gardens to be delivered by the proposed development, via paths and footways, there would be a noticeable improvement in provision to local people. The effect would be beneficial, but not significant, at borough level.

Cumulative Effects

Based on the limited information available in the public domain, there is potential for minor (not significant) beneficial cumulative effects on local employment during the construction stage in respect of six cumulative schemes. It is considered unlikely that there would be any cumulative

effects on local receptors, due to the spatial distribution of the schemes. Accordingly, the combined effects would remain as reported for the proposed development in isolation.

During the completed development stage, no likely cumulative effects have been identified due to the nature of the cumulative schemes. Accordingly, the combined effects would remain as reported for the proposed development in isolation.

1.44 Transport and Accessibility

Background

ES Chapter 8: Transport and Accessibility reports on the potential transport and accessibility impacts and likely effects due to the construction and completed development stages of the proposed development, taking into account the relevant national and local guidance and regulations.

Baseline

Catchment area analysis based on 2021 Census data shows most staff are expected to travel to the proposed development from a relatively small catchment area of approximately 10 km radius, predominantly from suburban areas to the south (e.g. Tilbury, Grays, South Ockendon), west (Upminster, Romford), and east (Basildon). Areas to the south and west are captured by existing bus routes; areas to the south are captured by existing rail services to Ockendon; and areas to the west and east are captured by existing rail services to Upminster.

The site currently has poor pedestrian and cycling accessibility. There is generally low propensity for walking to the site, given that the closest populated residential areas are located approximately 3.25 km (2 miles) to the south in South Ockendon and approximately 4 km (2.5 miles) to the east in Bulphan, which is considered beyond a reasonable walking distance for most people. This is compounded by the general lack of segregated footways and cycleways, including no continuous footway, cycleway, nor suitable PRoWs connecting the site to these nearby residential areas, forcing users to share the road with vehicular traffic which reduces pedestrian/cyclist safety and amenity.

The site has a Public Transport Accessibility Level (PTAL) score of 0, representing the lowest possible PTAL score. The village of North Ockendon has a PTAL score of 1a to 1b. Therefore, the site is in an area of very poor public transport accessibility. The closest bus stops to the site are on B186 Ockendon Road in North Ockendon. These stops are served by bus routes 269 and 370. The closest railway stations to the site are Ockendon (located in South Ockendon) and West Horndon, both of which are served by c2c services on different branches of the line between London Fenchurch Street and Basildon, Stanford-le-Hope, Southend Central, and Shoeburyness (approximately two to four trains per hour, per direction). The closest London Underground Station to the site is Upminster, which is served by District Line trains (approximately six trains per hour) towards Barking, Ealing Broadway and Richmond. Upminster is also served by Overground services to Romford (approximately two trains per hour), providing connectivity to the Elizabeth Line.

Primary access to the site is served from Fen Lane, which is a narrow single-carriageway rural road providing access to several residential properties, farms, Ladyville Lodge Care Home and Top Meadow Golf Club and Hotel. Fen Lane connects to the B186 Ockendon Road in North Ockendon, which provides connection to South Ockendon to the south, and Upminster to the north-west via B187. The junction of B186 Ockendon Road and Fen Lane is a priority junction (of which Fen Lane forms the minor arm), with a short flare for traffic turning left-out and a longer flare for traffic turning left-in. There is no dedicated lane provision for right-turning traffic on any arms. Rather than a give-way line, priority is controlled by a stop line and sign (an arrangement permitted only where it is considered that visibility cannot be provided to an appropriate standard).

Construction Stage Effects

The construction stage would commence in 2026 and last until 2043. Individual build zones would be completed and become operational throughout the construction stage. Therefore, the estimated construction traffic flows and a proportion of the operational traffic flows have been combined to establish the peak trip generation. On this basis, the peak trip generation during the construction stage is expected to be in December 2035. Therefore, the assessment has considered impacts and effects arising during the construction stage against the 2035 future baseline (including cumulative schemes), to represent a worst-case for assessment purposes.

The assessment has considered the effects of construction on driver delay, severance, pedestrian and cyclist delay, non-motorised user (pedestrian and cyclist) amenity, fear and intimidation, and public transport.

Effects on driver delay are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system. The junction assessment demonstrates that the B186 Ockendon Road / Fen Lane junction is predicted to operate within capacity during the AM and PM network peaks during the construction stage; and the scale of vehicle trips generated by the proposed development would not be expected to generate a material impact on the operation of strategic junctions. Moreover, parking for all construction vehicles (including construction workforce cars and HGVs) would be provided within the site boundary, and waiting, loading/unloading or parking activities on the public highway would be prohibited through the Construction Logistics Plan which would be secured within the Code of Construction Practice. Therefore, the effects on driver delay in the construction stage are considered to be adverse, but not significant.

The construction stage is predicted to increase traffic flows, including the proportion of HGVs, and would introduce a wider carriageway on Fen Lane to enable two-way running for HGVs which increases exposure to HGVs and increases the crossing distance experienced by non-motorised users. A footway is also proposed on the northern side of Fen Lane, between the junction with Ockendon Road and the care home, connecting to the dedicated walking/cycling route through the proposed ecology park. A separate connection and informal crossing would also be provided between the dedicated walking/cycling route and the existing golf club and hotel. These proposed facilities would separate pedestrians from motorised traffic on Fen Lane to somewhat offset the effect of the increased traffic flows, particularly benefitting specific receptors identified on Fen Lane. No material changes in average vehicle speeds nor substantial PRoWs diversions would be expected. Therefore, the effects on severance in the construction stage are considered to be neutral, and not significant.

Given the scale of future baseline traffic flow, non-motorised users are likely to experience delay crossing A128 Tilbury Road and A128 Bulphan Bypass. However, it is expected that the proposed development would not materially increase traffic flows on these routes during the construction stage and would not induce additional delay to non-motorised users. Therefore, the effects on pedestrian and cyclist delay in the construction stage are considered to be adverse, but not significant.

There is expected to be some worsening of non-motorised user amenity during the construction stage due to increase in vehicle flows and HGV composition, particularly on Fen Lane. However, this would be offset by improvement to pedestrian and cycle infrastructure including dedicated walking/cycling routes through the proposed ecology park, including a dedicated route between Ockendon Road and the main site entrance, and the provision of a footway on Fen Lane and informal crossings on Fen Lane and Ockendon Road. However, the routes through the proposed ecology park would be of limited benefit to non-motorised users of the private residences and care home on Fen Lane, who would continue to be exposed to motorised traffic on Fen Lane. On balance, the effects on non-motorised user amenity in the construction stage are considered to be beneficial but not

significant for most non-motorised users, and adverse but not significant for non-motorised users associated with the private residences and care home on Fen Lane.

The assessment finds that in the construction stage, one link is predicted to experience a one-step change in the level of fear and intimidation experienced, and all other links are predicted to experience no change in level of fear and intimidation experienced. Therefore, the effects on fear and intimidation in the construction stage are considered to be adverse, but not significant.

Effects on public transport can be experienced by users of the local bus, rail, and London Underground networks. No change to existing public transport networks is expected during the construction stage, and the scale of uplift in passenger demand is not expected to have a material impact on public transport capacity utilisation. Therefore, the effects on public transport in the construction stage are considered to be adverse, but not significant.

Overall, it is considered that the construction stage of the proposed development would not give rise to significant adverse effects on transport and accessibility and identified receptors. Therefore, no additional mitigation (beyond the embedded mitigation identified in ES Chapter 4) is required.

Completed Development Stage Effects

The fully completed development would be operational from January 2043 at the earliest, for the lifetime of the proposed development. For the purposes of assessing the completed development stage, a worst-case has been adopted which consists of the proposed development delivered in full to the maximum extent of the floorspace parameters.

Estimates of the trips generated by the completed development stage on the local highway network have been derived from first principles based on relevant attributes of the proposed development, and information and assumptions presented by the potential beneficiary of the LDO. These have been verified by using trip generation data from suitable benchmark sites where possible, and where not possible, based on professional judgement and experience. Further detail is provided in the separate Transport Assessment (TA).

The assessment has considered the effects of completed development on driver delay, severance, pedestrian and cyclist delay, non-motorised user amenity, fear and intimidation, and public transport.

Effects on driver delay are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system. The junction assessment demonstrates that the B186 Ockendon Road / Fen Lane junction is predicted to operate within capacity during the AM and PM network peaks during the completed development stage; and the scale of vehicle trips generated by the proposed development would not be expected to generate a material impact on the operation of strategic junctions. Moreover, parking sufficient for all vehicles would be provided within the site boundary, and use of the internal private estate roads for overspill parking would be managed through the Travel Plan. Therefore, the effects on driver delay in the completed development stage are considered to be adverse, but not significant.

