Quod

EIA Scoping Report

Cheshunt Lakeside, Parcels 12 & 13

MARCH 2022

Q220040

Contents

1 Introduction

Purpose

1.1 The purpose of this report is to inform a request for an Environmental Impact Assessment (EIA) Scoping Opinion from Broxbourne Borough Council ('BBC') in relation to Cheshunt Lakeside Developments Ltd. (the 'Applicant')'s proposals for the redevelopment of Parcels 12 and 13 at the Cheshunt Lakeside development, EN8 (the 'Site').

1.2 The Site is located on a former industrial estate that already benefits from outline planning permission (the 'Outline Permission') granted in August 2019 (Ref: 07/18/0461/O) for a comprehensive residential-led mixed use development known as 'Cheshunt Lakeside', comprising:

"Outline permission with all matters reserved other than access for the demolition of existing buildings and structures and the redevelopment of the site for a residential-led mixed use development including basement parking and servicing comprising up to 1,725 apartments (Use Class C3 (Including elderly accommodation)), up to 19,051 sqm (GIA) of commercial and non-commercial floorspace including business (Use Class B1), retail (Use Classes A1, A2, A3 and A4) and community and leisure uses (Use Classes D1 and D2), a two form entry primary school, the creation of a new local centre plaza and link access from Windmill Lane, plus associated works for landscaping, flood attenuation, works to existing waterways, parking areas, pedestrian, cycle and vehicular routes."

1.3 In respect of the Site, the Outline Permission allows for the delivery of 374 residential units and up to 2,127m^2 Gross Internal Area (GIA) of non-residential floorspace in buildings up to seven storeys in height. 497 car parking spaces (414 residential and 83 non-residential spaces) were also proposed under the Outline Permission.

1.4 Following ongoing design development and pre-application discussions with BBC, and in acknowledgement of the wider Cheshunt Lakeside regeneration of the area, the Applicant intends to submit a full planning application in due course for circa 475 new homes, approximately 2,430m^2 commercial floorspace, car parking, public realm and landscaping on Parcels 12 and 13 of the approved masterplan (the 'Development').

1.5 This report sets out the findings of an EIA scoping study and accompanies a request for a Scoping Opinion submitted to the BBC in accordance with Regulation 15 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017[1] (as amended)[2], ('EIA Regulations'). In line with the EIA Regulations, this report identifies the Site location, provides a brief description of the nature and purpose of the Development and an explanation of the likely significant effects of the Development on the environment. The report also outlines the proposed content, approach, and scope of the ES to be submitted with the planning application.

1.6 Figures 1.1 and 1.2 show the Site's location and the likely extent of the planning application boundary. Brief descriptions of the Site and the Development are provided within Sections 2 and 3, respectively.

Figure 1.1: Site Location Plan

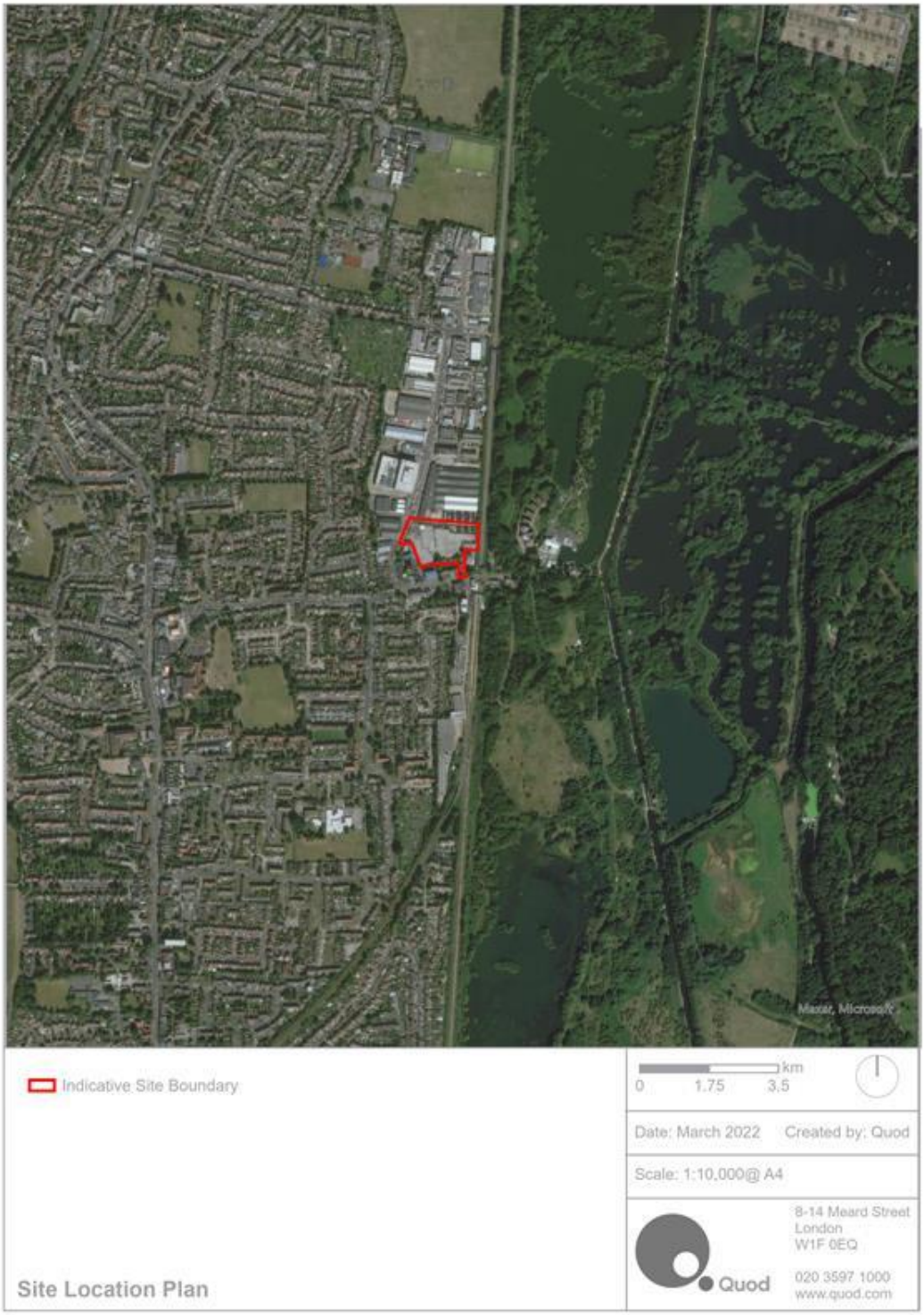
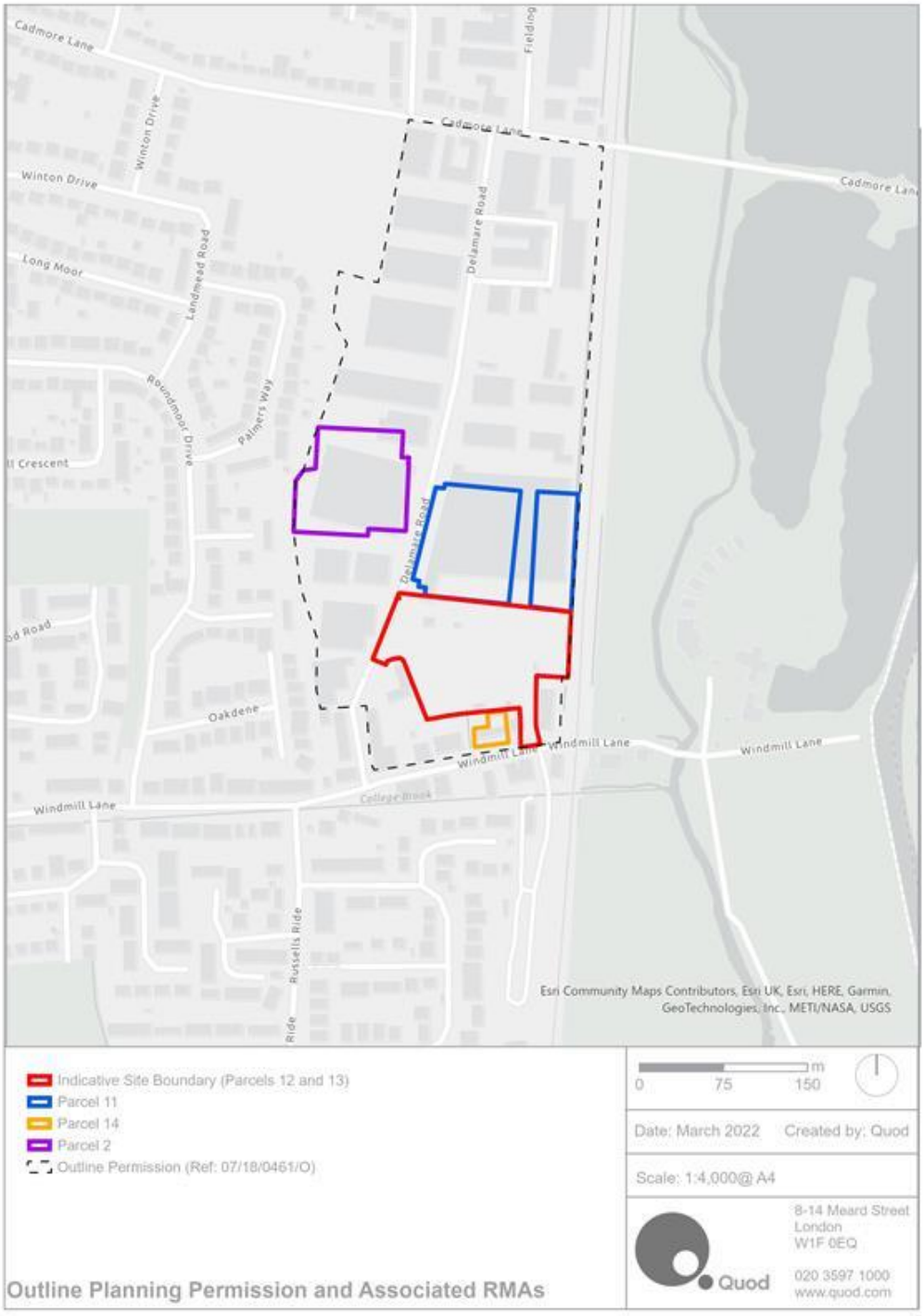


Figure 1.2: Indicative Planning Application Site Boundary

Figure 1.3: Site Boundary and Planning Context



Planning and EIA Context

1.7 The Site forms part of a wider development allocation in the Broxbourne Local Plan 2018 - 2033 (the 'Local Plan') under Policy CH1: Cheshunt Lakeside. This policy allocates the winder masterplan site for circa 1,750 new homes, approx. 20,000m^2 business floorspace, a neighbourhood centre, a 2-form entry primary school, care home accommodation, relocation of a Network Rail depot, infrastructure and landscaping in buildings up to eight storeys in height.

1.8 The Site benefits from the Outline Permission granted for the wider Cheshunt Lakeside development site in August 2019 for up to 1,725 residential units; 19,051m^2 of commercial floorspace; a new local centre including a primary school and business, commercial and leisure uses; car parking; landscaping and flood attenuation (hereafter referred to as the 'Consented Scheme'). The outline planning application was supported by an ES, dated March 2018 (the '2018 ES').

1.9 In respect of these two Parcels, the Outline Permission allows the delivery of 374 residential units and a maximum of 2,127m^2 Gross Internal Area (GIA) of non-residential floorspace in buildings up to seven storeys in height. A total of 497 car parking spaces (414 residential and 83 non-residential spaces) could also be delivered. The extent of the Outline Permission is shown in Figure 1.3.

1.10 Reserved matters applications (RMA) were approved under the Outline Permission for Parcel 11 (Phase 1A) in March 2020 and Parcels 14 and 2 (Phase 1B) in March and June 2021 respectively, to deliver a total of 422 residential units, commercial space and associated parking (see Figure 1.3). Construction at Cheshunt Lakeside began in 2020 and the first homes will be complete in 2022.

1.11 Rather than submitting an RMA under the Outline Permission, the Applicant is submitting a full standalone planning application for development proposals at the Site which comprises Parcel 12 (Phase 1C) and Parcel 13 (Phase 1D).

1.12 The Development falls within Category 10(b) of Schedule 2 of the EIA Regulations, which is applicable to 'Urban Development Projects'. Due to the scale and nature of the Development and the potential for cumulative effects in combination with the Outline Permission, the Applicant has voluntarily commissioned an EIA process. EIA is a systematic process that aims to prevent, reduce or offset the significant adverse environmental effects of development proposals and enhance beneficial effects. It ensures that planning decisions are made considering the likely significant environmental effects and with engagement from statutory bodies and other stakeholders including the public.

1.13 It should be noted that under the EIA Regulations, the ES will be required to be "based on" the Scoping Opinion provided by BBC and will be prepared by competent experts (see below).

Project Team

1.14 In accordance with Regulation 18(5) of the EIA Regulations, it is confirmed that this Scoping Report has been prepared by competent experts from the organisations listed in Table 1.1.

These specialists will also undertake the EIA and their relevant expertise and qualifications will be stated within the ES.

Table 1.1: EIA Project Team

Organisation	Role and/or Technical Expertise
Cheshunt Lakeside Developments Ltd.	Applicant
Montagu Evans	Planning; Townscape and Visual Impact Assessment; Built Heritage
JTP	Architects
Quod	EIA coordinator and Socio-Economics
Pre-construct	AVRs
Vectos	Transport and Access
GIA	Daylight, Sunlight and Overshadowing
Entran	Noise & Vibration and Air Quality
Tyler Grange	Ecology and Biodiversity
Urban Microclimate	Wind
Ecolyse	Climate Change and Greenhouse Gases
Twin and Earth	Energy and Sustainability
Ardent	Water, Flood Risk and Drainage
RPS	Archaeology

1.15 Quod will be the lead editor of the ES and author of non-technical chapters. Quod is a member of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark Scheme, an accreditation scheme which sets high standards for EIA practice and demonstrates a commitment to excellence in EIA activities.

2 Site and Setting

Site Location, Extent and Description

2.1 Figures 1.1 and 1.2 show the Site's location and likely extent of the planning application and context within the local area and extant planning consents.

2.2 The Site comprises two adjacent parcels of cleared brownfield land on the former Burden and Miles industrial estate in Cheshunt, in the southern administrative area of the Borough of Broxbourne, and extends to approximately 1.9 hectares (ha).

2.3 The Site has is predominantly cleared of structures, with an existing culvert running present the southern Site boundary. The Site was formerly occupied by employment uses and car parking. There are some temporary housing units on-Site that will be relocated before construction of the Development commences. The Site is bound by warehouse buildings (permitted for redevelopment as Parcel 11 of the Outline Permission) to the north, the West Anglia Mainline Railway to the east, commercial uses (partly permitted for redevelopment as Parcel 14 of the Outline Permission) to the south, and Delamare Road to the west.

Surrounding Context

Land Uses

2.4 The Site is located in a predominantly industrial area, however it is currently undergoing rejuvenation through implementation of the Outline Permission for the Cheshunt Lakes redevelopment, with initial development works underway on Parcels 2, 11 and 14. To the south and east are suburban residential uses, with the Lee Valley Country Park, an important ecological designated site, further east of the West Anglia Mainline Railway.

Transport and Access

2.5 Vehicular and pedestrian access to the Site is gained from Delamare Road and Windmill Land to the south. Windmill Lane connects to the A10 circa 1.1km west of the Site boundary. The Site is not intersected by any Public Rights of Way (PRoW), however a private access runs into the Site off Delamare Road.

2.6 Cheshunt railway station, which provides frequent rail services to London, Cambridge and the Hertfordshire region, is circa 70m south of the Site boundary. Delamare Road and Windmill Lane are not currently served by any bus services; the nearest bus stop currently by Cheshunt rail station, approximately a 5-minute walk from the Site.

Environmental Sensitivities

2.7 Figure 2.1 identifies the key environmental sensitivities within and in close proximity to the Site.

2.8 The Site is not located within a 'sensitive area' (as defined in Part 1 of the EIA Regulations) (i.e. a Site of Special Scientific Interest (SSSI), National Park, Area of Outstanding Natural

Beauty, World Heritage Site (WHS), Scheduled Monument or National Sites Network[1]) and is not subject to any statutory or non-statutory designations for nature conservation or heritage. There are no WHS, Registered Parks and Gardens or Registered Battlefields on the Site or within a 1km radius of the Site boundary. Approximately 600m east from the centre of the Site is the World War II Bofors Anti-aircraft gun platform, identified as a Scheduled Monument. Further east, at approximately 800m from the centre of the Site is the Waltham Abbey Royal Gunpowder Factory, also a Scheduled Monument.

2.9 The Site is not located within or in proximity to a Conservation Area and there are no listed or (non-statutory) locally listed buildings on-site. The closest Conservation Area, Churchgate, is located approximately 1.2km west of the Site boundary. The closest listed building is the Grade II listed 61 and 63 Windmill Lane, approx. 380m south west of the Site boundary. The Site is not located within an Area of Archaeological Interest.

2.10 There are no statutorily designated sites for nature conservation within the Site. There are five statutory designated sites within 2km of the Site boundary, the closest of which is Lee Valley Special Protection Area (SPA) and Ramsar (also designated as Turnford & Cheshunt Pits SSSI), located approximately 300m east of the Site boundary. Waltham Abbey SSSI and Cornmill Stream and Old River Lea SSSI are located approx. 770m and 1.37km south east of the Site boundary respectively.

2.11 Epping Forest Special Area of Conservation (SAC) and SSSI is located circa 5km south east of the Site boundary. There are two non-statutory designated sites identified within 1km of the Site boundary, Thistly Marsh and Area W. of Cheshunt Marsh Local Wildlife Site (LWS) circa 180m south east and Land North and West of Turnford and Cheshunt Pits LWS circa 750m north of the Site boundary. There are no trees subject to Tree Protection Orders on the Site.

2.12 The Site is not located within or in the vicinity of any statutorily designated or locally (non-statutorily) designated views.

2.13 Based on the Environment Agency flood maps, the Site is shown to be located entirely within Flood Zone 2, with areas to the south and west located in Flood Zone 3; this indicates a medium-high risk of fluvial flooding. The Site is also at medium-high risk of surface water flooding.

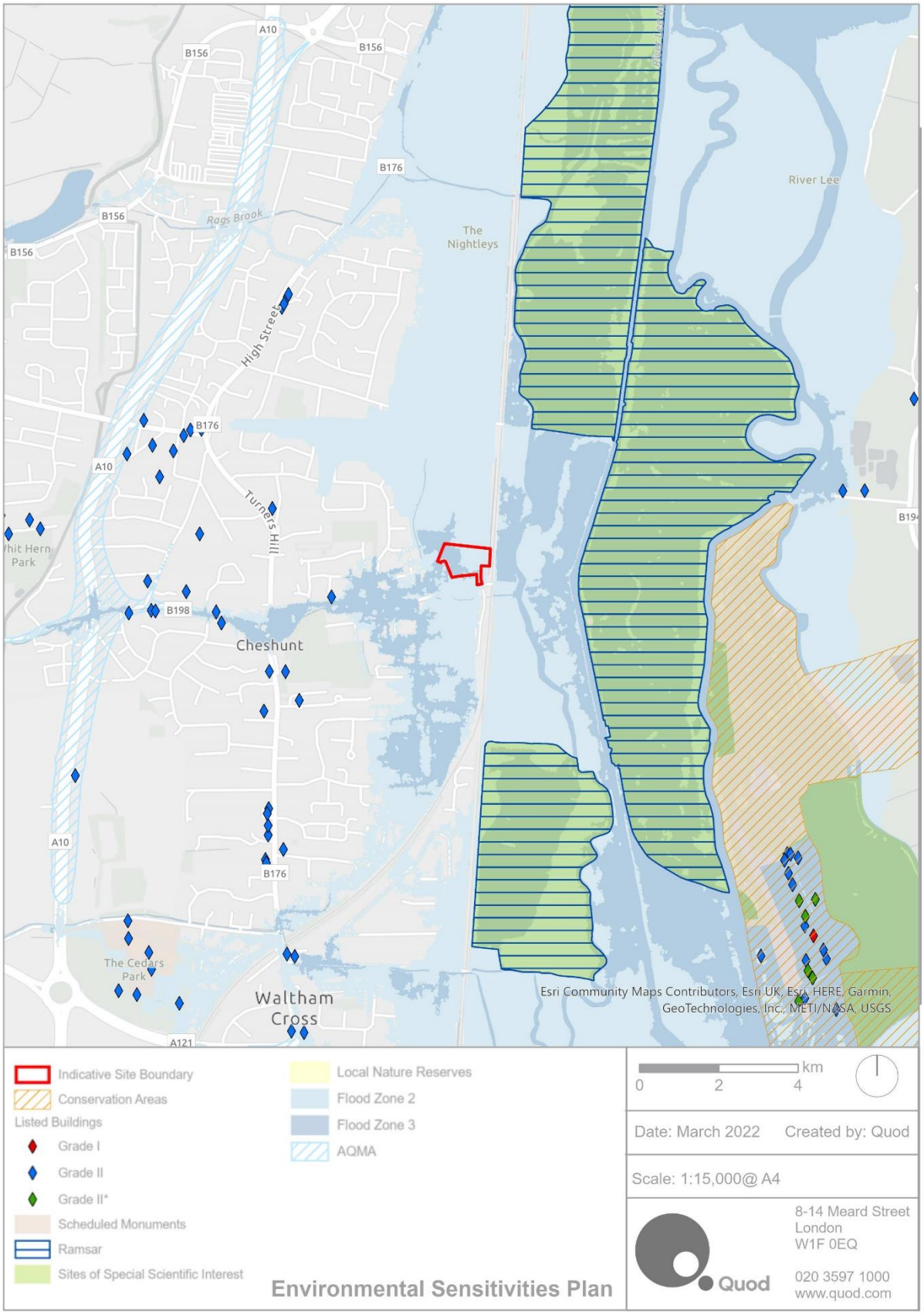
2.14 The Site is not located in an Air Quality Management Area (AQMA), with the closest located in the vicinity of the A10/B198 junction circa 820m west of the Site boundary, designated for exceedances in the annual mean concentration of nitrogen dioxide (NO_2).

Current and Future Development

2.15 As discussed in Para. 1.7, the Site already benefits from Outline Permission. Further details of current and future development are provided through the identification of cumulative schemes for the Cumulative Effects assessment (see Section 10).

[1] Special Area of Conservation, Special Protection Area and/or Ramsar site

Figure 2.1: Environmental Sensitivities



3 Description of the Development

Overview of the Application

3.1 The Development proposals are at an early stage of design and will be developed following further technical analysis as part of the EIA process and in consultation with BBC and other stakeholders.

3.2 The planning application will be a full application. For the purposes of the EIA, the Development will be defined by a suite of detailed planning drawings accompanied by the design principles set out in a Design and Access Statement.

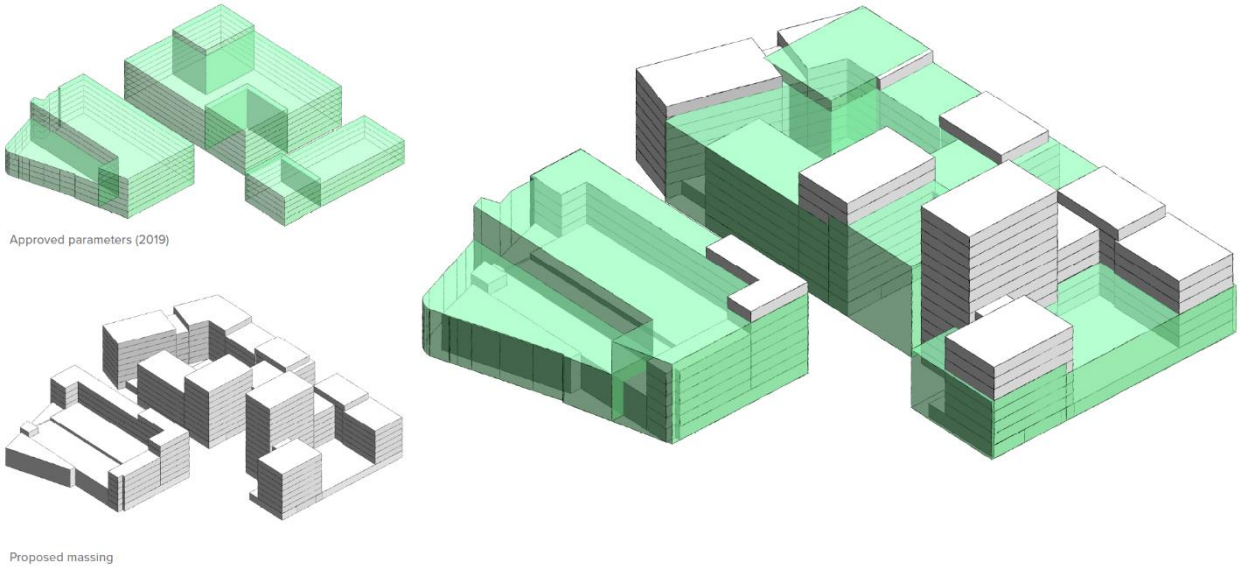
3.3 The planning description of Development has not been finalised and may be subject to change, however is likely to include construction of:

- Approx. 475 residential units (C3 Use) of a mix of unit sizes;
- Approx. 2,434m^2 commercial floorspace (Use Class E(g));
  - Parcel 12A: 1,020m^2
  - Parcel 12B: 378m^2
  - Parcel 13: 1,036m^2
- Between circa 240 and 510 car parking spaces with the majority of spaces in a new multi-story car park;
- Internal roads, servicing, circulation and parking; and
- Hard and soft landscaping works and new public realm, including an enhanced public square.

3.4 The Development proposals represent an uplift of 101 units (total 1,826 units) and 307m^2 commercial floorspace from that approved under the Outline Permission for the Site. The concept design involves optimisation of the consented blocks across Parcels 12 and 13 with some alterations to layout and form of buildings, along with increases in height and massing which are likely to be in exceedance of the approved parameters of the Consented Scheme. Parking provision is also being consolidated, with a reduction on the Site relative to that consented under the Outline Permission. A new landscaping/ public realm strategy is to be prepared with creation of a larger public square within Parcel 12.

3.5 The Development would bring forward new Blocks in a range of heights, broadly in accordance with the maximum heights defined by the Outline Permission. However, it is expected there will be some buildings would extend beyond these heights, with the block located by the public square extending up to a maximum of 14 storeys. The indicative proposed massing and block layout of the Development, in context of the maximum parameter envelope of development set by the Outline Permission, is illustrated in Figure 3.1.

Figure 3.1: Scale and Masing of Development Proposals in context of Consented Scheme Parameters



3.6 Mitigation measures will be incorporated and designed into the Development to address the potential effects on the surrounding land uses. Technical design workshops are currently being undertaken as part of the EIA process to ensure that mitigation measures are incorporated into the design.

