ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT ROSEDALE PARK NORTH

25 August 2016

Our Ref: JCG20024

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CONTENTS

1 INTRODUCTION

1.1 Crest Strategic Projects Ltd. (the Applicant) is seeking to obtain outline planning permission for the development of land to the west of Cheshunt (the proposed development), comprising approximately 44.6 hectares (ha) of land (the site) within the administrative boundary of Broxbourne Borough Council (BBC). As shown in Figure 1, the site is located to the north west of Cheshunt, and to the east of Goff's Oak, at National Grid Reference TL 33496 03601.

1.2 The site is bounded by Rags Lane to the west and north west, Peakes Way to the north east, and existing development to the east and south (including the Rosedale Sports Club). Andrew's Lane runs laterally across the site.

1.3 An EIA Scoping Report (CgMs, July 2013) was previously submitted to BBC for an earlier iteration of the proposed development at this site, and a Scoping Opinion was received from the Council on 19th August 2013. This has been provided in Appendix 1 and the consultees' views taken into consideration in the preparation of this Scoping Report, which has been updated to reflect changes to the scheme and the site's planning context in the intervening years.

1.4 The current proposal includes the development of 388 residential dwellings, a primary school, a local centre containing circa 400sqm of commercial B1 use, elderly persons accommodation, improved pedestrian and cycle connections across the site, the provision of a landscaped public park including enhancement of the Rags Brook Valley, and land provided for the expansion of Rosedale Sports Club.

The Need for an Environmental Impact Assessment

1.5 Planning applications for development that are subject to the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended 2015) (referred to as the 'EIA Regulations') are termed 'EIA applications'. The requirement for an EIA is either mandatory or conditional, depending on the classification of the development project. This is based, in turn, on the likelihood of significant environmental effects arising, together with the nature, scale and complexity of the proposed development. EIA applications are divided into 'Schedule 1 Applications' (major developments) and 'Schedule 2 Applications' (other developments) under the EIA Regulations.

1.6 Schedule 1 developments constitute those that are likely to have significant effects where an EIA is automatically required, such as major infrastructure projects. For all other developments, which fall under Schedule 2, the need for an EIA is determined on the basis of set criteria as follows:

- The development falls within one of the classes of development stated in Schedule 2; AND
- EITHER it exceeds the size threshold for that class of development in Schedule 2;
- OR it is in a sensitive area; AND
- It is likely to have significant effects on the environment.

1.7 The proposed development is classified as an “urban development project” in accordance with Schedule 2 (10b) of the EIA Regulations. The EIA thresholds for urban development projects as stated in Schedule 2 (10 b) are:

- The development includes more than 1 hectare of urban development which is not dwelling/house development; or
- The development includes more than 150 dwellings; or
- The overall area of the development exceeds 5 hectares.

1.8 As the overall site area (44.6 ha) and number of proposed dwellings (approximately 388) exceeds the thresholds outlined in the EIA Regulations and it is considered that there is the potential for significant environmental effects, an Environmental Statement (ES) will be prepared to report the findings of the EIA and will be submitted in support of the forthcoming planning application.

1.9 RPS Planning and Development Ltd. (RPS) has been commissioned by the Applicant to prepare the ES in accordance with the EIA Regulations and other relevant EIA guidance.

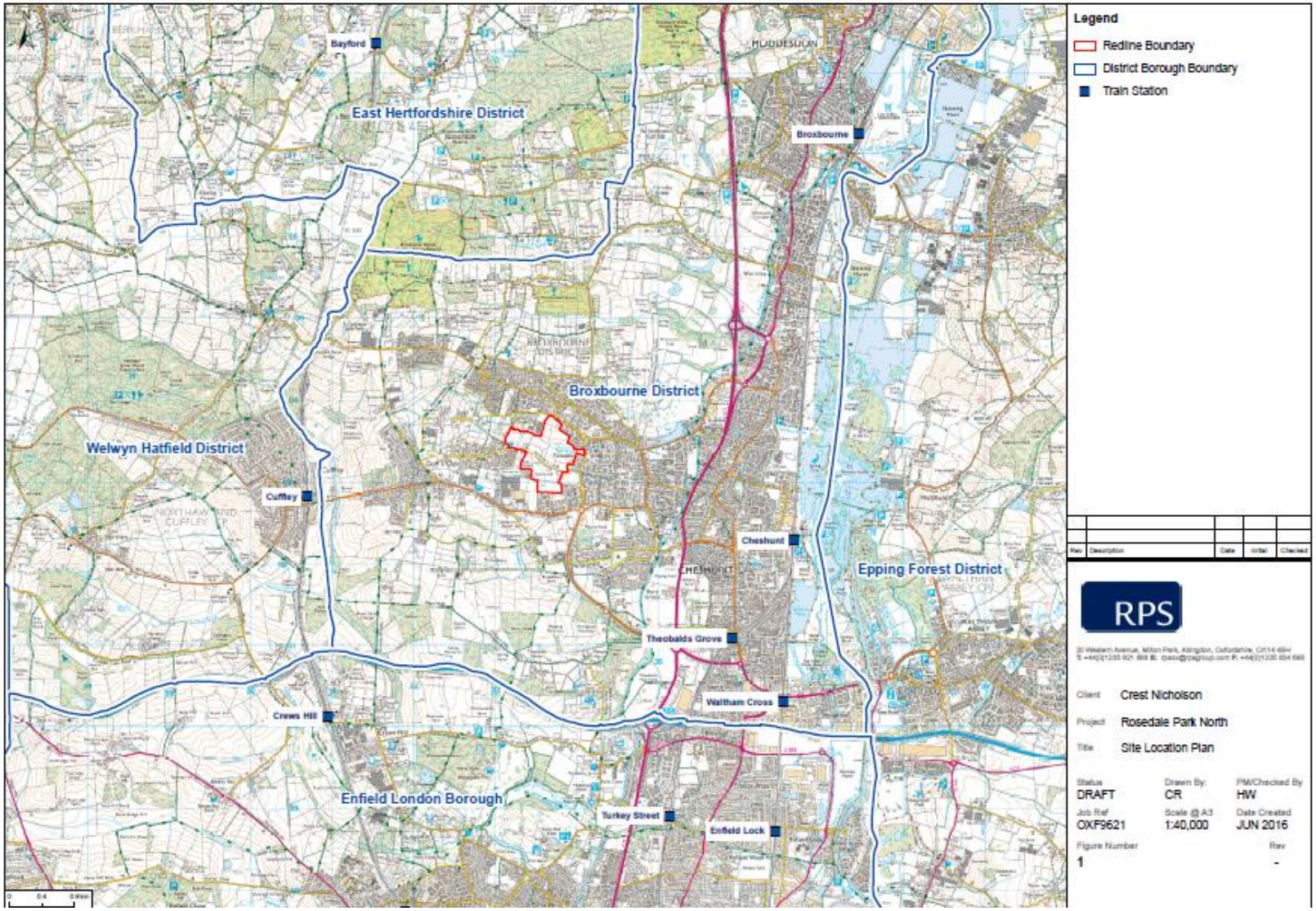
1.10 Scoping constitutes an important stage of the EIA process, and allows for the identification of likely significant environmental effects arising from a development, both adverse and beneficial, to be agreed with the Local Planning Authority and other stakeholders. The systematic approach to EIA enables the design of the proposed development to respond in an iterative manner to the prevailing environmental conditions and constraints. This ensures that all practical measures are taken to avoid, reduce, and where possible, offset any potentially significant adverse environmental effects. Furthermore, the EIA process aims to ensure that the potentially beneficial effects of development proposals are maximised.

1.11 This Scoping Report describes the scope and methodology of the technical studies being undertaken in order to provide a comprehensive assessment of significant effects likely to arise and to determine suitable mitigation measures for the construction and operational phases of the proposed development.

1.12 It also identifies the cumulative schemes that should be taken into account in the EIA, and seeks confirmation of these from BBC.

1.13 In accordance with Regulation 13 of the EIA Regulations, this EIA Scoping Report is issued with a request for a new Scoping Opinion from BBC, in order to allow BBC to re-confirm or amend its previous opinion of August 2013. Whilst the fundamental nature of the proposed development and site conditions have not changed since this time, and the EIA process has proceeded in accordance with previous opinion, this request for a new scoping opinion is made for the sake of completeness, accounting for the passage of time and revised development proposals.

Figure 1: Site Location Plan



Structure of the Scoping Report

1.14 This Scoping Report is structured as follows:

- Section 2 describes the site and surroundings, including any environmental designations or sensitivities;
- Section 3 outlines the principal elements of the proposed development;
- Section 4 describes the consultation undertaken and proposed, including for the EIA;
- Section 5 identifies the key legislative and planning policy background;
- Section 6 explains the general approach to the EIA, including the structure of the technical ES chapters;
- Section 7 lists the environmental topics proposed to be addressed by the EIA, and describes the scope and methodology of these assessments;
- Section 8 summarises the topics that are not considered to have the potential to result in significant effects or that are more appropriately covered in non-ES documents to be submitted alongside the planning application, and which will therefore be scoped out; and
- Section 9 details the proposed structure of the ES.

1.15 The following appendices comprise further relevant information:

- Appendix 1 provides the EIA Scoping Opinion from BBC dated 19 August 2013;
- Appendix 2 provides the Draft Phase 1 Ground Condition Assessment;
- Appendix 3 provides the Technical Note on the Assessment of Mineral Resources; and
- Appendix 4 provides the Archaeological Desk Based Assessment (DBA).

2 THE SITE AND SURROUNDINGS

Site Description and Context

2.1 The application site is located in the Borough of Broxbourne, to the west of Cheshunt, and is approximately 44.6 ha in size (Figure 2).

2.2 It is strategically placed on the outskirts of Cheshunt and has good access via B roads to the A10 and M25 and is also only 3km from Cheshunt railway station.

2.3 The site lies within a shallow valley which is dissected by the Rags Brook. This is a tributary of the River Lea and is currently not publicly accessible as it passes through private land. The brook has experienced a decline in condition from over-grazing, damage from trespassing, and fly tipping.

2.4 Andrew's Lane crosses through the site from east to west, separating the Rags Brook Valley to the north and Rosedale Sports Club to the south. Rags Lane forms a well-defined boundary to the west of the site.

2.5 The Rosedale Sports Club hosts a number of sports clubs and contains a range of sports pitches, including rugby pitches, a bowling green, Rafles Nursery and club buildings within the southern part of the site.

2.6 The Broxbourne Landscape Character Assessment defines the site landscape as being enclosed by suburban housing, including the recently developed Sovereign Gate housing site to the east. The prevailing undeveloped land is identified as pasture fields, particularly used for grazing horses, and is classified as Grade 3a and 3b agricultural land, although this land is largely underused. Operational and derelict glasshouses to the south are enclosed by mature hedgerows and pockets of woodland, and hedged road corridors.

2.7 Structures on the site are limited to the buildings of Garryross Farm present on the western part of the site as well as the buildings associated with the Rosedale Sports Club to the south of Andrew's Lane.

2.8 Overall the site contains habitats of mainly low ecological value; the key ecological features of 'moderate value' include Rags Brook, mature trees, hedgerows and scrub, and semi-improved grassland. There is presently no public access through the site, other than along Andrew's Lane with poor connectivity between existing estates for pedestrians and cyclists. There are no footpath connections linking the Rosedale area and other parts of Cheshunt or to the footpath network that lies to the west of Rags Lane, limiting access to the wider countryside for the public.

2.9 The site is designated as Green Belt Land, and to the south of the site the 'Meadow South of Rosedale Sports Ground' is designated as a Local Wildlife Site (LWS). This is an area of neutral grassland supporting a reasonably diverse sward which includes a number of indicator species, surrounded by hedgerows of native shrubs and trees. There are no listed buildings on the site, although there are a number in the wider Cheshunt area.

2.10 The key features of the site and adjoining areas are denoted on Figures 3a, b, and c.

2.11 The site has been allocated for development in the Draft Broxbourne Local Plan Consultation Document (July 2016) (BLPCD) as part of the wider redevelopment of Rosedale Park. This includes land under option to both the Applicant and Commercial Estates Group (CEG), who are working on an emerging masterplan for Rosedale Park South (Tudor Nursery), to the south of the proposed development site.

2.12 To the northwest of the site is the Grangebrook site which was last used as a stud farm with a range of commercial uses. This site now has planning permission for a residential development of 14 houses (ref: 07/15/0856/F). More details can be found in Table 6.1.