The completed development stage is predicted to increase traffic flows, particularly on Fen Lane. However, the proposed development would provide walking/cycling routes through the proposed ecology park, including a dedicated route between Ockendon Road to the main site entrance, allowing most non-motorised users to avoid use of Fen Lane. A footway would also be provided on Fen Lane between Ockendon Road and the care home, alongside a footway extension and informal crossing on Ockendon Road, and additional connection and crossing between the dedicated walking/cycling route and the existing golf club and hotel on Fen Lane. No material changes in average vehicle speeds nor PRoW diversions would be expected. Therefore, the effects on severance in the completed development stage are considered to be neutral, and not significant.

Given the scale of future baseline traffic flow, non-motorised users are likely to experience delay crossing A128 Tilbury Road and A128 Bulphan Bypass. However, it is expected that the proposed development would not materially increase traffic flows on these routes during the completed development stage, and therefore would not induce additional delay to non-motorised users. Therefore, the effects on pedestrian and cyclist delay in the completed development stage are considered to be adverse, but not significant.

There is expected to be some improvement of non-motorised user amenity during the completed development stage, in relation to some indicators of the Healthy Streets Approach, particularly due to the provision of a network of walking and cycling routes through the proposed ecology park, as well as provision of footway and informal crossing on Fen Lane, and footway extension and informal crossing on Ockendon Road. Balanced against the increase in traffic flows, the effects on non-motorised user amenity in the completed development stage are considered to be beneficial but not significant for most non-motorised users. However, the network of walking and cycling routes through the proposed ecology park would be of little benefit to non-motorised users associated with private residences and the care home on Fen Lane, for whom amenity would be degraded, leading to adverse but not significant effects.

The assessment finds that in the completed development stage, all links are predicted to experience no change in level of fear and intimidation. Therefore, the effects on fear and intimidation in the completed development stage are considered to be neutral, and not significant.

Effects on public transport can be experienced by users of the local bus, rail, and London Underground networks. No change to existing public transport networks is expected during the completed development stage, and the scale of uplift in passenger demand is not expected to have a material impact on public transport capacity utilisation. Therefore, the effects on public transport in the completed development stage are considered to be adverse, but not significant.

Overall, it is considered that the completed development stage of the proposed development would not give rise to significant effects on transport and accessibility and identified receptors. Therefore, no additional mitigation (beyond the embedded mitigation identified in ES Chapter 4) is required.

Cumulative Effects

Inter-project cumulative effects in relation to transport and accessibility have been considered as trips associated with relevant cumulative schemes are included in the future baseline scenarios against which the future development scenarios have been assessed.

Lower Thames Crossing (LTC) is predicted to be completed and operational prior to the predicted peak construction stage trip generation of the proposed development in 2035. Therefore, the operational impacts of LTC have been accounted for in both the construction future baseline (2035) and the completed development stage (2043). However, the construction impacts and effects of LTC, in combination with the proposed development would not be considered by these two assessment scenarios. Therefore, an additional assessment scenario has been considered to account for the LTC construction traffic peak on Ockendon Road anticipated in 2030.

In the LTC construction peak, the cumulative effects of LTC construction and the proposed development have been considered in relation to driver delay, severance, pedestrian and cyclist delay, non-motorised user amenity, fear and intimidation, and public transport. The additional assessment scenario does not identify any significant effects of the proposed development when assessed against the 2030 future baseline including LTC construction traffic.

1.45 Air Quality

Background

ES Chapter 9: Air Quality reports on the following potential impacts and associated likely effects of the proposed development on local air quality:

- Construction dust impacts and associated effects on amenity, human health and ecological sites, and amenity;
- Qualitative assessment of construction stage and completed development stage road traffic emissions on human health receptors;
- Completed development stage emergency generator emissions during emergency and testing scenarios; and
- The site's suitability for sensitive human health receptors considering potential air pollutant impacts from the testing of backup generators on-site.

The main air pollutants of focus are:

- Dust and particulate matter with an aerodynamic diameter of less than 10 microgram (µm) (PM_{10}), typically generated during construction activities;
- Nitrogen dioxide (NO_2), PM_{10} and particulate matter with an aerodynamic diameter of less than 2.5 µm ($PM_{2.5}$), typically generated by road traffic; and
- NO_2, PM_{10}, $PM_{2.5}$, sulphur dioxide (SO_2), carbon monoxide (CO) and ammonia (NH_3), typically generated by the operation of backup generators.

Baseline

The site is located within the Havering Air Quality Management Area; however, air quality monitoring data demonstrates that NO_2 concentrations in the study area are well below health-based air quality targets set as part of the National Air Quality Strategy. As such, the study area is not an area of poor air quality. Pollutant concentrations have decreased between 2018 and 2022 and are expected to continue to decline in the future.

Construction Stage Effects

During construction stage works, the risk of adverse effects from dust impacts would be controlled by the use of mitigation measures for a high-risk site. These measures would be incorporated in the LDO compliance documents. With the mitigation in place, the effects would be adverse, but not significant.

The assessment of vehicle movements for the construction stage have been based on peak vehicle movements occurring in combination with development traffic associated with the operation of the early completed phases during the peak construction year. The peak traffic generation is anticipated to occur in 2035.

The assessment of vehicle movements for the construction stage confirmed that significant increases in vehicle movements would be limited to Fen Lane. The limited spatial extent of significant increases in traffic movements combined with the low pollutant concentrations in the study area indicate construction stage traffic effects would be adverse, but not significant.

Overall, it is considered that the construction of the proposed development would not give rise to significant adverse effects on air quality at sensitive receptors.

Completed Development Stage Effects

The assessment of vehicle movements for the completed development stage shows substantial increases in vehicle movements would be limited to Fen Lane. The limited spatial extent of significant increases in traffic movements combined with the low pollutant concentrations in the study area indicate completed development stage traffic effects would be adverse, but not significant.

Backup generators would be required to provide power to the proposed development in the event that there is a loss of external power to the site. The backup generators are subject to periodic testing to ensure that they would start and operate correctly in the event of a loss of power to the site. In addition to this testing and assessment of the emergency scenario has been undertaken. In this emergency scenario (where there is a loss of power supply to the site) the generators would potentially operate for longer periods of time at higher loads than during testing.

The dispersion modelling assessment of the emergency generator emissions during the emergency scenario demonstrates that it is unlikely that there would be significant effects on human health unless all of the emergency generators were required to operate for in excess of 39 hours continuously which is considered to be unlikely.

However, impacts on ecological receptors would potentially be significant and would require abatement in the form of selective catalytic reduction (SCR) to reduce the impacts of NOx emissions. With the abatement (SCR) in place, the impacts of NOx emissions would be greatly reduced and there would be no significant effects at ecological receptors and significantly less effects on human health receptors, although no exceedances have been reported prior to the consideration of abatement.

The dispersion modelling assessment of the emergency generator testing regime shows the effect at human health and ecological receptors would be adverse but not significant for all pollutants assessed.

Overall, it is considered that the completed proposed development would not give rise to significant adverse effects on air quality.

Cumulative Effects

Significant cumulative effects as a result of construction stage dust are unlikely to occur as each scheme is anticipated to employ standard dust and construction mitigation in accordance with best practice and relevant guidance; therefore, the individual construction stage effects would not be significant, in isolation or in combination with the proposed development.

There would not be significant cumulative effects from road traffic or generator emissions during the completed development stage, alone or in combination with cumulative schemes.

The additional Lower Thames Crossing construction stage scenario assessment indicates that the proposed developments contribution to trip generation in 2030 would be below assessment thresholds.

1.46 Noise and Vibration

Background

ES Chapter 10: Noise and Vibration presents the potential noise and vibration effects due to the construction and completed development stages of the proposed development taking into account the relevant national and local guidance and regulations.

The following potential impacts and associated likely effects of the proposed development have been assessed:

- Noise from construction activity;
- Vibration generated by specific construction works and plant;
- Changes in road traffic noise on the local road network during the construction stage;
- Changes in road traffic noise occurring on the local road network as a result of the completed development; and
- Effects due to sound of an industrial and commercial nature generated by the completed development (including noise from mechanical and electrical plant), including an emergency scenario with all emergency generators operating in the event of complete power failure.

Baseline

Baseline conditions at sensitive receptors within the study areas were determined either through environmental noise monitoring, or through road traffic noise predictions for the relevant future baseline scenarios.

The noise climate across the site and at the nearest receptors within the study area was observed to be relatively quiet, predominantly influenced by distant and continuous road traffic noise from motorways and trunk roads, with intermittent road traffic noise from occasional traffic movements on the local road network.

Construction Stage Effects

During construction stage works, the risk of adverse effects from construction activity noise and vibration would be controlled by the use of mitigation measures outlined in ES Chapter 4: Proposed Development and Construction. These measures would be incorporated into the LDO compliance documents.