Construction

3.7 At this stage, construction of the Development is expected to commence in Quarter 1 (Q1) 2023, with construction expected to be complete in Q1 2026. This represents a build out period of approximately three years, with a breakdown as follows:

- Parcel 12 (Phase 1C): Start Q1 2023; Complete Q4 2024; and
- Parcel 13 (Phase 1D): Start Q3 2023; Complete Q1 2026.

3.8 For context, the Consented Scheme is proposed to be fully complete and operational in December 2029.

3.9 The Applicant has committed to undertaking construction works in line with a Construction Environmental Management Plan (CEMP) as a means of avoiding, reducing or mitigating potential adverse effects of construction on the environment and local community. The CEMP will be subject to approval by BBC and secured through an appropriate planning condition, which is consistent with the approach on the Consented Scheme.

4 EIA Methodology

Introduction

4.1 The Outline Permission was subject to a comprehensive EIA and extensive consultation was also undertaken prior to permission being granted. As such, the environmental issues and sensitivities associated with the Site are well understood by the Project Team and this information has informed the proposed approach and scope of the ES.

4.2 The ES will be prepared in compliance with the EIA Regulations. Reference will also be made to current EIA good practice guidance. This section outlines the general approach to the EIA process.

Consultation and Scoping Opinion

4.3 Further consultation with key stakeholders during the design development and as part of the EIA process will be undertaken prior to submission of the planning application. These key stakeholders will include BBC, Hertfordshire County Council (HCC), the Environment Agency, and Natural England.

4.4 In line with the EIA Regulations, the ES will be 'based on' the Scoping Opinion provided by BBC. Each ES topic chapter will set out key points made during scoping correspondence between the project team and stakeholders and will explain how these have been addressed by the EIA process.

Alternatives

4.5 In accordance with the EIA Regulations, the ES will provide *"a description of the reasonable alternatives…. relevant to the proposed project and its specific characteristics which have been considered by the Applicant and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects"*.

4.6 The ES will describe the reasonable alternatives to the Development which have been considered by the Applicant, including:

- The 'do-nothing' scenario – this will outline the consequences of no Development taking place and the Site remaining in its current form;
- Consented Scheme – the ES will consider the alternative of the design being built within the parameters of the Consented Scheme; and
- Alternative designs – for example, alternative building layouts, building heights and massing, together with the justification for the selection of the final design.

4.7 Alternative sites have not been considered by the Applicant and as such will not be considered in the ES.

EIA Methodology

Significant Effects and Scope of the EIA

4.8 As highlighted by the UK Government Online Planning Practice Guidance[3] (PPG), where considering the scope of EIAs, local planning authorities *"should limit the scope of the assessment to those aspects of the environment that are likely to be significantly affected"*.

4.9 With respect to identifying the likely significant environmental effects associated with the Development, consideration is given to potential effects associated with the construction phase and completed Development. These effects could be both beneficial and adverse and deemed to be 'significant' on the basis of:

- The value / importance of the resources and receptors that could be affected;
- The predicted magnitude of environmental change and / or impact experienced by these resources and receptors, accounting for their size, duration and spatial extent;
- The susceptibility or sensitivity of resources / receptors; and,
- Options for avoiding, reducing, offsetting or compensating for any potentially significant adverse effects and the likely effectiveness of such mitigation measures.

4.10 The proposed scope of the EIA has been defined through desktop study, a review of the scheme proposals and professional judgement from the consultant team. In addition, the environmental information associated with the previous planning applications on the Site, including the 2018 ES, have been reviewed to support any conclusions reached, where applicable.

4.11 Sections 5 to 9 of this Report set out those aspects of the environment that could potentially be significantly affected by the Development and hence will be scoped into the ES. Potential effects deemed to be non-significant within topics are also set out within these sections. Section 11 sets out those aspects of the environment that are unlikely to be significant and therefore will be scoped out of the ES.

Determining the Significance of Effects

4.12 Determining the significance of environmental effects is intended to inform decision making. The significance of effects will be determined by specialists with reference to generic assessment criteria or subject-specific criteria for each environmental topic being considered. These criteria will apply a common terminology, classifying whether the effects are major, moderate or minor, as well as, adverse, negligible or beneficial, temporary or permanent, in line with standard practice.

Study Area

4.13 The study area for each topic will be based on the geographical scope of the potential for significant effects relevant to the topic or the information required to assess the likely effects, as well as topic-specific guidance and consultation with stakeholders. Further detail is provided in the technical sections (Sections 5-9).

Baseline and Future Baseline Conditions

4.14 Baseline environmental conditions need to be established to enable an accurate assessment of potential changes to such conditions that may occur and to assess the likely significant environmental effects of the Development. Understanding baseline conditions is also important for the identification of the most appropriate mitigation which could be employed to reduce any likely significant adverse effects.

4.15 Baseline conditions will be taken as the current conditions on the Site. Baseline information is already being gathered through desk-based research and Site surveys in 2021 and 2022 to define and describe the existing environmental characteristics and receptors for each environmental topic that will be provided within the ES. Where environmental information and data is not available for 2021/22, it will be necessary to use data which pre-dates 2021/22. The ES will set out what year the baseline data is sourced from.

4.16 In addition to the current baseline conditions, the EIA Regulations require an outline of the likely evolution of the baseline condition without implementation of the Development, as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge (i.e. the 'future baseline'). The future baseline conditions for each topic will be described in each chapter of the ES. It is likely that other consented phases, i.e. Parcels 2, 11 and 14, of the Consented Scheme may be built out by the time the Development comes forward. These will be considered in the cumulative scenario.

Construction Assessment

4.17 An indicative construction programme for the Development will be presented in the ES. This will include all aspects of the construction phase including site preparation, construction, fit-out and landscaping works.

4.18 The ES will outline the main activities associated with the construction works, together with the likely duration of each activity. Topics which have identified likely significant effects from construction activities are outlined in the following sections. The Applicant has committed to a CEMP, which will be subject to approval by BBC and secured through an appropriate planning condition. Mitigation measures for inclusion in the CEMP will be set out in the ES to avoid, reduce or mitigate potential adverse effects.

4.19 In line with Institute of Environmental Management and Assessment ('IEMA') best practice[4], the CEMP can be defined as 'tertiary' mitigation which is defined as that which *"will be required regardless of any EIA assessment, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices. For example, considerate contractor practices that manage activities which have potential nuisance effects"*. As such, the CEMP is considered to be standard practice in the management of the demolition and construction works of the Development. The CEMP will be taken into account and form the basis of the assessment of likely significant effects. As such, any effects that might have arisen without this mitigation will not be identified as 'likely effects', as there should be no potential for them to arise. This should result in a simpler and more proportionate ES.

4.20 The assessment of construction effects will be based on an assumed 'peak year' of construction activity as a reasonable worst case, when volumes of construction vehicles and

on-site activities are likely to be at their highest. At this stage, this assumed to be 2023 although this may be subject to change. As phased occupation of the Development is expected on completion of Parcel 12 in advance of Parcel 13, future occupier receptors will be considered as sensitive receptors within the topic assessments, as appropriate.

Completed Development Assessment

4.21 The likely significant effects of the completed Development will be assessed for the anticipated year of full completion. Based on a delivery programme of approximately 3 years, the year of completion for the Development is assumed to be 2026.

4.22 The Completed Development assessment will be based on the detailed planning drawings and Design and Access Statement submitted alongside the planning application. Table 4.1 summarises the potential assessment scenarios.

Table 4.1: Assessment Year and Scenarios

Assessment Year	Assessment Phase	Scenario Description
2021/2022	Baseline	Baseline conditions
2023	Construction	Peak construction year
2026	Future Baseline	Without Development
	Completed Development	With Development

Cumulative Effects Assessment

4.23 Cumulative effects can occur either when different effects from the Development interact to exacerbate effects on sensitive receptors, or, when the magnitude of an effect is exacerbated by other future neighbouring developments, thus creating a more significant effect, on a receptor.

4.24 The potential for cumulative effects to arise will be considered in each technical chapter for demolition and construction and once the Development is completed and operational. Further details on the approach to the cumulative assessment including the proposed cumulative schemes are provided in Section 10 and Appendix A.

Structure of the ES Technical Chapters

4.25 Each environmental topic chapter scoped into the EIA will be structured as set out in Appendix B.

Scoping Summary

4.26 This scoping exercise has been informed by desk-based research, professional judgement and other information available for the Site and Development. Table 4.2 provides a summary of the scoping exercise which has drawn on the conclusions reached in the 2018 ES, as relevant.

4.27 In accordance with the EIA Regulations, all assessments will be prepared by consultants considered to have competent expertise in their discipline.

Table 4.2: EIA Scoping Summary

Technical Topics	Potential Significant Construction Effects	Potential Significant Operational Effects	Comments
Socio-economics	✓ - T	✓ - P	ES Chapters to be prepared
Daylight, Sunlight and Overshadowing	x	✓ - P	
Wind Microclimate	x	✓ - P	
Townscape and Visual Impacts	✓ - T	✓ - P	
Climate Change and Greenhouse Gases	✓ - T	✓ - P	
Transport and Access	x	x	Topics scoped out of the ES
Noise and Vibration	x	x	
Air Quality	x	x	
Ecology and Biodiversity	x	x	
Water Resources, Flood Risk and Drainage	x	x	
Human Health	x	x	
Archaeology and Built Heritage	x	x	
Ground Condition and Contamination	x	x	
Materials and Waste	x	x	
Light Pollution and Solar Glare	x	x	
Vulnerability to Major Accidents or Disasters	x	x	
Energy and Sustainability	x	x	
Utilities	x	x	
Aviation	x	x	
Telecommunications	x	x	
Electromagnetic Fields	x	x	

Key: ✓ Likely Significant Effect / x No Likely Significant Effect. T – Temporary Effect / P – Permanent Effect

5 Socio Economics

Baseline Conditions and Study Area

Study Area and Spatial Scope

5.1 The Site is in Cheshunt North ward within Broxbourne district and is currently cleared brownfield land and therefore does not support any employment uses.

5.2 The baseline assessment will consider relevant social and economic conditions for the Site (where data is available) and the Local Area (defined as 'Cheshunt North ward') which will be put into context against the wider district and county profile.

5.3 Assessment of existing social infrastructure will be considered based on existing provision within reasonable travel times of the Site:

- Within 1km for primary schools, primary healthcare services (GPs), open space and children's playspace; and
- Within the Hertfordshire Secondary School Planning Areas of Cheshunt and Hoddesdon which cover Broxbourne district for secondary schools[2]. Given the proximity of the Site to the London Borough of Enfield and Epping Forest, secondary schools within 5km of the Site within these boroughs will also be considered.

Baseline Conditions

5.4 The socio-economic baseline will draw on a range of data sources to establish the prevailing socio-economic condition, including (but not limited to):

- 2011 Census[5] (Since the 2011 Census, the ward boundaries of Broxbourne have been redefined – the Site formerly sat within Cheshunt Central ward. Given 2011 Census data is not available for Cheshunt North ward, Cheshunt Central ward has been used as proxy);
- ONS Mid-Year Population Estimates (2021)[6];
- Business Register and Employment Survey (2020)[7];
- Indices of Multiple Deprivation (IMD) (2019)[8]
- Claimant Count (2022)[9];
- Authority Monitoring Report data[10];
- Annual Schools Census data (2021)[11] and information from Broxbourne school admission documents;
- Data on local GP practices from NHS Digital[12]; and,
- Open space and playspace information from Ordnance Survey data[13], alongside a desktop study.

[2] Older children tend to travel further to secondary school – secondary school planning tends to therefore be carried out at the borough level.

5.5 Where more up-to-date data is available than is stated here, this will be used.

Future Baseline

5.6 The future baseline will consider additional social infrastructure expected to be delivered by 2025 (when the Development is anticipated to be fully complete and operational).

Assessment Scope

Likely Significant Effects

Construction

5.7 The assessment will consider the following potential likely significant effects:

- Generation of temporary employment during the construction period.

Completed Development

5.8 The assessment will consider the following potential likely significant effects:

- Delivery of new homes;
- The demand effect of the population accommodated by these new homes on social infrastructure – specifically education, primary healthcare, open space and playspace provision;
- Effect on employment opportunities; and,
- Spending effects associated with the new residents and net employees associated with the Development.

Cumulative Assessment

5.9 The cumulative assessment will assess the identified cumulative schemes set out in Section 10 of this report, including the other Parcels of the Consented Scheme. The cumulative assessment will consider the same potential likely significant effects as identified for the Development (outlined above).

Non-Significant Effects

Construction

5.10 Indirect construction effects such as supply chain effects and spending by construction workers are not likely to be significant. The number of construction workers would fluctuate on-site over the course of the programme, as such it will not be possible to quantify the level of spending captured locally. It is also not possible to quantify supply chain and procurement effects as the level of information required will not be available at the planning application stage. The spatial context of supply chain effects can range from local to national and even international depending on the supply and sourcing of construction materials. Whilst these effects are likely to be beneficial, they are unlikely to be significant.

Completed Development

5.11 It is not possible to undertake a quantitative assessment of the Development's impact on the capacity of nurseries, leisure and other community facilities in the same way as for schools

and GPs surgeries. This is because the take up and usage of these types of facilities varies and cannot be accurately predicted or measured. The effect of the Development on these types of facilities is not expected to be significant.

Cumulative Assessment

5.12 The non-significant effects identified for the Development above also apply to the cumulative assessment.

5.13 In addition, it is not possible to make a quantitative assessment of cumulative construction employment. Variance in methodologies between projects for calculating construction jobs means that inaccuracies would arise from summing available figures. Furthermore, construction projects do not always occur concurrently due to differences in commencement dates, programme length and potential stalling of projects. Fluctuation in the intensity of labour demand on construction sites can also enable contractors to move around between sites. Therefore, the employment generated through the construction of the cumulative schemes may not occur at the same time in a cumulative manner.

Key Receptors

5.14 The following receptors are considered sensitive to potential likely significant effects arising from the Development:

- The construction industry and its employees;
- The local economy and labour market i.e. local businesses and economically active residents;
- The local housing market (housing need within the borough);
- Local social infrastructure and its users, specifically:
  - Primary schools within 1km of the Site;
  - Secondary schools across the borough;
  - GP surgeries within 1km of the Site;
  - Open space and playspace within 1km of the Site.
- New residents and employees to be accommodated by the Development.

Assessment Methodology

5.15 The assessment of potential likely significant effects will be undertaken using the following methodology and/or tools:

- Demolition and construction-related employment effects will be assessed using the Construction Industry Training Board (CITB) Labour Forecasting Tool[14];
- Delivery of housing will be assessed against housing target set within the Broxbourne Local Plan[15] (Policy DS1);
- The estimated resident population (including child yields) arising from the Development will be calculated using the Moving Groups dataset within the 2011 Census. This model takes into consideration the occupation characteristics of different types of housing

including the characteristic of houses compared to flats of various sizes (based on number of bedrooms) according to their tenure at the district level for Broxbourne;

- Demand for education will be assessed by considering primary and secondary age child yield against existing capacity in schools surrounding the Site;
- The Healthy Urban Development Unit (HUDU) benchmark of 1,800 registered patients per NHS General Practitioner (GP)[16] will be used to assess existing GP capacity against demand arising from the Development;
- Open space and playspace will be qualitatively assessed in line with Broxbourne Local Plan Policy OCR1, taking into account the level of provision to be delivered as part of the Development and existing provision within 1km of the Site;
- Direct operational employment effects will be assessed by applying standard job density ratios from the Homes and Communities Agency Guidance (2015)[17]; and
- An estimate of spending generated as a result of the completed Development would be calculated using average household spending figures[18] and an average figure for daily worker spending[19].

6 Daylight, Sunlight and Overshadowing

Baseline Conditions and Study Area

Study Area and Spatial Scope

6.1 The Site has been cleared and therefore does not currently include any buildings or structures of any scale. Temporary housing units currently present within the Site would be relocated prior to construction commencing.

6.2 Nearby properties sensitive to daylight and sunlight will be considered within the study area. Building Research Establishment (BRE) Guidelines[20] state that habitable rooms within surrounding residential properties that can expect to receive a reasonable amount of daylight should be assessed. As a rule of thumb, where the angle to the horizontal subtended by the new development at the level of the centre of the lowest window is more than 25°, assessment is necessary. Professional judgement to the geographic scope is also applied. Therefore, the study area in relation to daylight and sunlight comprises residential buildings to the north, south, east and west with the potential to be impacted by the Development.

6.3 For overshadowing, nearby areas of outdoor amenity space which are likely to experience overshadowing will be considered.

Baseline Conditions

6.4 The Site currently comprises two parcels of brownfield land, which are predominantly cleared or structures. Immediately surrounding the Site to the north and south is emerging residential development associated with the Consented Scheme. To the west of the Consented Scheme is existing residential accommodation. To the east lies Cheshunt Country Park and Cheshunt Lake, within the Lee Valley Country Park. The baseline conditions of surrounding receptors in relation to daylight, sunlight and overshadowing will be detailed in the ES Chapter.

6.5 The future baseline conditions of the future sensitive receptors in relation to daylight and sunlight and overshadowing will be detailed in the ES Chapter.

Assessment Scope

6.6 Given the scale of the Development, along with its proximity to potentially sensitive receptors, daylight, sunlight and overshadowing assessments are considered necessary.

6.7 Those Parcels which have outline permission but do not yet have reserved matters approval will be considered in a cumulative scenario, testing the cumulative impacts upon surrounding receptors as well as the effect of the Development upon future receptors.

6.8 Given that the Site benefits from the Outline Permission, the effects of the consented development will be compared against the proposed Development to show whether the effects are materially worse.

6.9 The proposed assessment scenarios are as follows:

- Baseline;
- Proposed Development;
- Cumulative (including future receptors associated with the Consented Scheme); and
- Consented Scheme (for comparative purposes only).

Likely Significant Effects

Construction

6.10 The construction of new buildings on the Site would have a gradual impact on the levels of daylight, sunlight and overshadowing on the surrounding sensitive receptors during construction of the Development, as the massing of the proposed buildings increases over time. The potential daylight, sunlight and overshadowing effects associated with the Development are considered to be:

- Changes to the daylight and sunlight amenity within surrounding residential properties and other properties identified which have a reasonable expectation to natural light because of the construction works; and
- Changes to overshadowing of surrounding outdoor amenity spaces because of the construction works.

Completed Development

6.11 Once the Development is complete and operational, there is the potential for daylight, sunlight and overshadowing effects on surrounding sensitive receptors. These include changes to the daylight and sunlight amenity within surrounding sensitive buildings which have a reasonable expectation to natural light as a result the completed Development. The completed Development also has the potential to result in changes to overshadowing of surrounding public and private outdoor amenity spaces.

6.12 The potential daylight, sunlight and overshadowing effects associated with the completed Development are considered to be:

- Changes in daylight and sunlight effects at surrounding residential properties and other identified properties; and
- Changes in overshadowing effects at surrounding amenity areas.

Cumulative Assessment

6.13 An assessment of the cumulative effects of the Development with the cumulative schemes will be provided, using the same methodology as for those effects of the Development in isolation. This will include Blocks of the Consented Scheme which have detailed consent or are under construction, i.e. Parcels 2, 11 and 14, along with the remaining Parcels defined by the Outline Permission.

Non-Significant Effects

6.14 At this stage, significant solar glare and light pollution effects are not considered likely and therefore these assessments are scoped out of the ES. Further details are provided in Section 11 of this report.

Key Receptors

6.15 Daylight and Sunlight:

- Relevant existing residential neighbours along Palmers Way, Clifton Close, Greenall Close, Oakdene, Delamare Road and Windmill Lane; and
- Residential dwellings within the consented phases of the Outline Permission.

6.16 Overshadowing:

- River Lee Country Park; and
- Relevant rear gardens of surrounding (existing and emerging) residential dwellings.

6.17 As the temporary housing units on-site will be relocated and have a maximum lease period of 3 years, they will be excluded from the assessment.

Assessment Methodology

6.18 The assessments will be carried out in accordance with the BRE Guidelines. A 3D computer model will be constructed of the baseline, Development and cumulative scenarios, which will be based on land survey information, floor plans for the relevant existing surrounding properties (where publicly available) and the architect's 3D model and 2D drawings of the Development. Where plans of the neighbouring buildings are not available the internal layouts will be based on reasoned assumptions.

Construction

6.19 Owing to the evolving and changing nature of construction activities, the assessment of potential effects during construction of the Development on daylight, sunlight and overshadowing to surrounding receptors will not be modelled. Instead, a qualitative assessment of daylight, sunlight and overshadowing effects during the construction phase will be undertaken using professional judgement, with the worst-case scenario in terms of the effects quantitatively modelled and analysed through the assessment of the completed Development.

Completed Development

Daylight / Sunlight

6.20 In line with the BRE Guidelines, both the Vertical Sky Component (VSC and No-Sky Line (NSL) assessments will be undertaken in the Development scenario for the relevant sensitive receptors identified above. Where relevant, the Average Daylight Factor (ADF) will also be assessed.

6.21 The sunlight amenity to the surrounding relevant receptors will be considered by reference to the Annual Probable Sunlight Hours (APSH) and Winter PSH method of assessment. Due to the southerly location of the sun in the sky, this assessment will consider those windows which face the Site and are located within 90 degrees of due south.

Overshadowing

6.22 The overshadowing analysis on the surrounding areas of amenity space will be undertaken by reference to the Transient Overshadowing and Sun Hours on Ground methods of assessment.

6.23 For the Transient Overshadowing assessment, the path of shadow will be mapped on the following dates as suggested by the BRE Guidelines:

- 21st March (Spring Equinox);
- 21st June (Summer Solstice); and
- 21st December (Winter Solstice).

6.24 Additionally, owing to the proximity of private rear gardens surrounding the Site and the potential significant impacts arising from the Development, a Sun Hours on Ground assessment will be undertaken to confirm and quantify any effect on 21st March, as recommended by the BRE Guidelines. The Sun Hours on Ground assessment will consider the proportion of a designated amenity space which receives 2 hours of direct sunlight on 21st March.

Significance Criteria

6.25 The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of daylight, sunlight and overshadowing amenity effects will be determined using professional judgement and by reference to Appendix I of the BRE Guidelines, however typically it is considered that alterations which are considered negligible and minor adverse are deemed not significant, with all effects greater than minor adverse considered significant.

7 Wind Microclimate

Baseline Conditions and Study Area

Study Area and Spatial Scope

7.1 The study area will comprise the Site and immediate surrounding area, up to circa 100m from the Site. The initial stage of the assessment will consider the extent of likely significant effects of the Development and identify key sensitive receptors within this extent.

Baseline

7.2 Based on long-term wind climate statistics from Heathrow and London City Airports, combined and corrected to apply directly at the Site, the prevailing winds at the Site blow from the south-westerly sector. Wind speeds are generally highest during winter, when the most frequent strong winds blow from the west-south-west. Wind speeds are generally lower during summer. North-easterly winds are common during spring but, although potentially cold, these winds are generally light. South-easterly winds are generally light, rarely occurring and usually do not cause adverse impacts on pedestrian level conditions.

7.3 The Site comprises mainly cleared brownfield land with a small area of temporary housing on-Site that will be relocated before construction commences (see Para 2.2.). The immediate surrounding area comprises a mix of open brownfield sites, low-rise industrial or office buildings and housing to the north, west and south, with a railway line and River Lee Country Park (including areas of dense trees and undergrowth) to the east. In the absence of any dominant structures, wind conditions in and around the Site are expected to be dictated by exposure to prevailing winds. The resulting suitability of pedestrian level wind conditions will be assessed using the methodology outlined below.

Future Baseline

7.4 Historical wind statistics are used as standard practice due, in part, to lack of certainty in potential future changes in wind patterns. However, any changes are expected to be minor and are not expected to materially affect the suitability of wind conditions.

Assessment Scope

Likely Significant Effects

Completed Development

7.5 The Development will mainly introduce buildings of modest scale with regards to wind effects but is expected to include a taller building towards the centre of the Site. The taller building will have potential to deflect higher level winds downwards and channel the resulting pedestrian level winds along and between the buildings. In addition, the Development will also introduce more sensitive uses within the Site, including recreational activities. However, the potential effects are being considered during an iterative design process and there is expected to be opportunities to introduce substantial soft landscaping in key areas, as well as building features (e.g. recessed entrances), to help alleviate these potential effects.

7.6 The potential significant environmental effects to be considered within the ES are as follows:

- Creation of accelerated pedestrian level winds, requiring wind mitigation measures to ensure acceptable residual effects;
- Introduction of recreational activities, sensitive to pedestrian level wind conditions, requiring wind mitigation measures to ensure acceptable residual effects;
- Increased shelter to the surrounding area, enhancing wind conditions; and
- Acceleration of pedestrian level winds in the surrounding area, potentially creating unsuitable wind conditions for existing activities and requiring wind mitigation measures to ensure acceptable residual effects.

Cumulative Assessment

7.7 Committed future developments within the immediate surrounding area comprise the consented phases of the Consented Scheme. These parcels will be considered as part of the cumulative assessment based on the assessment methodology outlined below.

Non-Significant Effects

Construction

7.8 Potential effects on the local wind microclimate during construction are expected to gradually transition from the existing Site wind microclimate to those of the completed Development, and therefore would not be specific to construction. As such, it is proposed that construction effects will be scoped out of the ES.

Key Receptors

7.9 The receptors to be considered comprise pedestrians and future occupants of the Development, and will focus on the following locations:

- Pedestrian thoroughfares in and around the Site;
- Buildings' main entrances and active frontages in and around the Site;
- Proposed communal amenity spaces at both ground and elevated levels, e.g. roof-top terraces, with particular focus on seating and play spaces;
- Surrounding public amenity spaces such as River Lee Country Park; and
- Private residential gardens bordering the south of the Site.

7.10 Further sensitive receptors, such as Cheshunt railway station platforms (and the associated bus stop) and The Maltsters public house spill-out seating are expected to lie beyond the extent of potential significant effects of the Development, but this will be confirmed as part of the assessment.

Assessment Methodology

7.11 Taking account of the relatively modest massing, with the tallest building located towards the centre of the Site (away from existing sensitive surrounding receptors), and that potential wind effects are being considered at an early stage in the design process, it is considered that the

ES wind assessment will be adequately informed by an experience-based desk study. This approach is consistent with that taken by the 2018 ES for the Outline Permission.

7.12 The desk-based wind assessment will be carried out to predict pedestrian level wind conditions in and around the Site based on consideration of the massing and exposure of the Development in conjunction with long-term wind statistics applicable to the Site and the industry standard Lawson criteria[21] for pedestrian comfort and safety. This approach will draw on over 20 years' experience of assessing wind effects in the urban environment, with potential effects benchmarked against observations and measured wind speeds from wind tunnel testing of similarly massed buildings (often forming part of larger developments) in similar urban / suburban settings.

7.13 As stated, mitigation measures will be developed in conjunction with the design team to help create suitable conditions for planned pedestrian activities within the Site and an acceptable residual effect on surrounding conditions.