Figure 2: Indicative Redline Plan for the Rosedale Park North Development

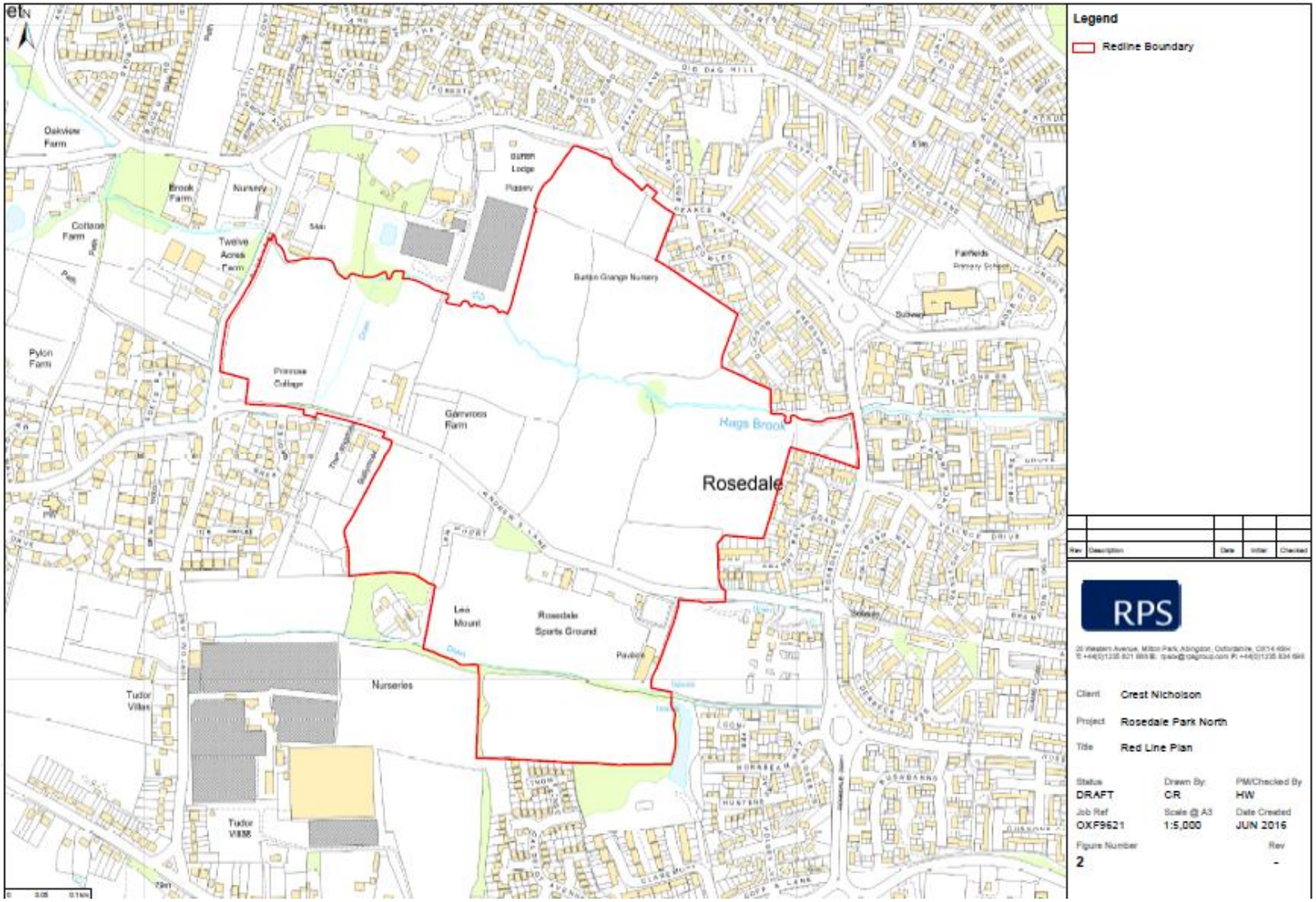


Figure 3a: Nature Conservation Features Within a 2km radius

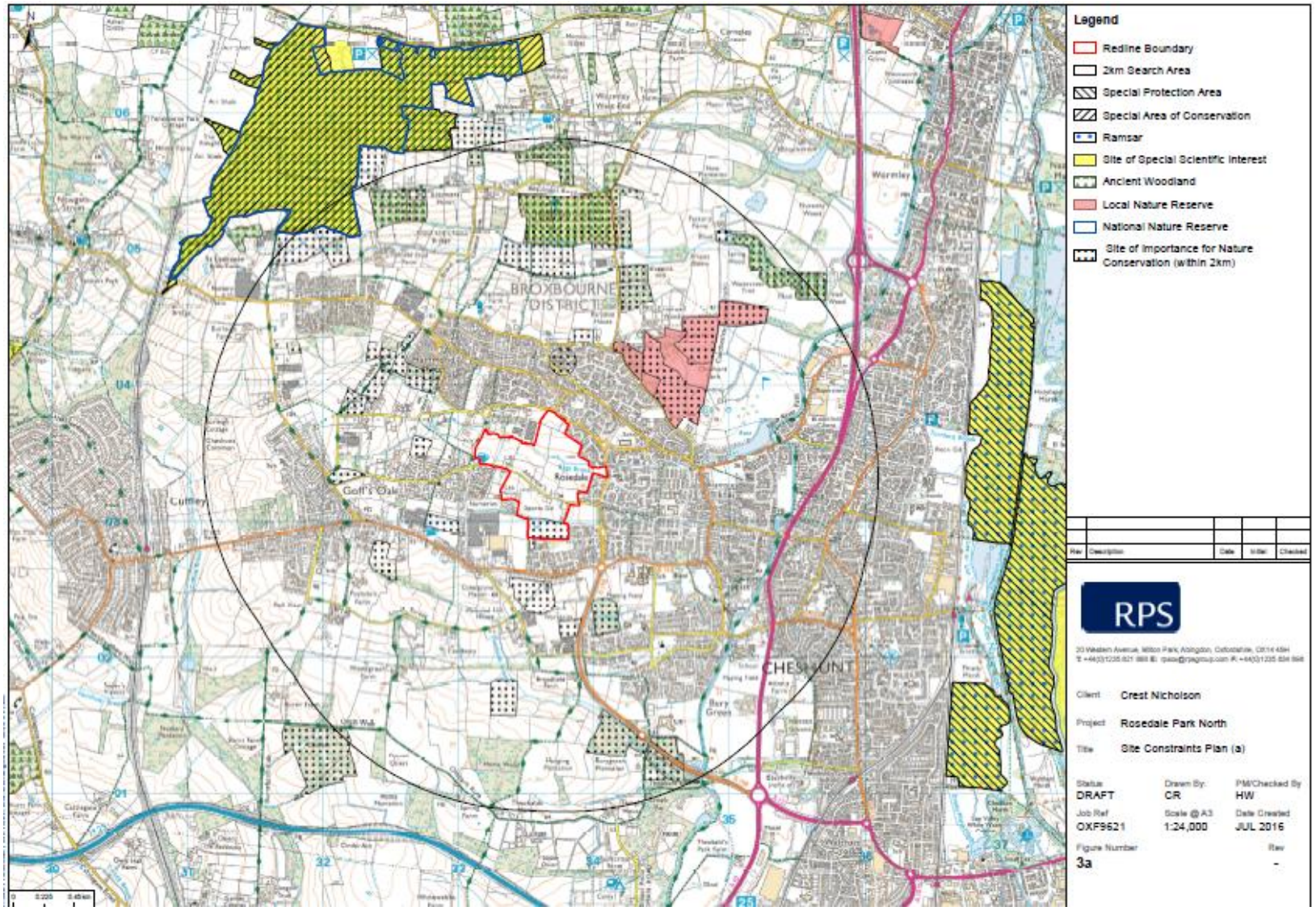


Figure 3b: Listed Buildings Within a 5km radius

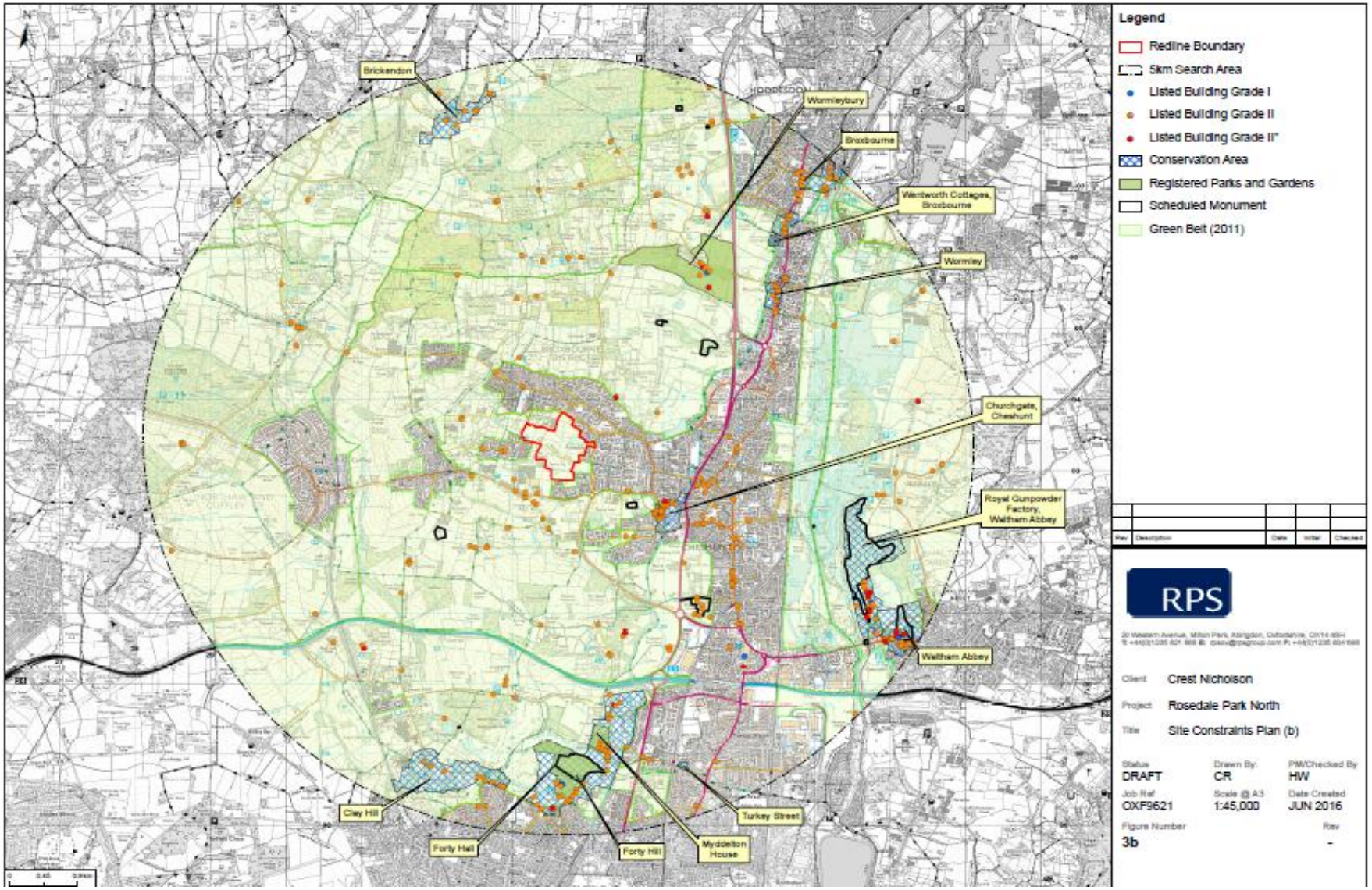
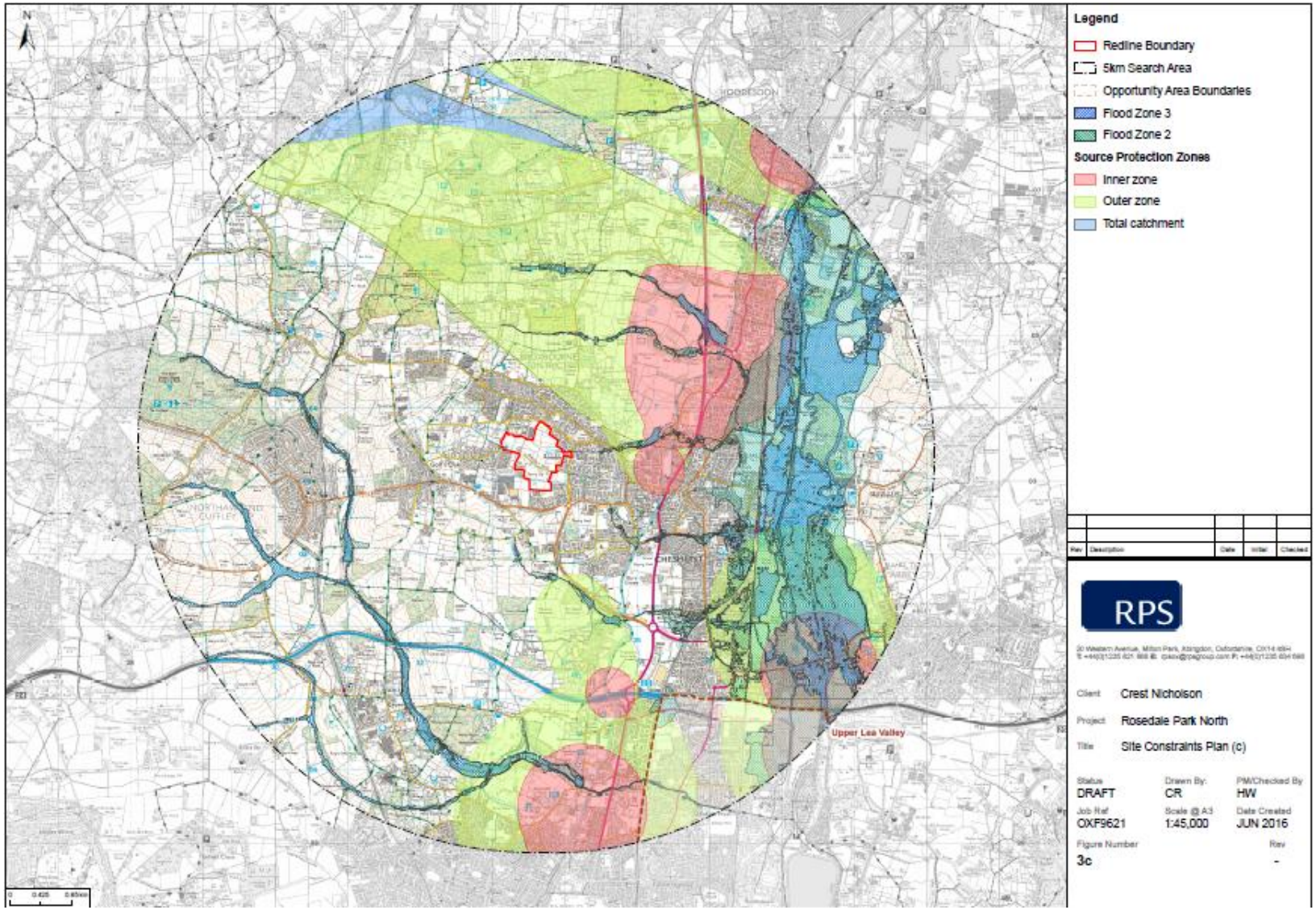


Figure 3c: Flood Risk and Source Protection Zone Designations Within a 5km radius



Sensitive Receptors and Environmental Constraints

2.13 A review of the existing site and its surroundings has identified a range of potentially sensitive receptors and/or environmental constraints, which could be sensitive to effects associated with the construction and operation of the proposed development. Potential sensitive receptors and environmental constraints are outlined as follows:

- Surrounding residential properties particularly within West Cheshunt and St James' Village;
- Future residents and users of the proposed development;
- Formal sports recreation areas and open space including: Rosedale Sports Club located in the southern part of the site; the children's play area to the east of the site along Rosedale Way; and the Claremont informal public open space and play area to the south of the Sports Ground;
- Short, medium and long distance views from Goff's Oak and St James' Village, Public Footpath 41, Peakes Way, and roads such as; Rags Lane; Andrew's Lane; Peakes Way; Rosedale Way; and Goff's Lane
- Non-designated heritage assets within the site including an area of 'ridge and furrow' on the northern boundary of the Rosedale Sports Club, and the crop mark of a linear ditch west of the sports ground;
- Road & Rail - Views from users of the local road network including: Rags Lane; Andrew's Lane; Peakes Way; Rosedale Way; and Goff's Lane;
- Statutory/non-statutory sites of nature conservation interest (see Figure 3a) including the Meadow South of Rosedale Sports Ground LWS, Wormley Hoddesdonpark Woods SAC and SSSI located approximately 2.5km northwest of the proposed development site, and the Cornmill Stream and Old River Lea SSSI approximately 4.5km southeast;
- Subsurface utilities and services; and
- Workers – the effect on people working near or on the development site.

3 THE PROPOSED DEVELOPMENT

3.1 Although subject to further minor changes, the masterplan (shown in Figure 4) for the proposed development envisages 388 new homes arranged within 14 development parcels. These development parcels will be situated around a linear central park.

3.2 The proposed development includes a local centre, one form entry primary school (with the potential to be expanded to a two form entry should this be required), elderly persons accommodation to the north of Andrew's Lane, which will create a community hub alongside the Rosedale Sports Club.

3.3 The local centre and primary school will be located at a central location within the site (see Figure 4) ensuring that they are within a comfortable, 10 minute walking distance (max. 800m) to all of the residents.

3.4 Public Open Space will be developed comprising approximately 24 ha, and 4ha of land will be used for sports facilities as an extension to the Rosedale Sports Club.

3.5 Pedestrian and cyclist-friendly connections will be created, designed to be attractive, safe and direct, with connections to local facilities, and the wider area via Burton Lane/ Goff's Lane.

Broxbourne Local Plan Consultation Document (July 2016)

3.6 The Broxbourne Local Plan Consultation Document was published in July 2016 and identifies 'Rosedale Park' as a new strategic location for growth within the Green Belt, described as "a largely residential development based on and around Tudor Nurseries and the Rags Valley".

3.7 Policy CH2 describes Rosedale Park as a series of *"interlinked new suburban parkland communities"* namely:

- Rosedale Park South (Tudor Nursery and environs)
- Rosedale Park North (Rags Valley)
- Rags Brook Park.

3.8 As described in Section 2, the 'Rosedale Park South (Tudor Nursery and environs)' component is under option by CEG and is referred to as Rosedale Park South within this Scoping Report. This is described within Policy CH2 as follows:

- Circa 340 new homes;
- Including a retirement 'village';
- 20% starter/shared ownership homes;
- 20% affordable rented homes;
- Low density parkland development between the nursery and the existing urban boundary;
- No more than 5% to be apartments;

- A local shop;
- Landscaped open space;
- Expanded sports pitches for Rosedale Sports Club;
- Extensive pedestrian connections, in particular to the proposed primary school in the Rags Valley.

3.9 The Rosedale Park North (Rags Valley) and Rags Brook Park components are those controlled by Crest and which make up 'Rosedale Park North' and are therefore covered by this Scoping Report. They are described within Policy CH2 as follows:

Rosedale Park North (Rags Valley)

- Circa 375 residential dwellings;
- Sensitivity to valley setting and views;
- Including elderly persons accommodation;
- 20% starter/shared ownership homes;
- 20% affordable rented homes;
- No more than 5% to be apartments;
- Two form of entry primary school;
- Andrew's Lane to become a local access route only; and
- Extensive pedestrian connections including with Tudor Nursery.

Rags Brook Park

- Fully accessible public park between Rosedale Way and Burton Lane, with multiple connections to Andrew's Lane, Peakes Way and Goff's Lane;
- Net gains in biodiversity across the development;
- Extensive tree planting throughout the development;
- Expansion of Rosedale Sports Club; and
- Enhanced facilities at Rosedale Sports Club including an all weather pitch and expanded sports area.

3.10 The Council state in the BLPCD (Chapter 7) that the existing area *"lacks cohesion, completeness and sense of identity"*. The proposed development will integrate land from the Green Belt with the existing housing to the east of the site, easing the demand for housing within the area to cope with expected population increases, whilst maintaining significant green and open space and creating access to the land in Rags Valley.

3.11 The local road network will also be designed to ensure local bus services have access to the site, and to ensure they are safe for cyclists to use.

Construction Phase

3.12 The ES will provide details of the proposed development programme together with specific construction activities and methods, and their anticipated duration. Information will be provided on, but not limited to, site preparation and construction logistics, including: site access and egress; materials and waste management; principal construction plant; welfare facilities; and working hours.

3.13 Estimates of wastes and the quantities of materials to be used throughout the construction phase will be considered, and an estimate of the monthly peak periods of heavy goods vehicle (HGV) movements will be provided.

3.14 The ES will define and assess the potential impacts of a reasonable 'worst case' scenario. The peak period or level of activity will be assessed in terms of traffic, noise and air quality effects. An indication of the plant and equipment to be used on site will also be given.

3.15 The mitigation measures identified will be presented within the ES for future inclusion within a Construction Environmental Management Plan (CEMP), or similar.

Figure 4: Proposed Development Masterplan (Version 2099-SK-1105.3-Y)

4 CONSULTATION

4.1 In the lead up to the planning application and throughout the development design, a programme of consultation has and will continue to be undertaken with statutory and non-statutory consultees. Statutory consultees have already commented on the previous scoping report and will be given a further opportunity to comment upon the scope of this EIA; consultation will include the following organisations:

- BBC;
- Hertfordshire County Council;
- Environment Agency (EA);
- Historic England (HE) (formerly English Heritage);
- Natural England (NE);
- Hertfordshire and Middlesex Wildlife Trust (HMWT);
- Thames Water Utilities Ltd.;
- National Grid;
- Relevant local community groups.

4.2 A public consultation event is expected to be held on the 29th September and 1st October. Details are to be circulated to residents/ interested parties in due course.

4.3 A summary of relevant consultations will be presented in the introductory sections of the ES. This will provide details of any environmental issues raised and provide an audit trail of how the EIA process has responded.

5 LEGISLATIVE AND PLANNING POLICY CONTEXT

5.1 Each of the technical chapters contained within the ES will include reference to relevant national, regional and local planning policy, a summary of which is given below.

National Planning Policy and Guidance

5.2 The ES will have regard to the National Planning Policy Framework (NPPF) (2012), which replaced the previous suite of national Planning Policy Statements and Planning Policy Guidance documents and should be read alongside the national Planning Practice Guidance (PPG) online resource.

5.3 The policies contained within the NPPF articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.

Local Planning Policy and Guidance

5.4 The following is a list of relevant local planning policies and guidance which have been adopted by Broxbourne Borough Council.

Borough of Broxbourne Local Plan (2005)

5.5 This plan was adopted in 2005 and is the framework for guiding, controlling and bringing forward development in the Borough. It covers the period from 2001 – 2011.

5.6 Policies in the plan integrate with the Hertfordshire Structure Plan Review 1991-2011 which was adopted in 1998. The Development Plan for the Borough also comprises a Waste Local Plan and Minerals Local Plan produced by Hertfordshire County Council.

The functions of this Local Plan are*:*

a) *"To update the polices contained in the Borough of Broxbourne Local Plan Review (adopted in December 1994);*

b) *To relate the policies in the Structure Plan and national planning guidance to a local level; and*

c) *To provide a basis for the determination of planning applications and coordination of development in the Borough."*

5.7 In order to guide the Council when coming to decisions on planning policies, a number of policies have been developed under each of the section headings. These are as follows:

- Sustainability
- Green Belt and Countryside
- Housing
- Employment and education

- Community, leisure and tourism
- Transport
- Implementation

July 2016 Draft Broxbourne Local Plan Consultation Document (BLPCD)

5.8 The draft Local Plan was released in July 2016, and the target is for the Plan to be fully adopted by the end of 2017. This Plan will then be in place until 2031.

5.9 Consultation on the Plan is open until 16th September 2016, with submission to the Planning Inspectorate expected at the end of March 2017.

5.10 The Plan sets out how Broxbourne will grow and develop, and become a more desirable place to live, work and visit. It provides strategic decisions on the type and location of developments, including Rosedale Park, with the aim of achieving sustainable development.

5.11 The Rosedale Park site has been identified as a site for strategic development and is detailed in Policy CH2. The details of what is to be included as part of the proposed development are outlined in Chapter 3 of this Scoping Report.

5.12 In regards to the proposed development, Policy CH2 also states:

"Section 106 agreements will accompany future planning permissions. These will finance the provision and maintenance of all on site infrastructure in full. Proportionate contributions will also be allocated to off-site priorities within the Infrastructure Delivery Plan.

Rosedale Park is to be developed in accordance with a comprehensive master plan. Incremental development of the area will be resisted.

If necessary, compulsory purchase will be pursued by the Council to assist in the timely and high quality delivery of the development."

5.13 The Local Plan also provides updated and more detailed information on that from the 2005 Local Plan on a number of key topics which the Council requires addressing as part of their aim to promote sustainable development within the community. As well as the topics detailed above from the 2005 Local Plan, the following relevant sections are now included within the BLPCD:

- Infrastructure
- Design and Sustainable Construction
- Economic Development
- Open Space, Recreation, and Community Facilities
- Water
- Natural Environment and Biodiversity
- Environmental Quality

5.14 Each of these sections includes detailed information and relevant policies which must be incorporated into the planning stage of the development. The meeting of these new policies will give the proposed development the best chance of having planning permission granted by the Council.