Additional mitigation for construction activity noise identified through the assessment comprises restrictions on the use of impact driving piling for key build zones (or the use of mitigated impact piling if no other form of piling can be implemented); temporary acoustic screening for works at Build Zone C, and restrictions on on-site cutting of steel; temporary screening for earthworks and mound works near the Home Farm receptors, the Fen Farm receptors and Corner Farm Cottage; and temporary screening during the main phases of the highway works should these works occur for more than the identified duration thresholds. In addition, noise monitoring with real-time alerts is to be carried out at positions representing Corner Farm Cottage, Bolyngtons, Fen Lane and Ockendon Road.

Additional mitigation for construction activity vibration identified through the assessment comprises prior notification of compaction works to receptors where vibration levels are expected to be 1 mm/s or more, limiting these works to weekday daytime hours, building condition surveys of the identified receptors prior to works, and vibration monitoring with real-time alerts at Corner Farm Cottage.

With additional mitigation in place, the effects of construction activity noise and vibration would not be significant.

The assessment of vehicle movements for the construction stage have been based on peak vehicle movements occurring in combination with development traffic associated with the operational stage of the early completed phases during the peak construction year. The peak traffic generation is anticipated to occur in 2035. During the peak construction year, construction road traffic is expected to cause perceptible changes in road traffic noise at receptors within 50 m of Fen Lane, such that significant adverse effects are expected. However, the level of road traffic noise during construction

at these receptors would not exceed 68 dB LA10,18hour and would not be atypical for dwellings adjacent to similar semi-rural roads.

No further significant effects are expected to occur due to construction road traffic noise at all other receptors within the study area.

Overall, it is considered likely that the construction of the proposed development would result in significant adverse effects at receptors within 50 m of Fen Lane due to the additional road traffic in the peak year of construction, and result in significant adverse effects at receptors within 50 m of the proposed highway works on Fen Lane and Ockendon Road due to construction activity noise. No further significant construction noise or vibration effects are expected.

Completed Development Stage Effects

The assessment of vehicle movements for the completed development stage has been based on vehicle movements expected to occur due to the fully completed development from 2043 onwards. During the completed development stage, operational road traffic is expected to cause perceptible changes in road traffic noise at receptors within 50 m of Fen Lane, such that significant adverse effects are expected. However, the level of road traffic noise at these receptors would not exceed 68 dB LA10,18hour and would not be atypical for dwellings adjacent to similar semi-rural roads.

No further significant effects are expected to occur due to completed development road traffic noise at all other receptors within the study area.

Prior to and during completed development stage, the risk of adverse effects from operational noise (noise of an industrial nature arising from mechanical and electrical plant including emergency generator testing) is to be controlled through implementation of a Framework for Managing Operational Noise (to be embedded within the LDO compliance documents) and compliance with the noise limits that apply to development within each build zone set out within the assessment and the compliance documents. In summary, the framework would require further assessment of operational noise during the design development stages to achieve the required operational noise limits, evaluation of change during the construction stage, and noise monitoring during the commissioning stages for each build zone. Design development and remedial action will be required should design stage or commissioning stage assessments demonstrate that noise limits are exceeded.

To support the evaluation of likely significant residual effects, an assessment of the illustrative scheme has been carried out and this demonstrates the likely operational noise effects of one form of proposed development that could be delivered under the parameters of the proposed LDO. This demonstrates that significant effects can be avoided and provides an indication of the likely forms of mitigation that would be required. Of particular note, the results demonstrate that up to 24 emergency generators (1-2 per building) could be tested simultaneously at any point in the day and still accord with these noise limits. However, given the flexibility sought thought the parameters, it is possible that the proposed development could be delivered in a different form and still achieve compliance with the noise limits via other means.

The framework includes limits for an emergency scenario in which large quantities of emergency power back-up systems could operate for up to 72 hours. The noise limits account for the low likelihood of occurrence and the fact that, in an emergency, any noise effect would be temporary. The assessment of the illustrative scheme demonstrates that, for one form of proposed development that could be delivered under the parameters of the proposed LDO, typical forms of mitigation (screening and enclosures) would be sufficient to achieve compliance with these noise limits.

Overall, it is considered that the operation of the proposed development would result in a significant adverse effect on receptors within 50 m of Fen Lane due to the addition road traffic generated by

the completed development. No further significant completed development noise or vibration effects are expected.

Cumulative Effects

The potential for significant cumulative noise and vibration effects have been evaluated for five of the eight identified cumulative schemes, due to proximity to the proposed development.

The potential for significant cumulative traffic noise and vibration effects has not been separately evaluated as the cumulative schemes have been included in the future baseline traffic data.

Overall, it is considered that cumulative noise and vibration effects would be no worse than the noise and vibration effects of the proposed development in isolation and therefore not significant.

An additional assessment scenario has been presented, considering the potential cumulative effects of LTC construction traffic and the proposed development construction traffic. This demonstrates that the combined road traffic noise effects would be no worse than the effects of the proposed development in isolation.

1.47 Ecology

Background

ES Chapter 11: Ecology reports on the assessment of potential ecological impacts and likely effects due to the construction and completed development stages of the proposed development. The assessment has been undertaken taking into account the relevant national and local guidance and regulations.

Baseline

The site comprises predominately agricultural land, with associated field boundaries, ditches, vehicular access tracks/roads and a small area of woodland in the approximate centre of the site. Small agricultural structures are also present on-site.

There are no international statutory designated sites within a 2 km radius of the site. Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar site are 9.19 km south-east of the site.

There are two Local Nature Reserves within 2 km of the site boundary, Cranham Marsh and Cranham Brickfields. A further 13 non-statutory designated sites are present within a 2 km radius of the site boundary, ranging from Metropolitan to Borough Grade 2, including Fairplay Farm SINC which is partially within the site and Upminster Sewage Works Grass Beds adjacent to the site.

The habitats currently on-site provide a varying level of ecological importance from Negligible to Local scale of ecological importance, with potential veteran trees of National scale ecological importance.

Invertebrate assemblages are considered to be of Local scale importance as the site contains various habitats which are of importance for invertebrates including woodland which is a valuable habitat for stag beetles, and neutral grassland which is a valuable habitat for notable pollinator species.

On-site amphibians are considered to be of up to Local scale importance. Although great crested newts have not been identified as present on the site, they are known to be in the local area and are considered likely to be present or to become present on the site in the future.

Reptile assemblages are considered to be of Local scale importance, with both grass snake and common lizard being recorded as present with a small population on the site.

On-site breeding and wintering birds are considered to be up to Local scale importance.

Foraging commuting and roosting common bat species (common pipistrelle, soprano pipistrelle and brown long-eared) are considered to be of Local scale importance. The site contains hedgerows, treelines and woodland which supports foraging and commuting bat species. There is a confirmed tree roost of a pipistrelle bat on the site, and a further 86 trees have been classed as having high and moderate potential to support roosting bats.

Badgers are considered to be up to Local scale importance.

Water vole are considered to be of Local scale importance. Although none were recorded on-site, there is suitable habitat present and they are assumed to be present as they are known to be in the local area.

Hedgehogs, harvest mice and brown hare are assumed present on the site and are considered to be of Local scale importance.

Construction Stage Effects

Extensive embedded mitigation measures have been considered in the assessment. These mitigation measures would ensure that the operation of the proposed development would reduce potential impacts and effects where possible.

A Habitat Regulations Assessment Stage 1 Screening has confirmed that there would be no effects in respect of Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar Site as a result of the construction stage. On this basis it is considered that there would be no effects on these designated sites.

During construction works, temporary and permanent, direct and indirect, adverse effects on ecologically sensitive receptors and biodiversity are likely to arise as a result of loss and degradation of habitat; loss of connectivity; loss of nesting, resting and foraging habitats; work practices; increased traffic and accidental vehicle collisions; contractor work force and activity presence and lighting leading to disturbance; spread of non-native and invasive species; as well as disturbance, emissions and discharges. However, these effect would not be significant.

The effects during the construction stage on designated sites, habitats, invertebrates, amphibians, reptiles, birds, bats, badgers, water voles and other species would be adverse but not significant. These effects would be temporary and reduce as new habitat is created on-site and becomes established over time.

Additional mitigation has been proposed based on legislative requirements, best practice and with the aim of delivering biodiversity gain. These measures would reduce and off-set identified adverse effects.

Completed Development Stage Effects

Extensive embedded mitigation measures have been considered in the assessment. These mitigation measure ensure that the operation of the proposed development would reduce potential impacts and effects where possible.

A Habitat Regulations Assessment Stage 1 Screening has confirmed that there would be no effects in respect of Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar Site as a result of the completed development stage. On this basis it is considered that there would be no effects on these designated sites.

Following completion of the proposed development, beneficial effects on biodiversity are likely to arise as a result of the introduction of extensive new habitats within the strategic landscaping and

ecology park. These habitats would be managed to support a range of protected and notable species.

The effects during the completed development stage would be beneficial and significant for habitats, and beneficial but not significant for designated sites, invertebrates, reptiles, amphibians, birds, bats, badgers and water vole. There would be no effects on other protected and notable species.

Additional mitigation has been proposed based on legislative requirements, best practice and with the aim of delivering biodiversity gain. These measures would reduce and off-set identified adverse effects.