7.14 If the desk-based wind assessment highlights any potentially significant issues requiring further development of wind mitigation measures, more detailed studies such as Computer Fluid Dynamic (CFD) modelling may be recommended and carried out to support the EIA and design process and provide a detailed evidence base to draw robust conclusions for the ES.

8 Townscape and Visual Impact Assessment

Baseline Conditions and Study Area

Study Area and Spatial Scope

8.1 The study area has been informed by site observations, a manual desk-based review of OS maps and historic environmental reporting, characterisation studies to identify building locations and heights, topography and key townscape features.

8.2 The proposed study area for townscape and visual receptors would comprise an area of 1km from the Site boundary; however, the impacts to townscape and visual receptors are likely to be limited to a radius of 500m and this will form the focus of the assessment.

8.3 Discussions regarding viewpoint locations are ongoing and will be determined through liaison with officers at BBC during the pre-application process. These will be based on those agreed for the 2018 ES and any additional viewpoints deemed necessary.

Baseline

8.4 A review of the baseline conditions of the Site has been carried out through a review of desktop secondary sources. This has included a review of information prepared for the Outline Permission, including the Heritage, Townscape and Visual Impact Assessment (HTVIA) (Montagu Evans, February 2018) which formed part of the 2018 ES.

8.5 The wider site associated with the Consented Scheme forms part of a strip of land running parallel to the railway line that is currently used for industrial purposes. The Consented Scheme will see this transformed into a residential-led mixed-use community. To the north, south and west of the Site is low-rise residential development. Beyond the railway track to the east is open space associated with the Lee Valley Regional Park.

8.6 There are no heritage assets located in the Site boundary or located adjacent to the Site. The Interim Policy for Locally Listed Buildings - Local List adopted[22] (Dec 2011) does not identify any non-designated heritage assets on the Site.

8.7 There are a limited number of heritage assets in the wider area. To the west, within the residential conurbation, there is one Grade II listed building within a 500m radius of the Site boundary, 61/63 Windmill Lane, a low-rise residential property. To the east, approximately 600m from the centre of the Site, is the World War II Bofors Anti-aircraft gun platform, identified as a Scheduled Monument. The gun platform is located in the Lee Valley, adjacent to the Waltham Abbey Royal Gunpowder Factory, also identified as a Scheduled Monument.

Assessment Scope

Likely Significant Effects

Construction

8.8 The construction phase will involve the temporary visibility of development works and associated machinery, cranes and other equipment. It will also involve change and disruption to the character and function of the area by virtue of construction works. The effects are likely to vary according to the distance between the receptors and the Site, with those receptors located closer to the Site more exposed to a higher visibility of machinery and infrastructure and likely to experience a larger effect than those located at greater distance.

8.9 These effects are likely to be adverse but short-term and temporary and will result in the completed Development. Potential significant effects arising during the construction phase may also be reduced through appropriate mitigation, including the implementation of a CEMP.

Completed Development

8.10 The completed Development will give rise to a change in the character, quality and amenity value of local views as experienced by the viewer. It will also change the local townscape quality, by virtue of appearance, spatial character and function. Those impacts may be both beneficial and adverse, by virtue of the increased intensity of development in close proximity to nearby residential areas, but also the improved appearance and function of the Site, which is also a district centre. Potential significant effects may be mitigated and/or enhanced through detailed design development and other measures, such as landscape buffering.

Cumulative Assessment

8.11 The potential cumulative effects of the completed Development will be assessed in conjunction with those Parcels of the Outline Permission that have been granted detailed consent or are under construction (i.e. Parcels 2, 11 and 14) along with undeveloped phases of the Consented Scheme outside the Site boundary.

Non-Significant Effects

Construction

8.12 Due to the temporary nature of the works, the separating distance from the Site, and nature of the receptors, construction works are not likely to give rise to significant effects on the following receptors:

- Visual receptors (people) over a 500m distance from the Site, including residents, pedestrians, commuters, and road users;
- Wider townscape character areas to the west of Roundmoor Drive and south of Windmill Road; and
- Built heritage assets.

Completed Development

8.13 Due to the separating distance from the Site, scale of Development and nature of the receptors, the change in the character, quality and amenity value of local views and to the function and

appearance of the townscape is not likely to give rise to significant effects on the following receptors:

- Visual receptors (people) over a 500m distance from the Site, including residents, pedestrians, commuters, and road users;
- Wider townscape character areas to the west of Roundmoor Drive and south of Windmill Road; and
- Built heritage assets.

8.14 Mindful of the above, it would be appropriate for the assessment of potential likely significant setting effects on built heritage assets to be scoped out of the ES. Further details are provided in Section 11 of this Report.

Key Receptors

8.15 Receptors with the greatest potential for significant effects are residents in close proximity (under 500m) from the Site, such as those to the east of Roundmoor Drive and along Windmill Lane. Users of the amenity space at the Lee Valley Regional Park also have the potential to be affected, where taller parts of the Development are visible on the skyline.

Assessment Methodology

8.16 The Townscape and Visual Impact Assessment (TVIA) will provide an assessment of the impact of the Development on townscape and visual receptors and form a standalone volume of the ES. The assessment will be prepared in accordance with legislation, planning policy and best practice guidance.

8.17 The townscape assessment will consider the Development within its urban context, including the buildings, the relationships between them, the different types of urban open spaces, including green spaces and the relationship between buildings and open spaces.

8.18 The visual assessment will consider the impact of the Development upon visual receptors (e.g. people), informed by verified views.

8.19 The methodology for the townscape and visual impact assessment will be based on the principles set out in the third edition of 'Guidelines for Landscape and Visual Impact Assessment'[23] (GLVIA), produced by the Landscape Institute with the IEMA. Reference will also be made to national, regional and local guidance and policies. It will be informed by a suite of accurate verified representations (AVRs) that will provide a detailed visual illustration of the Development, both in isolation and with cumulative schemes.

8.20 The applicant will engage with BBC officers during the pre-application process in regard to design development, including scale, mass and form and detailed design relative to townscape and visual impact matters to agree the boundaries of townscape character areas.

8.21 In respect to the visual impact assessment, no consultation has yet been undertaken in relation to the scope of this assessment. Viewpoint locations are to be identified by architectural and historic accounts of the area, an appraisal of the existing Site and surroundings, and relevant

policy designations. The set of views selected for assessment will be agreed with BBC officers and other relevant consultees.

8.22 The assessment of the effect of the Development on a receptor will be made on the basis of professional judgement which will take into account relevant planning policies and guidance. The sensitivity of the receptor as existing will be assessed as high, medium or low, depending on the importance, value and quality of the receptor, and its susceptibility to change, taking into account the quality of the receptor, and the nature of the receptor.

8.23 The magnitude of the impact resulting from the Development will be assessed as high, medium, low, very low or none according to the change to the receptor. These two measures will be combined to provide a conclusion as to the level of effect (major, moderate, minor or negligible). Whether the effect is significant or not will be judged on evidence and professional experience. It is generally considered that moderate to major effects are considered ‘significant’ in the context of the EIA Regulations and this is the approach that is proposed to be adopted in this EIA. Effects will be assessed as beneficial, adverse, or neutral. There may be both beneficial and adverse effects to each receptor. The assessment for each receptor as a whole is a 'net equation' of all effects, resulting in a single quantifiable entry into the scale of effect matrix.

9 Climate Change and Greenhouse Gases

9.1 Greenhouse Gas (GHGs) are gaseous compounds that have been identified as contributing to a warming effect in the earth's atmosphere. The primary GHG of concern with respect to the Development is carbon dioxide (CO_2) which is emitted from combustion sources such as vehicular transport and heating and energy plant. Other GHGs such as methane also contribute to climate change and these will be accounted for based on their Global Warming Potential (GWP). The combined effect of all GHG emissions will be presented as carbon dioxide equivalent (CO2e).

9.2 The Climate Change assessment will quantify the GHG emissions resulting from the Development and determine their significance in the context of local, regional and national climate change policy.

9.3 The resilience of the Development to future climate change will also be qualitatively assessed.

Baseline Conditions and Study Area

Study Area and Spatial Scope

9.4 GHGs contribute to climate change, which is a global environmental effect and, as such, the study area for the assessment is not limited by any specific geographical scope or defined by specific sensitive receptors. The scope is therefore determined by identifying emission sources associated with the Development over which the Applicant has some ability to control or influence.

Baseline Conditions

9.5 The Site is currently undeveloped brownfield land that has been cleared of vegetation. There are therefore no activities associated with the Site that result in GHG emissions and the GHG baseline is taken to be zero for the purposes of assessment.

Future Baseline

9.6 Assuming the Site remains as undeveloped brownfield land, the future baseline GHG emissions will remain unchanged as zero.

Assessment Scope

Likely Significant Effects

9.7 The assessment will quantify the GHG emissions from the Development over its lifetime. This will include GHG emissions during the construction and operational phase of the Development.

9.8 In line with IEMA Guidance on assessing GHG emissions[24], all GHG emissions are included as they all contribute to climate change and may be considered significant, irrespective of whether there is an increase or decrease in emissions.

Construction

9.9 The GHG emissions from the construction phase will be calculated, subject to availability of data, for the following activities:

- Transport of construction materials to the Site;
- Construction site activities (e.g. mobile machinery use) and energy consumption; and
- Embedded in the materials used to construct the Development.

Completed Development

9.10 The GHG emissions from the completed Development will be calculated over its lifetime, subject to availability of data for the following activities:

- Operational energy used by the Development;
- Operational transport activities related to the Development; and
- Repair, maintenance and refurbishment of the Development during its lifetime.

Cumulative Assessment

9.11 IEMA guidance makes clear that climate change is *"the largest interrelated cumulative environmental effect"* and therefore the assessment of GHG emissions which contribute to climate is intrinsically cumulative. In terms of this assessment, the following are also relevant:

- The assessment will consider the effects of the Development in the context of national and local cumulative totals. Since the national totals assume that other developments will contribute GHGs, the assessment will consider their implications in determining significance; and
- The geographical location of emissions has no relevance to the assessment. Therefore, the effects of the Development are independent of any local cumulative emissions.

9.12 Taking this into account, an assessment of the GHG emissions associated with cumulative developments will not be discretely undertaken and the cumulative GHG effects are considered to be the same as those for the completed Development.

Non-Significant Effects

9.13 A small number of minor activities, detailed further below will be scoped out of the assessment within the EIA, which is consistent with IEMA guidance. IEMA guidance recommends that activities with emissions that in total equal less than 5% the lifecycle emissions of the Development can be scoped out of the assessment.

Construction

9.14 GHG emissions from disposal of construction waste materials will be scoped out. GHG emissions from these activities are likely to represent less than 1% of total lifetime emissions and are difficult to estimate due to need for detailed data that is not normally available at the planning application stage.

Completed Development

9.15 GHG emissions from the treatment and disposal of waste materials during operation are scoped out since they are very small component of the GHG emissions of the Development

and will be minimised through standard best practice including the implementation of Site Waste Management Plans.

9.16 GHG emissions associated with water use (including water treatment and supply (pumping)) are expected to result in very small contributions to lifetime GHG emissions and are also scoped out.

9.17 GHG emissions associated with decommissioning of the Development at the end of its life will also be scoped out. The Development's life will extend beyond 2050, by which time the UK Government is targeting a net zero carbon economy. For practical purposes it is therefore reasonable to assume that decommissioning emissions will be net zero.

Key Receptors

9.18 The assessment of GHG does not include identification of sensitive receptors, as GHG emissions do not directly affect specific locations, but lead to indirect effects by contributing to climate change.

Assessment Methodology

9.19 The assessment will be undertaken in line with the IEMA guidelines and best practice, taking account of all relevant national, regional and local policies relating to GHG emissions and climate change, and will include a summary of mitigation measures designed into the Development to prevent, reduce and offset its GHG emissions.

9.20 The assessment of GHG emissions during construction will utilise the following approaches:

- The embedded carbon from construction will be based on GHG factors published by the Royal Institution of Chartered Surveyors[25], which consider the scale and nature of the Development;
- GHG emissions from construction activities will be based either on anticipated fuel and energy use data during construction, or use project value as set out in Royal Institution of Chartered Surveyors guidance[27]; and
- GHG emissions from construction traffic will be calculated based on predicted construction traffic volumes, average travel distances and government published GHG emission factors for construction vehicles[26].

9.21 The assessment of operational effects will utilise the following approaches:

- GHG emissions from operational transport will be calculated using government published GHG emission factors for public transport modes, and transport modelling of visitor and staff annual trips and distances travelled;
- GHG emissions associated with the repair, maintenance and refurbishment of the Development during its lifetime will be calculated based on benchmarking data from Royal Institution of Charted Surveyors[27];
- GHG emissions from operational energy consumption will be calculated using appropriate benchmarks and energy modelling; and

- GHG emissions in future years will be calculated based on government published data on the decarbonisation of the grid and transport modes reflecting UK climate change policy and strategies.

9.22 The net increase in GHG emissions from construction, during operation in the opening year and over the Development's lifetime will be calculated by comparison to the future baseline emissions.

9.23 The assessment will present GHG mitigation being proposed, which will follow the principles of the GHG management hierarchy (avoid, reduce, offset), in order to minimise, as far as reasonably practicable, the anticipated GHG emissions over the Development's lifecycle.

9.24 The approach to classifying and defining likely significant effects will rely on IEMA guidance (see Section 6 of the guidance) and apply expert judgment on the significance of the Development's lifecycle GHG emissions taking into account:

- any net change in emissions;
- their likely contribution to local and regional GHG emissions;
- their consistency with relevant policy; and
- an evaluation of the mitigation measures proposed to avoid, reduce and compensate GHG emissions.

Climate resilience assessment

9.25 The Climate Change chapter will also include a qualitative assessment of the vulnerability of the Development to future climate change consistent with IEMA guidance for assessing climate change resilience and adaptation[27]. This will consider potential climate risks and adaptation requirements resulting from future climate change including heatwaves, flooding, drought, and extreme weather events.

9.26 The assessment will reference UK Met Office Headley Centre[28] climate projections for the UK (UKCP18).

10 Cumulative Effects

10.1 The EIA Regulations specify the information to be included in an ES (Regulation 18) and require that in assessing the effects of a particular development, consideration should be given to cumulative effects. Potential cumulative effects can be categorised into two types:

- Combined effects - occur when two or more different environmental effects from the Development (e.g. dust, noise, traffic) act together to produce a different level of effect/ impact experienced by a particular receptor. These combined effects (or 'Intra-Project') can be additive or synergistic such that the sum of the impacts can be less or more than the individual impacts (i.e. because they may exacerbate or neutralise one another).
- Cumulative effects - are those that accrue over time and space from a number of different development activities and projects in geographical proximity to one another, which individually might be insignificant, but when considered together, could create a significant cumulative effect (also referred to as 'Inter-project' effects).

10.2 The cumulative assessment is important to ensure that the combined impacts of other schemes are fully understood and considered in decision making. The cumulative effects of the Development itself, and with other planned or committed development in the local area, will be considered on a topic-by-topic basis and reported in a subsection of each technical ES Chapter, and mitigation measures proposed where necessary. Combined effects will be considered in a separate chapter titled 'Effect Interactions'. The approach for both the Effect Interaction assessment and the Cumulative Effects Assessment with other development is outlined below.

Effect Interactions

Baseline

10.3 The Effect Interactions assessment focusses on individual receptors that have the potential to be affected by multiple impacts arising from the Development as addressed under more than one specialist topic in the ES. Therefore, the baseline for the Effect Interactions assessment will be determined by the results of the individual topic assessments.

Methodology

10.4 There is no consistent guidance or standardised approach to the assessment of Effect Interactions. However, it is recognised that the Development has the potential to give rise to a variety of impacts upon a number of different receptors some of which may combine to become significant effects.

10.5 Table 10.1 summarises the proposed receptor-based assessment process to be used for both construction and operation of the Development.

Table 10.1: Effect Interaction Assessment Process

Step	Description
Step 1: Identify and categorise receptors	Identify all topic sensitive receptors and their geographical locations based on the study areas and Zones of Influence (ZoI) of the respective technical assessments. These will then be categorised by type.
Step 2: Identify impacts	Identify all topic impacts associated with sensitive receptor(s)/ receptor types.
Step 3: Screen receptors and associated impacts	A screening exercise will be undertaken upon the identified receptors and impacts. Items are screened out from further assessment if they are: ▪ Receptors where no topic impacts overlap; ▪ Receptors with no temporal overlap with topic impacts; or ▪ Receptors where topic impacts are identified as 'negligible'
Step 4: Assess effect interactions	Qualitative assessment based on professional judgement of the effect interactions.

10.6 A screening exercise will be undertaken upon the identified receptors and impacts. Items are screened out from further assessment if they are:

10.7 Based on the topics and methodologies outlined in the previous chapters that are proposed to be scoped into the EIA, it is considered that the sole receptor group where there is potential for effect interactions to occur are principally human receptors (i.e. pedestrians, visitors, residents) within the Development and adjacent development sites. On this basis, the assessment of Effect Interactions will be limited to this receptor group, in considerations of potential effects on-Site and neighbouring developments. Potential effect interactions of multiple topic aspects on designated ecological sites (e.g. water quality, light, air quality) will be discussed in the standalone Ecological Impact Assessment (EcIA) submitted with the planning application.

Cumulative Effects Assessment

Baseline

10.8 The existing environment conditions to be considered in the cumulative assessment will be identified in each technical ES chapter.

Methodology

10.9 The cumulative effects of the Development and cumulative schemes in the local area will be considered on a topic-by-topic basis with the cumulative assessment methodologies and the cumulative effects reported in a subsection of each ES chapter, along with mitigation measures where necessary.

10.10 A set of screening criteria has been developed to identify which cumulative schemes in the area should be subject to assessment, as follows:

- Expected to be built-out at the same time as the Development and with a defined planning and construction programme;
- Spatially linked to the development (within 1km of the Site boundary);
- Considered an EIA development and for which an ES has been submitted with the planning application;
- Those which have received planning consent from the planning authority (granted or resolution to grant) and / or,
- Introduces sensitive receptors near to the Site (but are not EIA development).

10.11 A planning search was undertaken considering the above criteria. The only cumulative schemes identified is the Consented Scheme and associated planning consents. Further details are provided in Appendix A.

11 Non-Significant Topics

Introduction

11.1 As stated within the EIA Regulations, an ES is required to identify only the 'likely significant environmental effects' of a development.

11.2 The rationale for this scoping exercise has been guided by the current National Planning Practice Guidance on EIA (updated May 2020), which highlights the expectation that the ES should focus on the 'main' or 'significant' environmental effects only. The Guidance states:

"Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the "main" or "significant" environmental effects to which a development is likely to give rise. The Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects. Where, for example, only one environmental factor is likely to be significantly affected, the assessment should focus on that issue only. Impacts which have little or no significance for the particular development in question will need only very brief treatment to indicate that their possible relevance has been considered."

11.3 The following topics are considered to be those where 'significant' effects are unlikely to arise as a consequence of the Development; the rationale provided has been informed by professional technical advice where appropriate. As such, these issues would not be assessed in detail through the EIA process. Non-significant issues have also been identified within previous topics sections where relevant.

Transport and Access

Construction

11.4 Negligible transport effects were concluded for the construction phase of the Consented Scheme in the 2018 ES. With the Development proposals only comprising 475 homes and associated commercial floorspace (representing a minor increase in quantum of floorspace on the Site granted through the Outline Permission), it is not considered that the Development would give rise to a large volume of construction vehicles movements and significant effects, alone or in cumulation with the Consented Scheme, are not expected. Furthermore, in respect of mitigation, Condition 10 of the Outline Permission requires submission of a Construction Traffic Management Plan (CTMP) to BBC in relation to any phase or sub-phase of the Consented Scheme. This commitment will be applied to this application and, as such, a CTMP is expected to be produced and agreed prior to commencement of works on the Site.

Completed Development

11.5 Negligible to minor beneficial (non-significant) transport effects were concluded for the operational phase of the Consented Scheme in the 2018 ES. These conclusions were based on a transport modelling scenario that assessed the potential impacts of 2,000 dwellings; as such this modelled a transport scenario that comprised 275 additional homes to that of the Consented Scheme.

11.6 The uplift in residential units proposed through the Development, when considered in cumulation with the Consented Scheme (i.e. 101 dwellings on the Site for a cumulative total of 1,826 dwellings), is still notably less than the 2,000 dwelling scenario modelled previously for the 2018 ES which concluded no significant effects in relation to transport and access for the completed development. Preliminary modelling undertaken by the project transport consultant, Vectos, has illustrated that the Development would give rise to an additional 28 two-way vehicle trips in AM peak and 36 two-way in PM peak relative the trip generation predicted for the Site (i.e. 374 units) under the Consented Scheme. An initial forecast of traffic distribution across the local transport network also indicates that there would be a small increase in movement on the junctions surrounding the Site relative to that predicted for the Consented Scheme. However, these are very small in the context of the existing movements on the local transport network and the estimated vehicle trips generated by the completed Development are unlikely to have a significant impact. Additionally while delivery and servicing trips are expected to be marginally greater than those assessed in the 2018 ES, the likely impact will remain insignificant. Given these findings and that the Development will include proposals to enhance sustainable travel opportunities, no significant transport and access effects are predicted for the completed Development.

11.7 The planning application will be supported by a Transport Assessment, informed by new automated traffic surveys (ATCs) at key links to verify the baseline conditions. A Travel Plan will also be provided.

Noise and Vibration

11.8 The predominant noise sources in the vicinity of the Site arise from train movements on the adjacent mainline railway to the east and vehicle traffic on the surrounding highways, notably on the Delamare Road. There is also a potential for noise impacts from existing commercial uses to the north and west and ongoing construction works associated with the Consented Scheme.

11.9 The closest existing sensitive receptors to the Site are residential properties on Windmill Lane to the south (although their noise environment is already heavily influenced by traffic and rail noise), and emerging residential development associated with the Consented Scheme to the north and south of the Site (see Appendix A for further details).

11.10 Due to the Site's proximity to the identified noise sources, the design will carefully consider the potential noise and vibration effects posed to receptors, namely future residents of the Site.

Construction

11.11 Noise and vibration impacts associated with the construction of the Development will be controlled through the use of a CEMP and CTMP, which will be controlled by planning conditions akin to the controls on the Outline Permission. This will set out management and engineering controls that will minimise noise and vibration generated by construction activities to the lowest practical level. As such, the residual effect of noise and vibration during the construction phase of the Development is not expected to be significant.

Completed Development

11.12 The 2018 ES predicted negligible residual noise effects for the Consented Scheme due to the change in land uses and a net decrease in traffic flows.

11.13 The Site is predominantly cleared with the exception of temporary housing units and, as such, is not an existing source of noise and vibration. The Development would not bring forward noisy uses, with the only sources of noise expected to be from vehicle movements and building plant.

11.14 Car parking provision and servicing of the completed Development (e.g. deliveries) will lead to additional vehicular traffic on local roads and the local road network. These activities, in combination with the Consented Scheme, have the potential to impact noise sensitive receptors, however perceptible changes, defined by DMRB Guidance[29] as a >3dB increase, are not expected. For context, the 2018 ES predicted negligible to minor beneficial changes in road traffic noise with reductions in decibel levels of up to -1.3dB.

11.15 Appropriate noise control limits compatible with the aims of paragraph 180 of the NPPF will be established for new fixed plant installations. As such, no likely significant noise effects are anticipated as a result of the completed Development.

11.16 Potential vibration levels from the nearby trainline were calculated to be below the thresholds stated in BS 6472 within the 2018 ES and no impacts were predicted. It is considered unlikely that vibration associated with additional traffic generated by the Development will have any significant effect on existing vibration sensitive receptors. This is primarily informed by the assumption that the majority of additional traffic generated by the Development will be “light” vehicle movements (i.e. passenger cars and vans) which are not significant sources of vibration. such, no significant vibration effects as a result of the completed Development are anticipated.

11.17 Notwithstanding, a standalone Noise and Vibration Assessment will be submitted with the planning application. This will verify that the Development will not result in unacceptable levels of noise and vibration on sensitive receptors. It will also provide an assessment of the Development on the tranquillity of the local area.

Site Suitability

11.18 The suitability of the Site for residential development was assessed under the Outline Permission and found to be acceptable subject to appropriate acoustic design measures. The suitability of the prevailing local noise for the proposed residential development will be assessed in accordance with the NPPF, Planning Practice Guidance – Noise (PPG-Noise) and the Noise Policy Statement for England (NPSE) for noise sensitive areas of the Development to demonstrate acceptability.

11.19 To assess the potential impact of existing sources of noise on the Development, noise monitoring results would inform noise modelling to calculate future noise levels at proposed residential dwellings. The results would be analysed and assessed with reference to ProPG and the BS8233 guideline noise levels as follows:

- 35dB L_{Aeq} (16 hour) during the daytime in bedrooms and living rooms;

- 30dB LA_{eq} (8 hour) during the night-time in bedrooms;
- 45dB LA_{max} (fast) during the night-time in bedrooms; and
- 55dB LA_{eq} (16 hour) in external areas.

11.20 Acoustic mitigation may be required for external and internal amenity areas of proposed dwellings in close proximity to the noise sources identified. Where required, this would be outlined in the assessment to ensure future residents would not be subject to adverse noise levels and meet the criteria outlined above.

Air Quality

11.21 The Site is not located in an Air Quality Management Area (AQMA), with the closest located in the vicinity of the A10/B198 junction circa 820m west of the Site boundary.

11.22 An Air Quality assessment was undertaken as part of the 2018 ES. The assessment concluded that, through good site practice and the implementation of suitable mitigation measures (i.e. hoarding, good storage/handling practices, construction traffic management), the effect of dust and particulate matter releases could be effectively mitigated and the resultant effects were to be considered negligible. These construction mitigation measures, including adherence to a CEMP and CTMP, would be in place for the Development. Condition 13 of the Outline Permission makes provision for periodic submission of air quality monitoring data during the construction phase of Phase 1 of the Consented Scheme. The initial monitoring results submitted to BBC from May to November 2021 demonstrate compliance with air quality objectives, indicating that the mitigation measures in place are appropriate.

11.23 ADMS Roads dispersion modelling was carried out as part of the 2018 ES to assess the impact of the completed Consented Scheme on local air quality. Traffic generation from the Consented Scheme was predicted to result in a negligible effect on nitrogen dioxide and particulate matter concentrations during operation therefore leading to a negligible effect on local air quality.

11.24 The completed Development proposes to bring forward 475 new residential units alongside new commercial floorspace; this would bring forward a relative uplift of 101 residential units compared to the 374 consented on the Site under the Outline Permission. Car parking provision is proposed to be 100% electric and the predicted vehicle trips are not expected to give rise to significant air quality effects. Furthermore, the Development will incorporate low carbon energy efficiency/recovery measures in line with Part L of the Building Regulations, potentially incorporating Photovoltaic (PV) panels and/or air source heat pumps that will not lead to significant adverse air quality emissions.

11.25 With the appropriate mitigation measures in place, including adherence to a CEMP and CTMP and Travel Plan, it is considered unlikely that the scale of the Development would result in significant air quality effects and air quality will be scoped out of the ES. An Air Quality Assessment will accompany the planning application as a standalone document.