Borough Wide Supplementary Planning Guidance (SPG)

5.15 This supplementary guidance (adopted 2004 and updated 2013) was prepared in conjunction with the Borough of Broxbourne Local Plan (2005). It contains the details of further development standards to assess planning applications, advice on how certain policies are interpreted by BBC, and a checklist of required information.

5.16 Relevant information contained in various SPG documents includes:

- Housing
- Car Parking
- Waste
- Crime
- Open Space
- Development in the Green Belt
- Development in the floodplains

6 GENERAL APPROACH TO THE EIA

Introduction

6.1 The ES will be prepared in accordance with the EIA Regulations and guidance set out below, and taking into consideration the views of those consulted.

6.2 The EIA will consider the likely significant environmental effects of the development, utilising current knowledge of the site and the surrounding environment. Based on the findings of the studies undertaken as part of the EIA, methods of preventing, reducing, or offsetting significant adverse effects (collectively known as 'mitigation measures'), and methods to enhance any beneficial effects, will be set out in each relevant technical chapter of the ES. These studies, which have been ongoing since 2013, have helped to inform and shape the current masterplan

EIA Statutory Requirements and Guidance

6.3 The ES will be prepared in accordance with legislative requirements and current guidance for EIA. In particular, the ES will be prepared with due consideration to:

- Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (amended 2015), which were prepared to meet the requirements of European Council (EC) Directive 85/337/EEC (as amended by 97/11/EC)
- EU Directive 2014/52/EC, which is likely to be transposed into UK legislation on or before 18th May 2017.
- The Department for Communities and Local Government Planning Practice Guidance on EIA launched on 6th March 2014 available at:

  http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment; and
- Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Impact Assessment, 2004 (amended 2006).

Structure of the Technical Chapters

6.4 Throughout the EIA process, the likely significant environmental effects of the proposed development will be assessed. Each environmental topic scoped into the EIA (identified in Section 7 of this Scoping Report) will be addressed in a separate technical chapter of the ES. Within each of these technical chapters, the assessment will be structured in the following way:

Introduction

6.5 This will provide a summary of what is considered in the chapter and will state the author and/or relevant technical contributor.

Legislation, Guidance and Planning Policy Context

6.6 This section will summarise the key legislation and national, regional and local planning policies that are relevant to the particular environmental topic being considered and the assessment being undertaken. Where relevant, appropriate guidance will also be summarised.

Assessment Methodology and Significance Criteria

6.7 This section will describe any assumptions made or assessment limitation, as well as the methods used to carry out the technical study. It will also include an outline of the approach used to define the significance of environmental effects for the subject topic with reference to published standards, guidelines, best practice and relevant significance criteria.

6.8 Where a detailed methodological description is required, this will be provided in the appropriate technical appendix.

Baseline Conditions

6.9 The baseline conditions of the existing site and surrounding areas (in the absence of the proposed development) will be described for the environmental topic being considered.

6.10 The baseline conditions will describe the receptors or resources that could be impacted by the construction or operation of the proposed development, and will state the relative sensitivity or importance of these. Together, this will provide the context against which the likely significant environmental effects of the development will be assessed.

Incorporated Mitigation

6.11 This section will be provided before the impact assessment section to account for 'designed in' standard/ best practice mitigation. As such, the 'assessment of effects' will be undertaken on the basis that many such measures are already assumed (and can be secured by planning conditions, where necessary).

Potential Impacts

6.12 This section will identify the likely effects arising from the proposed development and will consider the effects during construction, and once the development is occupied and operational. The assessment will be undertaken against the established environmental baseline conditions.

Mitigation and Residual Effects

6.13 Should adverse effects be identified (particularly 'significant' effects), this section will describe further mitigation measures that will be committed to by the Applicant to reduce or offset these. Such measures may relate to design, construction or operational management activities.

6.14 This section will also identify the residual effects of the proposed development, assuming implementation of the proposed mitigation measures, and state whether any are significant or not.

Cumulative Effects

6.15 This section will assess the Type 1 and 2 cumulative effects of the environmental topic alongside other identified developments as outlined in Table 6.3.

Alternatives Assessment

6.16 The EIA process provides an opportunity to consider alternative development options with their respective environmental impacts before a final decision is taken on the design. In accordance with the EIA Regulations and statutory guidance, the ES will describe those alternatives that were considered by the Applicant, project team and architects, including:

- 'Do nothing scenario' – the consequences of no redevelopment taking place on the site;
- 'Alternative sites' – consideration of any reasonable alternative locations for the proposed development and the rationale behind the selection of the site; and
- 'Alternative designs' – the ES will summarise the evolution of the design of the proposed development; the modifications which have taken place to date and the environmental considerations which have led to those modifications. A summary of the main alternatives considered will be presented together with a justification for the final design.

Evaluation of Significance

6.17 The concept of 'significance' is central to the EIA process. The classification of significance aids the decision maker (in this case the BBC) in identifying the main environmental effects of the proposed development and, secondly what weight should be given to these effects in reaching its decision concerning whether or not to grant planning permission. The importance given to any adverse effect (e.g. temporary construction impacts) must be weighed against beneficial effects (e.g. provision of new residential units to meet housing needs in the borough, and security for the future use and integrity of the Rosedale Park North site), where there is a demonstrable need for this.

6.18 There is no statutory definition of what constitutes a significant effect and guidance is implicitly of a generic nature. However, it is widely recognised that 'significance' reflects the relationship between the magnitude of an impact and the sensitivity (or value) of the affected resource or receptor. Statutory designations and any potential breaches of environmental law take precedence in determining significance, because the protection afforded to a particular receptor or resource has already been established as a matter of law, rather than requiring a project or site-specific evaluation. Thus, effects resulting in unacceptable risks to human health and safety, the pollution of controlled waters or harm to protected species cannot be permitted.

6.19 The following approach provides a common framework within which the significance of the effects for all environmental topics arising from the proposed development will be predicted.

6.20 Specific criteria for the assessment of each potential effect have been developed giving due regard to the following:

- Extent and magnitude of the effect;
- Effect duration (whether short, medium or long term);

- Nature of effect (whether direct or indirect, reversible or irreversible);
- Performance against environmental quality standards;
- Sensitivity of the receptor; and
- Compatibility with environmental policies.

6.21 Within the ES, a generic description will be used in many of the technical chapters to define the level of significance of effects, as provided in Table 6.1.

Table 6.1: Generic Significance Thresholds

Level of Significance	Description
Substantial	Very large or large change in environmental or socio-economic conditions. Effects, both adverse and beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceedance of statutory objectives and/or breaches of legislation.
Moderate	Intermediate change in environmental or socio-economic conditions. Effects that are likely to be important considerations at a local level.
Minor	Small change in environmental or socio-economic conditions. These effects may be raised as local issues but are unlikely to be of importance in the decision making process.
Negligible	No discernible change in environmental or socio-economic conditions. An effect that is likely to have a negligible or neutral influence, irrespective of other effects.

6.22 The following matrix (Table 6.2) will generally be applied throughout the ES to determine the scale or magnitude of effects or impacts. Where different assessment criteria have been used, this will be clearly stated within the relevant chapter.

Table 6.2: Impact Magnitude Matrix

Sensitivity / value of receptor	Magnitude of effect or impact			
	High	**Medium**	**Low**	**Negligible**
High	Substantial	Substantial	Moderate	Minor
Medium	Substantial	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible

Sensitivity / value of receptor	Magnitude of effect or impact			
	High	**Medium**	**Low**	**Negligible**
Negligible	Minor	Negligible	Negligible	Negligible

6.23 Following their identification, significant effects will be classified on the basis of their nature and duration as follows:

- Beneficial – effects that have a positive influence on receptors and resources;
- Adverse – effects that have a negative influence on receptors and resources;
- Temporary – effects that persist for a limited period only (due for example, to particular activities taking place for a short period of time);
- Permanent – effects that result from an irreversible change to the baseline environment (e.g. land-take) or which persist for the foreseeable future (e.g. noise from regular or continuous operations or activities);
- Direct – effects that arise from the impact of activities that form an integral part of the scheme (e.g. direct employment and income generation);
- Indirect – effects that arise from the impact of activities that do not explicitly form part of the scheme (e.g. off-site infrastructure upgrades to accommodate the development);
- Secondary – effects that arise as a consequence of an initial effect of the scheme (e.g. induced employment elsewhere); and
- Cumulative – effects that can arise from a combination of different effects at a specific location or the interaction of different effects over different periods of time.

6.24 Short to medium term impacts are considered to normally be associated with physical construction, and long term impacts are normally associated with a fully occupied and operational scheme.

Cumulative Schemes

6.25 In accordance with the EIA Regulations, the EIA will give consideration to 'cumulative impacts'. For the cumulative assessment, two types of impact will be considered:

- Type 1 (or 'in-combination' or 'intra-project') impacts - The combined effect of individual impacts from the proposed development, for example noise, airborne dust or traffic on a single receptor; and
- Type 2 (or 'additive' or 'inter-project') impacts - The combined impacts of the proposed development with other nearby submitted, consented or under construction development schemes, which may, on an individual basis be insignificant but, cumulatively, have a likely significant effect.

6.26 Schemes that will be considered within the Type 2 cumulative assessment comprise those which:

- Are submitted, with planning permission (or with a resolution to grant consent) and those under construction;
- Are located within a 2km radius of the site; and
- Are major projects, and either subject to EIA themselves, or result in an increase of more than 150 residential units or 10,000m^2 Gross External Area in floor area.

6.27 Additional schemes not meeting these criteria may be considered by exception and/or if specifically requested by BBC. Table 6.3 sets out the provisional list of schemes to be considered within the additive cumulative impact assessment. The locations of these cumulative schemes are illustrated on Figure 5.

6.28 The Rosedale Park South (Tudor Nursery) scheme, being promoted by CEG, is adjacent to the Rosedale Park North site. The two sites have been jointly allocated within the BLPCD but will be submitted as separate planning applications. Whilst the two applicants (CEG and Crest) have been in regular dialogue regarding the inter-relationship of the developments, the Rosedale Park South (Tudor Nursery) masterplan is not sufficiently advanced (at this time) to allow for a fully integrated EIA process to be undertaken. Therefore, it is necessary to clarify how the two schemes will be dealt with in the ES with regards to cumulative effects.

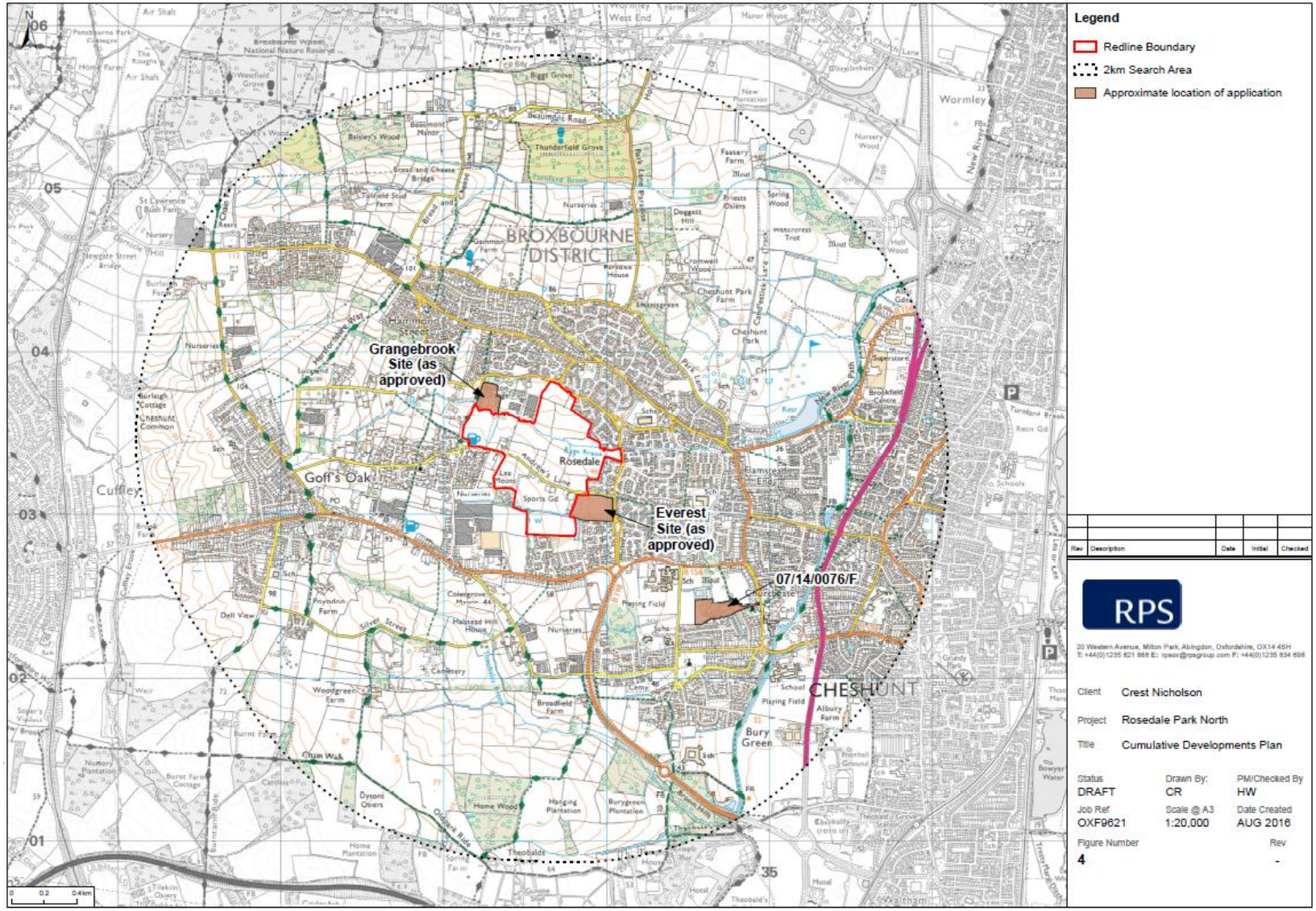
6.29 The Rosedale Park North application is anticipated to be submitted late 2016 whereas the CEG Rosedale Park South (Tudor Nursery) application may not be submitted until 2017 or later. For this reason, the Rosedale Park North ES will only be able to consider the known details of the Rosedale Park South (Tudor Nursery) project at the time of submission. A section within each chapter will outline the cumulative effects specifically with the Rosedale Park South (Tudor Nursery) scheme, with further commentary on the cumulative effects from these two schemes provided within the Cumulative Effects chapter.

Table 6.3: Details of Cumulative Schemes Proposed

New Ref	Address	Application ref	Description	Decision
1	Grangebrook Site	07/15/0856/F	Demolition of existing buildings and construction of 14 five bedroom dwellings with associated landscaping and car parking	Approved
2	Sovereign Gate	07/12/0524/O	Outline planning permission for the demolition of concrete foundation posts of former clubhouse, removal of hardstanding and redevelopment of the application site to provide 96 residential units together with associated car parking, highways, landscaping and other works including new access to the site from Andrew's Lane	Construction complete

3	Former St Marys High School Site, Churchgate, Cheshunt, Hertfordshire	07/14/0076/F	Demolition of all existing buildings and replacement with the erection of 79 residential dwellings comprising 12 apartments and 67 houses, provision of open spaces and landscaping, provision of an internal vehicular network and associated highway works and car parking, and creation of an attenuation pond	Approved

Figure 5: Cumulative Developments

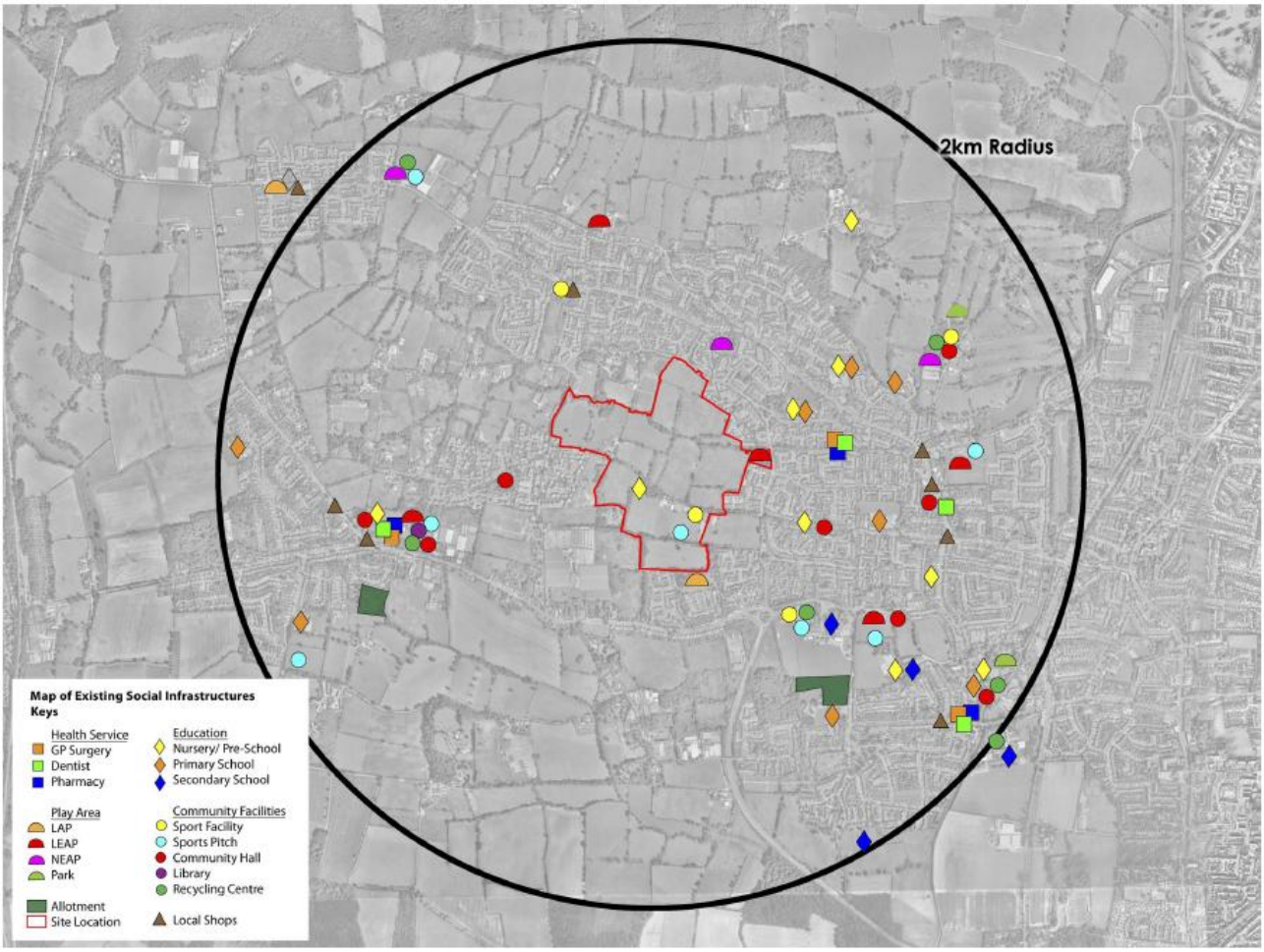


7 SOCIO-ECONOMICS

Key Issues/Baseline Overview

7.1 The development site lies to the west of Cheshunt and to the east of the settlement of Goff's Oak. This assessment will consider the social baseline within a 2 km radius of the application site which encompasses these two areas in order to provide a combined picture of their social and economic makeup.