Cumulative Effects

Of the nine cumulative schemes identified, three are considered to be located far enough away from the site that cumulative effects are not considered to be likely. The remaining six cumulative scheme would be required to accord with standard mitigation measures for schemes of their scale such as Construction Environmental Management Plans, etc. This includes meeting 10 % Biodiversity Net Gain and implementing procedures to reduce demolition and construction effects.

On this basis, cumulative effects from the construction and completed development stages are considered to be the consistent with those reported for the proposed development in isolation.

1.48 Water Resources and Flood Risk

Background

ES Chapter 12: Water Resources and Flood Risk presents the potential water resources and flood risk impacts and likely effects due to the construction and completed development stages of the proposed development. The assessment of construction and completed development stages has been undertaken taking into account the relevant national and local guidance and regulations.

Baseline

The site is situated adjacent to a watercourse, the Mardyke, which flows south along the north-east and crosses the south-east corner of the site. The Mardyke is designated as an Environment Agency (EA) main river.

The EA mapping indicates the majority of the site is within Flood Zone 1 (Low probability of fluvial or tidal flooding). There are areas within the site boundary in the east of the site, close to the Mardyke, within Flood Zones 2 and 3 (Medium and High probability of fluvial or tidal flooding).

There are several overland flow pathways crossing the site, predominantly routing surface water from west to east across the site towards the Mardyke, where the EA identified a potential surface water flood risk.

The British Geological Survey (BGS) map of the area (1:50,000 scale map series), accessed via online digital mapping, indicates the site is directly underlain by the London Clay Formation. Records show the site is underlain predominantly by superficial deposits of Head and Alluvium.

The site and study area are located within the Mardyke Nitrate Vulnerable Zone.

The site lies within Zone 3 (Total Catchment) of the groundwater Source Protection Zones.

The Mardyke watercourse lies within the Mardyke (West Tributary) Water Body catchment (Ref: GB106037028080) as delineated by the EA's Catchment Data Explorer. The catchment was classified as overall Moderate Status in 2022 although a failed Chemical Status in 2019 due to 'Mercury and Its Compounds' and 'Polybrominated diphenyl ethers (PBDE)'.

Construction Stage Effects

During construction works, the following effects have been identified:

- Increase in surface water runoff arising from construction works;
- Changes to the hydrodynamic status of the on-site ditch network and downstream watercourses;
- An increase in sediment loading of water discharged into the Mardyke and the resulting changes to the hydrodynamic status of downstream water features;
- Changes to the water quality status of the downstream water environment arising from construction works and associated drainage;
- Increase in potable water demand from the construction stage; and
- Increase in discharge volumes of effluent to foul sewers.

Taking into account the standard embedded management and control measures within the Code of Construction Practice which would be adopted on-site, it has been concluded that the existing site and construction of the proposed development would not result in significant adverse effects on water resources and flood risk and identified receptors.

Completed Development Stage Effects

During the completed development stage, the following effects have been identified:

- Increased surface water runoff rates leading to flood risks off-site;
- Direct changes to the extent and depth of the floodplain;
- Changes to the water quality status of on-site and downstream water features during the operational stage;
- Increase in potable water demand from the completed development stage; and
- Increase in discharge volumes of effluent to foul sewers.

Taking into account the embedded drainage strategy which would be adopted on-site, it has been concluded that the completed proposed development would not result in significant adverse effects on water resources and flood risk and identified receptors.

Cumulative Effects

This water resources and flood risk assessment has given consideration to the combined effects of the proposed development together with cumulative schemes within 1 km of the site boundary.

It is anticipated that the cumulative schemes would be required to offer betterment in terms of surface water runoff volumes when compared to the pre-developed situation and include measures to offer suitable treatment of runoff and demonstrate there would be no increase in off-site flood risks.

Similarly cumulative schemes would be reasonably expected to implement the same standard construction management measures and controls to those that would be adopted by the proposed development.

Furthermore, any surface water connections would be subject to approval and if a requirement for network upgrades were to be identified, these would be completed prior to connection.

Accordingly, no significant cumulative effects have been idenfitied.

1.49 Soils and Agriculture

Background

ES Chapter 13: Soils and Agriculture presents the potential impacts and likely effects on soils and agricultural land due to the construction stage of the proposed development, as a result of land being taken out of agricultural production. There are not anticipated to be any potential significant effects during the completed development stage and therefore this stage of the proposed development has not been assessed.

The assessment has been undertaken taking into account relevant policies and guidance.

Baseline

The site extends to 218.8 ha of primarily agricultural land in arable use, growing cereals together with break crops such as oilseeds and legumes.

The study area for this assessment has been determined as the agricultural land within the site boundary and comprises the following distinct areas targeted for development:

- Build Zones (including on-plot landscaping) and infrastructure corridors;
- Ecology park;
- Cable routing connecting to Warley substation; and
- Fibre optic cable routing.

The proposed highway works on Fen Lane and Ockendon Road would not impact on agricultural land or soil resource and therefore have not been assessed.

The proposed off-site fibre optic cable routes would also not impact on agricultural land or soil resources where they would be delivered within the highways network and on this basis have not been assessed within this chapter. Where the construction of new on-site fibre optic cable routes would be outside of the build zones and infrastructure corridors, they would not have a material effect on either agricultural land value or soil resource and therefore have not been assessed.

The superficial geology at the site comprises mostly head deposit, with alluvium in the east, all lying over a bedrock of London Clay. This gives rise to mostly clay, heavy clay loam and heavy silty clay loam soils, with variable permeability and drainage characteristics.

Detailed Agricultural Land Classification surveys were undertaken in March and October 2024 of the land proposed for development at the build zones. The remainder of the site, which is proposed for an ecology park and cable routing, was surveyed in October 2024 at a reconnaissance level as there would not be an irreversible loss of agricultural land or soil in this part of the site.

The survey identified three similar soil types, differentiated by subsoil permeability and drainage characteristics, and a small area in the west of a separate soil type with coarser textures and subject to soil draughtiness. Overall, the soil resource is of a heavy texture (clay or heavy (silty) clay loam).

The permeable soils are limited to Subgrade 3a, with the slowly permeable soils and those with heavier topsoil textures limited to Subgrade 3b. The droughty soils are also limited to Subgrades 3a and 3b, with the draughtier soils limited to the lower grade. Subgrade 3a is within the category of best and most versatile agricultural land and considered to be of high sensitivity while 3b is considered to be of medium sensitivity.

Construction Effects

During the construction stage, there would be a permanent irreversible loss of agricultural land of 75.0 ha within the build zones (including on-plot landscaping), of which 28.6 ha is BMV land in Subgrade 3a and 46.4 ha is non-best and most versatile land in Subgrade 3b.

The 114.1 ha of land within the proposed ecology park of which 34.6 ha is in Subgrade 3a and 79.5 ha is in Subgrade 3b would also be removed from agricultural production but is considered to be potentially reversible to agricultural use.

The up to four cable routes proposed to connect to Warley substation of which substantially less than 5 ha would be disturbed but would not be permanently removed from agricultural as it would be restored to its former use upon completion of the installation of the cables.

Off-site there would be a temporary and reversible loss of approximately 0.0165 ha of agricultural land within the fibre optic cable route at White Post Farm.

There are no universally applicable measures available to mitigate the irreversible loss of agricultural land.

The permanent, irreversible loss of Subgrade 3a best and most versatile land within the build zones and infrastructure corridors would give rise to significant adverse effects, while the permanent, irreversible loss of Subgrade 3b land has been assessed as not significant adverse.

The permanent, but potentially reversible loss of Subgrade 3a best and most versatile land and Subgrade 3b land within the ecology park has been assessed as significant adverse.

The temporary, reversible loss of Subgrade 3a best and most versatile land within the cable routing connecting to Warley substation has been assessed as not significant adverse.

The heavy-textured soils are sensitive to disturbance and handling, but the implementation of soil resource management measures with the LDO compliance documents would reduce the effect on soil resources. With this additional mitigation in place, the residual construction effects on soil resources are considered to be:

- Permanent significant adverse within the build zones and infrastructure corridors;
- Permanent, but potentially reversible, significant adverse within the ecology park; and
- Temporary and reversible, not significant adverse within the cable routing connecting to Warley substation.

Cumulative Effects

Five cumulative schemes are likely to give rise to cumulative effects on agricultural land in combination with the proposed development. Of the five, four include land of Subgrade 3b quality with some Subgrade 3a, but the Lower Thames Crossing is likely to involve the loss of Grade 2 agricultural land, which is a resource of high sensitivity. Therefore, the cumulative effect on agricultural land in combination with the proposed development is anticipated to be significant and adverse.

1.50 Climate Change

Background

ES Chapter 14: Climate Change presents the likely climate change effects due to the construction and completed development stages of the proposed development. The assessment of construction and completed development stages has been undertaken taking into account the relevant national

and local guidance and regulations. An end of life stage has been considered in respect of greenhouse gas emissions for information purposes.