Ecology and Biodiversity

11.26 An assessment of ecological impact was provided within the 2018 ES. This was supported by a comprehensive suite of ecological surveys (including an Extended Phase 1 Habitat Survey, bat emergence, and wintering bird surveys) and analysis of visitor survey data to assess the

potential impacts of the Consented Scheme on the Lee Valley SPA and Ramsar. This assessment identified that no significant ecological effects would result on-site from the Consented Scheme and recreational disturbance effects associated with increased visitors [arising from the Consented Scheme] would not give rise to likely significant effects on the ecological integrity of the Lee Valley SPA.

11.27 The Site has now been cleared and currently comprises undeveloped brownfield land with minimal vegetation and little ecological value. As part of the Development, landscaping and native planting will be implemented on-Site to help enhance biodiversity. Bat boxes would also be installed within Parcel 12 as per previously agreed conditions attached to the Outline Permission. Given the nature and scale of development proposals, it is unlikely it would lead to any significant effects to the local ecology and biodiversity. While there would be an uplift in future occupants and visitor trips associated with the Development, it is not considered that that this, alone and in combination, would be significant. As such, this topic will be scoped out of the EIA.

11.28 An Ecological Impact Assessment (EcIA) will be carried out for the planning application; this will also consider potential air quality, light pollution and hydrological impacts. Additionally, due to the proximity to the SPA and Ramsar, a Habitats Regulations Assessment (HRA) Screening exercise will also be undertaken and will accompany the planning application.

Archaeology

11.29 Archaeology was scoped out of the 2018 ES with the agreement of BBC and HCC. Notwithstanding, an Archaeological Desk-Based Assessment has been undertaken in February 2022 by RPS to inform the planning application (Appendix C). This report concluded that the Consented Scheme site has low archaeological potential for all periods. Based on the low archaeological potential and historic land uses that would have led to widespread below ground impacts, it was considered unlikely that the Consented Scheme would impact upon below ground archaeological deposits, should they be present. Given the low archaeological potential of the Consented Scheme site, no additional archaeological work was warranted. Notwithstanding, Condition 33 of the Outline Permission made provision that an archaeological watching brief would be maintained during all intrusive groundworks on the wider site not currently covered by buildings. This commitment will be maintained for this application.

11.30 The Development proposals would therefore have no significant effects on archaeology and it will be scoped out of the ES.

Built Heritage

11.31 The 2018 ES considered built heritage within the HTVIA and concluded negligible (not significant) residual effects on all built heritage assets resultant from the Consented Scheme.

11.32 The Site does not contain any designated built heritage receptors such as listed buildings, Scheduled Monuments or Registered Parks and Gardens, and is not located within a Conservation Area, with the closest – Churchgate, approx. 1.2km west of the Site boundary. There are no non-designated heritage receptors, such as locally listed buildings, on the Site.

11.33 The World War II Bofors Anti-aircraft gun platform Scheduled Monument is located circa 600m east from the centre of the Site. Further east, approx. 800m from the Site boundary, is the Waltham Abbey Royal Gunpowder Factory, also identified as a Scheduled Monument. Both structures have an open setting linked to historic uses of the River Lea. The Site has little historic associated with these heritage assets, and given the proximity to Site and limited intervisibility it is not considered that the completed Development would have any significant effects on the setting of these built heritage receptors, as stated in the 2018 ES.

11.34 There are no Grade I or II* listed buildings within the immediate vicinity of the Site. The closest listed building is the Grade II listed 61 and 63 Windmill Lane, approx. 400m south west of the Site boundary. These properties date from 17th Century or earlier and have historic interest due to their survival as part of the 17th Century townscape in Cheshunt. The Site does not contribute to this setting and it is not considered that the Development would have significant effects on the setting of these listed buildings, as stated in the 2018 ES.

11.35 There are a number of non-designated built heritage assets within a 1km radius of the Site. The closest of these is 98, 100 and 102 Turners Hill located circa 600m south west of the Site boundary. Non-designated built heritage assets within the surrounding area date from the late 20th Century and are modest houses and community amenities, including public houses and dwellings. They derive importance from their local architectural and historic interest and are experienced within the context of modern development of varied form, scale and materials. Owing to interposing development and vegetation, there is no visual relationship between these receptors and the Site, with which they share no historical associations or other setting relationship.

11.36 Given the former uses of the Site and current cleared state, it is considered that it makes no contribution to the importance and setting of any of the designated or non-designated heritage assets. Given the nature and scale of Development proposals, it is considered that there will be no likely significant direct or indirect effects on built heritage assets during the construction or operational phases of Development. This is due in part to the minimal inter-visibility between the built heritage assets (both designated and non-designated) and the Site, as well as the complete lack of any historic functional links between the Site and the built heritage assets.

11.37 Given that the scale, massing and maximum heights of the Development are broadly in keeping with the approved parameters of the Consented Scheme, it is considered reasonable to assume that the Development would not give rise to any new or materially different effects to those predicted for the Consented Scheme. Although the Development may be more visible within the surrounding area (than the Consented Scheme) with a maximum proposed height of the tower component being up to 14 storeys, the scheme is being sensitively designed such that it would not adversely impact on the setting of heritage assets or the contribution made by setting to their significance. As such, the direct and indirect effects of the Development on built heritage assets would be negligible and it is therefore considered appropriate to scope out this topic from the EIA.

Ground Conditions and Contamination

11.38 The 2018 ES was informed by a Geotechnical and Geo-Environmental Ground Investigation Report produced in 2017. This identified that ground conditions on the Site are generally consistent and are comprised of Made Ground overlying alluvial and river deposits (Kempton

Park Gravel) to depths of c. 3.80m to 7.90m below ground level (bgl). The solid geology comprises London clay underlain by Lambeth Group and Thanet Sands. Groundwater was generally encountered at depths varying between c. 0.8m to 1.52m bgl.

11.39 This assessment concluded that the environmental impact of the Consented Scheme on ground conditions and contamination would be negligible. A minor beneficial effect to controlled waters was identified for the Consented Scheme through change of use from industrial to residential-led development, in that potentially contaminative industrial infrastructure would be removed, therefore reducing the risk of future contamination. The assessment concluded that any short-term negative impacts from the demolition and construction phases could be effectively mitigated by use of best practice construction site management, as secured by planning condition, and any long-term negative impacts would be negligible. Linked to this, Condition 32 of the Outline Permission makes provision for the completion of a detailed site investigation on and Phase of the Consented Scheme prior to the commencement of below ground works. Any identified mitigation or need for remediation would then be agreed with BBC and a validation report submitted on completion of works.

11.40 In order to discharge Condition 32 for the RMA applications, Phase II Site Appraisals were carried out for Parcel 14 and Parcel 2 in April and June 2021 respectively. These identified some construction phase risks to workers and made recommendations for mitigation measures to reduce these risks to an acceptable level. A contamination hotspot was identified in Parcel 2, with a remediation strategy put in place to mitigate potential risks to controlled waters.

11.41 The nature and scale of the Development is not markedly different to the Consented Scheme that formed the basis of the 2017 Geotechnical and Geo-Environmental Ground Investigation Report and subsequent Phase II Site Appraisals on other Parcels. Taking this into consideration and that a detailed site appraisal will be carried out to support the planning application, with mitigation measures and a remediation strategy to be defined and implemented as required, the Development is unlikely to lead to any significant effects. As such, it is proposed that further assessment is scoped out of the EIA.

Water Resources, Flood Risk and Drainage

11.42 Approximately 90m east of the Site, beyond the railway line, is the Small River Lea which is designated as a Main River by the EA, as well as various watercourses and lakes including the River Lee Navigation, River Lea, Cheshunt Lake and Turnershill Marsh. The Windmill Lane ditch runs along the western and southern Site boundaries, passing through a series of culverts along the southern boundary, beneath the railway and draining into the Small River Lea in the east. The Small River Lea is also designated as a Main River.

11.43 EA flood mapping illustrates that the Site is located fully in Flood Zone 2 (0.1-1% annual risk of fluvial flooding), with the southern and western parts of the Site located in Flood Zone 3 (>1% annual risk of fluvial flooding), as illustrated in Figure 2.1. The Site is also at medium-high risk of surface water flooding but unlikely to be at any risk of reservoir flooding. The Site not located in a groundwater source protection zone but is underlain by a secondary aquifer and located in a Nitrate Vulnerability Zone.

11.44 The 2018 ES was informed by a site-specific Flood Risk Assessment and concluded that there would be negligible (non-significant) residual effects for the construction and operational

phases of the Consented Scheme. Potential risks during the construction phase would be mitigated through a range of control and monitoring measures (including the implementation of a CEMP) and a surface water drainage scheme, incorporate the use of SuDS, would mitigate potential flood risk during the operational phase.

11.45 Potential adverse effects associated with surface water flows and water quality (e.g. fuel spillages) during construction activities will be controlled by standard management practices and measures within the CEMP, to be secured by planning condition. As such, it is considered that the Development will not give rise to significant construction-related effects.

11.46 The Development will be informed by a detailed surface water drainage strategy, including the use of SuDS, that would reduce and mitigate potential flood risk and surface water drainage on the Site, the uplift in residential units proposed through the Development (i.e. 101 dwellings), While the completed Development will lead to an increase in demand of foul and potable water, this will be able to be accommodated by the water infrastructure maintained by the statutory authorities. For these reasons, it is considered that the completed Development will not give rise flood risk on Site or significant effects on the water environment and it is proposed that further assessment be scoped out of the EIA.

11.47 A Flood Risk Assessment (FRA) will be prepared in line with NPPF and BBC requirements and will likely be submitted with the planning application in full liaison with the Local Lead Flood Authority (LLFA). The FRA will assess the Site's flood risk from all sources and demonstrate how any flood risk to the Site and surrounding areas would be managed, taking into account climate change allowances. The FRA will incorporated a drainage strategy that will demonstrate how surface water discharge from the Site can be appropriately managed, in accordance with key drainage principles of the Consented Scheme.

11.48 It should be noted that any works proposed within 8m of the identified Main Rivers and culverts will be subject to a Flood Defence Consent from the EA, which the Applicant will coordinate when required.

Human Health

11.49 Human Health was scoped out of the 2018 ES for the Consented Scheme. The 2017 EIA Regulations require the consideration of the potential effects on human and population health where significant effects are likely to occur. The assessment should be proportionate to the project being considered. Where people live and work could have indirect impacts on their personal state of wellbeing. Therefore, new developments could potentially have a beneficial or adverse effect on health, particularly in areas of existing poor health conditions.

11.50 Poor health outcomes could arise from construction effects such as dust or pollution from construction traffic. However, construction and environmental management measures would be secured through planning conditions to manage the construction of the Development addressing issues related to health and wellbeing, including public safety, noise and vibration controls, and air and dust management. Principally, these measures will be included in management plans, such as the CEMP and a CTMP, to be controlled by planning condition.

11.51 Despite the indirect links that have been identified between new development and health and wellbeing, the potential effects of a new development on the health and wellbeing of new and

existing and future residents would be largely determined by the way the Development's buildings and spaces are used (rather than constructed) and by lifestyle factors which cannot be accurately quantified or controlled at the planning stage. Notwithstanding, the Development is being designed with full consideration of future health and wellbeing factors including the high-quality design and inclusion of amenity and open space, and active travel mechanisms (including sustainable travel options).

11.52 At the system level, greater access to housing, education and employment may be positively correlated with good health, but these effects will be uncertain and not measurable at the level of an individual site. Assigning scale of significance to potential health effects is challenging as wider physical, social, economic and environmental factors do not produce predictable or equal health effects in individuals. When exposed to the same health pathway, different individuals may react differently as a result of a complex mixture of underlying levels of health, lifestyle factors, and personal preferences. Public Health England (PHE) guidance[30] suggests that significant health effects should be based on a severity predominately related to moderate change in morbidity (life expectancy) or mortality and should affect at least a large minority of the population. If the change in mortality is expected to only be small and/or only a small minority of the population are likely to be affected, the health effect should not be considered significant.

11.53 PHE guidance also recommends that only likely significant adverse health effects should trigger the need for health assessment as part of an EIA[31]. Significant beneficial effects and non-significant adverse health effects are more appropriately considered within other relevant assessments and documents that accompany the planning application.

11.54 The EIA and wider planning application documents will indirectly consider health through various topics which can act as key health indicators and pathways such as air quality, transport, noise, contamination, microclimate and water quality/flood risk. Whilst these assessments do not explicitly refer to health outcomes, some of the impacts identified within them have the potential to effect human health. Many of the standards and criteria against which these topics are assessed are based on thresholds which are informed by what is and is not acceptable in terms of human health. The preparation of a CEMP, for example, tends to be informed by the EIA process in order to mitigate and/or minimise any impacts during the construction process which might give rise to health and well-being issues including public safety, noise and vibration controls, and air and dust management.

11.55 The socio-economic chapter of this EIA will also assess impacts on housing delivery, community infrastructure including primary healthcare services, education (primary and secondary), and open space, as well as employment which can all have an indirect effect on health.

11.56 A variety of impacts which have the potential to affect health will, therefore, be considered in the ES and planning application as a whole. Each ES chapter of the assessment will identify effects proportionate to the scheme itself. Where negative effects are identified, mitigation measures will also be proposed. Measures may also be proposed to enhance a positive effect. The inclusion of the requirement to consider human health effects in line with the EIA Regulations will, therefore, be met by the robust assessment of the topics listed above.

11.57 On that basis, a human health chapter is being scoped out of this EIA

Materials and Waste

11.58 Materials and Waste were scoped out of the 2018 ES for the Consented Scheme. Waste streams arising from the construction stage of the Development would mainly comprise soil from excavation and foundation work, however it would be the intention to reuse as much material on-site as practicable. Waste produced during construction would be subject to the 'Duty of Care' under the Environmental Protection Act. The waste hierarchy would be followed, and waste streams would be managed by the contractor in line with current legislation and best practices, with construction waste materials disposed of by the contractor(s) to appropriate recycling facilities or appropriately licensed landfills. The appropriate disposal of contaminated material off-Site will depend on the waste classification determined from the chemical analysis or Waste Acceptance Criteria testing as necessary.

11.59 The ES will outline likely waste quantities arising from construction works and present the Applicant's commitments to waste minimisation and management during these works. These would comprise one of the primary commitments within the CEMP.

11.60 The Environment Agency's Guidance for Pollution Prevention and other relevant guidance will be followed during the handling, storage and use of such materials, including oil, chemicals, cement, cleaning materials and paint. The CEMP will set out roles and responsibilities such that the Site Manager will audit waste carriers and disposal facilities and maintain documentary evidence that these requirements are being met, including a register of waste carriers, disposal sites (including transfer stations) and relevant licensing details for each waste stream.

11.61 Operational waste from the completed Development would comprise residential and commercial waste. This waste would be collected by BBC or other commercial operators.

11.62 The Development will be designed to comply with BBC recycling and waste requirements and will ensure provision of sufficient waste storage areas across the Development to enable occupants to segregate waste and recyclables where required with appropriate access for refuse collection vehicles. The ES will summarise the operational waste management measures which would be included within the Development.

11.63 Volumes of waste generated by the Development during construction and operation are not expected to give rise to a significant impact on waste management infrastructure. No significant effects are anticipated with respect to materials and waste. As such, this topic is proposed to be scoped out of the ES.

Light Pollution

11.64 Light Pollution was scoped out of the 2018 ES for the Consented Scheme. The Site comprises vacant brownfield land, surrounded by residential and commercial uses to the north, west and south which provide some existing sources of light pollution. The adjacent roads are also currently lit to highway requirements. However, the Lee Valley Country Park, across the railway line to the east, is not a source of light pollution.

11.65 The CEMP, as secured by planning condition, will contain standard good practice measures which would effectively mitigate light pollution onto nearby sensitive receptors during the

construction phase. It is therefore expected that construction of the Development will not give rise to significant light or glare effects.

11.66 The lighting strategy for the completed Development would be designed in line with best practice including those from the Guidance Note 1 for The Reduction of Obtrusive Light[32]. The Development will provide a modern, efficient and controlled lighting scheme which incorporates best practice design principles. Principles of the lighting design will be set out within a Lighting Statement and summarised within the ES, giving consideration to sensitive human and ecological receptors in order to reduce light pollution where practicable.

11.67 Due to the Site's location and the Applicant's commitment to design the lighting scheme in line with best practice, it is considered that potential significant effects can be avoided. Therefore, it is considered unlikely that lighting associated with the Development will result in significant adverse effects to sensitive human or ecological receptors and it is proposed that an assessment of light pollution be scoped out of the ES.

Solar Glare

11.68 Solar Glare was scoped out of the 2018 ES for the Consented Scheme. There is no specific criterion for assessing the significance of solar glare or dazzle and professional judgment has therefore been used in establishing whether the Development is likely to give rise to significant effects. Sensitive receptors are likely to include road users, including train drivers on the adjacent railway, road drivers along the Delamare Road, Windmill Lane, as well as on-Site vehicle operators. Solar glare to these receptors might cause visual distraction or disability to transport controllers. However, the emerging design of the Development does not propose to incorporate any significantly reflective components and no significant solar glare effects are likely. Therefore, it is proposed to scope this topic out of the EIA.

Vulnerability to Major Accidents and Disasters

11.69 The 2018 ES scoped out an assessment of major accidents and disasters for the Consented Scheme. With reference to Regulation 4(4) and Schedule 4 of the EIA Regulations, this Scoping Report considers whether there are likely to be any significant effects on the environment or the project arising from the vulnerability of the Development to major accidents or disasters. The EIA Regulations require the ES to consider the inclusion *"A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned".*

11.70 IEMA guidance (IEMA Quality Mark Article 'Assessing Risks of Major Accidents / Disasters in EIA'[33]) defines major accidents and disasters as *"man-made and natural events which are considered to be likely, and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with /rectify".*

11.71 Overall, the vulnerability of the Development to risks of major accidents and /or disasters is considered to be low. The proposed use is not considered hazardous and the most likely foreseeable vulnerability of the Development with regards to risks of major accidents and /or disasters are related to flood risk. These risks would be adequately considered as part of the

FRA and drainage strategy. Risks to fire can be assumed to be low with the detailed design and fire strategy to be developed in line with the latest fire safety guidance.

11.72 No other significant effects relating to the vulnerability of the Development to major accidents and disasters have been identified for further assessment within the EIA.

Energy and Sustainability

11.73 The 2018 ES scoped out an assessment of energy and sustainability for the Consented Scheme, however a high-level assessment of sustainability was provided within the Climate Change assessment. The planning application will likely be supported by Energy and Sustainability Strategies. This negates the need for further energy and sustainability assessments within the ES and accords with the Department of Communities and Local Governments' (DCLG) consultation paper on EIA Good Practice (2006)[34] which states:

"there is no requirement to include a sustainability appraisal within the Environmental Statement. If such an assessment is required by the Local Planning Authority, it should be provided as a separate document supporting the planning application."

11.74 The main sustainability features of the Development (e.g. SuDS drainage strategy, energy strategy) will be summarised in the description of the Development included in the ES. As such, all technical assessments will inherently test the principal sustainability design features sought as part of the planning application.

Utilities

11.75 The 2018 ES scoped out an assessment of utilities and servicing for the Consented Scheme. The Development will have a minor demand on the grid network in relation to power and water utilities. Consultation with the relevant statutory bodies will be undertaken to ensure the existing electricity, gas and clean water networks, as well as local foul drainage, will have sufficient capacity to supply the Development. Network substations are located in the vicinity of the Site. Therefore, it is not considered that the Development is likely to give rise to significant effects on utility infrastructure or demand and this topic will be scoped out of the ES.

Aviation

11.76 The 2018 ES scoped out an assessment of aviation for the Consented Scheme. There are no airfields or aerodromes within a 10km radius of the Site which is considered sufficient distance that significant impacts would not occur. Therefore, no significant effects in terms of aviation are considered likely and this topic is proposed to be scoped out of the EIA.

Telecommunications

11.77 Telecommunications was scoped out of the 2018 ES for the Consented Scheme. Given the maximum heights of the Development, it is considered unlikely that there will be any significant telecommunications effects as a result of the Development. Furthermore, with the adoption of digital television, EIA best practice is increasingly recognising that telecommunication issues do not raise environmental considerations which need to be addressed as part of the EIA

process and can be addressed through standard mitigation measures, such as adjustment of satellite dishes. Accordingly, this issue will not be considered further within the EIA process.

Electromagnetic Fields

11.78 All new electrical plant will be designed in accordance with the current British Standards (e.g. BS EN 62041:2010) which set the specific limits for electro-magnetic fields.

11.79 No major sources of electro-magnetic fields (such as high voltage transformers or electricity transmission line/cables) are proposed as part of the Development. As such, no significant effects are likely and therefore this issue will not be considered further within the ES.

Appendix A – Cumulative Schemes

Table 1: Cumulative Schemes

ID	Project	Planning Ref.	Description of Project	Distance from Site boundary	Status
1	Land at Delamare Road, Cheshunt, EN8	07/18/0461/O	Outline application for demolition of existing buildings and development of up to 1,725 residential units (Use Class C3), up to 19,501sqm commercial and non-commercial floorspace (Use Classes B1 and A1-A4), community and leisure uses (Use Classes D1 and D2), a 2 form-entry primary school, a new local centre, flood attenuation, landscaping and access.	Adjacent to north and south of Site	Granted August 2019
Reserved Matters Pursuant to the Outline Permission:					
2	Parcel 11 (Phase 1a), Land at Delamare Road, Cheshunt	07/19/0996/RM	RMA for external appearance, layout and scale for Parcel 11 (Phase 1A) pursuant to the Outline Permission, comprising the construction of two buildings, Block A ranging between 5 and 7 storeys and Block B ranging between 3 and 4 storeys (195 residential units), car parking, cycle storage, servicing, plant areas, landscaping, new public realm, and other associated works.	Adjacent to north of Site	Granted March 2020
3	Parcel 14, Land at Delamare	07/20/1186/RM	RMA for external appearance, layout and scale for Parcel 14	Adjacent to south of Site	Granted March 2021

ID	Project	Planning Ref.	Description of Project	Distance from Site boundary	Status
	Road, Cheshunt		pursuant to the Outline Permission, comprising the construction of a building ranging between 3 and 4 storeys to provide 351 sqm of commercial floorspace (Use Class E) at ground floor and 22 residential units on first to third floors, provision of a temporary car parking area, cycle storage, servicing, plant areas, landscaping, new public realm and other associated works.		
4	Parcel 2, Land at Delamare Road, Cheshunt	07/20/1187/RM	RMA for external appearance, layout and scale for Parcel 2 pursuant to the Outline Permission, comprising the construction of a building ranging between 5 and 7 storeys to provide 205 residential units, car parking, cycle storage, servicing, plant areas, landscaping, new public realm and other associated works.	Adjacent to north west of Site	Granted June 2021

Appendix B – Structure of ES Technical Chapters

Introduction

The introduction will provide a brief summary of what is considered in the chapter and will state the author and/or relevant technical contributor and their competence.

Legislation, Planning Policy and Guidance

This section will summarise the relevant planning policy, legislation and guidance that form the context for the topic in bullet point form to minimise length. A detailed review of relevant planning policy, legislation and guidance will be provided as an Appendix to the chapter or within the supporting technical report within Volume II of the ES.

Assessment Methodology

The assessment methodology section in each chapter will provide an explanation of methods used in undertaking the technical assessment and the prediction of effects. Reference will be made to published standards, professional guidelines and best practice of relevance to the topic.

This section will also describe any topic-specific significance criteria applied in the assessment, particularly where these differ from common or generic criteria applied elsewhere in the ES. However, wherever possible, a common scale and language for assessing effects will be applied.

Consultation undertaken as part of the assessment to agree scope or methodology will be set out in the chapter. Where appropriate, it will describe the assumptions and limitations related to the assessment of the topic and any constraints to undertaking the assessment.

Baseline Conditions

A description of the environmental conditions that exist in the absence of the Development both now and, where relevant, those that are projected to exist in the future will be provided. The results of baseline surveys and desktop research will be summarised in this section.

Relevant receptors to the specific topic-based effects (e.g. noise, air quality) will be described, together with an indication of the relative sensitivity of these receptors to such effects. Comment will also be made on the future baseline conditions as required by the EIA Regulations.

Scheme Design and Management

This section will present the embedded design and / or management measures that will form part of the Development to avoid, prevent, reduce or offset environmental effects. These measures will be clearly defined to ensure transparency and to ensure that the impact assessment does not assess a scenario that is unrealistic in practice.

Construction

This section will present the assessment of potential effects/ impacts that are predicted to occur during the construction phase. Mitigation measures, over and above those included in the CEMP, will also be presented, together with residual effects.

Completed Development

This section will present the assessment of potential effects that are predicted to occur once the Development is complete and occupied together with the mitigation and residual effects.

Cumulative Effects

This section will present the assessment of potential cumulative effects with the Consented Scheme that are predicted to occur during both the construction and completed Development phases together with the mitigation and residual effects.

Summary

This section will include a tabulated summary of the potential effects, mitigation measures and residual effects. The potential mechanisms by which the proposed mitigation measures will be implemented (e.g. CEMP, specific planning conditions or Section 106 obligations) will be specified, where appropriate.

Appendix C – Archaeological Desk-based Assessment (February 2022)

ARCHAEOLOGICAL DESK BASED ASSESSMENT

Land East of Delamare Road at Cheshunt Lakeside, Hertfordshire, Phase I

JAC27903
Land East of Delamare Road at Cheshunt Lakeside, Phase I
February 2022

rpsgroup.com

Quality Management

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Prepared for:

Inland Homes Ltd

EXECUTIVE SUMMARY

Land east of Delamare Road, Cheshunt, has been assessed for its archaeological potential. The Site assessed in this report forms Phase I of the strategic redevelopment known as Cheshunt Lakeside. The Phase I Site, as part of the wider allocated site. benefits from outline planning consent for redevelopment (ref.07/18/0461/O).

The Site is proposed for comprehensive residential led redevelopment.

In accordance with relevant government and local planning policy and guidance, a desk-based assessment has been undertaken to clarify the archaeological potential of the Site.

In terms of relevant designated archaeological heritage assets, no World Heritage Sites, Registered Historic Battlefields, Registered Parks and Gardens or Historic Wreck sites lie within the immediate vicinity of the Site. A 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument, is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223).

This report does not assess Built Heritage matters. This report assesses the below ground archaeological potential of the Site only.

There have been no previous archaeological investigations within a 750m radius of the Site. Few archaeological finds have been made locally and the Site is considered to have a low potential for archaeological evidence of all past periods of human activity.

Past post-depositional impacts have been severe across the Site as a result of modern phases of development. The Site is not considered to retain any archaeological potential.

It is considered highly unlikely that the proposed development will have any archaeological impact.

Outline planning consent has been granted for the wider Cheshunt Lakeside strategic redevelopment (Ref. 07/18/0461/O), to which an archaeological planning condition has been attached as follows:

Condition 33: An archaeological watching brief shall be maintained during all intrusive groundworks to areas of the site which are not currently covered by buildings.