Figure 6: Map of Social Infrastructures Around the Site



7.2 The land south of the site is currently being used largely for sport and accommodates a number of sports pitches and clubs.

7.3 Data from the Office for National Statistics (ONS) suggests that the local neighbourhood is generally in 'good' or 'very good' health (35.2% and 48.7%), and that overall the deprivation rank is 24985 out of 32844 in the index of multiple deprivation, suggesting the area is not deprived. Barriers to housing and education are the main deprivation factors, although these are still not significant.

7.4 Further information will be sourced from the Office of National Statistics (ONS) Labour Force and Neighbourhood Statistics (2014), and Annual Population Survey (2014) to provide greater details on the socioeconomic baseline of the local area.

7.5 Apart from Garryross Farm, the site is not currently populated and so the baseline conditions for the surrounding local area in which the site is located will be established with reference to the following sources:

- A policy review will provide an outline of the relevant local and regional, social and economic policies and objectives for the area, together with the national policy context and relevant government statements to help provide a picture of the key socio-economic issues of relevance to the site and the surrounding area;
- A desk based review of the current economic and labour market characteristics of the main impact area including its demographic profile, job growth, indices of deprivation and crime, unemployment rates, car ownership, income levels and skills levels of the workforce. This will establish any strengths and weaknesses of the local economy;
- A desk based review of the current provision of housing and community infrastructure (e.g. provision of health facilities, schools and other relevant community facilities, including shops and services, and recreation, leisure and open space, within the local area). Where appropriate, the assessment will highlight any existing deficiencies or surplus capacity in such provision and any new facilities already planned; and,
- Where required, liaison and dialogue with BBC and other important stakeholders for information regarding the economic, employment, housing and community aspirations for the local area.

Potential Impacts

7.6 The main issues and impacts predicted, and therefore to be addressed in the ES, include:

- Construction phase employment opportunities (and wider economic multiplier effects);
- Provision of new homes (including affordable homes) and housing for the elderly;
- Implications of the new residential population upon local services and facilities (including, healthcare, education, community facilities and open space);
- Additional expenditure and revenue generated by the new site population and occupants;
- Creation of new direct and indirect, long-term employment opportunities (and wider economic multiplier effects);
- Effects of redefining the site's access, public space and amenity provision, including the wider benefits of connectivity, together with real and perceived improvements to the attractiveness and public safety of the site;

Approach and Methodology

7.7 The assessment will seek to establish the potential economic and social contributions of the proposed development and assess the impacts against the current baseline.

7.8 The proposed methodology will make reference to the standard EIA significance criteria terminology detailed in Chapter 6, in terms of the likely nature, scale, permanence and significance of effects, and will include:

- A review of relevant social and economic policy at national and local levels;
- Establishment of the socio-economic baseline conditions at the site and within the BBC area (including population, housing, employment and economy, educational facilities, healthcare facilities and open space provision) using established statistical sources of information such as the 2011 Census, Business Register and Employment Survey (BRES) (2012);
- A review of direct, indirect and induced impacts on local spending will also be considered, as well as the broader social and community impacts; and

7.9 Both quantitative and qualitative methods will be used in this assessment.

8 TRANSPORT AND ACCESS

8.1 The transport and access chapter will be based on the findings of the Transport Assessment (TA) being prepared by Vectos. This chapter of the ES will consider transport related environmental effects of the proposed development during the construction and operational phase of the development, with reference to the Institute of Environmental Management and Assessment (IEMA) guidelines.

8.2 The ES Chapter will consider the effect of the proposed development in the future year assessment and this will also include consideration of cumulative schemes as outlined in section 6 which will be agreed with Hertfordshire County Council (HCC) through a separate TA Scoping Assessment. The ES Chapter will identify the potential impacts of the proposed development, propose an appropriate mitigation strategy then conclude with an assessment of the residual impacts.

8.3 The planning application will be accompanied by a full Transport Assessment (TA) presented as a technical appendix to the ES. The exact scope of the TA (upon which the ES chapter will be based) will be agreed with HCC.

Key Issues/Baseline Overview

Highway Network

8.4 Andrew's Lane runs east-west through the site and has the character of a rural lane with no continuous footpaths on either side of the road. Andrew's Lane currently provides access to a variety of land uses including the Rosedale Sports Club, Garryross Farm, Rafles Nursery and a number of residential properties.

8.5 To the north of the site, Peakes Way is a single carriageway local distributor road that is a continuation of Rosedale Way.

8.6 Rags Lane to the west of the site has the character of a rural country lane with no footways on either side of the carriageway. To the south of Rags Lane, Burton Lane is a single carriageway road that provides a link between St James' Village and the B156.

8.7 To the east of the site, Rosedale Way is a local distributor road that connects to the B156 Goff's Lane in the south and to Peakes Way in the north. Rosedale Way is a single carriageway road, but widens to a 2 lane dual carriageway at the roundabout to the south east of the new residential development (Sovereign Gate). From this roundabout the B156 Goff's Lane is a secondary distributor road that runs east/west and provides connections to Goff's Oak to the west and into Cheshunt to the east.

8.8 To the south of the junction is the B198 Lieutenant Ellis Way which is also a secondary distributor road. This 2 lane dual carriageway connects to the A10 immediately to the north of the junction with the M25.

8.9 The site is well connected to the A10 to the south via roads that are mainly dual carriageways. This would be the main direction of travel for those living on the site (see figure 7).

8.10 As part of the development proposals, the main site access will be via a new priority junction from Andrew's Lane, whilst Andrew's Lane itself will become the minor road, used for access only. The major route, including access for buses, will be provided within the new residential site.

8.11 There are four secondary accesses including an access from Peakes Way to the northern area of housing (north of Rags Brook) and three accesses to limited areas of housing at the western end of Andrew's Lane. All of these accesses are simple T-junctions. Andrew's Lane will retain its rural country character remaining open to provide access to Rosedale Sports Club, the children's nursery (Rafles Nursery) (located next to Rosedale Sports Club) and to Lea Mount.

Pedestrian and Cycle Accessibility

8.12 In terms of pedestrian environment, there is a footway at the eastern end of Andrew's Lane on the northern side of the road with a section of footway on the southern side of the road which provides a direct pedestrian link through to Rosedale Sports Club.

8.13 There are good existing facilities for pedestrians around the site with the majority of roads (excluding Andrew's Lane) having dedicated footways on both sides. There are also footpaths to the east, west and north-east of the site. All existing pedestrian and cycle links are shown in Figure 8.

8.14 Consideration has been given to the existing local facilities in the area within a 2km walking distance. This is consistent with Government guidance, which explains that walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2 km.

8.15 In terms of the environment for cycling, there are no dedicated cycle facilities on Andrew's Lane or in the immediate vicinity of the site. However, there is a traffic free route along Goff's Lane east of the Goff's Lane (W) / Rosedale Way / Goff's Lane (E) / Lieutenant Ellis Way roundabout. This traffic free cycle route is facilitated by a shared pedestrian / cycleway. There is also a north-south route along Dark Lane, accessed from Goff's Lane that leads to Capel Manor Environmental Centre, approximately 3km south of the site.

8.16 Consideration has been given to the existing local facilities in the area within a 5km cycling distance. This is consistent with Central Government guidance, which explains that cycling has the potential to replace many short car trips under 5 km.

8.17 While there are limited dedicated cycling facilities in the vicinity of the site, there is the opportunity for cyclists to use the roads. A large number of transport facilities are within 5 km of the site, including the railway station.

Public Transport

8.18 There are a number of existing bus stops located on Rosedale Way and Hammondstreet Road within a short walking distance of the site.

8.19 The bus stops on Rosedale Way serve the following bus routes:

- 242 Service – between Potters Bar and Waltham Cross – 30 minute frequency on weekdays, 60-90 minute frequency on Saturday and 120 minute frequency on Sunday.

8.20 The bus stops on Hammondstreet Road serve the following bus routes:

- 251 Service – between Hammond Street and Upshire – 20 minute frequency Monday to Saturday only.

8.21 The closest railway station to the site is Cheshunt, located in the town centre approximately 4 km east of the site. This station is managed by National Express East Anglia and services are provided to local towns and beyond. The train services from the station operate every 10 minutes between Hertford East and Liverpool Street during peak times. Existing bus services that operate near to the site provide a connection to the railway station.

8.22 In addition, there is also a station in Cuffley which is located approximately 5km to the west of the site which provides additional rail services.

Potential Impacts

Construction Impacts

8.23 The environmental effects of changes in traffic as a result of the construction of the proposed development will be determined using pre-defined significance criteria for each mode of travel, as set out within the Institute of Environmental Management and Assessment (IEMA) publication 'Guidelines for Environmental Impact Assessment' (2004). Those criteria will be based on the increase in traffic as a result of the proposed development. The significance criteria will establish the magnitude of any beneficial or adverse traffic and transport impacts of the proposed development.

8.24 The key effects which will be assessed are as follows:

- **Severance** is defined as the perceived division that can occur within a community when it becomes separated by a major traffic artery and describes a series of factors that separate people from places and other people. Such division may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself.
- **Pedestrian delay** is defined in the IEMA guidelines as an issue which is affected by changes in the volume, composition and / or speed of traffic may affect the ability of people to cross roads. Typically, increases in traffic levels result in increased pedestrian delay, although increased pedestrian activity itself also contributes.
- **Pedestrian amenity** is defined in the IEMA guidelines as the relative pleasantness of a journey and can include fear and intimidation if they are relevant. As with pedestrian delay, amenity is affected by traffic volumes and composition along with pavement width and pedestrian activity.
- **Driver delay** is identified in the IEMA guidelines as issue which can occur at several points on the network, although the effects are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system.
- **Accidents and safety** are not defined in the IEMA guidelines which suggests that professional judgement will be needed to assess the implications of local circumstance, or factors which may increase or decrease the risk of accidents. The full results of the accident analysis will be reported in the TA.

Potential Operational Effects

8.25 As part of the proposed development, a number of non-vehicular accesses are proposed for pedestrians and cyclists to the site:

- Rags Lane to the west;
- Andrew's Lane to the south;
- Rosedale Way to the east; and
- Peakes Way to the north.

8.26 Under the masterplan for Rosedale Park North pedestrian links are proposed into the existing recreational ground so that the site is permeable through a pedestrian cycle link. Further details on the masterplan can be found in Chapter 3.

8.27 The site will be designed to create a walkable and cycleable community which is a key element to successful and sustainable developments.

8.28 Footpaths will be located at the front of dwellings so they have good surveillance and designed to high standards including dropped kerbs, to encourage inclusive access;

8.29 As stated in Chapter 3, the local road network will allow for existing bus services to divert into the site from Rosedale Way. This would provide outside access to facilities on the site, such as the school and local centre, and allow residents to have easy access to public transport with bus stops being located at the local centre. Discussions will be held with operators to try and achieve this.

8.30 The potential impacts of traffic from the proposed development on the road network can be found at figure 6.7 on the 'Traffic Assignment Plan'. This shows the predicted routes that will be taken by traffic from the development, which can help assess which roads will have increased traffic on them.

Approach and Methodology

8.31 The environmental effects of changes in traffic as a result of the proposed development will be determined using pre-defined significance criteria for each mode of travel, as set out within IEMA Guidance (2004). Those criteria will be based on the net change in journeys as a result of the proposed development. The significance criteria will establish the magnitude of any beneficial or adverse traffic and transport impacts of the proposed development.

8.32 The key assessment areas are the same as those in the potential construction effects section above. Further areas such as the impact on public transport will be dealt with in the Transport Assessment, with a short summary provided in the ES chapter.

8.33 The transport and access impact of the development proposals will be assessed in line with both guidance contained in the DfT publication 'Guidance on Transport Assessment' (March 2007) and the IEMA Guidance referred to above.

8.34 This chapter will consider the effect of the proposed development on all of the surrounding local roads and identify the impact on the wider highway network.

Technical Scope

8.35 As discussed above in the section on construction impacts, the assessment of operational effects on the completed development will consider traffic-related issues such as severance, pedestrian amenity, pedestrian delay, driver delay and accidents and safety. All other transport issues will be dealt with in the Transport Assessment.

Baseline Assessment

8.36 Baseline data will be gathered from the following sources:

- Site visits / on-site observations;
- Discussions with Hertfordshire County Council;
- Traffic survey and accident data;
- Published / web based information; and
- Local, regional and national policy documents.

Effect Prediction and Assessment of Effect Significance

8.37 The potential effects of the proposed development will be determined by considering the following scenarios:

- Existing baseline year;
- Future baseline without the proposed development; and
- Future baseline with the proposed development.

8.38 Within the IEMA guidance, two broad rules are suggested which can be used as a screening process to limit the scale and extent of the assessment:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%);
- Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.

8.39 Where the predicted increase in traffic flows is lower than the above thresholds, the IEMA guidelines suggest the significance of the effects can be stated to be negligible and further detailed assessments are not warranted. Increases in traffic flows below 10% are generally considered to be insignificant in environmental terms given that daily variations in background traffic flow may vary by this amount.

8.40 The effect of the development proposals will be defined by Rule 1 and 2 above but will also take into account the sensitivity of the receptors and the magnitude of the impact to determine the significance of the effect.

8.41 In relation to the sensitivity of a receptor (a road in this case) can be defined by the vulnerability of the user groups who may use it, e.g. elderly people or children. A sensitive area may be where

pedestrian activity may be high, for example in the vicinity of a school or where there is already an existing accident issue. It should be noted that the sensitivity of the receptor is judged on the sensitivity of road users (primarily pedestrians). It also takes account of the existing nature of the road e.g. an existing "A" road is likely to have a lower sensitivity than a minor residential road.

Table 8.1: Sensitivity of Receptors

Receptor Type	Receptor Sensitivity
The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance. Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident clusters, retirement homes, roads without footways that are used by pedestrians.	Major
The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance. Traffic flow sensitive receptors: congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, recreation facilities	Moderate
The receptor/resource is tolerant of change without detriment to its character, is of low or local importance. Receptors with low sensitivity to traffic flow: places of worship, public open space, tourist attractions and residential areas with adequate footway provision.	Minor
Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions	Negligible

8.42 The effect of the proposed development will be assessed by determining the magnitude of the change from the baseline conditions.

8.43 To assist with the judgement of magnitude of impact, reference has been made to the IEMA guidelines. These thresholds are guidance only and provide a starting point by which a detailed analysis will inform a subjective analysis of the impact magnitude.

Table 8.2: Magnitude of Impacts

Impact	Magnitude			
	Negligible	Minor	Moderate	Major
Severance	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Pedestrian Delay	Two way traffic flow < 1,400 vehicles per hour.	A judgement based on the road links with two way traffic flow exceeding 1,400 vehicles per hour in context of the individual characteristics		
Pedestrian Amenity	Change in total traffic or HGV flows < 100%	A judgement based on the routes with >100% change in context of their individual characteristics		
Driver Delay	A judgement based on the results of junction capacity assessment			
Accidents and Safety	A judgement based on the findings of the baseline accident analysis			

8.44 The significance of the effect is judged on the relationship of the magnitude of impact to the assessed sensitivity and/or importance of the receptor.

8.45 The significance of effect will be considered for the sensitive receptors identified. These will address instances in which there are traffic flow increases which may result in ‘adverse’ impacts, but also where there are traffic flow reductions which may result in ‘beneficial’ impacts.

8.46 Potential effects are therefore concluded to be of negligible, minor adverse, moderate adverse, substantial adverse, minor beneficial, moderate beneficial, or substantial beneficial significance.