Baseline

There is no operational energy or operational transport greenhouse gas (GHG) emissions associated with the site. In addition, for LBH, the UK Climate Projections (UKCP18) over land indicate increased likelihood of milder, wetter winters and hotter, drier summers for the future assessment period in comparison to the UKCP18 baseline, respectively.

Construction Stage Effects

Climate Change Resilience

During the construction works, the Climate Change Resilience (CCR) assessment has reviewed the potential vulnerability of the proposed development to extreme weather and projected climate change.

Taking into account the embedded mitigation measures, the effects are predicted to be of low magnitude. The construction of the proposed development would result in adverse effects, but these would not be significant in respect of identified receptors and climate change.

Greenhouse Gas Emissions

During the construction works, GHG emissions would be produced from raw materials required, transport and construction processes. The estimate of GHG emissions from the construction stage is approximately 622,992 tonnes of carbon dioxide equivalent (tCO_2e).

As the emissions would be small in respect of carbon budgets at borough and national level, it has been concluded that the construction of the proposed development would result in adverse, but not significant effects on identified receptors and climate change.

Completed Development Stage Effects

Climate Change Resilience

The CCR assessment has reviewed the potential vulnerability of the proposed development to extreme weather and projected climate change; however, taking into account embedded mitigation measures, the impacts are predicted to be of low magnitude.

While the completed development stage of the proposed development would result in adverse effects on identified receptors and climate change, the effects would not be significant.

Greenhouse Gas Emissions

Once the proposed development is completed, GHG emissions would be generated primarily from the use of the proposed development and from its maintenance. The provisional estimate of emissions from the completed development stage of the proposed development over the 60-year design life (including end of life) totals 71,751,469 tCO_2e. In the absence of additional mitigation, the effect would be significant adverse.

The necessary additional mitigation would be secured within the LDO and via legal agreement. On this basis, the residual completed development GHG emissions would result in adverse, but not significant effects on identified receptors and climate change.

Cumulative Effects

Climate Change Resilience

The climate resilience effects identified as a result of the construction and completed development stages are limited in their spatial extent to the site boundary and the proposed development in isolation. Therefore, cumulative CCR effects with other schemes are not applicable.

Greenhouse Gas Emissions

The atmospheric concentration of GHGs and resulting effect on climate change is affected by all sources and sinks globally, anthropogenic and otherwise. As GHG emission impacts and resulting effects are global rather than affecting one localised area, the approach to cumulative effects assessment for GHGs differs from that for many EIA topics where only projects within a geographically bounded study area of, for example, 1-2 km would be included.

Therefore, effects of GHG emissions from specific cumulative schemes have not been individually assessed. However, GHG emissions, have been contextualised within the UK, LBH and UK building sector carbon budgets.

1.51 Landscape and Visual

Background

ES Chapter 15: Landscape and Visual presents the potential landscape and visual impacts and likely effects due to the construction and completed development stages of the proposed development. The assessment of construction and completed development stages has been undertaken taking into account the relevant legislation, policies, and published guidance.

The following potential impacts and associated likely landscape and visual effects of the proposed development have been assessed:

- Construction stage activities resulting in the removal of vegetation to facilitate the build programme; the introduction of site compounds, storage of materials, lighting (if necessary, during the autumn and winter months); the presence of plant machinery; earthworks; and the power connection to Warley Substation; and
- Completed development stage that considers the maximum development envelopes (with roof plant and flues) within build zones with embedded mitigation measures as set out in ES Chapter 4: Proposed Development Description and Construction, resulting in the presence of new built form and planting within the ecology park.

The illustrative scheme has been assessed for additional context; the findings of this assessment has been set out in Technical Appendix 15.4 of ES Volume 2.

Methodology

The technical scope of the assessment has been informed by GLVIA3 and subsequent GLVIA 3 clarifications, and by application of professional judgement. The assessment has taken account of applicable legislation, guidance and policy.

The technical scope of the assessment for both the construction stage and completed development stage has considered the potential impacts and likely effects on the following:

- Landscape fabric (the site and immediate context 500 m form the site boundary);
- Landscape character; and
- Visual amenity.

Whilst the proposed landscape planting within the ecology park is embedded mitigation, it would not be immediately effective as landscape and visual mitigation at the time of initial planting. Therefore, the completed development stage has been assessed for each landscape and visual receptor on the basis of the following two scenarios:

- Scenario 1 assesses the maximum development envelopes (with roof plant and flues) within build zones with embedded mitigation measures as set out in ES Chapter 4: Proposed Development Description and Construction, at the end of the LDO (2045). Scenario 1 presents a worst-case for the completed development stage; and
- Scenario 2 assesses the maximum development envelopes (with roof plant and flues) within build zones with embedded mitigation measures as set out in ES Chapter 4: Proposed Development Description and Construction, with any screening effects of the proposed ecology park planting at 10 years following the end of the LDO (2055).

Baseline analysis has been informed by a review of published studies, desk top research, site visits, and ZTV analysis. The study area covers an area of 10 km radius from the site boundary.

Accurate visual representations (AVRs) (Type 3 photowire and/or photomontages) have been prepared in accordance with current best practice, to predict the completed development effects of the proposed development based on the development parameters and to inform the assessment.

Baseline

The site is located within arable farmland and contains the following landscape elements:

- Within the northern section of the site is a parcel of woodland. The field boundary hedgerows thin out and the landscape becomes open with a network of ditches delineating land parcel boundaries;
- The east of the site is relatively flat. The Mardyke runs along the boundary of the site, separating the site from the surrounding agricultural fields;
- The south of the site is characterised by arable fields with small ponds; and
- In the west the topography rises by 20 m from the centre of the site towards North Ockendon which sits on a plateau and forms a vantage looking towards the north-east.

The site sits within Landscape Character Area (LCA) 7 Essex Plateau; however, the eastern section of the site shares more characteristics with the adjacent LCA A1 Bulphan Fenland with an open rural character where major roads and development have less influence.

The visual amenity of the study area is predominantly of a semi-rural or rural landscape containing small settlements with visual enclosure provided by hedgerows and trees and small areas of woodland. The land rises to the north and east resulting in some elevated views across the landscape. The overall quality of the views and the visual amenity of residents is limited to some degree by major road corridors, commercial and utilities development and by networks of pylons and power lines that interrupt or foreshorten panoramic views.

A series of 23 representative assessment viewpoints were agreed during the EIA Scoping process, baseline photography was taken from each viewpoint, with night-time photography taken from four viewpoints.

Construction Effects

During construction works, there is potential for adverse effects on both landscape and the visual receptors. These effects would be controlled by the use of embedded mitigation measures incorporated within the LDO control documents.

It is noted that some of the on-site landscape planting within the ecology park would be delivered early int the construction programme. However, the most pronounced effects would be associated with changes to the landscape fabric on the site, and the introduction of tall machinery and plant such as cranes that would have localised impacts that would move position as the build out programme progresses. In this respect they may be considered transient in nature although the construction period would extend up to 20 years in extent.

Landscape

The effects of the construction stage of the proposed development on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary).

The effects on landscape character would be adverse but not significant for host LCA 7: Essex Plateau and the adjoining LCA A1: Bulphan Fenland.

Visual Day-Time

The effects of the construction stage of the proposed development on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 10 (PRoW North-west of Bulphan), 15 (PRoW to the west of Langdon Hills), 18 (Fen Lane), 19 (PRoW south of Harrow Bridge) and 22 (PRoW at Clay Tye Cottage).

Effects would be adverse, but not significant from viewpoints 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 5 (PRoW on the Western Edge of Little Burstead), 11 (PRoW Near the Grove), 12 (PRoW West of Orsett), 13 (PRoW West of Brentwood Road), 14 (PRoW West of Langdon Hills Golf Club), 16 (Near St. Mary's Church), 17 (B186 Railway Bridge), 20 (B186 and A127 Junction) and 21 (St Mary's Lane and Dunning's Lane Junction).

There would be no effect at viewpoint 23 (PRoW at Belhus Wood Country Park).

Visual Night-Time

The effects of the construction stage of the proposed development on visual amenity during the night-time would be adverse but not be significant at all four viewpoints assessed (6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 15 (PRoW to the west of Langdon Hills) and 22 (PRoW at Clay Tye Cottage)).

Completed Development Effects

The embedded and additional mitigation described in this assessment would soften the edges of built form, and filter views to the proposed development. The ecology park and other planting would provide 'in character' habitat creation that would establish green corridors throughout the site. Seven view corridors, and separation distances between built form would retain a degree of visual permeability across the site with views to the ecology park and wider landscape. These would reduce the scale and extent of completed development stage landscape and visual effects, but significant landscape and visual effects would persist for some receptors arising from the presence of built form on previously visually open agricultural land, particularly within and adjoining the site, and where views extend across and along the full extent of the proposed development.