It is considered that as a result of the low archaeological potential of the Phase I Site and the extent of below ground impact, that no further archaeological investigation is necessary in this particular instance. A draft Written Scheme of Investigation for archaeological monitoring has been prepared (Appendix I), setting out those areas of the wider Cheshunt Lakeside Development Site that could reasonably be subject to archaeological monitoring.

Contents

Appendices

Figures

1 INTRODUCTION AND SCOPE OF STUDY

1.1 This archaeological desk-based assessment has been prepared by RPS Consulting Services UK Ltd on behalf of Inland Homes Ltd.

1.2 The subject of this assessment comprises the Phase I area of the site known as Cheshunt Lakeside, Cheshunt, Hertfordshire. The Phase I area is referred to in this report as the *Study Site*. The Study Site comprises an area of modern commercial buildings and hardstanding lying on the east side of Delamare Road. The Study Site is approximately centred at NGR TL 36591 02547.

1.3 Inland Homes Ltd have commissioned RPS to establish the archaeological potential of the Study Site and to provide guidance on ways to address any archaeological constraints identified.

1.4 In accordance with the relevant government and local policy and guidance on archaeology and planning, and in accordance with the 'Standard and Guidance for Historic Environment Desk-Based Assessments' (Chartered Institute for Archaeologists, 2021) this assessment draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the Study Site.

1.5 This desk-based assessment comprises an examination of evidence held on the Hertfordshire and Essex Historic Environment Records (HER), and other sources, including the results of a comprehensive map regression exercise.

1.6 This document draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the Study Site, together with its likely significance, and to consider the need for design, civil engineering, and archaeological solutions to any constraints identified.

2 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

2.1 National legislation regarding archaeology, including scheduled monuments, is contained in the Ancient Monuments and Archaeological Areas Act 1979, amended by the National Heritage Act 1983 and 2002, and updated in April 2014.

National Planning Policy

2.2 In March 2012, the government published the National Planning Policy Framework (NPPF), which was most recently revised in July 2021. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014 and has since been periodically updated.

2.3 The NPPF and NPPG are additionally supported by three Good Practice Advice (GPA) documents published by Historic England: GPA 1: The Historic Environment in Local Plans; GPA 2: Managing Significance in Decision-Taking in the Historic Environment (both published March 2015). The second edition of GPA3: The Setting of Heritage Assets was published in December 2017.

2.4 Section 16 of the NPPF, entitled 'Conserving and Enhancing the Historic Environment' provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:

- Delivery of sustainable development;
- Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment;
- Conservation of England's heritage assets in a manner appropriate to their significance; and
- Recognition of the contribution that heritage makes towards our knowledge and understanding of the past.

2.5 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 194 states that planning decisions should be based on the significance of the heritage asset and that the level of detail supplied by an applicant should be proportionate to the importance of the asset and should be *no more than sufficient* to review the potential impact of the proposal upon the significance of that asset.

2.6 *Heritage Assets* are defined in Annex 2 of the NPPF as: a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).

2.7 Annex 2 also defines *Archaeological Interest* as a heritage asset which holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

2.8 A *Designated Heritage Asset* comprises a: World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.

2.9 *Significance (for Heritage policy)* is defined as: The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.

2.10 *Setting of a heritage asset* is defined as: The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

2.11 In short, government policy provides a framework which:

- Protects nationally important designated Heritage Assets;
- Protects the settings of such designations;
- In appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions;
- Provides for the excavation and investigation of sites not significant enough to merit *in-situ* preservation.

2.12 The NPPG reiterates that the conservation of heritage assets in a manner appropriate to their significance is a core planning principle, requiring a flexible and thoughtful approach. Furthermore, it highlights that neglect and decay of heritage assets is best addressed through ensuring they remain in active use that is consistent with their conservation. Importantly, the guidance states that if complete, or partial loss of a heritage asset is justified, the aim should then be to capture and record the evidence of the asset's significance and make the interpretation publicly available. Key elements of the guidance relate to assessing harm. An important consideration should be whether the proposed works adversely affect a key element of the heritage asset's special architectural or historic interest. Additionally, it is the degree of harm, rather than the scale of development, that is to be assessed. The level of 'substantial harm' is considered to be a high bar that may not arise in many cases. Essentially, whether a proposal causes substantial harm will be a judgment for the decision taker, having regard to the circumstances of the case and the NPPF. Importantly, harm may arise from works to the asset or from development within its setting. Setting is defined as the surroundings in which an asset is experienced and may be more extensive than the curtilage. A thorough assessment of the impact of proposals upon setting needs to take into account, and be proportionate to, the significance of the heritage asset and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it.

2.13 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

Local Planning Policy

2.14 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

2.15 The Broxbourne Borough Local Plan 2018-2033 was adopted in June 2020. The adopted Local Plan contains the following relevant policy:

Policy HE1: General Strategy for the Historic Environment

I. The Council will seek to ensure that development not only avoids harm, but also improves the setting of Broxbourne's historic environment, and better reveals the significance of heritage assets

II. To achieve this, the Council will:

- **carry out a borough-wide characterisation study;**
- **investigate the use of Article 4 Directions in conservation areas;**

- **improve signage relating to heritage assets, and**
- **seek to increase public access to the historic environment and heritage assets where-ever possible.**
- **prepare or update Conservation Area Character Appraisals; and**
- **review the potential for new Conservation Areas**

III. Development proposals must have regard to the Broxbourne Historic Environment Strategy Supplementary Planning Document, once adopted.

Policy HE2: Development affecting the Historic Environment

Development proposals affecting heritage assets or their settings should conserve or enhance the historic environment, and will be determined in accordance with relevant national planning policy relating to the historic environment, along with other relevant policies in the Plan

2.16 In terms of relevant designated archaeological heritage assets, no World Heritage Sites, Registered Historic Battlefields, Registered Parks and Gardens or Historic Wreck sites lie within the immediate vicinity of the Site. A 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223).

2.17 In line with relevant planning policy and guidance, this desk-based assessment seeks to clarify the archaeological potential of the Study Site, the likely significance of that potential and the need or otherwise for additional mitigation measures.

3 GEOLOGY AND TOPOGRAPHY

Geology

3.1 The Study Site is located on the London Clay Formation comprising Clay, Silt and Sand as shown by the British Geological Survey (2022), overlain by a drift geology of Alluvium comprising Clay, Silt, Sand and Gravel.

3.2 At this time no geotechnical data for the Study Site is available.

Topography

3.3 The ground within the Study Site is roughly level at a height of approximately 21m Above Ordnance Datum (AOD).

3.4 The Small River Lea or Lee flows north to south 100m to the east of the Study Site. The Small River Lea is separated from the River Lea (further to the east) by a series of artificial lakes created following gravel extraction.

4 ARCHAEOLOGICAL BACKGROUND WITH ASSESSMENT OF SIGNIFICANCE

Timescales used in this report

Prehistoric

Palaeolithic	900,000	-	12,000 BC
Mesolithic	12,000	-	4,000 BC
Neolithic	4,000	-	2,500 BC
Bronze Age	2,500	-	800 BC
Iron Age	800	-	AD 43

Historic

Roman	AD 43	-	410
Saxon/Early Medieval	AD 410	-	1066
Medieval	AD 1066	-	1485
Post Medieval	AD 1486	-	1799
Modern	AD 1800	-	Present

Introduction

4.1 This chapter reviews the archaeological background of the Study Site and the historical background of the general area, and, in accordance with the NPPF and local planning policy, considers the potential for any as yet to be discovered archaeological evidence to be present within the Study Site.

4.2 The following includes a review of past archaeological investigations and known archaeological finds and features within a 750m radius of the Study Site (Fig.2a), referred to as the Study Area, held on the Hertfordshire and Essex Historic Environment Records (HERs). A historic map progression exercise then charts the development of the Study Site from the 18th Century onwards until the present day.

4.3 The available Historic Landscape Characterisation (HLC) Data is given as Figure 2b. The Study Site is denoted as ‘built up area/urban development’.

4.4 Chapter 5 subsequently considers the conditions of the Study Site and whether the proposed development will impact the archaeological potential identified below.

Previous Archaeological Investigation

4.5 There have been no previous archaeological investigations within a 750m radius of the Study Site.

4.6 The event record shown on Figure 2a relates to an aerial photograph that appears to indicate a moated site feature located c.500m to the southeast of the Study Site (EHT3483, TL 3700 0200).

Undated Archaeological Evidence

4.7 No undated archaeological evidence has been recorded within the Study Area.

Early Prehistoric: Palaeolithic, Mesolithic, Neolithic

4.8 The gravel terraces around Cheshunt are likely to have been subject to human utilisation in the early Prehistoric periods. A high number of stone tools earlier Prehistoric date have been found along the wider course of the river Lea and its former floodplains landscape.

4.9 The only instance of early Prehistoric evidence recorded within the Study Area however comprises a Neolithic flint axe that is recorded as having been found c.600m to the northwest of the Study Site (2084, TL 3597 0282).

4.10 The Study Site is considered to have a low potential to contain archaeological evidence relating to any early Prehistoric period of human activity.

Later Prehistoric: Bronze Age and Iron Age

4.11 While it is likely that the River Lea and its vicinity would have been extensively exploited for its natural resources and on a seasonal basis for pasture in the later Prehistoric periods, the marshlands would not have been suitable for early agriculture or prolonged settlement.

4.12 No evidence of later Prehistoric activity has been recorded within the Study Area.

4.13 The archaeological potential of the Study Site for later Prehistoric evidence is considered to be low.

Roman

4.14 The conjectured route of a Roman road lies c.175m to the north of the Study Site. No archaeological evidence for the position of a Roman road at this location has been recorded (4659, TL 365 027).

4.15 A Roman mortarium (a kitchen vessel) is recorded as having been found c.600m to the southwest of the Study Site (2968, TL 359 023).

4.16 The Study Site is considered to have a low archaeological potential for evidence of Roman date.

Anglo-Saxon and Medieval

4.17 No definitive archaeological evidence relating to the Anglo-Saxon or Medieval period has been recorded within the Study Area.

4.18 Cheshunt is recorded in the Domesday survey of 1086 AD as a taxable manorial settlement of 78 households. The Medieval settlement at Cheshunt was located some distance west of the Study Site.

4.19 The Study Site is likely to gave been in pasture or other seasonal use as was much of the vicinity of the River Lea in the Medieval period.

4.20 Several mills are known to have been positioned c.700m to the north of the Study Site in the Medieval and early post-Medieval periods (11840, TL 3666 0328).

Post Medieval & Modern (including map regression exercise)

4.21 The Site of a post-Medieval windmill is recorded c.100m to the west of the Study Site (7304, TL 3637 0242).

4.22 An 18th Century wharf on the Lea Navigation is recorded c.150m to the east of the Study Site (11839, TL 3681 0240).

4.23 The river Stort was canalised in 1769, when the Lea and Stort Navigation was completed, however much of the original river also survives in its original course. The present Lock House, c.300m to the east of the Study Site, is modern, a shield on the side of it, dated to 1787, was transferred from the previous Lock House and commemorates George Jackson (later Sir George Duckett) who was largely responsible for the building of the canal (45225, TL 4117 0615).

4.24 An 1833 brick bridge over the Small River Lea is recorded c.130m to the southeast of the Study Site (5082, TL 3675 0234).

4.25 A bridge is recorded c.500m to the northeast of the Study Site (7271, TL 3707 0282).

4.26 A 19th Century lock on the Lea Navigation is recorded c.700m to the northeast of the Study Site (7258, TL 3711 0312).

4.27 The original position of Cheshunt rail station, which was replaced in the late 19th Century by another station in a different position is recorded c.50m to the south of the Study Site (30596, TL 36654 02364). Cheshunt rail station lies c.100m to the south of the Study Site (5544, TL 3666 0230).

4.28 A 19th Century wall post box is recorded c.75m to the south of the Study Site (5274, TL 36637 02332).

4.29 The site of a former brickworks, identified from historic Ordnance Survey Mapping is recorded c.150m to the east of the Study Site (6893, TL 3680 0239).

4.30 A First World War emplacement for two 6pdr Q R Hotchkiss guns included in the anti-air defences of the Royal Gunpowder Factory at Waltham Abbey is recorded c.550m to the northeast of the Study Site (12349, TL 3707 0292).

4.31 The site of a First World War Anti-Aircraft Gun Site is recorded c.550m to the northeast of the Study Site (20570, TL 3707 0292).

4.32 A 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223).

Map Progression Exercise

4.33 Dury and Andrew's map of 1766 (Figure 3) shows the approximate location of the Study Site located within unenclosed marshy land to the west of the Small River Lea. Cheshunt Mills (11840, TL3666 0328) are depicted to the north and Waltham Abbey is shown to the south-east.

4.34 The 1782-85 Plan of the Liberty and Manor of Cheshunt (Figure 4) depicts the Study Site more clearly, which is divided into numerous long agricultural strip plots. At this time Cadmore Lane is not depicted, suggesting that there is no earlier route and it is therefore unlikely that a Roman road passes near to the Study Site. The general character of the Study Site remains unaltered between 1799 and 1842 (Figures 5-8), although the individual strip plots within the Study Site are not shown. Cadmore Lane first appears on the Cheshunt Parish Map dated 1821 to 1840 (Figure 6) A windmill (7304, TL 3637 0242) is depicted to the south-west of the Study Site on the south side of Windmill Lane. The point on the HER Plot (Figure 2a) placing the site of the windmill closer to the Study Site is inaccurate.

4.35 The 1842 Cheshunt Tithe map (Figure 8) and associated Award identifies the Study Site as unenclosed. The planned route of the Great Eastern Railway forms the eastern boundary of the Study Site.

4.36 The Ordnance Survey map of 1873 (Figure 9) shows the Study Site being gradually reclaimed from the marsh and enclosed for agricultural use. A large house, with a tree lined avenue leading to it, is depicted in the south-east corner of the Study Site. A large area of marsh (Field 404) is shown to the north of the house. On Windmill Lane a Dye Works is noted. The Great Eastern Railway is complete and Cheshunt Station is shown to the south-east (Plate 9).

4.37 By 1898 (Figure 10) the marshy area in the northeastern part of the Study Site appears to have been drained. Another marshy area or a possible water meadow is shown to the northwest of the Study Site. The lower part of Delamare Road, known at this time as Windmill Terrace, has been constructed and is lined with terraced houses.

4.38 The 1914 Ordnance Survey (Figure 11) identifies a Nursery with glasshouses in the northern part of the Study Site. The area north of the Study Site is annotated as allotments.

4.39 By 1938 (Figure 12) additional glasshouses have been constructed within the Study Site. The remainder of the Study Site is unchanged.

4.40 The 1960 Ordnance Survey (Figure 13) shows that Delamare Road has been constructed and the area, including the Study Site has been intensively developed as an industrial estate, comprising a mixture of works, offices and warehouses. The Study Site remains unchanged, aside from minor alterations to some of the workshops, in 2016 (Figure 16).

4.41 By 2017 (Figure 17) part of the works building within the Study Site had been demolished and the area of hardstanding expanded. The vicinity of the Study Site to the north, west and south remains characterised by commercial development.

4.42 The potential of the Study Site for Post-Medieval and Modern evidence periods is low

Assessment of Significance

4.43 Existing national policy guidance for archaeology (the NPPF as referenced in section 2) enshrines the concept of the 'significance' of heritage assets. Significance, as defined in the NPPF, centres on the value of an archaeological or historic asset for its 'heritage interest' to this or future generations.

4.44 In terms of relevant designated archaeological heritage assets, no World Heritage Sites, Registered Historic Battlefields, Registered Parks and Gardens or Historic Wreck sites lie within the immediate vicinity of the Site. A 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223).

4.45 The Study Site does not lie within a locally designated Archaeological Notification Area.

4.46 As identified by desk-based work the archaeological potential by period and the likely significance of any archaeological remains which may be present within the Study Site is summarised in table form below:

Period:	Identified Archaeological Potential	Identified Archaeological Significance
Palaeolithic	Low	Low/Local
Mesolithic	Low	Low/Local
Neolithic	Low	Low/Local
Bronze Age	Low	Low/Local
Iron Age	Low	Low/Local
Roman	Low	Low/Local
Anglo-Saxon	Low	Low/Local
Medieval	Low	Low/Local
Post Medieval	Low	Low/Local

5 SITE CONDITIONS, THE PROPOSED DEVELOPMENT & REVIEW OF POTENTIAL DEVELOPMENT IMPACTS ON ARCHAEOLOGICAL ASSETS

Site Conditions

5.1 The Study Site is currently fully developed and occupied by a mixture of warehouses and other commercial structures and hardstanding.

5.2 The Study Site has undergone widespread and severe below ground impacts as a result of drainage, land forming and 20th Century commercial/industrial built development.

Proposed Development

5.3 The Study Site is proposed for residential redevelopment (Plate1). (further details to be supplied)

Plate 1: Proposed Development

Review of Potential Development Impacts on Cultural Heritage Assets

Archaeology

5.4 The proposed development will not impact the significance of any designated archaeological assets. The 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument that is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223) will be unaffected by the proposed development.

5.5 Based on the available information, the Site is considered to have a low archaeological potential to contain evidence relating to any pre-modern period of human activity.

5.6 As a result of past post-depositional impacts, the Study Site is not considered to retain its archaeological potential.

5.7 The proposed development is considered highly unlikely to have any archaeological impact.

5.8 No further archaeological investigation or monitoring is recommended in respect of the Phase I site specifically.

6 SUMMARY AND CONCLUSIONS

6.1 Land to the east and west of Delamare Road, Cheshunt, Hertfordshire has been reviewed for its below ground archaeological potential.

6.2 The Study Site is proposed for comprehensive residential led redevelopment (further details to be supplied).

6.3 In terms of relevant designated archaeological heritage assets, no World Heritage Sites, Registered Historic Battlefields, Registered Parks and Gardens or Historic Wreck sites lie within the immediate vicinity of the Site. A 40mm Bofors anti-aircraft gun platform, designated as a Scheduled Monument is located c.380m to the southeast of the Study Site (NHLE ref. 1021000; 10081, TL 3699 0223).

6.4 Based on the available information, the Site is considered to have a low archaeological potential to contain evidence relating to any pre-modern period of human activity.

6.5 As a result of past post-depositional impacts, the Study Site is not considered to retain its archaeological potential.

6.6 The proposed development is considered highly unlikely to have any archaeological impact.

6.7 A draft Written Scheme of Investigation for archaeological monitoring of parts of the wider Cheshunt Lakeside site has been prepared in response to condition 33 of the outline planning permission granted under ref.07/18/0461/O. No further archaeological investigation or monitoring is recommended in respect of the Phase I site specifically.

Sources Consulted

General

British Library

Surrey Historic Environment Record

The National Archive

Internet

British Geological Survey – http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

British History Online – http://www.british-history.ac.uk/

Domesday Online – http://www.domesdaybook.co.uk/

Historic England: The National Heritage List for England – http://www.historicengland.org.uk/listing/the-list/

Portable Antiquities Scheme – www.finds.org.uk

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Historic England (formerly English Heritage) *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment* 2008 (new draft 2017)

Historic England Historic Environment *Good Practice Advice in Planning: 2 Managing Significance in Decision-Taking in the Historic Environment* July 2015 unpublished document

Historic England Historic Environment *Good Practice Advice in Planning: 3 The Setting of Heritage Assets* December 2017 unpublished document

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Margary I. D. *Roman Roads of Britain* 1955

Mills, A.D. A *Dictionary of British Place Names* 1991

Cartographic

1766 Dury & Andrews Map

1782-85 Plan of the Liberty and Manor of Cheshunt

1799 Ordnance Survey Drawing

1821-1840 Cheshunt Parish Map

1822 Bryant Map

1842 Cheshunt Tithe Map

1873 Ordnance Survey Map

1898 Ordnance Survey Map

1914 Ordnance Survey Map

1938 Ordnance Survey Map

1960 Ordnance Survey Map

1972-1973 Ordnance Survey Map

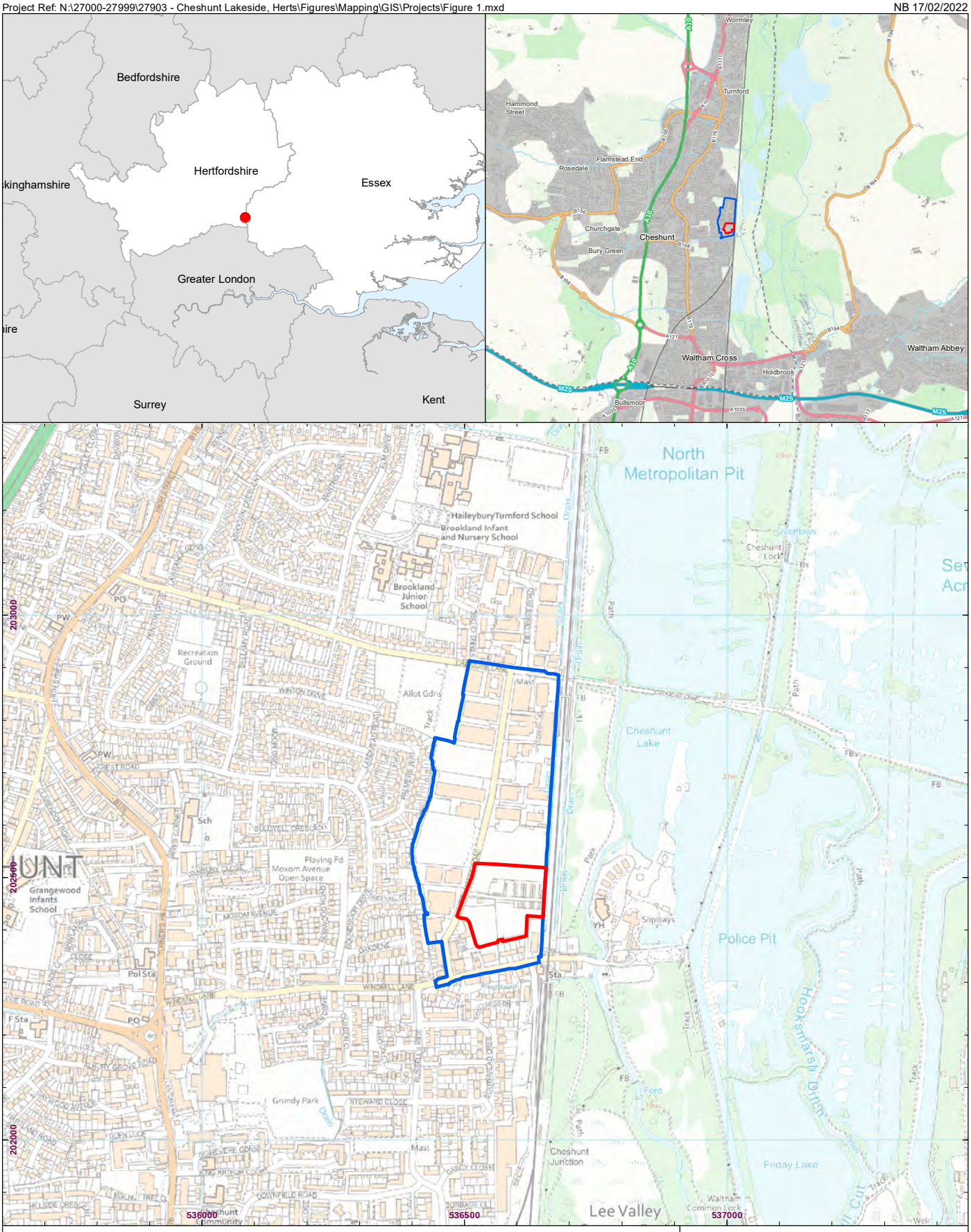
2009 Aerial Photograph (Google Earth)

2016 Ordnance Survey Map

2017 Aerial Photograph (Google Earth)

2020 Aerial Photograph (Google Earth)

FIGURES



Site Boundary

Wider boundary

N

0 100 200m

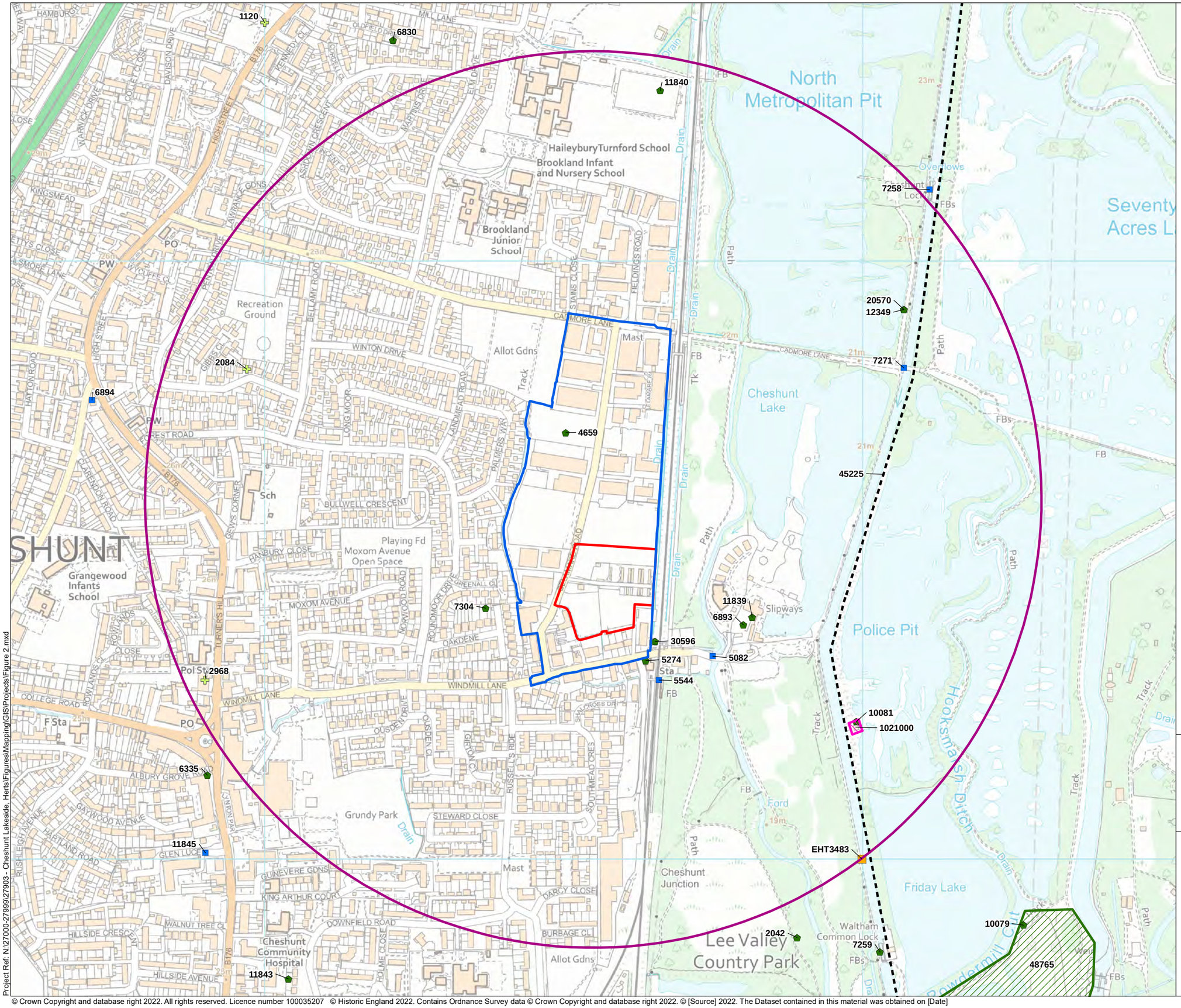
Scale at A4: 1:10,000

MAKING COMPLEX EASY

Figure 1

Site Location

NB 17/02/2022



Legend

- Wider boundary
- Site Boundary
- 750m search radius

Designated Heritage Assets:

- Scheduled Monuments

Non-designated Heritage Assets:

HER Records Points

- Monuments
- Findspots
- Buildings

HER Records Polygons

- Monuments

HER Records Lines

- Industrial

Previous Archaeological Work:

- HER Events

N

0 100 200m

Scale at A3: 1:6,000

MAKING COMPLEX EASY

Figure 2a

HER Plot (Data from Hertfordshire HER and Essex HER)

Project Ref: N:\27000-27999\27903 - Cheshunt Lakeside, Herts\Figures\Mapping\GIS\Projects\Figure 2.mxd

NB 17/02/2022

HHT4788

HHT3562

HHT4775

HHT2567

HHT4774

HHT4773

HHT1816

HHT4772

Legend

- Wider boundary
- Site Boundary
- 750m search radius

Historic Landscape Characterisation:

- BUILT-UP AREAS - URBAN DEVELOPMENT
- ENCLOSED MEADOW
- LEISURE / RECREATION
- RESTORED LAND

N

0 100 200m

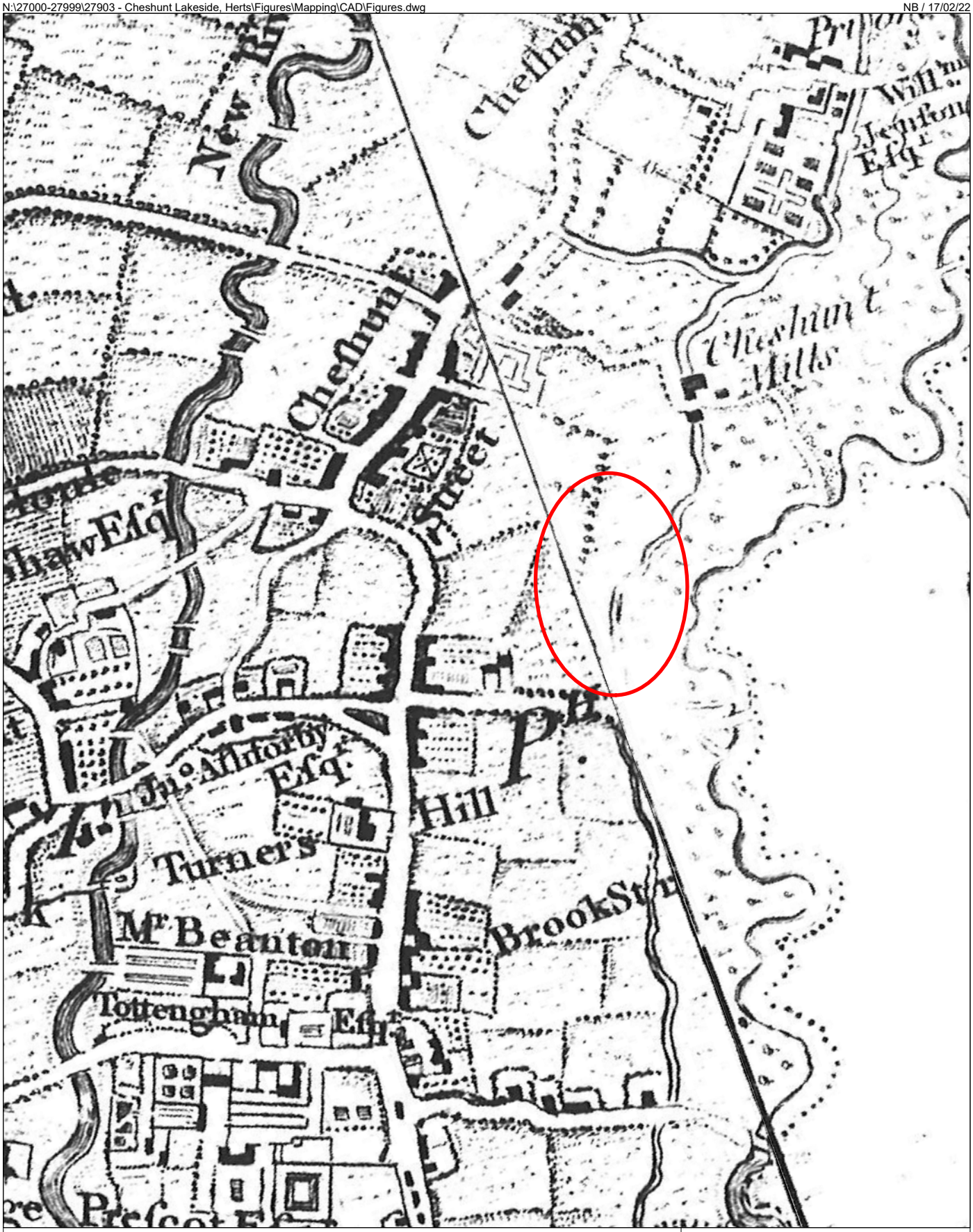
Scale at A3: 1:6,000

MAKING COMPLEX EASY

Figure 2b

HLC Plot (Data from Hertfordshire HER)

Project Ref: N:\27000-27999\27903 - Cheshunt Lakeside, Herts\Figures\Mapping\GIS\Projects\Figure 2.mxd



Approximate site location

N

Not to Scale
Illustrative Only

MAKING COMPLEX EASY

Figure 3

1766 Dury & Andrews Map

Site Boundary (approximate)
Wider Boundary (approximate)

N

0 50 100m
Scale at A4: 1:5,000
(approximate)

MAKING COMPLEX EASY

Figure 4

1782-85 Plan of the Liberty and Manor of Cheshunt

Approximate site location

N

Not to Scale
Illustrative Only

MAKING COMPLEX EASY

Figure 5

1799 Ordancne Survey Drawing

Approximate site location

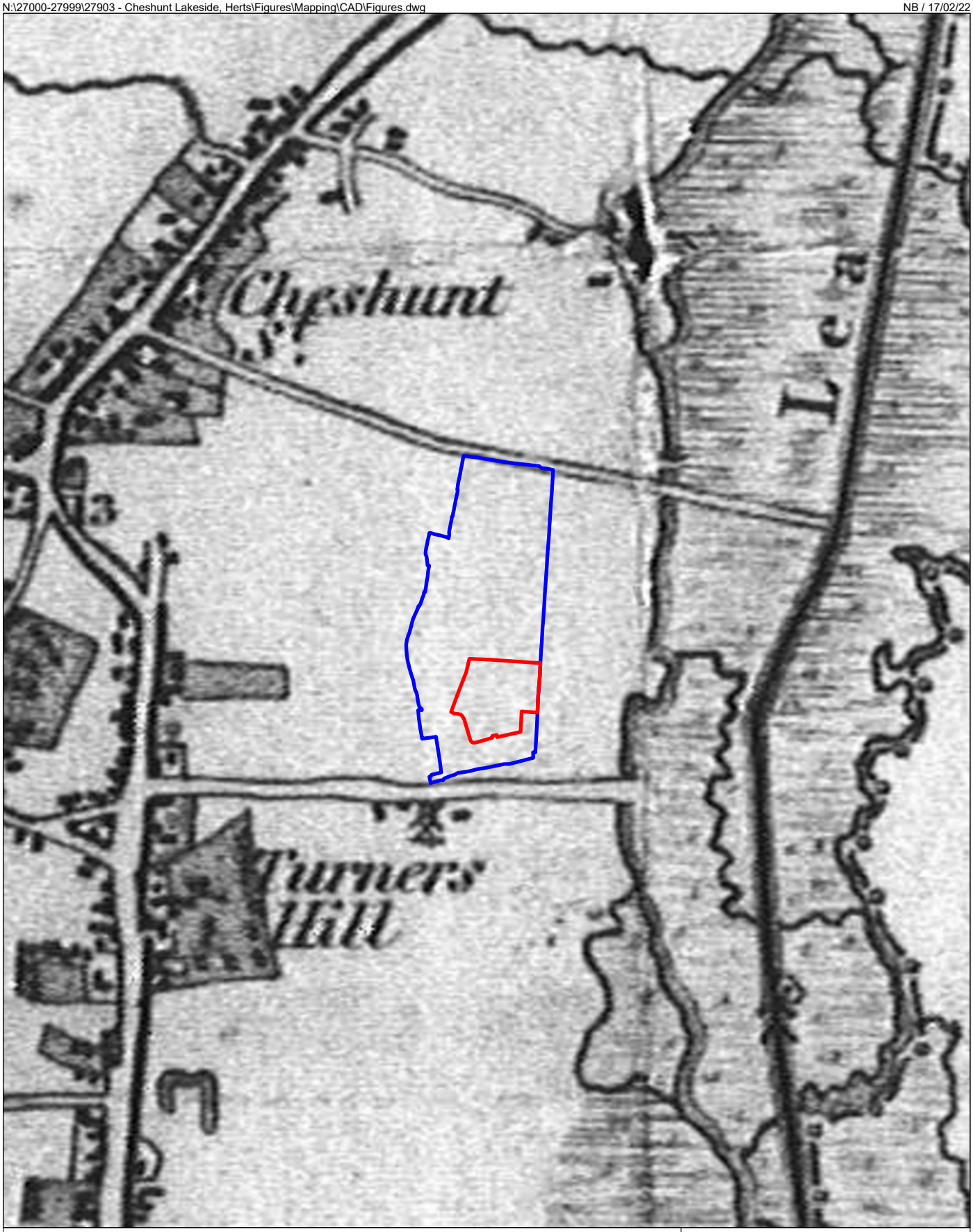
N

Not to Scale
Illustrative Only

MAKING COMPLEX EASY

Figure6

1821-1840 Cheshunt Parish Map



Site Boundary (approximate)
Wider Boundary (approximate)

N

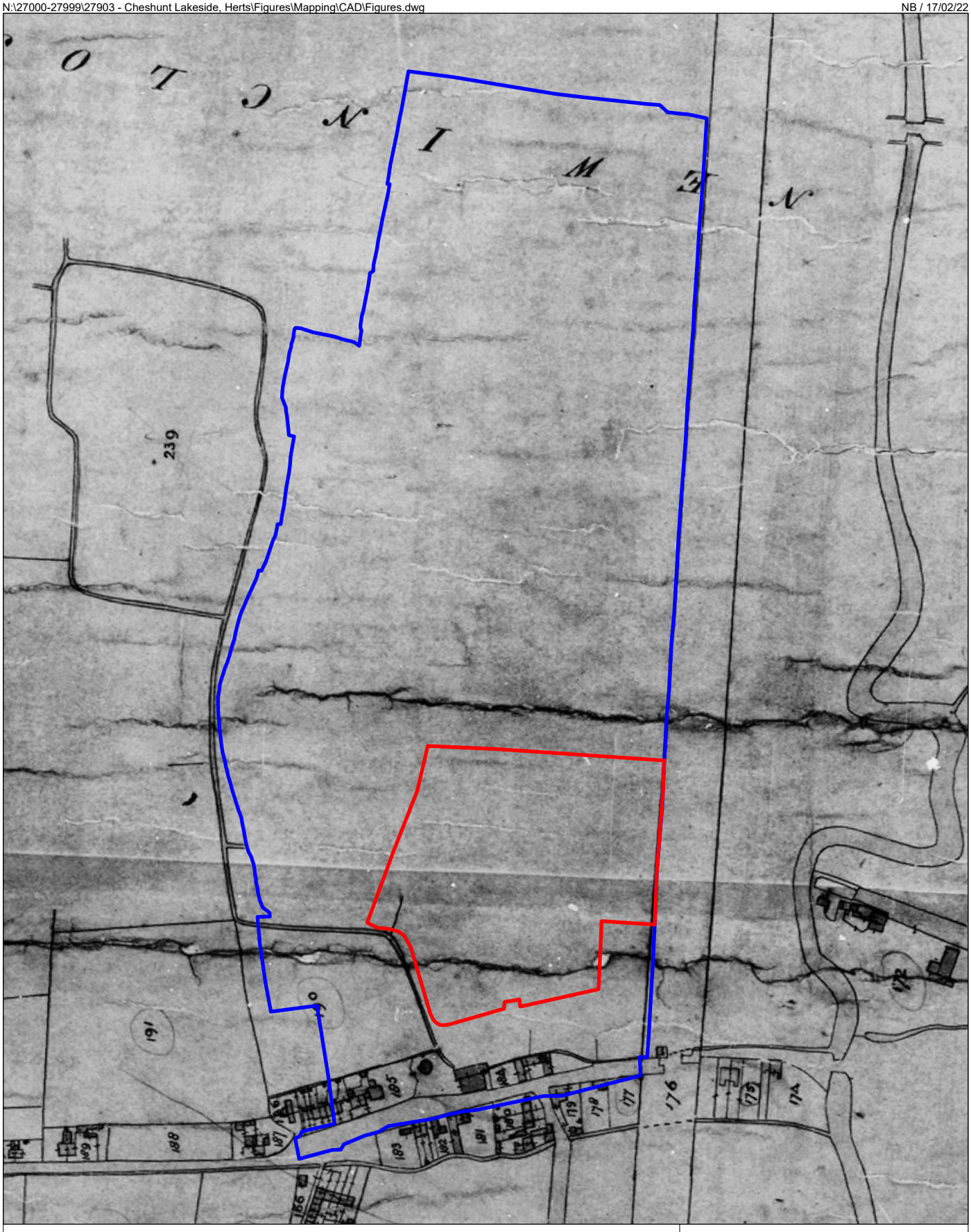
0 100 200m

Scale at A4: 1:10,000
(approximate)

MAKING COMPLEX EASY

Figure 7

1822 Bryant Map



Site Boundary
Wider Boundary

N

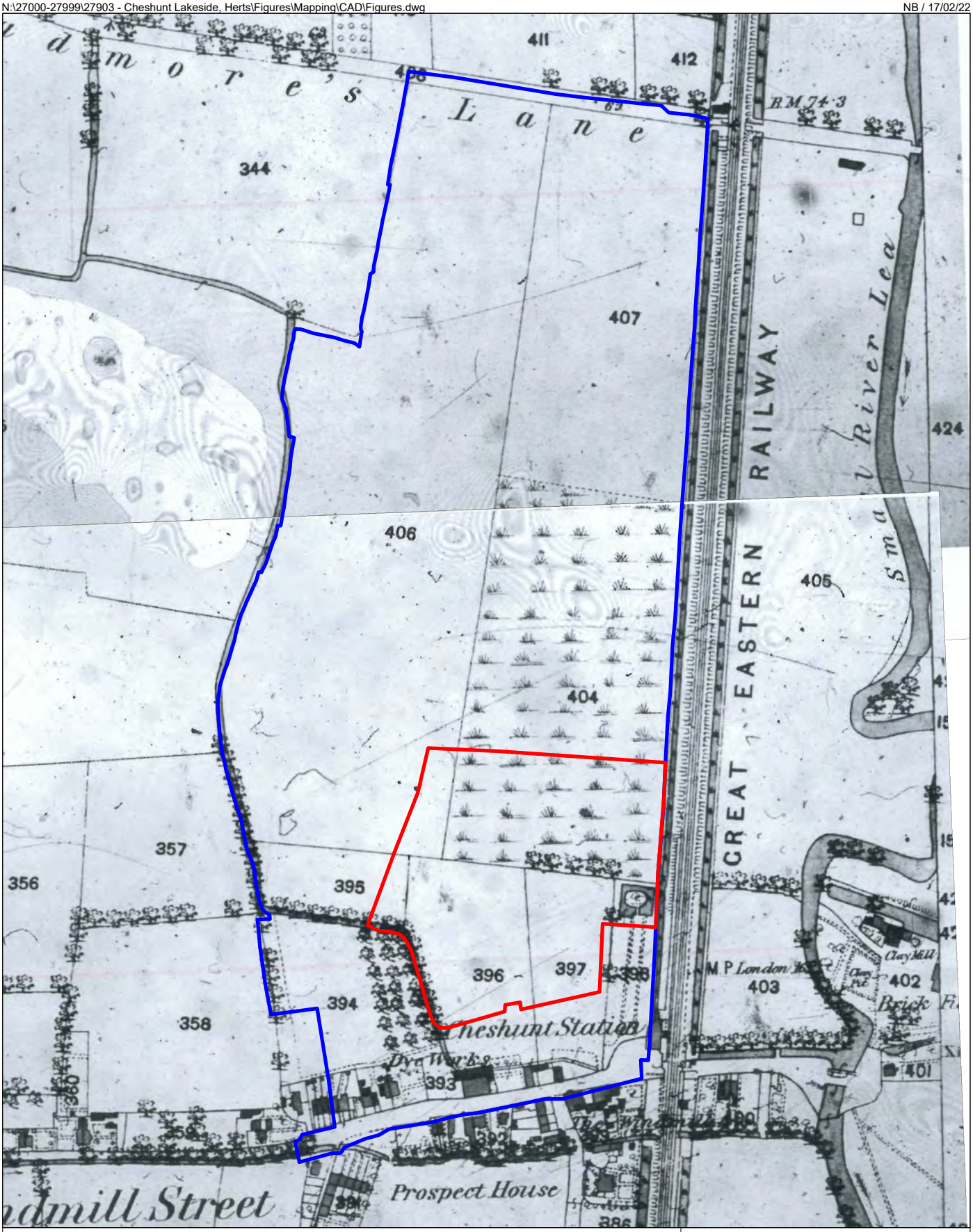
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 8

1842 Cheshunt Tithe Map



Site Boundary
Wider Boundary

N

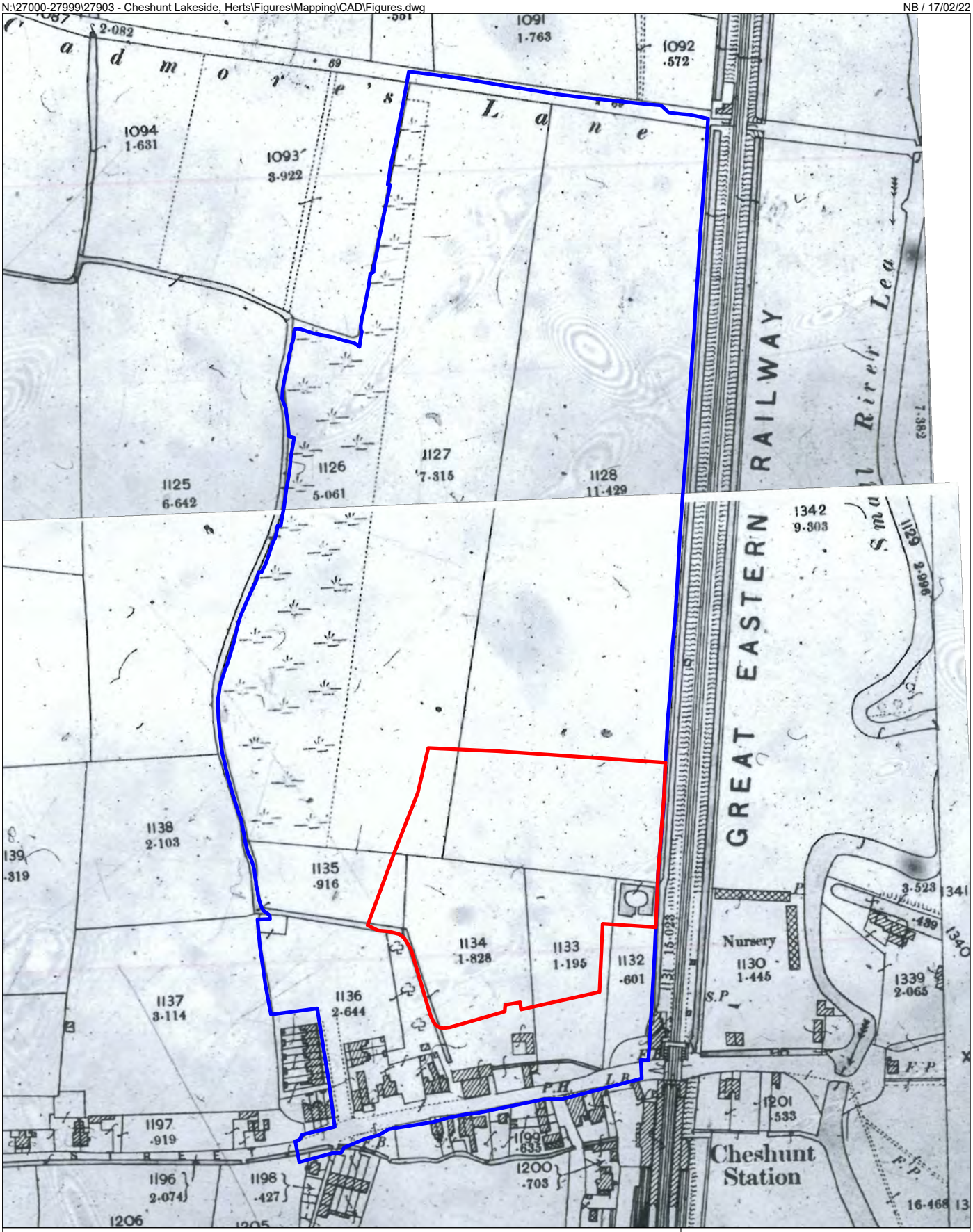
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 9

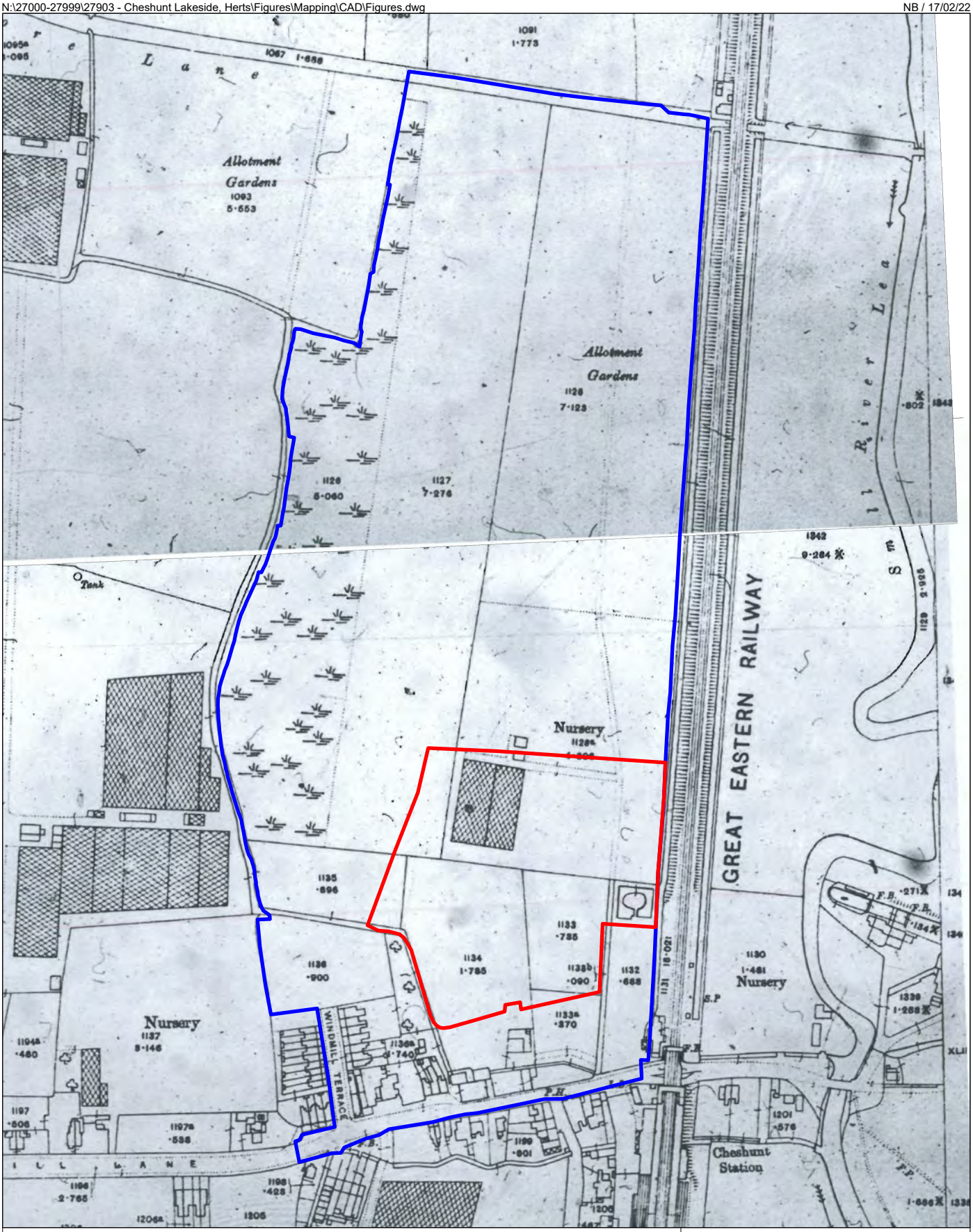
1873 Ordnance Survey Map



MAKING COMPLEX EASY

Figure 10

1898 Ordnance Survey Map



Site Boundary
Wider Boundary

N

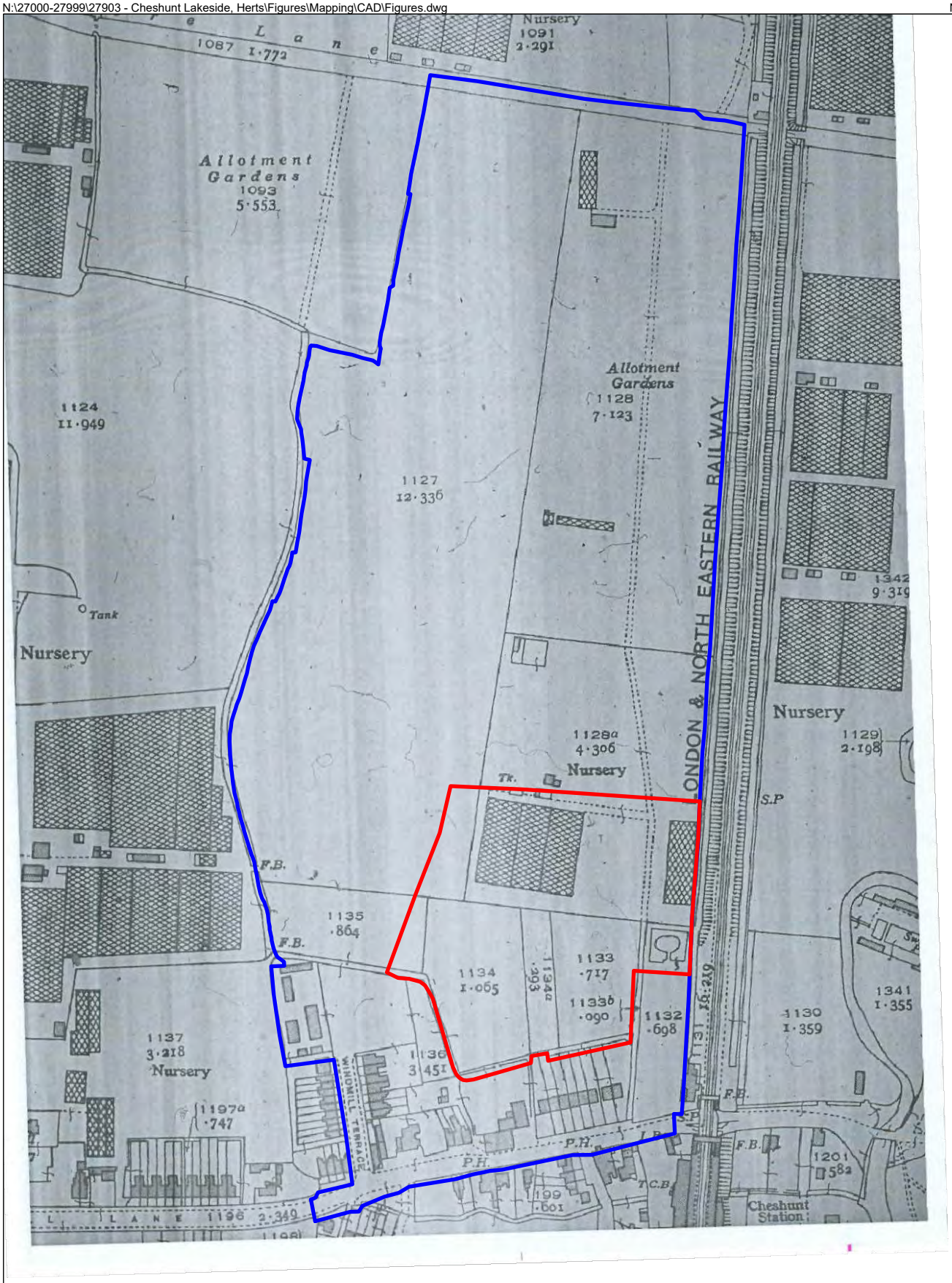
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 11