Figure 7: Traffic Assignment Plan

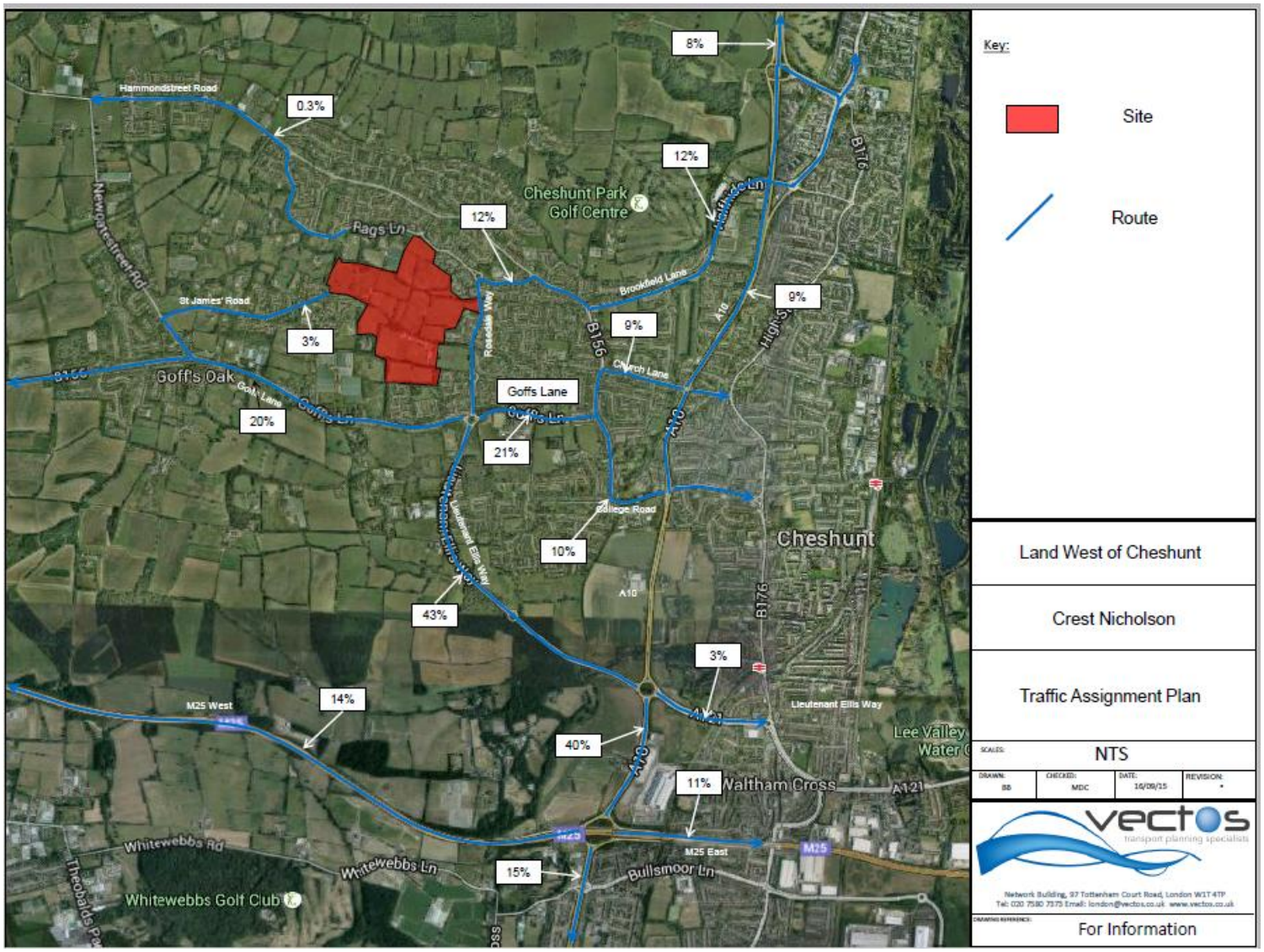
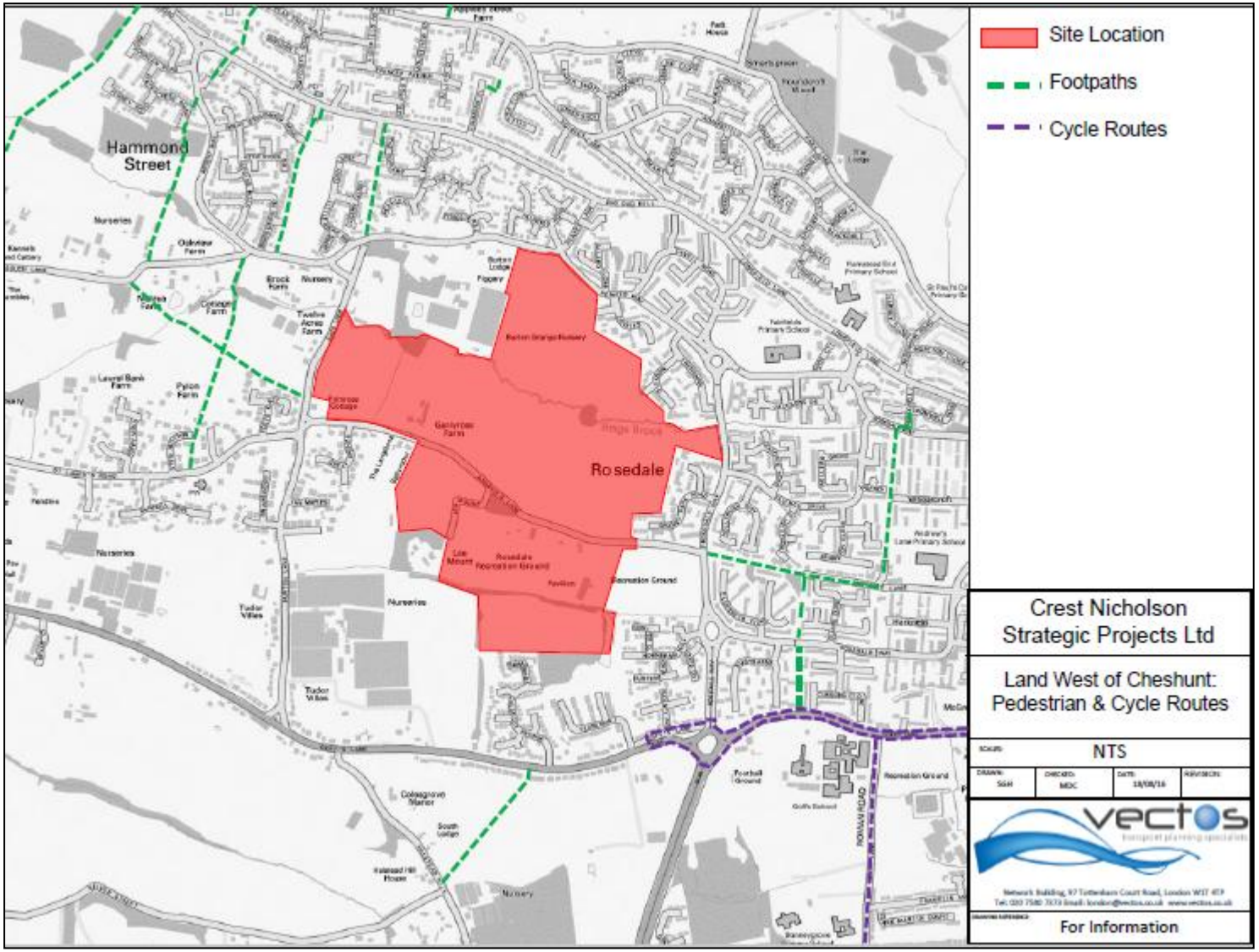


Figure 8: Existing Pedestrian and Cycle Routes



9 NOISE AND VIBRATION

9.1 This chapter of the ES will be prepared by PBA and will consider the potential environmental effects on sensitive receptors from noise and vibration associated with the construction and operation of the proposed development.

9.2 With regard to potential noise and vibration effects associated with the proposed development, key, potentially significant issues are considered to be:

- Construction Effects: noise and vibration effects from activities associated with the construction of the proposed development.
- Operational Effects: noise and vibration effects from activities associated with the operation of the proposed development, including % changes in traffic flow characteristics on the local road network; deliveries, and potential mixed use conflicts (i.e. visitors to the local centre, school and residents).

Key Issues/Baseline Overview

9.3 Potential noise effects resulting from the operation of the development are likely to be related to traffic generation and movements, the operation of building services plant and the operation of commercial ground floor land uses.

9.4 Accordingly, the ambient noise environment is likely to comprise sound from vehicular movements on the surrounding road network including the B198 and B156 amongst other smaller roads as described in the previous section.

9.5 In addition, Rosedale Sports Club holds occasional social functions that could impact on receptors located close to the facility.

9.6 The development itself has the potential to generate additional sources of noise and vibration during the construction phases, and upon completion and operation of the development.

9.7 There are no major sources of vibration in the vicinity of the development nor is it expected that the operation of the development will generate significant levels of vibration. Therefore, a simplified qualitative assessment of vibration from the proposed changes in traffic levels will be undertaken.

9.8 Considering the range of potentially sensitive existing and future residential and commercial land uses within and in proximity to the site, the EIA will consider potential effects of existing background and future noise levels upon a range of identified noise sensitive receptors.

Potential Impacts

9.9 Potential noise and vibration effects will be dependent on the various stages of the development. Effects to be assessed within the EIA are summarised below:

- Noise and vibration effects on buildings and their occupants surrounding the site during the construction works and on existing and future residents in the area from vehicular

movements generated during the construction of the development and once completed and operational;

- Suitability of the site for its proposed use in the predicted future noise environment; and
- Effects of building services plant from the development and the routine control of noise from such plant on existing and future residents in the area.

Approach and Methodology

Construction Noise

9.10 The construction phase of the proposed development will be assessed to determine any potential effects on existing and potential future noise sensitive receptors, both in the existing and 'with development' situations.

9.11 The likely on-site construction noise and vibration levels will be assessed with reference to British Standard BS5228 'Noise and Vibration Control on Construction and Open Sites'; BS7385 'Evaluation and Measurement for Vibration in Buildings'; and BS6472 'Guide to Evaluation of Human Exposure to Vibration in Buildings'. Consideration will also be given to road traffic noise generated by construction related vehicles associated with site works.

9.12 Comprehensive day and night-time baseline noise surveys will be undertaken at appropriate locations, in addition to those already undertaken to the north of Andrew's Lane.

9.13 Verification of these baseline sound levels for the site and calculation of future 'with-development' and 'without-development' sound levels for the site will be completed to ensure they are both accurate and reliable so that appropriate comparisons can be made.

Operational Noise

9.14 The fully occupied or operational development will be assessed to determine any potential effects on existing and proposed future noise sensitive receptors, including the effects of deliveries, road traffic and potential mixed use conflicts.

9.15 Façade incident noise levels will not be considered in determining the suitability of the site for residential development. Achieving suitable internal noise levels will be the overarching suitability criterion.

9.16 Incident transportation noise will be assessed based on the guideline internal noise levels presented in Table 4 of BS: 8233:2014 the World Health Organisation 'Guidelines for Community Noise'. These levels will be set as the Lowest Observed Adverse Effect Level (LOAEL) and measures will be proposed with the aim for the majority of habitable rooms to reach these levels as far as reasonably practicable.

9.17 The daytime period for the transportation noise assessment will be defined from 07:00 to 23:00 hours and the night-time period from 23:00 to 07:00 hours.

9.18 The LOAEL for external noise in gardens will be set at 50 dB LAeq (16 hours). Reasonable practicable mitigation measures will be proposed in order for the majority of the proposed gardens (or areas in the gardens) to reach this level.

9.19 The assessment of noise and vibration generated by road traffic and the proposed servicing strategy for the development will be completed using the results of the TA.

9.20 Where possible the evaluation of noise effects resulting from the operation of the new building services plant will take place using the BS4142 ‘Method for rating industrial noise affecting mixed residential and industrial areas’.

9.21 An assessment will also take place of the noise generated by active ground floor uses.

9.22 Mitigation measures for both the construction and operational phases of the development will be recommended where appropriate with a view to reducing the levels of impact to below the identified LOAELs. This will include recommendations to optimise the residential suitability of the development.

9.23 The significance thresholds and criteria outlined in Chapter 6 will be applied to this Chapter in order to determine whether the potential impacts of the proposed development are significant.

10 AIR QUALITY

10.1 The air quality chapter of the ES will be prepared by PBA and will assess the potential air quality effects during the construction phase; changes in traffic flow characteristics on the local network; impact on local wildlife; and the environmental suitability of the development site for residential purposes.

Key Issues/Baseline Overview

10.2 BBC has declared three Air Quality Management Areas (AQMAs) within the borough, all located adjacent to the M25 motorway, whilst the neighbouring London Borough of Enfield has declared a whole borough AQMA. The impact of additional traffic generated by the proposed development upon air quality within the AQMAs will therefore need to be determined within the ES.

Potential Impacts

10.3 Potential impacts on local air quality to be considered in the ES are as follows:

- Impacts upon sensitive receptors from dust and emissions generated during the proposed construction activities;
- Temporary increases in traffic-generated emissions associated with construction related vehicles operating on the site and/or on the local road network;
- Long-term changes in local air quality particularly in relation to NO_x and PM_{10} levels, due to emissions from vehicles associated with the operation of the completed development;
- Effects of ambient air quality upon the occupants of the proposed residential units of the development (i.e. establishment of the suitability of the site for residential uses).

10.4 The Wormley-Hoddesdonpark Woods SAC and SSSI is located approximately 2.5km northwest of the proposed development site, and the Cornmill Stream and Old River Lea SSSI lies approximately 4.5km southeast. It may, therefore, be necessary to include an assessment of the impact of the development on these habitats if road traffic increases significantly on a road within 200m of these protected wildlife sites.

Approach and Methodology

10.5 Consultation will take place with BBC's Environmental Health Officer regarding the approach to the assessment, modelling methodology and assessment scenarios. The approach to the assessment will be consistent with relevant technical guidance LAQM.TG16 and will address concerns raised during the consultation.

10.6 A review of BBC's baseline ambient air quality conditions within the borough will be completed through the examination of their air quality review, and the assessment of documents and available monitoring data

10.7 A qualitative risk assessment of the air quality effects from the construction works using the Institute of Air Quality Management (IAQM) guidance: Guidance on the assessment of dust from

demolition and construction will be carried out. This information would then be compared with the baseline air quality data to determine whether there would be any significant effects.

10.8 ADMS-Roads air quality dispersion modelling of existing baseline, future ‘without development’ and future 'with development' ambient air quality will be completed using the traffic flow data provided by the project’s transport consultants.

10.9 A comparison of the predicted effects of the proposed development and the residential suitability of the site will be made against criteria derived from the IAQM/EPUK guidance (Land-use planning and development control: Planning for air quality), and the air quality criteria set out in the UK’s current Air Quality Strategy objectives.

10.10 Criteria set out in the Land Use Planning and Development Control: Planning for Air Quality (May 2015) produced by Environmental Protection UK will be used as framework guidance for the determination of the significance of the predicted effects.

10.11 Using the resulting data from the above, and the results from modelling, mitigation measures will be proposed for the operational phase, if required, along with appropriate construction mitigation measures based on the identified level of risk.

11 LANDSCAPE AND VISUAL IMPACT

11.1 This chapter of the ES will be prepared by The Landscape Partnership, and will determine the impact of the proposed development on identified landscape and visual receptors within and surrounding the proposed development site.

Key Issues/Baseline Overview

11.2 In terms of landscape character, the site is located within an area characterised by an undulating landform pattern comprising a series of east to west orientated ridges and valleys. The site is located between two ridges and focuses around the Rags Brook valley which forms a core feature with an intimate character. The main historic routes through the area, Andrew's Lane and Rags Lane, are narrow with strong banked and vegetated boundaries which form an important part of the local character. The site is an area of largely undeveloped countryside close to the built development of West Cheshunt and St James. There is currently very limited public access into the site.

Potential Impacts

11.3 Impacts will be considered for the various stages including construction, one year on from completion, and longer term (c. 15 years) following the development of mitigation measures. These potential impacts include:

- The removal of visually aesthetic natural habitats;
- The construction of buildings on natural landscapes;
- The impact on views from the 'Meadow South of Rosedale Sports Ground' LWS;
- The views from nearby residential properties; and,
- The views from roads, rail, and public footpaths.

Approach and Methodology

11.4 The Landscape and Visual Impact Assessment (LVIA) presented in this chapter will be in accordance with current guidelines including:

- Guidelines for Landscape and Visual Impact Assessment – Third Edition 2013 (Landscape Institute and Institute of Environmental Assessment);
- Landscape Character Assessment - Guidance for England and Scotland (2002) and the accompanying Topic Papers including Topic Paper 6. (Countryside Agency/Scottish Natural Heritage);
- LI Advice Note 01/2011: Photography and photomontage in landscape and visual assessment.

Landscape

11.5 The baseline landscape context of the site will include consideration of the relevant National Character Areas and District Scale Landscape Character Areas (as identified in the BLPCD). The study will also identify local character area sub divisions that apply to the site in its immediate environment including areas of West Cheshunt. This will include rural and suburban character.

11.6 The ES chapter will identify the key characteristics and landscape elements for each of the local Landscape Character Areas and provide an assessment of the impacts on these landscape units and features. The study will include recording the local patterns of landform, vegetation type and location and other significant land uses, built features or detractors. The site is centred on the valley feature associated with the Rags Brook.

11.7 The landscape study will establish the relative sensitivity of the site (and its component parts) and the sensitivity of local Landscape Character Areas and their capacity to accommodate the proposed development. The study will assess wider effects on the local Landscape Character Areas. The magnitude of change for each Character Area will be recorded as well as the significance of the effects. A judgement on the nature of the effects (adverse, beneficial or neutral) will also be provided.

11.8 Tree survey information to BS 5837 standard will be provided by way of an ES Appendix and the main findings summarised in the ES. Trees and hedges that may potentially be directly affected by the development will be individually assessed. Trees and groups that would not be affected (e.g. along Rags Brook) will be recorded as groups.

11.9 The features of the development including areas of proposed open spaces will be detailed to assess their contribution towards enhancing Landscape Character or Green Infrastructure opportunities. These measures will include the proposed linear park along the Rags Brook.

11.10 A description of the proposed open space provision, landscape works and green infrastructure will be illustrated and described. Mitigation has formed an integral part of the design process for the Rosedale Park North masterplan, and thus forms part of the assessment of the development. Should additional mitigation measures be required, this will be described and an assessment of residual effects set out. A distinction will also be made between measures for mitigation and enhancement.

Visual Impact

11.11 An assessment of visual effects arising from the proposed development will be provided from publicly accessible locations, such as roads and footpaths, and from private residential properties adjacent to the site. The assessment will consider the extent of change occurring from the existing fields and the introduction of a range of built types, infrastructure, the creation of Rags Brook Park, and associated green space.

11.12 The extent of visual effects arising from the development will be established through the use of a Zone of Theoretical Visibility (ZTV), based on a desk study and site observations in the local area. This will confirm the extent of visibility of the development site and determine the extent of the study area. This will then be used to inform the landscape and visual impact assessment.

11.13 Consultation with Colin Haigh (then Head of Planning Policy at BBC) was undertaken in October 2013, following the previous Scoping Opinion received on 19 August 2013. During this consultation the 14 locations for Representative Viewpoints recommended by The Landscape Partnership were agreed and an additional 3 locations were also requested by Colin Haigh. It is considered that these 17 locations remain valid and provide the most appropriate positions for the Representative Viewpoints (see Figure 9). These will therefore form the main basis for assessing effects on views. Further assessment of effects on visual receptors will be provided, where required, to cover any additional receptor not sufficiently covered by these Representative Viewpoints.

11.14 The visual assessment will be based on site observation and further support work. The following aspects will be included:

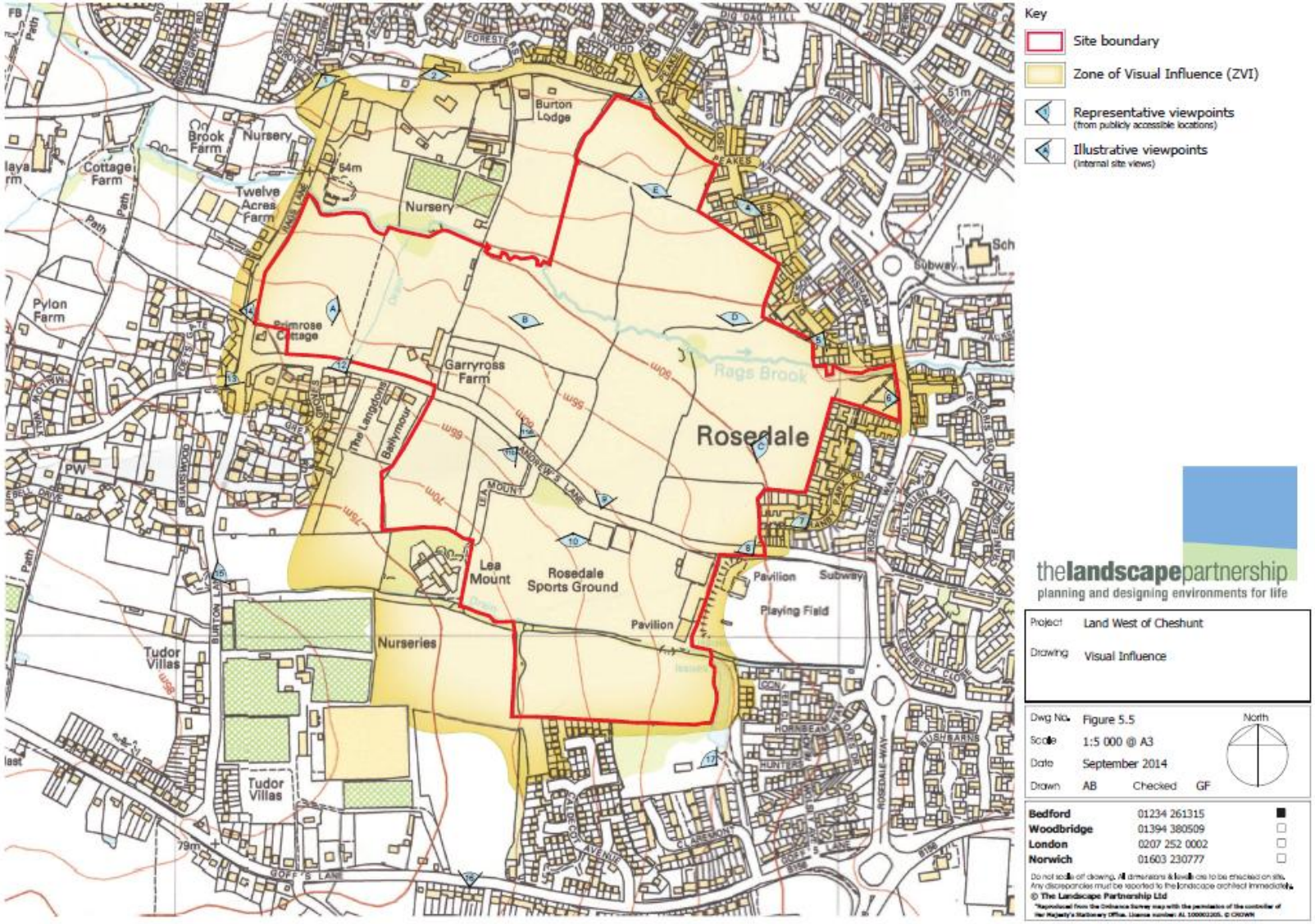
- the parameters of the proposed development including: the scale, height and location of the main features of the development such as buildings, infrastructure, attenuation ponds, and open space;
- a thorough assessment of the main receptor groups likely to be affected. This will identify the sensitivity of the receptors and the likely magnitude of change to the view arising from the development, and the corresponding significance of effect on views. This will include the assessment of the Representative Viewpoints, a description of effects, and views illustrated by panoramic photographs; and
- effects will be assessed at the various stages, including: construction, the first year following completion; and 15 years following completion. The latter is provided to assess the effectiveness of the proposed planting. A judgement on the nature of the effects (adverse, beneficial or neutral) will also be provided.