Scenario 1

Landscape

The effects of the completed development stage for scenario 1 (end of LDO 2045) on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary).

The effects on landscape character would be adverse but not significant for host LCA 7: Essex Plateau and adjoining LCA A1: Bulphan Fenland.

Visual Day-Time

The effects of the completed development stage for scenario 1 (end of LDO) on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 10 (PRoW North-west of Bulphan), 15 (PRoW to the west of Langdon Hills), 18 (Fen Lane), 19 (PRoW south of Harrow Bridge) and 22 (PRoW at Clay Tye Cottage).

Effects would adverse but not be significant from viewpoints 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 5 (PRoW on the Western Edge of Little Burstead), 11 (PRoW Near the Grove), 12 (PRoW West of Orsett), 13 (PRoW West of Brentwood Road), 14 (PRoW West of Langdon Hills Golf Club), 16 (Near St. Mary's Church), 17 (B186 Railway Bridge), 20 (B186 and A127 Junction) and 21 (St Mary's Lane and Dunning's Lane Junction).

There would be no effect at viewpoint 23 (PRoW at Belhus Wood Country Park).

Visual Night-Time

The effects of the completed development stage for scenario 1 (end of LDO) on visual amenity during the night-time would be significant adverse at viewpoints 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), and 22 (PRoW at Clay Tye Cottage).

Effects would adverse but not be significant from viewpoint 15 (PRoW to the west of Langdon Hills).

Scenario 2

Landscape

The effects of the completed development stage for scenario 2 (10 years following the end of the LDO) on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary).

The effects on landscape character would be adverse but not significant adverse for host LCA 7: Essex Plateau and adjoining LCA A1: Bulphan Fenland.

Visual Day-Time

The effects of the completed development stage for scenario 2 (10 years following the end of the LDO) on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 10 (PRoW North-west of Bulphan), 18 (Fen Lane), and 22 (PRoW at Clay Tye Cottage).

Effects would adverse but not be significant from viewpoints 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 5 (PRoW on the Western Edge of Little Burstead), 11 (PRoW Near

the Grove), 12 (PRoW West of Orsett), 13 (PRoW West of Brentwood Road), 14 (PRoW West of Langdon Hills Golf Club), 15 (PRoW to the west of Langdon Hills), 16 (Near St. Mary's Church), 17 (B186 Railway Bridge), 19 (PRoW south of Harrow Bridge), 20 (B186 and A127 Junction) and 21 (St Mary's Lane and Dunning's Lane Junction).

There would be no effect at viewpoints 23 (PRoW at Belhus Wood Country Park).

Visual Night-Time

The effects of the completed development stage for scenario 2 (10 years following the end of the LDO) on visual amenity during the night-time would be significant adverse at viewpoints 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), and 22 (PRoW at Clay Tye Cottage).

Effects would adverse but not be significant from viewpoint 15 (PRoW to the west of Langdon Hills).

Cumulative Effects

Construction Effects

The landscape and visual cumulative effects during the construction stage and completed development assessment relate to combined visibility and sequential views with other similar developments of equivalent scale and type.

Eight of the cumulative schemes have the potential to generate in combination effects with the proposed development during the construction stage.

Landscape

The cumulative effects of the construction stage in combination with the proposed development on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary), the host LCA 7: Essex Plateau, and adjoining LCA A1: Bulphan Fenland.

Visual Day-Time

The cumulative effects of the construction stage in combination with the proposed development on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 10 (PRoW North-west of Bulphan), 11 (PRoW Near the Grove), 12 (PRoW West of Orsett), 15 (PRoW to the west of Langdon Hills), 17 (B186 Railway Bridge), 18 (Fen Lane), 20 (B186 and A127 Junction) and 22 (PRoW at Clay Tye Cottage).

Effects would be adverse but not be significant from viewpoints 5 (PRoW on the Western Edge of Little Burstead), 13 (PRoW West of Brentwood Road), 14 PRoW (West of Langdon Hills Golf Club), 16 (Near St. Mary's Church), and 21 (St Mary's Lane and Dunning's Lane Junction).

The effects from viewpoints 19 (PRoW south of Harrow Bridge) and 23 (PRoW at Belhus Wood Country Park) would remain as previously reported for the construction stage for the proposed development.

Visual Night-Time

The effects of the construction stage of the proposed development on visual amenity during the night-time would remain as previously reported for the proposed development.

There would be no cumulative effects from viewpoints; 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), and 22 (PRoW at Clay Tye Cottage), effects would remain as previously reported for the proposed development.

Completed Development Stage

Scenario 1

Nine of the cumulative schemes have the potential to generate in combination effects with the proposed development during the completed development stage.

The cumulative assessment has considered the proposed development as set out in scenario 1 in combination with cumulative schemes to identify residual cumulative effects.

Landscape

The effects of the completed cumulative schemes in combination with the proposed development on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary), the host LCA 7: Essex Plateau, and adjoining LCA A1: Bulphan Fenland.

Visual Day-Time

The effects of the completed cumulative schemes in combination with the proposed development on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 5 (PRoW on the Western Edge of Little Burstead), 10 (PRoW North-west of Bulphan), 11 (PRoW Near the Grove), 12 (PRoW West of Orsett), 15 (PRoW to the west of Langdon Hills), 17 (B186 Railway Bridge), 18 (Fen Lane), 20 (B186 and A127 Junction) and 22 (PRoW at Clay Tye Cottage).

Effects would be adverse but not be significant from viewpoints 5 (PRoW on the Western Edge of Little Burstead), 13 (PRoW West of Brentwood Road), 14 PRoW (West of Langdon Hills Golf Club), 16 (Near St. Mary's Church), and 21 (St Mary's Lane and Dunning's Lane Junction).

There would be no cumulative effects from viewpoints 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 19 (PRoW south of Harrow Bridge), and 23 (PRoW at Belhus Wood Country Park). Effects would remain as previously reported for the scenario 1 stage of the proposed development.

Visual Night-Time

The effects of the completed cumulative schemes in combination with the proposed development on visual amenity during the night-time would be adverse but not significant from viewpoint 15 (PRoW to the west of Langdon Hills).

There would be no cumulative effects from viewpoints6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), and 22 (PRoW at Clay Tye Cottage), effects would remain as previously reported for the proposed development.

Scenario 2

Nine of the cumulative schemes have the potential to generate in combination effects with the proposed development during the completed development stage.

The cumulative assessment has considered the proposed development as set out in scenario 2 in combination with cumulative schemes to identify residual cumulative effects.

Landscape

The effects of the completed cumulative schemes in combination with the proposed development on landscape character would be significant adverse for the site and immediate context (500 m from the site boundary), the host LCA 7: Essex Plateau, and adjoining LCA A1: Bulphan Fenland.

Visual Day-time

The effects of the completed cumulative schemes in combination with the proposed development on visual amenity during the day-time would be significant adverse at viewpoints 1 (PRoW South of Great Warley Hall), 2 (PRoW North of Childerditch), 3 (PRoW to the South of Thorndon Hall Grade II Registered Park and Garden and Country Park), 4 (PRoW North of Dunton Hall), 5 (PRoW on the Western Edge of Little Burstead), 10 (PRoW North-west of Bulphan), 11 (PRoW Near the Grove), 12 (PRoW West of Orsett), 17 (B186 Railway Bridge), 18 (Fen Lane), 20 (B186 and A127 Junction) and 22 (PRoW at Clay Tye Cottage).

Effects would be adverse but not be significant from viewpoints 5 (PRoW on the Western Edge of Little Burstead), 13 (PRoW West of Brentwood Road), 14 PRoW (West of Langdon Hills Golf Club), 15 (PRoW to the west of Langdon Hills), 16 (Near St. Mary's Church), and 21 (St Mary's Lane and Dunning's Lane Junction).

There would be no cumulative effects from viewpoints 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), 8 (PRoW Passing Through the Site), 9 (Dunnings Lane), 19 (PRoW south of Harrow Bridge), and 23 (PRoW at Belhus Wood Country Park). Effects would remain as previously reported for the scenario 2 stage of the proposed development.

Visual Night-Time

The effects of the completed cumulative schemes in combination with the proposed development on visual amenity during the night-time would be adverse but not significant from viewpoint 15 (PRoW to the west of Langdon Hills).

There would be no cumulative effects from viewpoints; 6 (PRoW at North Ockendon), 7 (PRoW to the North of the Site), and 22 (PRoW at Clay Tye Cottage), effects would remain as previously reported for the proposed development.

8. Cumulative Effects

1.52 Inter-Project Effects

The inter-project cumulative effects have been summarised in each of the relevant technical topics in Section 7 of this NTS.

No additional significant effects have been reported when combined or additive cumulative effects are considered.

1.53 Intra-Project Cumulative Effects

Construction Stage

From the assessment of intra-project cumulative effects, one significant beneficial construction effect has been identified in respect of the following receptors and receptor groups:

- The labour market.