1914 Ordnance Survey Map



Site Boundary
Wider Boundary

N

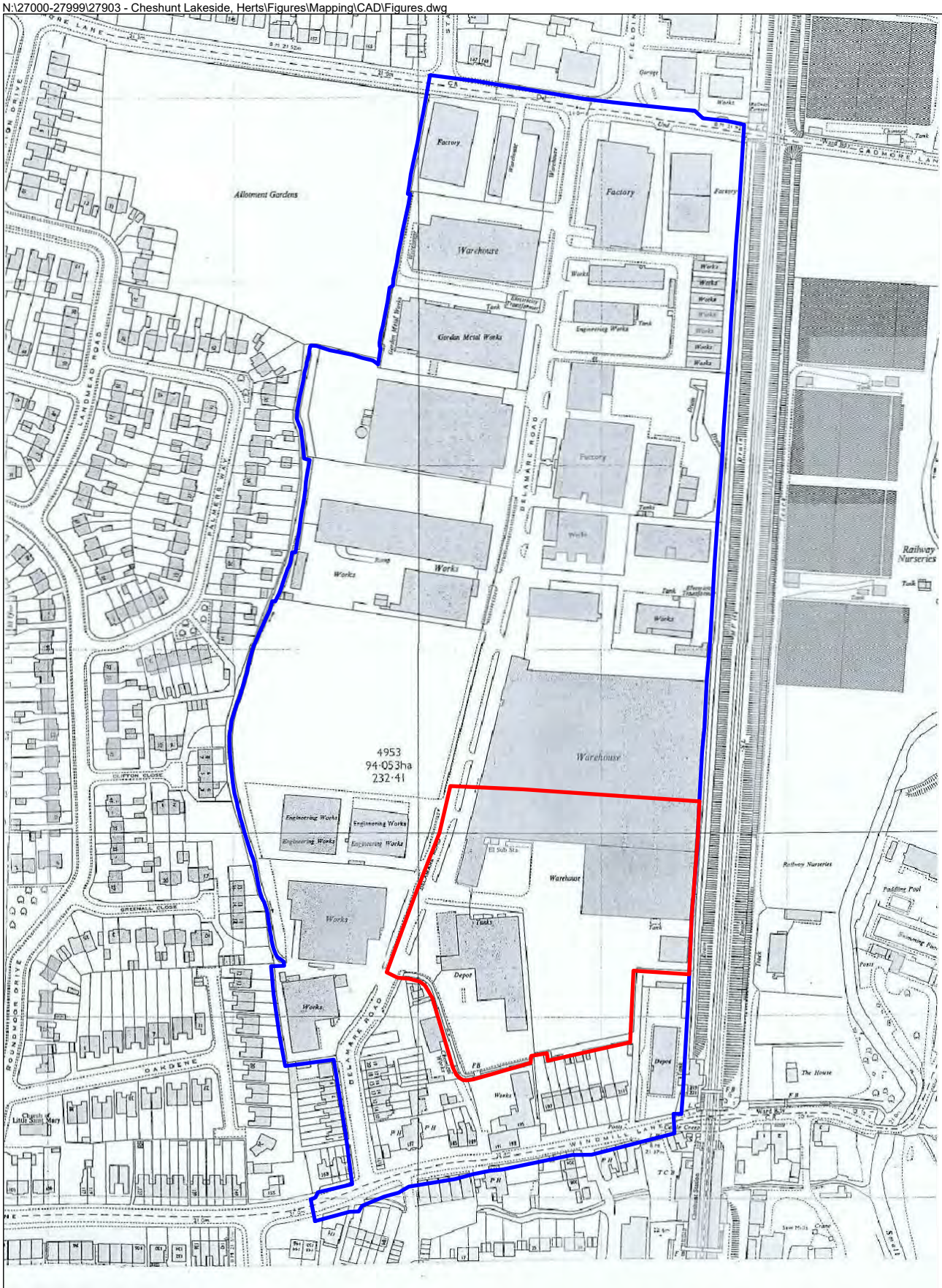
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 12

1938 Ordnance Survey Map



Site Boundary
Wider Boundary

N

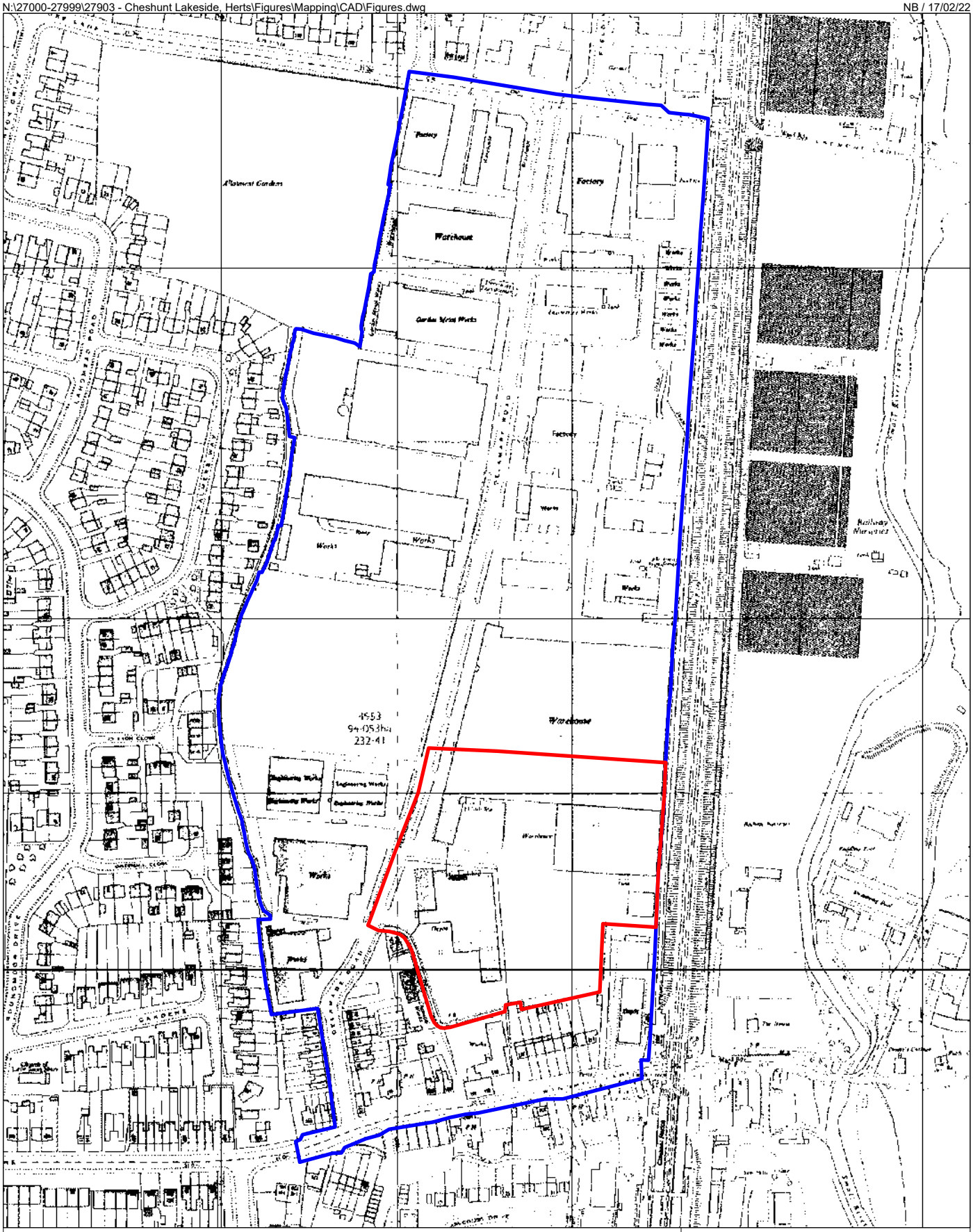
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 13

1960 Ordnance Survey Map



Site Boundary

Wider Boundary

N

0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 14

1972-1973 Ordnance Survey Map

Site Boundary
Wider Boundary

N

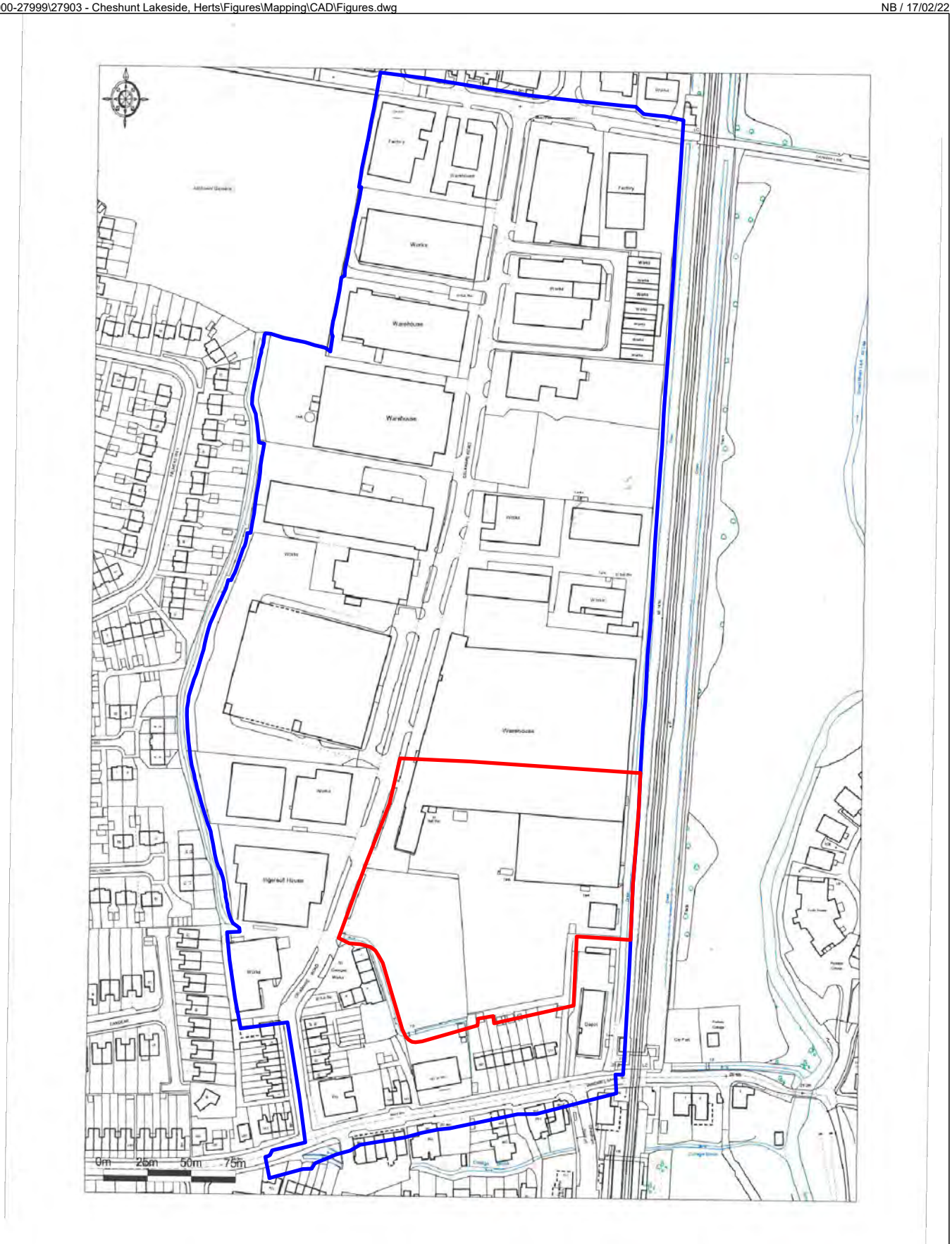
0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 15

2009 Aerial Photograph (Google Earth)



Site Boundary

Wider Boundary

N

0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 16

2016 Ordnance Survey Map

Site Boundary
Wider Boundary

N

0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 17

2017 Aerial Photograph (Google Earth)

Site Boundary
Wider Boundary

N

0 30 60m

Scale at A4: 1:3,000

MAKING COMPLEX EASY

Figure 18

2020 Aerial Photograph (Google Earth)

APPENDICES

Appendix A

Appendix I - RPS Cheshunt Lakeside

Archaeological Watching Brief WSI

Written Scheme of Investigation for an Archaeological Watching Brief

Cheshunt Lakeside

JAC26714
Cheshunt Lakeside
Version 1 Draft for Comment
September 2020

rpsgroup.com

Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Date
Version 1	Draft for Comment	James Archer	Peter Reeves	Peter Reeves	02/10/2020

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Prepared for:

Inland Homes

NON-TECHNICAL SUMMARY

- Outline planning permission has be granted across the Cheshunt Lakeside development, at Delamare Road in Cheshunt, Broxbourne Borough. An archaeological planning condition was attached to the granting of planning consent, which requires a programme of archaeological watching brief during relevant groundworks outside the footprint of existing development.
- This Written Scheme of Investigation outlines the proposed methodology for the archaeological watching brief and zones the outline application site accordingly into areas that should be subject to the archaeological brief.
- Relevant groundworks within zones identified for the watching brief should be undertaken in line with the methodology outlined in this document. Areas outside the zones identified for the watching brief are excluded from the archaeological requirement.

Contents

Figures

1 INTRODUCTION

1.1 This document has been prepared by RPS Heritage, on behalf of their client Inland Homes, as a project design for an archaeological watching brief on relevant construction groundworks at the development known as Cheshunt Lakeside, Delamare Road, Cheshunt, Broxbourne Borough.

1.2 Outline planning consent has been granted for the Cheshunt Lakeside development, to which an archaeological planning condition has been attached as follows:

Condition 33: An archaeological watching brief shall be maintained during all intrusive groundworks to areas of the site which are not currently covered by buildings.

1.3 This document forms the Written Scheme of Investigation (WSI) for the archaeological watching brief during relevant construction groundworks. It has been prepared in accordance with all relevant guidelines and standards, including those set down by the Chartered Institute for Archaeologists (CIfA) and Historic England (HE). The WSI will be submitted to Broxbourne Borough pursuant to the discharge of outline consent planning condition 33.

1.4 It is anticipated that detailed planning applications will made for specific land parcels within the outline application area, for which the outline conditions will then apply should detailed planning consent be granted. This document comprises an overarching WSI for which any groundworks undertaken as part of detailed planning consent should adhere to.

1.5 An archaeological desk based assessment of the site has recently been undertaken for the site (CgMs 2018). The assessment report concluded that the site had a low potential for archaeological remains associated with all past periods of human activity. The conjectured route of a Roman road is located at the northern part of the site. This was considered to be very unlikely as it has never been found archaeologically, despite extensive gravel extraction along its route that would have had the opportunity to discover this suggested roadway.

1.6 The archaeological watching brief will monitor excavation work during proposed groundworks outside of existing building footprints and only within those zones identified on Figure 4 as being subject to the archaeological watching brief. These zones of archaeological watching brief have been based upon the likely archaeological potential of the site, in particular the conjectured Roman road, zoning out areas of limited archaeological potential. Areas outside the zones identified for the watching brief are excluded from the archaeological requirement.

2 GEOLOGY AND TOPOGRAPHY

Geology

2.1 The study site is located on the London Clay Formation comprising Clay, Silt and Sand as shown by the British Geological Survey (2020), overlain by a drift geology of Alluvium comprising Clay, Silt, Sand and Gravel.

2.2 No geotechnical data or site investigation reports are available however, the BGS notes the presence of a well located, approximately, on the east side of Delamare Road in front of the former Tesco Headquarters. The well is described as extracting 700 gallons a day for industrial cooling.

Topography

2.3 The ground within the study site is roughly level at a height of approximately 21m Above Ordnance Datum (AOD).

2.4 The course of a tributary of the College Brook forms part of the western site boundary of the study site. The Small River Lea or Lee flows north to south 100m to the east of the site. The Small River Lea is separated from the River Lea (to the east) by a series of artificial lakes created following gravel extraction.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Timescales used in this report

Prehistoric

Palaeolithic	900,000 -	12,000 BC
Mesolithic	12,000 -	4,000 BC
Neolithic	4,000 -	2,500 BC
Bronze Age (including Chalcolithic)	2,500 -	800 BC
Iron Age	800 -	AD 43

Historic

Roman	AD 43 -	410
Saxon/Early Medieval	AD 410 -	1066
Medieval	AD 1066 -	1485
Post Medieval	AD 1486 -	1799
Modern	AD 1800 -	Present

Introduction

3.1 An archaeological desk based assessment (CgMs 2018) has provided the detailed archaeological background to the site. The results of nearby archaeological works have been incorporated into the desk based assessment.

3.2 In terms of designated heritage assets, no designated World Heritage Sites, Historic Wrecks or Historic Battlefields lie within the study area. The site is not located within an area of identified archaeological potential. The Scheduled Monument of Waltham Abbey and Royal Gunpowder Factory (HE Ref: 1016618, TL 376 022) is located 850m to the south of the site on the opposite side of the River Lea Country Park. A second Scheduled Monument (HE Ref: 1021000), the site of a World War II Bofors Anti-Aircraft gun platform, is located 450m south east of the site.

Prehistoric

3.3 The gravel terraces around Cheshunt appear to have been a favoured area of exploitation in the Palaeolithic period. A high number of stone tools of the period have been found, mainly during gravel extraction in the surrounding area. Within the study area there is no evidence for either Palaeolithic or Mesolithic activity. The absence of evidence may be due to the incorrect geological facies below the study site.

3.4 A single reference in the HHER notes a Neolithic flint axe c.700m to the north-west of the site (MHT2084 at TL 3597 0282). There are no definite remains within the nearby area attributed to the Bronze Age period.

3.5 No Iron Age remains have been recorded at Cheshunt though it is speculated that this is a false impression and much Iron Age activity has been concealed by alluvium and marsh and destroyed by erosion and gravel extraction (Thompson & Hunns 2003).

3.6 Whereas no evidence for permanent settlement has been recorded within the nearby area, it is highly likely that the River Lea would have been exploited on a seasonal basis. The river and its associated marshlands, aside from supplying abundant water, would have been a rich source of fish, wild life and plants ideal for early hunter gather communities and for the provision of supplementary resources for sedentary communities settled nearby. In the later Prehistoric periods, the Bronze and Iron Ages, the riverside marshes and water meadows may have been used for seasonal grazing but would have been unsuitable for arable farming.

Roman

3.7 The major Roman feature of the area is the course of Ermine Street, the principal Roman road from London to York, located c1.5km to the west of the site (Thompson & Hunns 2003). The conjectured line of a Roman road is considered to pass east-west through the northern end of the site (MHT4659) however there is no archaeological evidence for its existence. If a Roman road is present it is more likely to be the precursor of Cadmore Lane (forming the northern boundary of the proposed development area). Roman find spots from the nearby area comprise the recovery of a Roman mortarium found c.750m to the south-west of the site (MHT2968).

3.8 The place name Cheshunt, or *Cestrehunt* in the Domesday Survey of 1086 (Open Domesday Online 2020), strongly implies a Roman origin for the settlement. Whereas *Caester* or *Cestre* implies the presence of a Roman Fort there has been some debate with regard to the hunt element. Some authors consider it to imply a Roman Fountain within or near a Roman Fort whereas others suggest a spring by the old Roman Fort.

3.9 It is highly probable that a Roman settlement existed nearby along Ermine Street (1.5km to the west) and this was located on the higher ground within Cheshunt Park.

Anglo-Saxon/Early Medieval & Medieval

3.10 Excavations near Waltham Cross, approximately 1km south of the site, recorded a 10th to 12th century post-hole structure associated with ditches and a clamp kiln, indicating the presence of small-scale Saxo-Norman occupation.

3.11 The historic village of Cheshunt, located approximately 1km to the north-west of the site, is recorded in the Domesday Book of 1086 as a large settlement containing 78 households (Open Domesday 2020).

3.12 The site a Medieval moated homestead is located approximately 950m south west of the site. Identified on Richardson's Map of the Parish (1785, not reproduced here) the moated homestead was referred to as 'Scite of the Manor of Darcies' (MHT11843, TL 3604 0180).

3.13 A moated site believed to be of Medieval origin is located c.800m south east of the site (MHT2042, TL 3689 0186).

Post Medieval & Modern (including map regression exercise)

3.14 Dury and Andrew's map of 1766 shows the approximate location of the site located within unenclosed marshy land to the west of the Small River Lea. Cheshunt Mills (HER 11840 at TL3666 0328) are depicted to the north and Waltham Abbey is shown to the south-east.

3.15 The 1782-85 Plan of the Liberty and Manor of Cheshunt depicts the site more clearly, with the site divided into numerous long agricultural strips. At this time Cadmore Lane is not depicted suggesting that there is no earlier route and therefore it is unlikely that a Roman road passes through or adjacent to the site. The general character of the site remains unaltered between 1799 and 1842, although

the individual strips within the site are not shown. Cadmore Lane first appears on the Cheshunt Parish Map dated 1821 to 1840. A windmill (HER 7304) is depicted to the south west of the site on the south side of Windmill Lane.

3.16 The 1842 Cheshunt Tithe map and associated Award identifies the site as unenclosed. The planned route of the Great Eastern Railway forms the eastern boundary of the site.

3.17 The Ordnance Survey map of 1873 shows the site being gradually reclaimed and enclosed. A large house, with a tree lined avenue leading to it, is depicted in the south east corner of the site. A large area of marsh is shown to the north of the house. In that part of the site touching Windmill Lane a Dye Works is noted. The Great Eastern Railway is complete, and Cheshunt Station is noted to the south-east.

3.18 By 1898, the marshy area in the eastern part of the site appears to have been drained. A new marshy area or a possible water meadow is shown within and along the western boundary of the site. The lower part of Delamare Road, known at this time as Windmill Terrace, south of the site was constructed and lined with terrace houses.

3.19 The 1914 Ordnance Survey identifies a Nursery with glasshouses in the eastern part of the site. The northern area is annotated as allotment gardens but the full extent is not shown.

3.20 By 1938, additional glasshouses have been added to the eastern part of the site at the northern end. The remainder of the site is unchanged.

3.21 The 1960 Ordnance Survey shows that Delamare Road has been constructed through the centre of the site and 90% of the area has been developed as an industrial estate comprising a mixture of works, offices and warehouses. The site remains unchanged, aside from minor alterations to some of the workshops, in 1972-73.

3.22 Recent aerial photography shows the remaining area undeveloped in the 1970's has been filled with a large office.

Summary of Archaeological Potential and Likely Significance of Remains if Presents

3.23 The Historic Environment Record indicates one non-designated asset within the northern part of the site, the conjectured line of a Roman road. The road's presence has not been proven archaeologically and, despite extensive gravel extraction along its route to the east of the site, has not been mentioned in historical records. If a Roman route is present in this area the assessment considered that it most probably underlies Cadmore Lane to the north however as the route does not appear until late in the cartographic record this was regarded as being highly unlikely.

3.24 Overall, the assessment suggested that the site has a low potential for all past periods of human activity, indicating that the site has a negligible archaeological significance.

4 AIMS AND OBJECTIVES

4.1 The watching brief should aim to determine, as far as is reasonably possible, the location, form, extent, date, character, condition, significance and quality of any surviving archaeological remains, irrespective of period, liable to be threatened by the proposed development. An adequate representative sample of all areas where archaeological remains are potentially threatened should be studied, and attention should be given to sites and remains of all periods (inclusive of evidence of past environments.

4.2 The watching brief should also seek to clarify the nature and extent of existing disturbance and intrusions and hence assess the degree of archaeological survival of buried deposits and any surviving structures of archaeological significance.

4.3 The general aims of the project are:

- To record any archaeological remains which may be present;
- To determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
- To determine or confirm the approximate extent of the remains;
- To determine the condition and state of preservation of the remains;
- To determine the degree of complexity of the horizontal and/or vertical stratigraphy present;
- To assess the associations and implications of any remains encountered with reference to the historic landscape;
- To determine, as far as is possible, the implications of the remains with reference to economy, status, utility and social activity;
- To determine or confirm the likely range, quality and quantity of the artefactual evidence present; and
- To determine the sequence and dating of Made Ground deposits to enable an understanding of the recent history of the site and its impact on archaeological remains.

4.4 The relevant research agenda for the site comprises *Research & Archaeology: The Eastern Counties* prepared by ALGAO East, published in 2000 and updated in 2011 (Medlycott 2011).