11.15 Visual receptors groups within the ZTV will be identified in terms of their location and sensitivity to the effects from the development. The following groups will be included:

- Residential Properties – The residential impacts on the adjacent residential areas in West Cheshunt, Goff's Oak and St James will be detailed for all areas around the site. This will either be by way of individual properties or groups of properties with similar levels of effect. Properties with more distant views will also be considered where they are affected.
- Open Space – The impact on areas of existing open space will be assessed including the play area to the east on Rosedale Way and recreation area around the fishing lake to the south.
- Formal sports recreation areas – The impact on users of sports pitches and facilities including Rosedale Sports Club.
- Rights of Way – the impact on users of all types of rights of way will be included. This will include those in closer proximity to the site and also those at greater distance within the ZVT where there are likely to be views to elements of the development in the vicinity of the site.
- Walkers – users of all types of public rights of way. This will include walkers on Public Footpath 41 and pedestrians using footpaths along roads, such as Peakes Way;
- Workers **–** effect on people at their place of work e.g. Burton Grange Nursery; and

- Road & Rail - Views from users of the local road network including: Rags Lane; Andrew's Lane; Peakes Way; Rosedale Way; and Goff's Lane.

Figure 9: Representative Viewpoints



12 ECOLOGY AND NATURE CONSERVATION

12.1 The Ecology chapter of the ES will be prepared by JFA and will cover ecology and nature conservation issues, which are material considerations for any planning application, and will set out the results of an ecological assessment of the application site. The value of ecological features will be interpreted within the context of the surrounding landscape and incorporated into the development, where possible, with mitigation measures, where required, to prevent, reduce or offset any significant adverse impacts. The chapter will also describe the likely residual impacts after these measures have been employed.

12.2 The assessment will be based on results from field surveys and information obtained through consulting the recognised bodies involved in nature conservation within the area. The habitats and species evaluations will be based on the guidance issued by the Institute of Ecology and Environmental Management (IEEM).

Key Issues/Baseline Overview

12.3 The proposed development site has been subject to a range of ecological surveys and a desktop appraisal, in order to gain an understanding of the flora and fauna currently present at the development site, with particular emphasis on wildlife that is protected under European and/or domestic legislation.

12.4 A desktop appraisal was carried out which included a commissioned desk study search from the Hertfordshire Biological Records Centre (HBRC) in 2013. Biological records for designated sites, both statutory and non-statutory, protected species, rare species and Biodiversity Action Plan (BAP) species were requested within a 2 km radius from the boundary of the site from HBRC. The Applicants ecological consultant (JFA) have carried out periodic surveys since this time, therefore the information from both the record study and recent surveys has been used to carry out the ecological appraisal.

12.5 The site consists of grazed farmland and large areas of amenity grassland with recreational facilities. There are a number of buildings located within the development site at Garryross Farm, and Rosedale Sports Club.

12.6 An extended Phase 1 Habitat Survey Report in line with standard methodologies was undertaken in March 2011, to identify the ecological value of the site. Subsequently species surveys have been undertaken; these include bat, badger, reptile, invertebrate, bird and botanical surveys. A water vole and white clawed crayfish assessment found that the site did not support these species. The Phase 1 and species surveys have been updated following standard guidance between 2011 and 2016.

12.7 The majority of the site was found to be of poor quality, being heavily grazed by horses. The ecological value of the site is associated with the linear linking habitat features, mature trees, hedgerows, scrub and Rags Brook.

12.8 There are some areas of ecological interest and linear linking habitat features which are of greater ecological value. One area, in particular, is the ‘Meadow South of Rosedale Sports Ground’ LWS, where attention must be paid to assessing the botanical interest, habitat quality

and management history, in order to ensure the development has no detrimental impacts on the local ecological network, and so that mitigation measures can be put in place.

Potential Impacts

12.9 Without mitigation and enhancement, the effects of the development proposal upon biodiversity have the potential to be adverse, for example:

- Loss and/or disturbance to flora and fauna;
- Loss of existing on-site habitats during site clearance;
- Recreational disturbance of certain habitats and species; and,
- Damage/disturbance to adjacent sites of ecological value (for example pollution of Rags Brook, or removal of trees).

12.10 The proposed development seeks to mitigate for potential negative ecological impacts (see below) and to provide an overall biodiversity enhancement strategy, through a comprehensive site-wide ecologically informed landscape design. This will include:

- Protection of Rags Brook through a linear park design, including planting of terrestrial and wet areas to offer ecological opportunity, and amenity benefit through careful placement of the footpaths. The Park will link to further habitat;
- Open space designed to incorporate plants and structural planting of benefit to species found to be present at site and species identified in the Herts Biodiversity Action Plan;
- The use of protective measures for ecological features throughout the construction period;
- A strategy addressing bats currently using the site for commuting purposes, including a bat friendly lightly strategy and roost box provision; and,
- A detailed landscape and ecological management and monitoring plan and schedule.

Approach and Methodology

12.11 The assessment will be based on results from field surveys (mostly complete) and information obtained through consulting the recognised bodies involved in nature conservation within the area. The habitats and species evaluations will be based on the guidance issued by the Institute of Ecology and Environmental Management (IEEM).

12.12 Existing habitat survey information will be checked and updated as necessary as part of further species survey work, to ensure that habitat and species data provide as accurate a picture as possible of the ecological baseline of the site at the time of planning submission.

12.13 Rags Brook, which traverses the site, is recognised as a ‘main river’ by the EA and is considered to be of potential importance for the ecology and biodiversity of the site. Thus, a River Corridor Survey was conducted in 2012 to inform the scope of the ecology part of the EIA. This was updated in 2015 and the results will be submitted as a Technical Appendix of the ES which will also inform the final landscape strategy proposals for the site.

12.14 Invertebrate surveys, for both aquatic and terrestrial invertebrates, were undertaken in 2012 because there are various ecological features – namely, the brook, the semi-improved grasslands, scrub, small wooded areas and hedgerows - which could provide suitable habitat for a range of invertebrates. The invertebrate diversity present in the Rags Brook was found to be very poor, and Six Nationally Scarce species were found within terrestrial habitats close to the Rags Brook.

12.15 A National Vegetation Classification (NVC) assessment was recommended in order to ascertain the ecological value of the semi-improved grassland and LWS ('Meadow South of Rosedale Sports Ground') on site. Considering the site is situated in the Green Belt, as well as the presence of some areas of more diverse (semi-improved) grassland, this was a necessary step to take to identify whether there are any notable or protected plant species present on site, and therefore to inform the scope of the ecology part of the EIA. The majority of the grassland was found to be a mixture of semi-improved, species-poor improved, and amenity grassland. The best grassland found in the sports field rugby pitch, which featured NVC category MG7 Lolium perenne Leyland grass community along the field borders and category OV23 *Lolium perenne* - *Dactylis glomerata* grassland community within the majority of the mown sports pitch.

12.16 The mature and semi-mature trees and the hedgerows on site present nesting opportunities for a variety of bird species. Breeding bird surveys were conducted during the breeding bird season in 2012 in order to identify the bird species that use the site for breeding. The surveys had particular focus on birds that are afforded special protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The first phase of scoping surveys identified the need for further surveys to consider the nesting potential for schedule 1 species, undertaken in 2013 and 2016. A pair of kingfishers have been identified in the local area.

12.17 Bat surveys were undertaken in 2011, and 2013 and 2015/16. These considered the bat species present, their use of the site and the potential for roosting bats in mature trees and buildings across the site during dusk and/or dawn surveys. Activity surveys have also been undertaken to evaluate the importance of the linear features on site for bat species. No bats were found to be roosting on site. Four bat species in total have been recorded using the hedgerow and tree boundaries at the site, namely: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and brown long-eared bat *Plecotus auritus*.

12.18 Due to the scrub, hedge lines and semi-improved grassland areas that provide potential habitat for three British reptile species: slow worm *Anguis fragilis*, grass snake *Natrix natrix* and common lizard *Zootica vivipara*, reptile surveys were undertaken in 2011, 2013 and 2016. A single juvenile grass snake was found along the Rags Brook in the western site extent.

12.19 On the whole the site was found to be relatively species poor with areas of ecology value concentrated in the boundary habitats and Rags Brook. No habitat suitability or evidence for the presence of further protected species such as badger, dormice, water vole, white clawed crayfish or great crested newts was found.

12.20 The proposal for the site offers the opportunity to include significant biodiversity enhancements for the area. For example, a strategy to maximise the site connectivity through linking onsite areas to offsite habitat to enhance the regions green infrastructure through the inclusion of a park along Rags Brook designed to maximise the biodiversity potential of the site.

12.21 The significance thresholds and criteria outlined in Chapter 6 will be applied to this Chapter in order to determine whether the potential impacts of the proposed development are significant.

13 WATER RESOURCES, DRAINAGE AND FLOOD RISK

13.1 This chapter of the ES will be prepared by PBA and will assess the proposed development's impacts on site drainage and flood risk. The ground conditions will be considered separately (see below).

Key Issues/Baseline Overview

13.2 According to online mapping by the Environment Agency (EA), the site lies entirely within Flood Zone 1 (Figure 3c). The Rags Brook is designated as the Main River at this location.

13.3 Existing surface water runoff from the majority of the site currently discharges into the Rags Brook and some of the southernmost development areas are served by a connection to a Thames Water sewer at Everest Lane.

13.4 The building footprints of the proposed Rosedale Park North development will be restricted to Flood Zone 1 and all development will be set back a minimum of 8m from the top of the banks to Rags Brook. Surface water storage features will also be located beyond the floodplain of the Rags Brook.

13.5 Site specific hydraulic modelling has been undertaken for the reach of the Rags Brook to supplement the limited EA data and Flood Mapping for this area. The extent of the flood plain has been agreed with the EA and will be used to inform the layout and extent of the proposed development.

13.6 The following information sources have also been used to assess and establish baseline conditions:

- BBC's Level 1 Strategic Flood Risk Assessments (2007);
- Hertfordshire County Council's Preliminary Flood Risk Assessment (2011);
- Hertfordshire County Council's draft Local Flood Risk Management Strategy (2012); and
- EA Water Quality and Flood Data.

Potential Impacts

13.7 The assessment will consider the following:

- The potential effects on water quality (both in watercourses and groundwater) will be qualitatively assessed during the construction and operation of the development in the Surface Water Drainage Strategy supporting the planning application. This will determine the effect that any greater level of pollution could have during these stages;
- Water demand will rise due to an increased population in the area caused by a greater number of houses. This impact will be determined in the Flood Risk Assessment (FRA);
- The impact of increased foul water discharge caused by the development will be assessed by the FRA and mitigation measures to reduce this impact will also be suggested; and,

- An assessment will take place in the FRA and Surface Water Drainage Strategy in order to determine the potential for flood risk caused by the development, both on and offsite.

Approach and Methodology

13.8 A FRA and Drainage Strategy will be produced for the proposed development in accordance with the NPPF and Technical Guide to the NPPF and will examine flood risk from all sources. This document, forming a technical appendix to the ES, will provide a more detailed analysis of the hydrology, flood risk and drainage for the proposed development and will be used as the basis of the ES chapter.

13.9 Both the FRA and Drainage Strategy will be completed in accordance with EA and local authority guidance.

13.10 The FRA will include an assessment of the existing hydrological baseline conditions; their potential effects on the development; and the potential effects of the development on them. It will also include hydraulic modelling for this reach of Rags Brook and will outline a strategy to provide mitigation, where necessary, associated with the flooding from the Rags Brook and existing field drains or tributaries.

13.11 A Surface Water Drainage Strategy incorporating Sustainable Drainage Systems (SuDS) will be developed for the site to ensure that surface water runoff is managed effectively during the construction and operation of the development and to demonstrate that the proposed development will not result in an increase in flood risk elsewhere. The strategy will include supporting technical details to ensure that sufficient space will be made available, in suitable locations for sustainable drainage features such as ponds and swales. It will also qualitatively assess potential effects on water quality (both in watercourses and groundwater) during the construction and operation of the development.

13.12 Both the FRA and Surface Water Drainage Strategy will include an assessment of the effect of climate change on hydrology, flood risk and drainage in accordance with the NPPF and Technical Guide to the NPPF, including the revised climate change impacts released in February 2016.

13.13 The significance thresholds and criteria outlined in Chapter 6 will be applied to this Chapter in order to determine whether the potential impacts of the proposed development are significant.

14 GROUND CONDITIONS AND CONTAMINATION

14.1 This chapter of the ES will be prepared by PBA and will assess the likely significant environmental effects of the proposed development on ground conditions, which encompass the site's geology, groundwater conditions and contamination of the soils and groundwater.

Key Issues/Baseline Overview

Geology and Geomorphology

14.2 The site is situated on the undulating land to the west of the valley of the River Lea, within the valley of the Rags Brook and a low ridge between the valleys of the Rags Brook and Theobald's Brook to the south. The solid geology underlying the site comprises the London Clay Formation. River Terrace Deposits and Glacial Sands and Gravels are shown overlying the solid geology, respectively, in the lower part of the valley of the Rags Brook on the eastern part of the site, and on the low ridge on the southern part of the site. In addition, the mapped strata are overlain by Head Deposits formed by natural geomorphological processes with limited deposits of Alluvium present in the valley of the Rags Brook. Made Ground is locally expected to be present overlying the natural strata in areas of previous development.

14.3 There are no designated geological or geomorphological sites or features of conservation value in the area affected by the proposed scheme. At Appendix 2 of this Scoping Report is the Draft Phase 1 Ground Condition Assessment which outlines these lack of features

Mineral Resources

14.4 In accordance with the Hertfordshire County Council Mineral Consultation Areas in the Hertfordshire Supplementary Planning Document (2007) part of the site is located within the Sand and Gravel Belt Mineral Consultation Area. The potential sand and gravel resources on the site relate to the River Terrace Deposits in the lower part of the valley of the Rags Brook on the eastern part of the site and the Glacial Sands and Gravels on the low ridge on the southern part of the site.

Land Use

14.5 The site has remained largely undeveloped agricultural land, and current development of the site is limited to the buildings of Garryross Farm present on the western part of the site and the buildings of the former Grangebrook Nursery on the northwest part of the site which are currently being used as a commercial vehicle business.

Potential Effects

Geology and Geomorphology

14.6 The proposed development will give rise to no material change on the geology and geomorphology in the vicinity of the site. Accordingly, an assessment of the effects of the scheme on the geology and geomorphology will be excluded from the ES.

Mineral Resources

14.7 Although the potential sand and gravel resources on the site are within a designated Mineral Consultation Area, from consideration of their geomorphological setting and the information presented in the BGS mineral assessment report for the area, any sand and gravel present is expected to be of limited thickness and volume, to have a significant fines content and a high overburden to deposit ratio. On this basis, any sand and gravel on the site is not considered to represent a viable mineral resource and hence an assessment of the effects of the scheme on mineral resources will be excluded from the ES. A Technical Note on the Assessment of Mineral Resources has been prepared by PBA and is included at Appendix 3.

Land Contamination

14.8 There are no known or expected major sources of contamination or hazardous ground gases within the site, accounting for the historic and the current use of the site. The presence of localised areas of contamination associated with, for example, the storage and use of fuel oils or fertilisers cannot, at this time, be discounted. Any such land contamination may present a notional risk to sensitive receptors including site workers, site occupiers/neighbours, ground and surface waters, ecology and wildlife, and the built environment. This is detailed in the Draft Phase 1 Ground Condition Assessment in Appendix 2.

14.9 On this basis an assessment of the indirect effects of the development on human health, the environment and the proposed development relating to land contamination and hazardous ground gases will be included in the proposed ES.

14.10 Potential indirect effects with respect to land contamination to be addressed by this chapter of the ES include:

- Effects on human health of on-site workers, users and general public from land contamination and potentially hazardous ground gases;
- Effects on controlled waters (surface water and local groundwater) resources from land contamination;
- Effects on proposed landscaped areas, the on-site ecosystem and the ecosystem of the surrounding area from land contamination; and,
- Effects on proposed development construction including foundations and infrastructure from land contamination.

Soil Quality

14.11 Given the site comprises largely undeveloped agricultural land, an assessment of the direct effects on agricultural land quality and soil resource conservation issues resulting from the proposed development will be included in the ES.

Approach and Methodology

14.12 The ES will consider the potential environmental effects from the development relating to the prevailing geology and ground conditions at the site. Consideration will also be given to the potential indirect effects on human health, the environment and the proposed development with

respect to ground contamination, the potential direct effects on any potentially viable mineral resources, agricultural land quality and soil resource conservation issues resulting from the proposed development.

14.13 The assessment will be based on a desk based Phase 1 Ground Condition Assessment (of which a draft can be found at Appendix 2), and a Soils Site Report that will be included as appendices to the ES.

14.14 The Phase 1 Ground Condition Assessment for the site includes a site reconnaissance, review of historical maps and records and identification of potential contaminant sources, pathways and receptors that may be present on the site, together with a qualitative Tier 1 assessment of the risks and hazards associated with existing or potential future contamination and hazardous gases in the ground. The assessment has been carried out in general accordance with established procedures using current UK best practice and guidance as given in British Standard 10175, Contaminated Land Report 11 and NHBC Standards Chapter 4.1.