Five significant adverse construction effects have been identified in respect of the following receptors and receptor groups:

- Existing off-site residential receptors;
- Agricultural Land;
- Soil Resource;
- Existing Landscape Character; and
- Existing Views.

Completed Development Stage

No significant beneficial completed development effects that have been identified.

Two significant adverse completed development effects have been identified in respect of the following receptors and receptor groups:

- Existing Landscape Character; and
- Existing Views.

9. Summary

1.54 Additional Mitigation

The EIA process has identified the need for additional mitigation as summarised in Table 9.1. The additional mitigation measures are over and above the embedded mitigation measures, as the embedded mitigation forms part of the proposed development description.

Table 9.1: Summary of Proposed Additional Mitigation

Topic	Proposed Additional Mitigation
Construction	
Archaeology and Cultural Heritage	**Archaeology** It is considered that the adverse effects on buried heritage assets could be offset by a staged programme of archaeological evaluation (Stages 1 and 2) and mitigation (Stage 3), with dissemination at an appropriate level to increase knowledge and appreciation of the buried heritage assets. The aims and methodology of each stage would be set out in a WSI subject to prior approval by the LPA/ GLAAS. Stage 1 would comprise the following: • A programme of geophysical survey to identify anomalies indicative of buried features, which would inform the scope of Stage 2; Stage 2 would comprise the following: • Where necessary, a targeted archaeological trenched and/or geoarchaeological evaluation in order to confirm the underlying deposits and the nature, extent, condition and heritage significance of predicted archaeological remains at the site. The results of Stages 1 and 2 would allow confirmation of the mitigation strategy (in particular on the need for targeted archaeological excavation in advance of construction, and/or a watching brief during earthworks) for any significant archaeological assets in order to offset the effects and ensure public benefit from the archaeological process. All archaeological work would be undertaken in consultation with the GLAAS as the archaeological advisor to LBH, and in accordance with an approved archaeological WSI.
Socio-Economics	None.
Transport and Accessibility	None.
Air Quality	None.
Noise and Vibration	For Build Zones B, C, G and H, substructure works shall be carried out without the use of impact driven piling. Piling using augured or vibratory methods shall be implemented, or an alternative means of mitigating noise from piling shall be employed, such as with the drive system enclosed within an acoustic shroud. For Build Zone C, the following additional mitigation shall apply: • On-site cutting of structural steel shall be minimised as far as possible through off-site manufacture. Should this be essential to carry out on site, these works shall be carried out within the northern half of the build zone (at least 150 m from Corner Farm Cottage) where feasible; and • Temporary acoustic screening (a 2.4 m tall imperforate barrier of minimum mass per unit area of 10 kg/m^2) shall be provided around works associated with a proposed building where the proposed building footprint encroaches into the southern 100 m wide part of the build zone.

Table 9.1: Summary of Proposed Additional Mitigation

Topic	Proposed Additional Mitigation
	For earthworks and the closest mound works to the Home Farm receptors (R01 and R05), the Fen Farm receptors (R02 and R08) and Corner Farm Cottage (R06), temporary acoustic screening (minimum mass per unit area of 10 kg/m^2) shall be provided where these works occur within 100 m of the receptor and for a duration of two weeks or more. Acoustic screening shall be a minimum height of 2 m (and, in general, with a height of no more than 3 m) and shall be positioned to completely hide the surface level works from view at the receptor. For Phases S2 to S4 of the highway works, temporary acoustic screening (minimum mass per unit area of 10 kg/m^2) shall be provided where these works occur within 100 m of noise-sensitive receptors for a duration of two weeks or more. Acoustic screening shall be a minimum height of 2 m and shall be positioned and selected to hide surface level works from view at the overlooking windows to noise-sensitive rooms within these dwellings. For Phase S1 of the highway works, it is assumed that provision of temporary screening during the limited site clearance and enabling works would not be practical or appropriate. Where vibration levels are predicted to exceed Significant Observed Adverse Effect Level (SOAEL) for human perception effects (such as at Corner Farm Cottage, and the dwellings closest to the Fen Lane and Ockendon Road highway works), the contractors shall: • carry these works out only during weekday daytime; • provide prior notification to the occupiers of affected receptor building of the type of works, the reason for the works, the likely times and duration of works; and • offer to carry out a building condition survey prior to the works to ensure the current status of the receptor building is recorded, and carry this out if consent is given by landowner. To further reduce the risk of significant effects occurring: • Noise and vibration monitoring shall be carried out at a position representing Corner Farm Cottage during substructure works at Build Zone C and during mound works (during which potential significant effects have been identified); • Noise and vibration monitoring shall be carried out at a position representing Bolyngtons (near Home Farm Estate) during mound works (during which potential significant effects have been identified); and • Noise and vibration monitoring shall be carried out during the highway works at one position on Fen Lane and one position on Ockendon Road (north of Fen Lane) representing the closest dwelling to the Fen Lane and Ockendon Road highway works. For the above monitoring, the instrumentation shall be located at a position representing the worst-affected receptor building(s) and shall provide the Contractor with real-time alerts such that action can be taken to reduce the likelihood of significant effects occurring when noise or vibration levels approach or exceed the SOAEL values.
Ecology	As no significant effects have been identified within the assessment, no additional mitigation is considered to be necessary in EIA terms. However, non-significant effects have been identified and additional mitigation has been proposed on the basis of best practice and legislative requirements (such as protected species licencing). The final design and location of mitigation would be secured by condition (with a preference for locating within build zones where possible). All mitigation would be provided in the following build zones and/or on-site areas:

Table 9.1: Summary of Proposed Additional Mitigation

Topic	Proposed Additional Mitigation
	• Phase 1 Mitigation - in Build Zones D and F or in areas of existing habitat which would remain unaltered (i.e. the woodland area to the north of Build Zone A) or within Part 1 and 1A of the ecology park; • Phase 2 Mitigation - in Build Zones E, G and H or in areas permissible for Phase 1 or within Part 2 or Part 4 of the ecology park; and • Phase 3 Mitigation - in Build Zones A, B and C or in areas permissible for Phase 1 and 2 or within Part 3 or Part 4 of the ecology park. **Fairplay Farm SINC** Skylark plots would be provided in on-site habitats (likely within retained SINC habitat) in the north-west of the site. These would be created from the commencement of the relevant construction stage and throughout the phased completed development stage. They would be created in line with up-to-date guidance. Assuming a maximum of four breeding pairs could potentially be lost from the area, eight skylark plots would be provided each year (delivered in sets of two plots). Skylark plots have the potential to also benefit rare arable weeds, through provision of suitable uncropped habitat. As these are proposed to benefit skylarks using the SINC, the benefits of this are considered as part of the residual effects SINC assessment rather than in the bird residual effects assessment. **Amphibians** In addition to the embedded mitigation measures, at least 12 permanent artificial refugia (hibernaculum) would be created for GCN built from stone, wood, earth, and turf to make them permanent. They would be built with one aspect facing south, and away from waterlogged areas, and in accordance with up to date guidance. These would also be beneficial for reptiles and invertebrates. **Birds** In addition to embedded mitigation such as provision of appropriate habitat and careful timing of work, additional bird mitigation would include provision of a minimum of 150 bird boxes in a range of sizes and locations to suit various species (including three barn owl boxes, boxes suitable for other owls, house sparrow terraces and swift boxes) would be provided. The exact location and type would be advised by an experienced ecologist at each build stage. **Bats** In addition to the embedded mitigation provisions of appropriate habitat, and an appropriate lighting strategy, specific bat mitigation would include update surveys in the season ahead of work commencing, including further survey in advance of tree clearance, and provision of a minimum of 80 bat boxes installed on suitable features including existing mature trees within the retained hedgerows, in the proposed broadleaved woodland and built into new buildings. Bat box specification, mounting instructions and exact location would be advised by an experienced bat ecologist at each build stage. A variety of box types would be included, with hibernating and maternity boxes included.
Water Resources and Flood Risk	None.
Soils and Agriculture	The implementation of soil resource management measures which would be secured by the LDO compliance documents. The soil resource management measures would ensure that soils are handled, stored and replaced according to good practice as set out in the Defra Construction Code of Practice for the Sustainable Use of Soils. In this way, soils that are reused on the site would be