4.5 Within the parameters of the general aims of the project and the relevant research agenda, the archaeological work at this site presents an opportunity to address the following objectives:

1. Identify the presence or absence of Prehistoric activity within the site;
2. Identify whether there is any evidence for a conjectured Roman road within the site (Medlycott 2011: pp.48);
3. Identify any Saxon or Medieval remains within the site, in particular whether the site was utilised for pasture or agriculture during these periods;
4. Identify the extent of Post Medieval and Modern activity within the site, in particular the extent of likely Modern ground disturbance and depths of truncation of earlier deposits; and
5. Provide sufficient information to enable the production of an appropriate archaeological watching brief report.

5 ARCHAEOLOGICAL WATCHING BRIEF DETAILED SPECIFICATION

5.1 The overall objectives of this watching brief are set out in Section 4. This section details the onsite methodologies, report format and other related details.

5.2 The archaeological watching brief will record any archaeological remains which may be removed during relevant construction groundworks outside of existing building footprints and within zones identified on Figure 4.

General Techniques

5.3 In the first instance the appointed archaeological fieldwork contractor will fully review all available information regarding the excavation locations, in particular service plans and contamination information, and will provide their own plan of works prior to works taking place on site, to be attached to their Health and Safety Risk Assessment (RAMS) documentation. In addition, the appointed archaeological fieldwork contractor will ensure that excavation locations will be scanned by appropriately trained archaeologists using appropriate equipment (CAT scanner etc.) prior to relevant works commencing on site.

5.4 Construction groundworks will be undertaken by mechanical excavator, with removal of all undifferentiated topsoil down to the first significant horizon. The machine should remove a level spit of no more than 0.20m depth and allow the monitoring archaeologist the appropriate access to monitor the work. Successive spits may be similarly removed until the first significant archaeological horizon or the underlying natural deposits are reached.

5.5 Archaeological horizons should be cleaned in plan using a wide blade, ditching bucket or similar, with no teeth. If the machine has to re-enter the trench care should be taken to ensure that it does not damage underlying remains, particularly in soft conditions. *The machine must not be used to cut arbitrary trial trenches down to natural deposits, without regard to the archaeological stratification and leaving a section record only.* All machine work must be under archaeological supervision and should cease immediately if significant evidence is revealed.

5.6 The machine used should be powerful enough for a clean job of work and able to mound spoil neatly, a safe distance from trench edges. Mini garden excavators or bulldozers are not suitable.

5.7 Initially examination of all archaeological deposits should be by hand with cleaning, examination and recording both in plan and section. The objective is to define remains rather than totally remove them. Full excavation should be confined to the least significant remains (e.g. dumped layers) which may allow underlying stratigraphy and features to be exposed and recorded. Within significant levels partial excavation, half-sectioning, the recovery of dating evidence, sampling and the cleaning and recording of structures is preferable to full excavation. Depending on the stratigraphy revealed, sieving and flotation of fills (at the appropriate mesh level) should be undertaken to recover small flint flakes/metalwork (i.e. a control sample of artefacts).

5.8 Archaeological excavation may require work by pick and shovel or occasionally further use of the machine. *Such techniques are only appropriate for the removal of homogeneous or low-grade deposits which may give a 'window' into underlying levels. They must not be used on complex stratigraphy and the deposits to be removed must have been properly recorded first.* Casual "mattock testing" of features of uncertain archaeological value must not be undertaken without the prior approval of the archaeological advisor. The depth and nature of all colluvial or other masking deposits must be established across the site.

5.9 Particular care should be taken not to damage any areas containing significant remains which might merit preservation in situ. Such evidence would normally include deep or complex stratification

settlement evidence and structures. The Local Planning Authority must be informed immediately if remains likely to be of national significance are encountered. Such areas should be protected and not left open to the weather, or other forms of deterioration whilst investigation will not be at the expense of any structures, features or finds which might reasonably be considered to merit preservation, it is important that a sufficient sample is studied.

5.10 Any human remains (if encountered) must also be left in situ, covered and protected. The latest Historic England guidance 'The Role of the Osteologist in an Archaeological Fieldwork Project' (HE 2018) indicates a preference to lift burials encountered at evaluation stage. However, this is specialist guidance which should be read in conjunction with the Advisory Panel on the Archaeology of Burials in England 2017 'Guidance for Best Practice of the Treatment of Human Remains Excavated from Christian Burial Grounds' (Second Edition), which also deals with non-Christian burials, which indicates that retention in situ is the best option. In cases where removal is the only option and absolutely essential, human remains will only be excavated after obtaining the relevant Ministry of Justice Licence, as required by the Burials Act of 1857 (amended 1981). The discovery of human remains will be reported to the local coroner. Other structured or placed deposits will be recorded and retained as "small finds". Should sufficient human bone be exposed to warrant specialist examination in situ, a human bone specialist may be required to attend to examine the remains.

5.11 Any remains classified as 'treasure' under the Treasure Act 1996 will be removed to a secure location, and where removal cannot be undertaken on the same day as discovery, suitable security measures will be put in place to protect the finds from theft.

5.12 Metal detecting will be undertaken at all stages of the works by a suitably qualified/experienced metal detectorist.

Watching Brief Techniques

5.13 The watching brief will involve the monitoring of intrusive ground works outside of existing building footprints and within zones as identified on Figure 4. During the course of the groundworks, the scale and scope of the archaeological works may be reviewed, in consultation with the archaeological consultant and the archaeological advisor. Should practical considerations mean that the scope of the groundworks has to be changed, the archaeological advisor will be consulted.

5.14 The archaeologist will be present to observe all intrusive below ground works. Subject to safe access, the archaeologist will enter the excavated area to carry out close inspection.

5.15 Machining will be done with a flat bladed bucket (toothless), and in horizontal spits, where practicable.

5.16 Archaeological recording, where not precluded by Health & Safety considerations, will consist of:

- Hand cleaning of archaeological features, sections and surfaces, sufficient to establish the stratigraphic sequence exposed;
- Structures will be cleaned to enable interpretation, recording and phasing;
- Planning of all exposed archaeological features and horizons (including boundaries of natural) at an appropriate scale;
- Excavated material will be examined in order to retrieve artefacts to assist in the analysis of their spatial distribution;
- A scaled photographic record of representative exposed sections and surfaces, along with sufficient photographs to establish the setting and scale of the groundworks; and
- A record of the datum levels of archaeological deposits.

Access and Safety

5.17 Reasonable access to the site is to be arranged for representatives of the Local Planning Authority and their archaeological advisor who may wish to make site inspections to ensure that the archaeological investigations are progressing satisfactorily.

5.18 All relevant health and safety regulations must be followed. A general health and safety policy must be provided by the Archaeological Contractor and a detailed risk assessment and management strategy for this site prepared. In particular the machine should be kept away from unsupported trench edges and public access routes should be supervised and controlled. Barriers, hoardings and warning notices should be installed as appropriate by the groundworks contractor. Safety helmets are to be used by all personnel as necessary. The groundworks contractor will provide appropriate toilet and washing facilities for site staff.

5.19 *No personnel are to work in deep unsupported excavations.* Trenches deeper than 1.2m will have to be stepped or battered back.

5.20 Where there is reason to believe from previous uses that the ground may be contaminated, the Archaeological Contractor must include arrangements for pollution sampling and testing before any site work takes place. A search for public utility or other services will also be undertaken by the Archaeological Contractor prior to commencement.

5.21 The archaeological organisation must be satisfied that the applicant or developer has provided all information reasonably obtainable on contamination and the location of live services before any site work takes place.

Recording Systems

5.22 The recording system must be fully compatible with that most widely used elsewhere in Hertfordshire. Context sheets should include all relevant stratigraphic relationships and for complex stratigraphy a separate matrix diagram should be employed. This matrix should be fully checked during the course of the works. If there is any doubt over recording techniques the guidance of the archaeological advisor will be sought.

5.23 The site archive will be so organised as to be compatible with other archaeological archives produced in Hertfordshire. Individual descriptions of all archaeological strata and features excavated or exposed will be entered onto prepared pro-forma recording sheets. Sample recording sheets, sample registers, finds recording sheets, access catalogues, and photo record cards will also be used. This requirement for archival compatibility extends to the use of computerised database.

5.24 Site location plan required; general plan (e.g. OS 1:1250) showing investigation area and development site in relation to surrounding locality and street pattern.

5.25 This will be supplemented by trench plans at 1:500, which will show the location of the areas investigated in relationship to the investigation area, OS grid and site grid (if any). The locations of the OS bench marks used and site TBMs will also be identified.

5.26 Archaeological plans; some record of the full extent in plan of all archaeological deposits must be made. All significant deposits that significantly affect the interpretation of the site and relate to the watching brief objectives should be formally planned in relation to the trench and OS grid and be at a scale of 1:10 or 1:20. Single context planning is required on deeply stratified sites.

5.27 Sections containing significant deposits, including half sections, should be drawn as appropriate. Upon completion of the works at least one long section is to be drawn, including a profile of the top of natural deposits (extrapolated from cut features etc. if natural deposits are not reached). In addition to the excavation of artificial deposits, some assessment of “naturally deposited” levels will

be necessary, especially when these are organically preserved and laid down within archaeological timescales.

5.28 All archaeological plans and sections should be on drawing film at a scale of 1:10 or 1:20 and should include context numbers and OD spot heights for all principal strata and features.

5.29 An adequate photographic record of any significant archaeological remains is required, in both plan and section. This will include black and white prints and colour transparencies (on 35mm film), illustrating in both detail and general context the principal features and finds discovered. The photographic record will also include working shots to illustrate more generally the nature of the archaeological operation mounted. The transparencies will be mounted in suitable frames. Where appropriate a photogrammetric record will be made of complex structures, features and horizons liable to be damaged in the course of the archaeological work.

5.30 A Harris Matrix stratification diagram will be compiled and fully checked during the course of the works.

Finds and Samples

5.31 A high priority should be given to dating any remains and so all pre-Modern artefacts and finds are to be retained. Consideration should also be given to the recovery of specialist samples for scientific analysis, particularly samples for absolute dating, structural materials and cultural/environmental evidence. Different sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Minimum levels of data acquisition should be defined according to the “information recovery levels” summarised by Carver (1987). The default data acquisition level for all pre-modern assemblages is level D. Close attention will be given to sampling for date, structure and environment.

5.32 If required, the strategy for sampling archaeological and environmental deposits and structures (which can include soils, timbers, animal bone and human burials) will be developed in consultation with the archaeological advisor and the Historic England Scientific Advisor. Bulk samples will generally be 40l.

5.33 If present, a high priority will be given to the sampling of river and other anaerobic deposits (such as peat) where organic materials may be preserved.

5.34 Organic samples will be subject to appropriate specialist analysis. There may be a requirement to submit timbers to dendrochronological analysis and to process some samples to provide C14 dating. Other forms of specialist analysis may also be appropriate.

5.35 Best practice finds retrieval policies will be adopted. All identified pre-Modern finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained. No finds will, however, be discarded without the prior approval of the archaeological advisor.

5.36 All finds and samples will be treated in a proper manner and to the standards of the UK Institute of Conservators Guidelines. They will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the guidelines set out in the UK Institute for Conservation “Conservation Guideline No 2”. Appropriate guidelines set out in the Museums and Galleries Commissions “Standards in the Museum Care of Archaeological Collections (1991)” will also be followed.

5.37 The pottery specialist employed by the Archaeological Contractor will be familiar with local pottery types and with a record of publications in the region.

5.38 The spot dating of pottery will be employed, where appropriate, to inform the onsite methodology and interpretation.

5.39 Within three weeks of completion of the work the archaeological contractor will produce a report, copies of which are to be provided to the client, the Local Planning Authority, and their archaeological advisor.

Reports and Archives

Draft Report

5.40 A draft report on the results of the watching brief will be prepared, both in bound paper format with colour images, and also in electronic format a PDF with a minimum file size of 300dpi.

5.41 The summary report should include:

1. The archaeological contractor's site/finds code;
2. Perceived archaeological potential of the site and vicinity from documentary sources – historic, cartographic, archaeological, Hertfordshire Historic Environment Record (HER), geographical, topographic and environmental;
3. The aims and methods adopted in the course of the watching brief;
4. Illustrative material including maps, plans, sections, drawings and photographs as necessary: photographs should include images of work in progress together with any significant features revealed;
5. The nature, extent, date, condition and significance of the archaeological finds with specialist opinions and parallels from other sites if required;
6. The perceived degree of survival of archaeological deposits across the site, as affected by its present state and recent past (e.g. extent of quarrying); and
7. A digital copy of the draft report will be sent to RPS Heritage for onward submission to the archaeological advisor. Once approved a final copy will be submitted to the HER.

Archives and Published Reports

5.42 The integrity of the site archive should be maintained. The archive of all records and finds must be prepared consistent with the principles set out in the Management of Archaeological Projects (English Heritage 1991), particularly Appendix 3.1 and Appendix 4.1.

5.43 The minimum acceptable standard for the archival report is defined in the "Management of Archaeological Projects" 5.4 and Appendix 3. It will include all materials recovered (or the comprehensive record of such materials) and all written, drawn and photographic records relating directly to the investigations undertaken. It will be quantified, ordered, indexed and internally consistent. It will also contain a site matrix, a site summary and brief written observations on the artefactual and environmental data.

5.44 United Kingdom Institute for Conservation guidelines for the preparation of excavation archives for long term storage (1990) will be followed. Arrangements for the curation of the site archive will be agreed in writing with the recipient Museum and details of such arrangements will be made by the archaeological contractor.

5.45 In principal, the site archive is to be deposited with the appropriate museum within 3 months of the completion of reporting work. The Archaeological Contractor will need to hold discussions with the museum curator prior to archaeological work commencing regarding the collection and discard policy relevant to the site, and to observe such requirements. If the museum is unable to accept the archive an alternative solution regarding the storage of the archive will be found.

5.46 A copy of the report will be forwarded to the archaeological advisor as soon as it is complete, and provision will also be made for further reporting and publication of the results of the investigation in a suitable local journal should significant remains be encountered and no other opportunity exists for their dissemination.

5.47 In addition, at the start of work (immediately before fieldwork commences) an OASIS online record http://ads.ahds.ac.uk/projects/oasis/ must be initiated and key fields completed on Details, Location and Creators Forms. Following completion of any further work, all appropriate parts of the OASIS online form must be entered, and the completed form sent to the GLHER. This should include an uploaded .pdf version of the entire report (a paper copy should also be included with the archive).

5.48 A timetable for all stages of the project must be agreed before the first stage of work commences, including monitoring by the archaeological advisor.

6 OTHER MATTERS

Archaeological Contractor

6.1 The Archaeological Contractor will have a proven track record in undertaking archaeological works within the Lea Valley, and the relevant underlying geological sequence.

6.2 The field team deployed by the Archaeological Contractor will include only full time professional archaeological staff.

6.3 The Archaeological Contractor should preferably be a body on the CIfA Register of Archaeological Organisations.

Standards

6.4 RPS Heritage endorses *the Code of Practise and the Code of Approved Practise for the Regulation of Contractual Arrangements in Field Archaeology* of the Chartered Institute for Archaeologists.

6.5 All staff supplied by the archaeological contractor should be of a standard approved by RPS Heritage and be employed in line with the Chartered Institute for Archaeologist's Codes of Practise and hold membership of the Chartered Institute for Archaeologists.

6.6 Provision should be made for monitoring of all stages of the project by the client and the local planning authority and their representatives.

Insurance and Health and Safety

6.7 The archaeological contractor will maintain both public liability (£5,000,000) and professional indemnity insurance (£1,000,000). Full details of insurance cover can be supplied on request.

6.8 The principal contractor will ensure that all work is carried out to within the Health and Safety and Work etc Act 1974 and the Management of Health and Safety Regulations 1999.

Sources Consulted

Chartered Institute for Archaeologists Guidelines

http://www.archaeologists.net/sites/default/files/node-files/code_conduct.pdf

http://www.archaeologists.net/sites/default/files/node-files/ifa_code_practice.pdf

https://www.archaeologists.net/codes/cifa

National Guidance

Department of Communities and Local Government *National Planning Policy Framework* 2012 (revised February 2019)

Department of Communities and Local Government/Department of Culture Media and Sport/English Heritage *National Planning Practice Guidance* 2014 (revised 2019)

Guidelines

Historic England (formerly English Heritage) *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment* 2008 (new draft 2017)

Historic England Historic Environment *Good Practice Advice in Planning: 1 The Historic Environment in Local Plans* July 2015 unpublished document

Historic England Historic Environment *Good Practice Advice in Planning: 2 Managing Significance in Decision-Taking in the Historic Environment* July 2015 unpublished document

Historic England Historic Environment *Good Practice Advice in Planning: 3 The Setting of Heritage Assets* December 2017 unpublished document

Historic England *Understanding Historic Buildings. A Guide to Good Recording Practice*. 2016

Medlycott, M. (ed.). *'Research and Archaeology Revisited: a revised framework for the East of England', East Anglian Archaeology Occasional Papers 24,* 2011

MAP2 *Management of Archaeological Projects* (Second Edition) 1991

MoRPHE *Management of Research Projects in the Historic Environment* The MoRPHE Project Managers' Guide 2009

MoRPHE *Management of Research Projects in the Historic Environment* PPN 3: Archaeological Excavation January 2008

Museums and Galleries *Commissions Standards in the Museum Care of Archaeological Collections* 1991

United Kingdom Institute for Conservation (UKIC) *Conservation Guideline No 2* (n/d)

United Kingdom Institute for Conservation (UKIC) *guidelines for the preparation of excavation archives for long term storage* 1990

General

British Library

Hertfordshire Historic Environment Record

Hertfordshire Record Office

The National Archive

Internet

Bombsight – http://bombsight.org/#17/51.49200/-0.03924

British Geological Survey – http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

British History Online – http://www.british-history.ac.uk/

Domesday Online – http://www.domesdaybook.co.uk/

Historic England: The National Heritage List for England – http://www.historicengland.org.uk/listing/the-list/

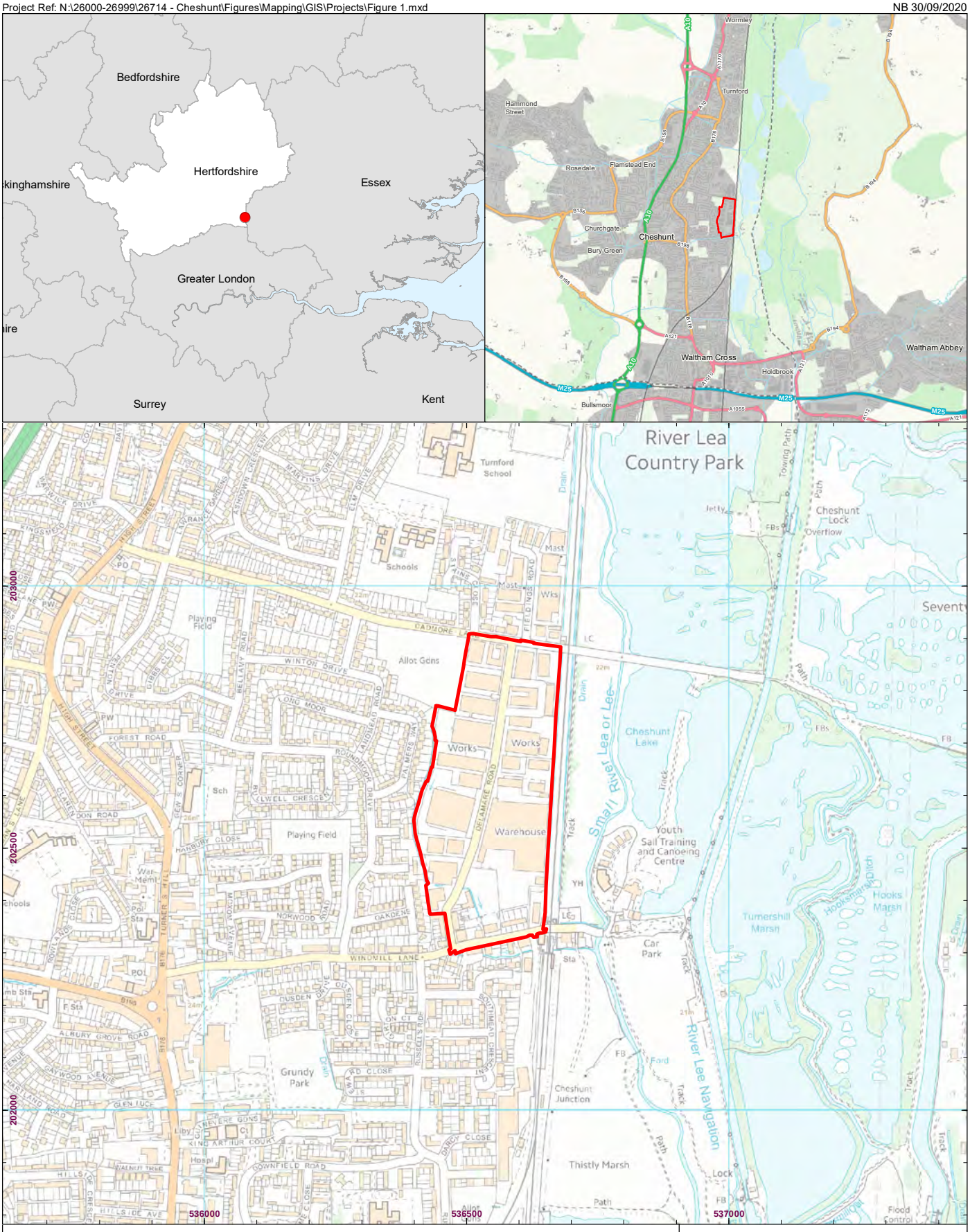
Portable Antiquities Scheme – www.finds.org.uk

Site Specific

CgMs Heritage, *Archaeological Desk-Based Assessment: Cheshunt Lakeside, Delamare Road, Cheshunt* 2018

Thompson, I. & Hunns, T. *Cheshunt Extensive Urban Survey Assessment* 2003

FIGURES



Site Boundary

N

0 100 200m

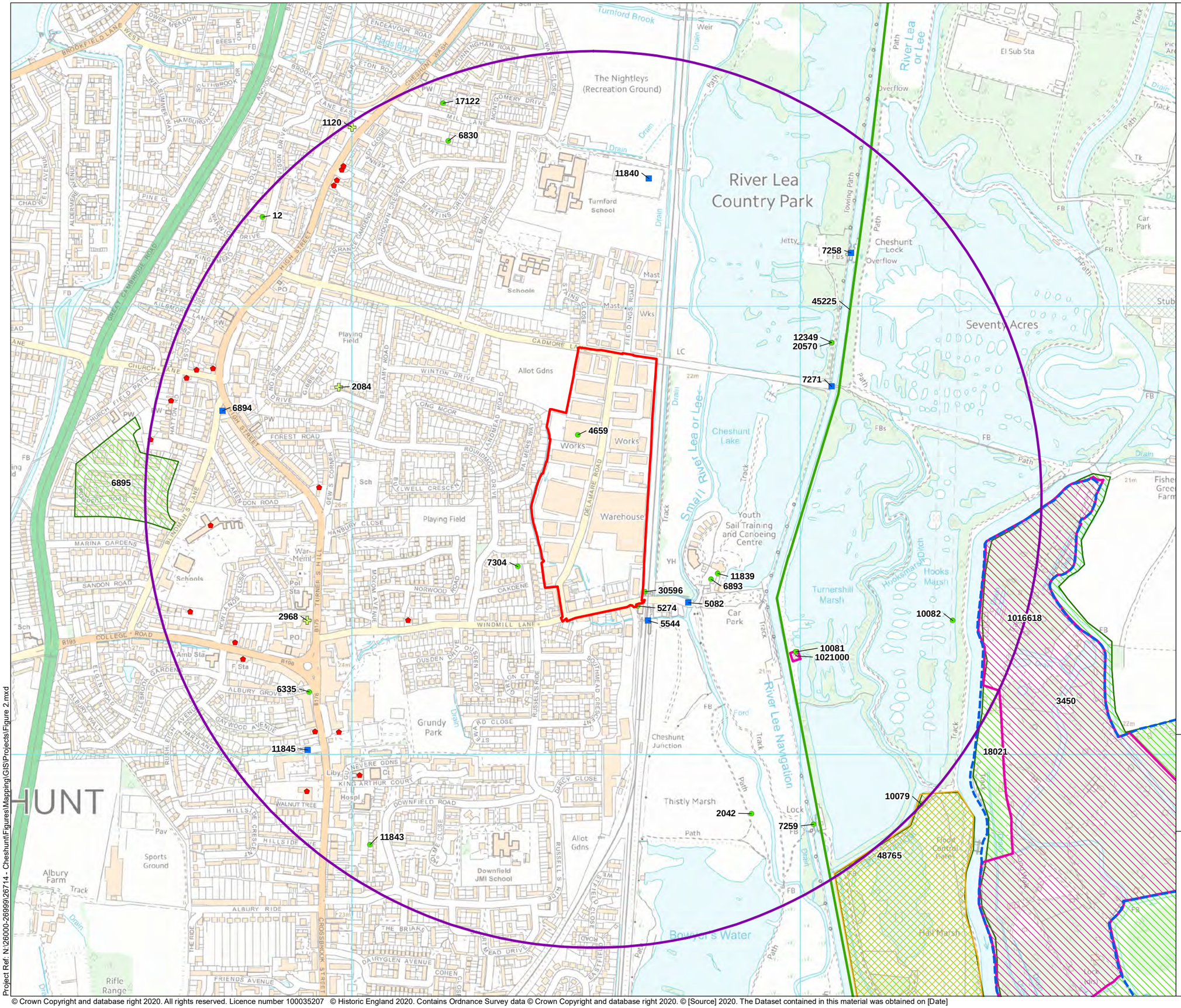
Scale at A4: 1:10,000

MAKING COMPLEX EASY

Figure 1

Site Location

NB 30/09/2020



Legend

- Site Boundary
- Search Radius

Designated Heritage Assets:

- Listed Buildings
- Scheduled Monuments

Conservation

- Royal Gunpowder Factory, Waltham Abbey

Non-designated Heritage Assets:

HER Record (Point)

- Find Spot
- Monument
- Building

HER Record (Line)

- Industrial

HER Record (Polygon)

- Monument

Previous Archaeological Work:

- HER Event (Polygon)

N

0 100 200m

Scale at A3: 1:8,000

MAKING COMPLEX EASY

Figure 2

Nearby Historic Environment Assets (Data taken from CgMs DBA 2018)

Project Ref: N:\26000-26999\26714 - Cheshunt\Figures\Mapping\GIS\Projects\Figure 2.mxd

Site Boundary

N

0 30 60m

Scale at A4: 1:3,000

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Figure 3

Site Layout as Existing
(2020 Google Earth Image)

Site Boundary

Watching Brief Area

N

0 30 60m

Scale at A4: 1:3,000

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Figure 4

Proposed Watching Brief Zones (2017 Google Earth Image)

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COMPLEX
EASY

rpsgroup.com

References

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[2] HMSO, 2018. The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018. The Stationary Office. October 2018.
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