14.15 The significance thresholds and criteria outlined in Chapter 6 will be applied to this Chapter in order to determine whether the potential impacts of the proposed development are significant.

15 ARCHAEOLOGY

15.1 This chapter of the ES will be completed by CgMs who will provide an Archaeological Desk Based Assessment (DBA) of the site, as well as the potential for effects of the proposed development on unidentified archaeology on the site.

Key Issues/Baseline Overview

15.2 An Archaeological DBA has been undertaken on the site (which can be found in Appendix 4 of this Scoping Report). This examined and reviewed the available archaeological, historic and topographic information and concluded that the site has a generally 'moderate' to 'low' archaeological potential for evidence from the Palaeolithic to the Post-Medieval periods, with a heightened archaeological potential in localised areas of known activity.

15.3 The desk based assessment identified that there are no designated heritage assets on or in close proximity to the study site. There are two undesignated heritage assets in the south of the site, indicating evidence of medieval ridge and furrow fields.

15.4 There is potential for residual early prehistoric finds on the Taplow terrace gravel geology in the east of the study site, and the archaeological potential for the later prehistoric period is heightened on areas of higher ground. Roman agricultural activity could be expected in the east of the site close to the Roman road, Ermine Street, although evidence of Roman occupation is not expected. There is a heightened potential for medieval agricultural remains in the south of the site where ridge and furrow and a linear ditch have been observed from aerial photographs.

15.5 The majority of the study site has lain in agricultural land during the historic periods, west of Cheshunt. In addition, features associated with the grounds of the late 18th century house, Claramont House, survive in the south of the site.

Potential Impacts

15.6 The archaeological potential of the site for all past periods of human activity is considered to be low. As a result the proposed development is thought unlikely to impact on archaeological remains of more than local importance.

15.7 The operational phase of the proposed development is not expected to have any likely environmental effects on archaeology.

15.8 Potential effects on archaeology will therefore be confined to construction activities, particularly where intrusive ground works are proposed including piling, foundations and basement construction. Effects, if any, will therefore focus upon the disturbance, damage, removal or destruction of potential archaeological remains.

Approach and Methodology

15.9 To supplement the existing DBA, a further archaeological investigation could be undertaken following planning consent in accordance with an archaeological planning condition. This evaluation would act to clarify the potential for as yet to be discovered assets. It would also

provide additional information to enable a fuller assessment of the character and significance of remains recorded and the impact of the proposed development on these.

15.10 The ES will consider the significance of archaeological assets, using standing EIA procedures and other relevant advice, including English Heritage's Conservation Principles, Policies and Guidance. The assessment of effects will identify and consider the potential nature of the effect (direct or indirect) and its magnitude. It will also identify mitigation measures incorporated into the proposed development to avoid adverse impacts arising and those measures to reduce or offset harmful effects that cannot be avoided. Beneficial mitigation measures will be incorporated into the proposed development, where relevant.

16 NON-SIGNIFICANT/ NON-EIA TOPICS

16.1 This section sets out a range of topics that are not considered likely to result in significant environmental effects. An explanation has been provided to justify the reasons why a specific topic does not require a stand-alone ES chapter.

Agriculture and Soil Resources

16.2 In the Council's scoping opinion of the 19th August 2013, it was suggested that Agriculture and Soil Resources should be scoped into the EIA. Whilst the area is greenfield land and has potential for productive agricultural uses, it mainly consists of grazed and ungrazed farmland and large areas of fallow grassland with a low agricultural value. It is therefore proposed that the information regarding 'agriculture and soils' is presented as part of one or more technical chapters, instead of being presented as a standalone assessment and ES Chapter. It is suggested that the impact on agriculture could be examined within the socio-economics chapter (7) and the soil conditions discussed within the ground conditions and contamination chapter (14).

16.3 The site is currently identified as "pasture fields" in the Broxbourne Landscape Character Assessment, particularly used for grazing horses, as the land is largely inaccessible. The need for housing and the historic lack of interest/ investment in agricultural use indicates strongly that alternative utilisation of the land for agriculture is unviable. According to the NPPF, only the 'best and most versatile agricultural land' is required to demonstrate overriding reasons for its protection. Although part of the site meets these criteria, the site is under different land ownerships and therefore cannot be considered a viable agricultural area.

Utilities and Services

16.4 It is considered that the proposed development will require substantial upgrades/ extensions to local utilities and servicing (i.e. drinking water, foul water, surface water drainage, gas, electricity and telecommunications).

16.5 As part of the Water Resources ES chapter, a description of the activities during the construction phase will be provided. This will include an indicative sequence and duration of activities such as site enabling works (which includes the installation of services). An assessment of the construction phase's likely impacts will be provided, considering the reasonable 'worst case' activities for environmental impacts, which are expected to be during the main ground works and housebuilding phases. If these impacts are considered acceptable, the construction phase impacts from the installation of utilities and services will also be.

16.6 The Applicant and design team have carried out infrastructure due-diligence works, to identify the required capacity, and are in discussions with utility providers to ensure development can be achieved. It is noted that Thames Water Utility Services Ltd. requested (in the August 2013 Scoping Opinion) that water usage, sewage and drainage infrastructure are considered. These will be assessed in the Water Resources ES chapter. However, it is not proposed that a standalone Utilities and Services chapter is necessary to be included as part of the ES.

Microclimate Conditions

16.7 Given the relatively low rise nature of the proposed buildings (generally being no more than 2-3 storeys), it is unlikely that the built form of the development would lead to wind funnelling, downdraughts or other adverse wind effects which are more typically associated with tall buildings and narrow passages. Pedestrian comfort, particularly within the public open spaces within the site, will be assured by appropriate planting and other landscaping features determined at the detailed design stages of the scheme.

16.8 In respect to the potential for adverse daylight, sunlight and overshadowing effects, the relatively low height of the structures reduces the likelihood of these effects. There is expected to be sufficient separation of the residential units to ensure acceptable levels of natural light are achieved in all habitable rooms. Such design criteria will be described within the Design and Access Statement (DAS). Accordingly, this issue will not be considered any further within the ES.

Waste

16.9 The majority of the site is an open grassed field covering approximately 44.6 hectares and there are no built structures or hardstanding on the site. As such, no demolition waste will be generated from the site clearance. Furthermore, the re-profiling of the land to achieve suitable development levels will aim to adopt a 'cut and fill' balance, so no net export of soil from the site is anticipated.

16.10 Construction waste, including off-cuts and excess concrete and bricks etc. would be managed by the Contractor in line with current legislation and best practice.

16.11 It is anticipated that the volumes of operational waste from the built development (mainly domestic waste and small quantities of commercial waste) can be readily accommodated by existing off-site waste management infrastructure.

16.12 Taking account of the above, it is considered that the topic of 'Waste' should be scoped-out of the EIA. As confirmed in the August 2013 Scoping Opinion, this will be considered within the Planning Statement and/or Design and Access Statement.

17 STRUCTURE OF THE ENVIRONMENTAL STATEMENT

17.1 The ES is proposed to be set out as follows:

Volume 1: Environmental Statement

1. Introduction;
2. EIA Methodology;
3. Site Context, Alternatives and Scheme Description;
4. Development Programme and Construction;
5. Socio-Economics;
6. Transport and Access;
7. Noise and Vibration;
8. Air Quality;
9. Landscape and Visual Impacts;
10. Ecology and Nature Conservation;
11. Water Resources, Drainage and Flood Risk;
12. Ground Conditions and Contamination;
13. Archaeology;
14. Cumulative Effects; and
15. Summary of Mitigation and Residual Effects

Volume 2: Technical Appendices

17.2 For transparency and to prevent an unnecessary 'paper trail', this volume will provide the full text of a number of technical assessments together with other relevant background information used to inform the EIA. At present, Volume 2 is envisaged to comprise:

- EIA Scoping Report (appending BBC's August 2013 Scoping Opinion);
- EIA Scoping Opinion;
- Transport Assessment;
- Noise and Vibration Technical Data;
- Air Quality Technical Data;
- Ground Conditions Technical Data;

- Archaeological Desk-Based Assessment;
- Ecological Surveys and Data;
- Landscape Technical Data.

Non-Technical Summary

17.3 The Non Technical Summary (NTS) will provide an accurate and balanced account of the key information contained within Volumes 1 and 2. In accordance with the EIA Regulations, the NTS will be presented in non-technical language and be produced as a stand-alone document in a format suitable for the general public.

18 SUMMARY

18.1 This EIA Scoping Report sets out the proposed content and structure of the ES to be submitted in support of the outline planning application for the development of the site.

18.2 In accordance with Regulation 13 of the EIA Regulations, this EIA Scoping Report is issued with a request for a new Scoping Opinion from BBC, in order to allow BBC to re-confirm or amend its previous opinion of August 2013.

18.3 Whilst the fundamental nature of the proposed development and site conditions have not changed since this time, and the EIA process has proceeded in accordance with the previous opinion, this request for a new scoping opinion is made for the sake of completeness, accounting for the passage of time and revised development proposals.

18.4 After consideration of this report it is anticipated that BBC will concur with our interpretation of the key issues to be considered in the EIA/ES, which have been set out in the above sections.

APPENDIX 1 – PREVIOUS SCOPING OPINION (AUGUST 2013)

Environmental Services Department
Borough Offices, Bishops' College, Churchgate,
Cheshunt, Hertfordshire EN8 9XB
Tel: 01992 785555 Minicom: 01992 785581
Fax: 01992 627183
E-mail: am1.environment@broxbourne.gov.uk

BOROUGH OF BROXBOURNE
www.broxbourne.gov.uk

Jeff Stack
Director of Environmental Services

Your Ref:
My Ref: West Cheshunt
Extension: 01992785555 ext 5799
Please ask for: Andrew MacDougall
Date: 19 August 2013

Valerie Scott
CGMS Consulting
140 London Wall
London
EC2Y 5DN

RE: TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND) REGULATIONS 2011 (REGULATION 13)

PROPOSED MIXED USE DEVELOPMENT AT LAND WEST OF CHESHUNT

I am writing to you further to your letter and accompanying Scoping Report dated 11th July 2013. The scoping report has been the subject of consultation in accordance with the Environmental Impact Assessment (EIA) Regulations. I am enclosing the consultation responses which are summarised below.

It is agreed that the following disciplines are scoped into the EIA

Socio Economics;
Traffic and Transportation;
Landscape and Visual Assessment;
Ecology and Nature Conservation;
Archaeology and Cultural Heritage;
Ground Conditions, Hydrogeology and Contamination; and
Flooding and Water Resources.

The Council considers that the following are also an important consideration and there is the potential for significant impact on present and future provision/quality in the area. We therefore wish to see the below issues scoped into the EIA.

Noise and Vibration;
Local Air Quality;
Agriculture and Soil Resources;
Utilities and Services.

Whilst Cumulative Effects with other Committed Developments does not need to be covered as a separate chapter within the EIA, there are likely to be cumulative impacts in relation to specific topics covered. This will particularly be the case in relation to traffic and transportation,

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It is agreed that the following disciplines are scoped into the EIA

Socio Economics;
Traffic and Transportation;
Landscape and Visual Assessment;
Ecology and Nature Conservation;
Archaeology and Cultural Heritage;
Ground Conditions, Hydrogeology and Contamination; and
Flooding and Water Resources.

The Council considers that the following are also an important consideration and there is the potential for significant impact on present and future provision/quality in the area. We therefore wish to see the below issues scoped into the EIA.

Noise and Vibration;
Local Air Quality;
Agriculture and Soil Resources;
Utilities and Services.

Whilst Cumulative Effects with other Committed Developments does not need to be covered as a separate chapter within the EIA, there are likely to be cumulative impacts in relation to specific topics covered. This will particularly be the case in relation to traffic and transportation,

flooding and water resources and utilities and services. The Council expects these to be addressed within the appropriate chapters although the transport assessment will be the lead document in terms of a full understanding on transport matters.

Whilst it is agreed that Microclimate, Waste and Artificial Lighting are scoped out of the EIA, these do remain issues that require to be considered and the Council expects them to be incorporated within the Supporting Planning Statement and/or Design and Access Statement.

Turning to the individual chapters; I have broadly summarised the responses from each of the respective consultations received. I have attached their full response as appendices to this letter. Please note: The Council has yet to receive a response from the County Council Education Authority. We will therefore forward this under separate cover.

Socio Economics

The Council support contents and agree with the methodologies and assessment approach.

Landscape and Visual Assessment

The Council support contents and agree with the methodologies and assessment approach.

Ecology and Nature Conservation

Natural England - The proposal does not appear, from the information provided, to affect any nationally designated geological or ecological sites or landscapes or have significant impacts on the protection of soils nor is the development for a mineral or waste site of over 5ha.

The Environment Agency - The NPPF is clear that the planning system should enhance the natural environment by establishing coherent ecological networks that are more resilient to current and future pressures. As such, the applicant will need to investigate what opportunities are available to restore sections of the Rags Brook. This would create a valuable amenity and biodiversity asset whilst also ensuring that the proposals comply with the Thames River Basin Management Plan.

Herts & Middlesex Wildlife Trust - The scoping report states (para. 6.6), 'The ecological value of the site is associated with the mature trees, hedgerows, scrub, semi-improved grassland and Rags Brook.' Para 6.7 - 'The majority of habitats found on site can be considered to have a low ecological value. However there are pockets of ecological interest and linear linking habitat features with greater ecological value'. Based upon aerial photos, this appears to be a fair assumption. The scoping report does not however mention the Local Wildlife Sites. Particular attention must be paid to assessing the botanical interest, habitat quality and management history of the Local Wildlife Site in order that the impact of the development on ecology and the local ecological network can be fully considered, and suitable mitigation and compensation can be proposed and implemented in the event that the Local Wildlife Site is lost as a result of the development.

The list of surveys done and to be completed appears suitable, based upon the habitats affected. All ecological survey work must follow the accepted industry best-practice standards and guidance for that particular species and survey type. The ES should include proposed avoidance and mitigation measures to reduce the likely adverse impacts of construction and post-construction use of the site. The EIA must also assess and take account of the impact that development will have on local biodiversity networks and ecological connectivity through the

landscape. The assessment therefore needs to look beyond the boundaries of the application site and take an integrated approach to consider the likely impact on ecosystem functioning and resilience. Given its scale and Green Belt/Greenfield location, there is an expectation that the development will include high quality green infrastructure and biodiversity enhancement proposals.

Traffic and Transportation

Hertfordshire County Council Highways – It is usually expected that the highway implications would be covered in a Transport Assessment, in accordance with DfT guidelines. The Scoping Report states that all applications will be prepared in accordance with this, and this should ensure a robust and comprehensive assessment of any forthcoming proposals. Ideally the Scoping Report should put more emphasis on the NPFF. In particular, NPPF paragraph 32 (decisions should take account of whether safe and suitable access to the site can be achieved for all people) and paragraph 35 (developments should be located and designed where practical to give priority to pedestrian and cycle movements, and have access to high quality public transport facilities) should be thoroughly addressed in any forthcoming applications.

Noise and Vibration

Borough of Broxbourne Environmental Health Department – Noise is considered an important issue both with regard to existing uses and their impact upon any proposed dwellings and vice versa. This must be covered in the EIA.

Archaeology and Cultural Heritage

The Hertfordshire County Council Historic Environment Unit - Any archaeological information submitted must include consideration of the historic landscape, especially the co-axial field boundaries which lie within the application site. These probably have prehistoric origins and are part of a wider historic landscape that this office considers to be of national importance. Provision for the further investigation and conservation of ancient historic boundaries will be necessary as part of the Environmental Statement. We therefore consider that a desk-based archaeological assessment (DBA) of the site is undertaken and recommend that this includes a detailed walk over survey which would include an assessment of the extant boundaries. We would ask that this office is consulted on the scope and methodology of the DBA. Depending on the results and the quality of the archaeological DBA it may be that in addition further archaeological site investigations are required.

English Heritage - There are no scheduled monuments or registered parks and gardens that will be adversely impacted on by the proposed development. However we would draw your attention to a number of grade II listed buildings in proximity to the proposed redevelopment.

Flooding and Water Resources

Environment Agency – We are satisfied that most of the key environmental issues have been identified. We agree that a Flood Risk Assessment will need to be submitted in line with the National Planning Policy Framework (NPPF) and Local Plan Policy SUS16. While it is encouraging that section 3.15 mentions both ponds and swales, the applicant should also investigate the incorporation of green/living roofs. We are concerned that water usage has not been identified as an issue considering that this is a highly water-stressed area.

Thames Water - It is unclear at this stage what the net increase in demand on our infrastructure will be as a result of the proposed development. Thames Water is concerned that the network in this area may be unable to support the demand anticipated from this development. The developer needs to consider the net increase in water and waste water demand to serve the development and also any impact the development may have off site further down the network, if no/low water pressure and internal/external sewage flooding of property is to be avoided

We would therefore recommend that any report should be expanded to consider, demand for water supply and network infrastructure both on and off site, demand for Sewage Treatment and network infrastructure both on and off site and surface water drainage requirements and flood risk of the development both on and off site.

HMWT - is pleased to see that the extent of the floodplain will inform the layout and extent of the development. As the development is proposed on existing undeveloped land and also surrounds a main river, adverse impacts on hydrology, water quality, flood risk and surface water drainage must be avoided through sensible layout and design, and mitigation should be planned and integrated through a drainage strategy and Sustainable Drainage Systems within any development within the site. The Environmental Statement must fully assess the likely effects of the development on water resources and proposed suitable mitigation, including SUDS. Where possible, sustainable drainage solutions should be designed to deliver multiple benefits in the context of the new development, for instance biodiversity enhancement, visual amenity benefits, climate change adaptation, as well as sustainable drainage and runoff management.

Hertfordshire County Council – SUDS - Overall no significant comment to make as the approach will consider flooding from all sources, on site as well as upstream and downstream; and also look to enhance the water related environment in the vicinity of Rags Brook. The key will be in the specifics of how the various baselines are established. Would also point to the HCC Interim SuDS Policy Statement as it is likely that this development would come forward after HCC has established a SuDS Approval Body (anticipated April 2014).

Ground Conditions, Hydrogeology and Contamination

We support contents and agree with the methodologies and assessment approach.

Finally, my experience of EIA's is that they can be very duplicative of other documents submitted in support of planning applications. This is costly for the applicant, can lead to conflicting information and is very time consuming to assess. Please can you therefore avoid duplication as much as possible.

Yours Sincerely

Douglas Cooper
Head of Planning and Development

Appendix: Copies of all consultations received to date.

Andrew MacDougall

From: Andy Instone [Andy.Instone@hertfordshire.gov.uk]

Sent: 31 July 2013 13:58

To: Diane Parsley; Andrew MacDougall

Subject: Scoping Opinion: Proposed Mix Use Development at land west of Cheshunt- HertsCC Hist Env Unit comments

Dear Diane/Andy,

Scoping Opinion: Proposed Mix Use Development at land west of Cheshunt

ARCHAEOLOGICAL IMPLICATIONS

Thank you for consulting me on the above Request for an Environmental Impact Assessment Scoping Opinion for a mixed use development at land west of Cheshunt.