Table 9.1: Summary of Proposed Additional Mitigation	
Topic	**Proposed Additional Mitigation**
	used for their most suitable purposes in the detailed design and would be able to continue to fulfil their various ecosystem functions. The soil resource management measures would confirm the most appropriate re-use for the topsoil within the site and aim to re-use as much of the displaced topsoil on-site as is possible. The soil resource management measures would contain descriptions of the following: • Principles and measures for soil management during construction, including conditions for soil handling, preparatory works, soil stripping, soil storage and the maintenance of soil stockpiles; • Principles and methods to be used to reuse and reinstate soils in the site; and • Aftercare of reinstated soils.
Climate Change	None.
Townscape and Visual	None.
Completed Development	
Archaeology and Cultural Heritage	None.
Socio-Economics	None.
Transport and Accessibility	None.
Air Quality	The use of SCR or another suitable equivalent technology would be conditioned for all generators within the proposed development. This would be secured by means of an appropriately worded planning condition.
Noise and Vibration	None.
Ecology	As previously set out, the provision of skylark plots within retained arable land at Fairplay Farm SINC, to the north-west of the site boundary, would ensure that sufficient habitat for farmland birds is retained during the completed development stage, and the integrity of the SINC for use by these species would not be compromised.
Water Resources and Flood Risk	None.
Soils and Agriculture	None.
Climate Change	**Greenhouse Gas Emissions** Additional mitigation would be required to reduce the completed development GHG emissions to ensure the proposed development aligns with a science-based 1.5 °C compatible trajectory and the UK's trajectory towards net zero. To fulfil this, achievement of net zero emissions in the operational stage would be set out within energy statements, the delivery of which would be secured within the LDO. Net zero emissions in the operational stage would be achieved by implementing the principles of the Institue of Sustainability and Environmental Professionals (ISEP's) GHG management hierarchy: • Firstly, eliminate emissions: For example, considering decisions about operational design/use to prevent GHG emissions across the lifecycle; • Then, reduce GHG emissions: For example, achieving real and relative (per unit) reductions in carbon and energy; achieving efficiencies in operations, processes, fleet and energy management;

Table 9.1: Summary of Proposed Additional Mitigation	
Topic	**Proposed Additional Mitigation**
	• Then, substitute GHG emissions: For example, adopting renewable or low-carbon technologies; reducing carbon (GHG) intensity of energy use and of energy purchased; or purchasing inputs and services with lower embodied/embedded emissions; and • Finally, compensate: After implementing the measures outlined above, the completed development would be required to seek to compensate unavoidable residual emissions via securing a contribution to the Council's Carbon Reduction Fund to offset GHG emissions. The Sustainability and Energy Statement has been developed in line with the previously set out ISEP's GHG management hierarchy and provides initial estimates of site-level carbon savings, carbon shortfalls and offset payments. It also reports how the proposed development would meet the objectives and requirements set by the London Plan. As these findings are initial, carbon estimates for offset payments would be further refined at the design stage. These refinements to the carbon estimates would be set out within energy statements (the production of which would be secured within the LDO). These energy statements would also be produced in line with the ISEP's GHG management hierarchy The final offset payments would therefore be decided based on information presented in the energy statements and would be secured through legal agreement. The LDO would require a Whole Lifecycle Carbon Assessment (WLCA) and Circular Economy Statement to be submitted at the detailed design stage pre-commencement of any building. This would enable the WLCA models to capture the updated design detail to refine the accuracy of the analysis and to provide an increasingly representative estimate of the embodied carbon result at practical completion, as the proposed development moves through each design phase. This would also drive carbon reduction through recommending low carbon alternatives at each stage.
Landscape and Visual	None.

1.55 Significant Construction Stage Effects

After taking in consideration the additional mitigation measures, the following significant residual beneficial environmental effect have been identified:

- Creation of employment and associated GVA within the labour market.

The following significant residual adverse environmental effects have been identified:

- Localised removal of archaeological prehistoric archaeological settlement remains through cut and fill earthworks, foundation construction, ponds and reservoir earthworks;
- Localised removal of archaeological Roman settlement remains through cut and fill earthworks, foundation construction, ponds and reservoir earthworks;
- Change in setting due to increased traffic; noise, dust, visibility of traffic and construction equipment/plant during enabling works, cut and fill earthworks, infrastructure works, construction equipment and plant during mound earthworks, building construction, highway works and off-site fibre optic cable installation of Bury Farmhouse;
- Construction activity noise on receptors within 50 m of Fen Lane highway works (13 dwellings) and Ockendon Road highway works (19 dwellings);
- Construction stage road traffic noise on receptors within 50 m of Fen Lane;
- Permanent, irreversible loss of BMV agricultural land (Subgrade 3a) in the build zones and infrastructure corridors;

- Permanent, potentially reversible loss of BMV agricultural land (Subgrade 3a) and Non-BMV agricultural land (Subgrade 3b) agricultural land in the ecology park;
- Permanent, irreversible loss of or damage to soil resources in the build zones and infrastructure corridors;
- Loss of existing vegetation. Large areas of bare earthworks. Prominence of construction elements on the landscape fabric and character of the site and immediate context;
- Change in daytime views due to visibility of construction elements and activities at:
  - Viewpoint 1 (PRoW South of Great Warley Hall);
  - Viewpoint 6 (PRoW at North Ockendon);
  - Viewpoint 7 (PRoW to the North of the Site);
  - Viewpoint 8 (PRoW Passing Through the Site);
  - Viewpoint 9 (Dunnings Lane);
  - Viewpoint 10 (PRoW North-west of Bulphan);
  - Viewpoint 15 (PRoW to the west of Langdon Hills);
  - Viewpoint 18 (Fen Lane);
  - Viewpoint 19 (PRoW south of Harrow Bridge); and
  - Viewpoint 22 (PRoW at Clay Tye Cottage).

From the assessment of intra-project cumulative effects, one significant beneficial effect has been identified during the construction stage in respect of the following receptors and receptor group:

- The labour market.

From the assessment of intra-project cumulative effects, five significant adverse effects have been identified during the construction stage in respect of the following receptors and receptor group:

- Existing off-site residential receptors;
- Agricultural Land;
- Soil Resource;
- Existing Landscape Character; and
- Existing Views.

1.56 Significant Completed Development Stage Effects

After taking in consideration the additional mitigation measures, the following residual significant beneficial environmental effects have been identified:

- Creation of employment and associated GVA within the labour market; and
- Habitat loss, fragmentation and/or severance, habitat enhancement and creation, root compaction of retained trees and hedgerows.

The following significant residual adverse environmental effects have been identified:

- Change in setting of Bury Farmhouse due to new buildings and landscaping on the site;
- Road traffic noise at receptors within 50 m of Fen Lane;
- Loss of open rural character and increased recreational, conservation and education resource at the site and immediate context for Scenario 1 (Scenario 1 considers the maximum development envelopes (with roof plant and flues) within build zones with embedded mitigation measures as set out in ES Chapter 4: Proposed Development Description and Construction with proposed landscape mitigation such as minimum height mounding and perimeter and ecology park planting as it would be at the end of the LDO. This equates to impacts occurring immediately after construction (2045); and is a worst-case.);

- Change in daytime views for Scenario 1 due to built form, urbanising influences and loss of openness at:
  - Viewpoint 1 (PRoW South of Great Warley Hall);
  - Viewpoint 6 (PRoW at North Ockendon);
  - Viewpoint 7 (PRoW to the North of the Site);
  - Viewpoint 8 (PRoW Passing Through the Site);
  - Viewpoint 9 (Dunnings Lane);
  - Viewpoint 10 (PRoW North-west of Bulphan);
  - Viewpoint 14 (PRoW West of Langdon Hills Golf Club);
  - Viewpoint 15 (PRoW to the west of Langdon Hills);
  - Viewpoint 18 (Fen Lane);
  - Viewpoint 19 (PRoW south of Harrow Bridge); and
  - Viewpoint 22 (PRoW at Clay Tye Cottage).
- Change in night-time views for Scenario 1 due to lighting changes associated with the operation of the completed development at:
  - Viewpoint 6 (PRoW at North Ockendon);
  - Viewpoint 7 (PRoW to the North of the Site); and
  - Viewpoint 22 (PRoW at Clay Tye Cottage).
- Loss of open rural character and increased recreational, conservation and education resource on the landscape character and fabric of the site and immediate context for Scenario 2 (Scenario 2 considers effects of the agreed maximum development envelopes (with roof plant and flues) with minimum height mounding with matured perimeter and ecology park landscaping (10 years following the end of the LDO));
- Change in daytime views for Scenario 2 due to built form, urbanising influences and loss of openness at:
  - Viewpoint 1(PRoW South of Great Warley Hall);
  - Viewpoint 6 (PRoW at North Ockendon);
  - Viewpoint 7 (PRoW to the North of the Site);
  - Viewpoint 8 (PRoW Passing Through the Site);
  - Viewpoint 9 (Dunnings Lane);
  - Viewpoint 10 (PRoW North-west of Bulphan);
  - Viewpoint 18 (Fen Lane); and
  - Viewpoint 22 (PRoW at Clay Tye Cottage).
- Change in night-time views for Scenario 2 due to lighting changes associated with the operation of the completed development at:
  - Viewpoint 6 (PRoW at North Ockendon);
  - Viewpoint 7 (PRoW to the North of the Site); and
  - Viewpoint 22 (PRoW at Clay Tye Cottage).

From the assessment of intra-project cumulative effects, two significant adverse effects have been identified during the completed development stage in respect of the following receptors and receptor group:

- Existing Landscape Character; and
- Existing Views.

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