I hope you are able to take account of the following comments concerning the approach outlined in the scoping report for the consideration of the historic environment and archaeology against the EIA Regulations. Please note that these comments are also informed by the policies contained in the NPPF.

The ES should enable informed advice to be provided to the LPA, and thereby provide the intended basis for better decision making within the planning process. Sufficient information should be included to test the principle of development for each masterplan that is submitted. If the masterplan changes then further archaeological evaluation will be needed to test it. Further archaeological evaluation will be required to identify appropriate mitigation should a proposal receive consent.

The Scoping Report notes that the proposed development site covers approximately 53 ha. Chapter 4 considers "Archaeology".

We agree with the proposal in the Scoping Report that Archaeology (or more properly the Historic Environment) be included within the EA (paragraph 2.3). Chapter 4 summarises an Archaeological Desk-Based Assessment. However, this document has not yet been submitted and we have not seen it. This office needs to be able to consider the document before we can advise as to the suitability of its contents and assess the need for any additional archaeological information which might be required. In the absence of the Desk Based Assessment, we can nonetheless state that any archaeological information submitted must include consideration of the historic landscape, especially the co-axial field boundaries which lie within the application site. These probably have prehistoric origins and are part of a wider historic landscape that this office considers to be of national importance. Provision for the further investigation and conservation of ancient historic boundaries will therefore be necessary as part of the Environmental Statement.

We therefore consider that a desk-based archaeological assessment (DBA) of the site is undertaken and recommend that this includes a detailed walk over survey which would include an assessment of the extant boundaries. We would ask that this office is consulted on the scope and methodology of the DBA. Depending on the results and the quality of the archaeological DBA it may be that in addition further archaeological site investigations are required. This may include geophysical survey and archaeological field evaluation. Particular attention should be given to the areas which will be subject to significant and extensive ground disturbance and which have been identified as having heightened archaeological potential by the DBA.

Please do not hesitate to contact me should you require any further information or clarification.

Yours sincerely,

Andy Instone
County Planning Archaeologist
Historic Environment Unit
Postal Point EMG CHN108
Hertfordshire County Council, County Hall, Pegs Lane, Hertford, SG13 8DN
t: 01992 555241 **Comnet / Internal:** 25241

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Hertfordshire – County of Opportunity

Please note that HCC email addresses are changing. Please note my new address:
andy.instone@hertfordshire.gov.uk

From: Diane Parsley [mailto:dp.environment@broxbourne.gov.uk]
Sent: 17 July 2013 11:56
To: caroline.sabberton@environment-agency.gov.uk; Andy Hardstaff; Stephen Tingley; Jackie Cottingham; Dave Renouf; Property Inbox; Roland Childerhouse; Jacqueline Nixon; Andy Instone; consultations@naturalengland.org.uk; planning@hmwt.org; devcon.team@thameswater.co.uk; Broxbourne Consult; Christopher Franks; Chris Allison; Environmental Health; plantprotection@nationalgrid.com; Sarah.Poppy@english-heritage.org.uk
Cc: Andrew MacDougall
Subject: ES Scoping Report

ES Scoping Opinion

Redevelopment Scheme on Land West of Cheshunt

The Council has received a scoping opinion for the above development; documentation can be viewed on our website http://www.broxbourne.gov.uk/environment_and_planning/planning/public_notices.aspx If you have any observations you wish to make on the proposal can we please receive them within 14 days, they can be emailed to planning@broxbourne.gov.uk

If your observations are not received within the requested time limits, I will assume you have no comments to make, if you require an extension of time please let us know and we will endeavour to agree this with the applicant.

Please note any representations received may be subject to inspection by the applicant or by third parties.

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953

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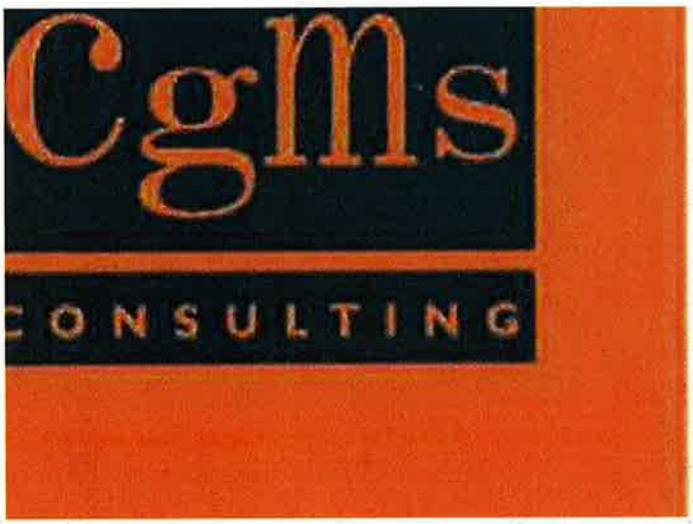
Andrew MacDougall

From: Joe Ward
Sent: 05 August 2013 16:09
To: Andrew MacDougall
Subject: RE: ES Scoping Report - West Cheshunt

Andy,

Re



ES SCOPI

The above document needs a section on noise.

Joe

Joe Ward
Head of Environmental Health
Broxbourne Borough Council
Bishops' College,
Churchgate,
Cheshunt,
Herts., EN8 9XE
Tel. 01992 785511
Fax. 01992 627183 Minicom 01992 785581

From: Andrew MacDougall
Sent: 05 August 2013 15:53
To: 'Andy.Hardstaff@hertfordshire.gov.uk'; Dave Renouf; Jacqueline.Nixon@hertfordshire.gov.uk'; Joe Ward; 'Sarah.Poppy@english-heritage.org.uk
Subject: FW: ES Scoping Report

Dear All

Please can I receive your responses ASAP for the below consultation. If you are unable to respond imminently, please let me know.

Regards.

Andy MacDougall

Major Sites Development Officer
Borough of Broxbourne

Bishops College | Churchgate | Cheshunt | Herts | EN89XQ
t: 01992 785555 ext 5799

From: Diane Parsley
Sent: 17 July 2013 11:56
Cc: Andrew MacDougall
Subject: ES Scoping Report

ES Scoping Opinion

Redevelopment Scheme on Land West of Cheshunt

The Council has received a scoping opinion for the above development; documentation can be viewed on our website http://www.broxbourne.gov.uk/environment_and_planning/planning/public_notices.aspx If you have any observations you wish to make on the proposal can we please receive them within 14 days, they can be emailed to planning@broxbourne.gov.uk

If your observations are not received within the requested time limits, I will assume you have no comments to make, if you require an extension of time please let us know and we will endeavour to agree this with the applicant.

Please note any representations received may be subject to inspection by the applicant or by third parties.

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953

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EAST OF ENGLAND OFFICE

Mr Andrew MacDougall
Broxbourne Borough Council
Borough Offices
Bishops' College, Churchgate
Cheshunt
Hertfordshire
EN8 9XB

Direct Dial: 01223 582713
Direct Fax: 01223 582701

Our ref: PA00172938

8 August 2013

Dear Mr MacDougall

Request for Pre-application Advice

LAND WEST OF CHESHUNT, CHESHUNT, HERTS

Thank you for your email of 17th July consulting English Heritage about the above EIA Scoping Report.

This development could, potentially, have an impact upon designated heritage assets and their settings in the area around the site. In line with the advice in the National Planning Policy Framework (NPPF), we would expect the Environmental Statement to contain a thorough assessment of the likely effects which the proposed development might have upon those elements which contribute to the significance of these assets.

There are no scheduled monuments or registered parks and gardens that will be adversely impacted on by the proposed development. However we would draw your attention to a number of grade II listed buildings in proximity to the proposed redevelopment.

We would also expect the Environmental Statement to consider the potential impacts on non-designated features of historic, archaeological and historic landscape interest, since these can also be of national importance and make an important contribution to the character and local distinctiveness of an area and its sense of place. This information is available via the local authority Historic Environment Record (www.heritagegateway.org.uk) and relevant local authority staff.

We would strongly recommend that you involve the Conservation Officer of Broxbourne Borough Council and the archaeological staff at Hertfordshire County Council Historic Environment Unit in the development of this assessment. They are best placed to advise on: local historic environment issues and priorities; how the

English Heritage is subject to the Freedom of Information Act 2000 (FOIA) and Environmental Information Regulations 2004 (EIR). All Information held by the organisation will be accessible in response to an information request, unless one of the exemptions in the FOIA or EIR applies.
English Heritage will use the information provided by you to evaluate any applications you make for statutory or quasi-statutory consent, or for grant or other funding. Information provided by you and any information obtained from other sources will be retained in all cases in hard copy form and/or on computer for administration purposes and future consideration where applicable.

proposal can be tailored to avoid and minimise potential adverse impacts on the historic environment, including impacts on the setting of heritage assets; the nature and design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of heritage assets.

It is important that the assessment is designed to ensure that all impacts are fully understood. Section drawings and techniques such as photomontages are a useful part of this.

The assessment should also take account of the potential impact which associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to *in situ* decomposition or destruction of below ground archaeological remains and deposits, and can also lead to subsidence of buildings and monuments.

We have the following comments to make regarding the content of the Scoping Report:

Given the very large size of the proposed redevelopment, and the potential for archaeological remains of all periods as identified in the Scoping Report, we advise that a staged programme of archaeological desk-based assessment and field investigation should be undertaken to inform the proposals and input into the Archaeology and Cultural Heritage chapter of the Environment Statement. This is consistent with paragraph 128 of the National Planning Policy Framework which states that "where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation." The requirements for the archaeological assessment (desk-based and field evaluation) should be agreed in consultation with archaeological staff at Hertfordshire County Council Historic Environment Unit.

If you have any queries about any of the above, or would like to discuss anything further, please contact me.

24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582 700 Facsimile 01223 582 701
www.english-heritage.org.uk

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EAST OF ENGLAND OFFICE

Yours sincerely

Sarah Poppy
Assistant Inspector of Ancient Monuments
E-mail: sarah.poppy@english-heritage.org.uk

24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU
Telephone 01223 582 700 Facsimile 01223 582 701
www.english-heritage.org.uk

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EAST OF ENGLAND OFFICE

LAND WEST OF CHESHUNT, CHESHUNT, HERTS
Request for Pre-application Advice

Information Provided

Published Guidance

24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582 700 Facsimile 01223 582 701
www.english-heritage.org.uk

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Environment Agency

Andrew MacDougall
Broxbourne Borough Council
Bishops College
Churchgate
Cheshunt
Waltham Cross
EN8 9XQ

Our ref: NE/2013/118357/01-L01

Date: 31 July 2013

Dear Andrew

ES Scoping Opinion for redevelopment scheme on land west of Cheshunt.

Thank you for consulting us regarding the above site.

Having reviewed the submitted Scoping Report (Crest Strategic Projects Ltd, July 2013) we are satisfied that most of the key environmental issues have been identified. However we would also like to provide some more specific guidance. This will ensure that all of our concerns are addressed in advance of a formal application being submitted.

Flood risk and drainage

We agree that a Flood Risk Assessment will need to be submitted in line with the National Planning Policy Framework (NPPF) and your policy SUS16. This should demonstrate that:

- surface water runoff is balanced to the Greenfield run off rate for all events up to and including the 1 in 100 chance in any year storm, taking the effects of climate change into account;
- storage is provided to attenuate the 1 in 100 chance in any year storm event, taking into account the effects of climate change;
- Sustainable Drainage Systems (SuDS) are maximised in line with your policy SUS18.

While it is encouraging that section 3.15 mentions both ponds and swales, the applicant should also investigate the incorporation of green/living roofs. These provide multiple benefits including storm water management (up to 40% reduction in peak run-off compared to a standard roof), reduced energy consumption, increased roof life, increased biodiversity, visual enhancement and reduced noise levels. As these do not necessarily need to be large scale they could also be incorporated into bike sheds, garages and bus shelters.

Please advise the applicant to refer to our SuDS hierarchy on page 4 of '*SuDS a Practical Guide*' which I have attached. This hierarchy should be used in descending order, with any obstacles to the use of the most sustainable techniques fully justified.

ea/lh/e/std

Ecology

The NPPF is clear that the planning system should enhance the natural environment by establishing coherent ecological networks that are more resilient to current and future pressures. As such, the applicant will need to investigate what opportunities are available to restore sections of the Rags Brook. This would create a valuable amenity and biodiversity asset whilst also ensuring that the proposals comply with the Thames River Basin Management Plan.

While we support the maintenance of an eight metre buffer strip either side of the Rags Brook the applicant should look at increasing this. This is both due to the size of the site and the fact it is currently on greenfield land. The Rags Brook is also currently failing to achieve good ecological potential.

Water efficiency

We are concerned that water usage has not been identified as an issue considering that this is a highly water-stressed area.

We suggest that all residential developments should aim to achieve 105 litres per person per day. This is equivalent to level 3/4 for water within the Code for Sustainable Homes and can be accomplished by incorporating water efficient technologies such as rainwater harvesting, low flow taps and water butts. This will also ensure that the proposals comply with your policy SUS14.

Please contact me if you have any queries.

Yours sincerely

Natasha Smith
Planning Advisor – Sustainable Places Team

Direct dial 01707 632332
E-mail SPHatfield@environment-agency.gov.uk

Andrew MacDougall

From: Matthew Armstrong [Matthew.Armstrong@hertfordshire.gov.uk]
Sent: 06 August 2013 10:45
To: Andrew MacDougall; Paul Chappell
Subject: RE: ES Scoping Report

Andy

Comments as follows:

- We would usually expect the highway implications to be covered in a Transport Assessment, in accordance with DfT guidelines. The Scoping Report states that all applications will be prepared in accordance with this, and this should ensure a robust and comprehensive assessment of any forthcoming proposals.

- It is possible that some of the 6 sites may, in themselves, fall below the threshold for warranting a full Transport Assessment (i.e. for C3 residential, less than 80 units needs only a TS; over 80 needs a full TA). However, if the sites are being promoted collectively, then there is the cumulative impact to take into account. Therefore it may be justified to ask for a full TA for each application that comes forward, regardless of size, which examines the collective impact of the sites on the public highway. This is particularly important in terms of calculating junction capacity analysis.

- Ideally I would like to see the Scoping Report put more emphasis on the NPFF. In particular, NPPF paragraph 32 (decisions should take account of whether safe and suitable access to the site can be achieved for all people) and paragraph 35 (developments should be located and designed where practical to give priority to pedestrian and cycle movements, and have access to high quality public transport facilities) should be thoroughly addressed in any forthcoming applications. Given the sites are previously undeveloped land, these issues are particularly important to think through.

Regards

Matt Armstrong
Transport Engineer
Asset Management and Maintenance Strategies
Postal Point CHN 203, Hertfordshire County Council, County Hall, Pegs Lane, Hertford, SG13 8DN
01992 556065 (Internal: 26065)

From: Andrew MacDougall [mailto:am1.environment@broxbourne.gov.uk]
Sent: 05 August 2013 15:57
To: Paul Chappell; Matthew Armstrong
Subject: FW: ES Scoping Report

Dear All

Please can I receive your responses ASAP for the below consultation. If you are unable to respond imminently, please let me know.

Regards.

Andy MacDougall
Major Site- Development Officer
Borough of Broxbourne

Bishops College | Churchgate | Cheshunt | Herts | EN8 9XQ
T: 01992 785555 ext 5790

From: Diane Parsley

Sent: 17 July 2013 11:56
Cc: Andrew MacDougall
Subject: ES Scoping Report

ES Scoping Opinion

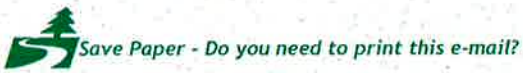
Redevelopment Scheme on Land West of Cheshunt

The Council has received a scoping opinion for the above development; documentation can be viewed on our website http://www.broxbourne.gov.uk/environment_and_planning/planning/public_notices.aspx If you have any observations you wish to make on the proposal can we please receive them within 14 days, they can be emailed to planning@broxbourne.gov.uk

If your observations are not received within the requested time limits, I will assume you have no comments to make, if you require an extension of time please let us know and we will endeavour to agree this with the applicant.

Please note any representations received may be subject to inspection by the applicant or by third parties.

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953



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30th July 2013

Broxbourne Borough Council
Case Officer: Andrew MacDougall
Your ref: ES Scoping report
planning@broxbourne.gov.uk

Dear Mr MacDougall,

Planning ref: **ES Scoping report**
Location: Land west of Cheshunt
Description: Redevelopment scheme on land west of Cheshunt

Thank you for consulting Herts & Middlesex Wildlife Trust on the above request for an EIA scoping opinion.

The proposal involves redevelopment of 6 parcels of green belt, greenfield land, totalling 53 hectares, to provide up to 750 new dwellings, separated by retained hedgerows, tree lines and Rags Brook. Other elements of the redevelopment include construction of a new school and 'community hub', new roads, play areas and a linear park along Rags Brook.

The existing site consists predominantly of grassland fields (probably improved and semi-improved), with mature hedgerow and tree boundaries, the Rosedale Sports Ground (amenity grassland), a number of buildings, Andrew's Lane and Rags Brook. The most southerly parcels south of Rosedale Sports Ground are identified as a Hertfordshire Local Wildlife Site – ref. 80/035, *Meadow South of Rosedale Sports Ground* – based on its neutral grassland interest.

The structure and scope of the EIA proposed in the scoping report seem appropriate and consistent with the EIA regulations and best practice guidance.

Among the topics that have been 'scoped in' and which have implications for ecology and nature conservation, are effects on: water resources; geology and ground conditions; landscape and visual amenity; and ecology. The methodologies and approaches proposed for the EIA and Environmental Statement appear appropriate.

Water resources

HMWT is pleased to see that the extent of the floodplain (as agreed with the EA based on hydraulic modelling and other information) will inform the layout and extent of the development. As the development is proposed on existing undeveloped land and also surrounds a main river, adverse impacts on hydrology, water quality, flood risk and surface water drainage must be avoided through sensible layout and design, and mitigation should be planned and integrated through a drainage strategy and Sustainable Drainage Systems within any development within the site. The Environmental Statement must fully assess the likely effects of the development on water resources and proposed suitable mitigation, including SUDS. Where possible, sustainable drainage solutions should be designed to deliver multiple benefits in the context of the new development, for instance biodiversity enhancement, visual amenity benefits, climate change adaptation, as well as sustainable drainage and runoff management.

Ecology

Herts & Middlesex

Grebe House
St Michael's Street
St Albans
Hertfordshire
AL3 4SN

Tel: (01727) 858901
Fax: (01727) 854542
Email: info@hmwt.org
www.hertswildlifetrust.org.uk

Chief Executive: Jane Durney

INVESTORS IN PEOPLE UK

Hertfordshire & Middlesex Wildlife Trust Limited is registered in England No 816710 at the above address and is registered as a charity under Registration No 239863. VAT No 366 9276 06

President
Sir Simon A Bowes Lyon, KCVO

The scoping report states (para. 6.6), 'The ecological value of the site is associated with the mature trees, hedgerows, scrub, semi-improved grassland and Rags Brook.' Para 6.7 - 'The majority of habitats found on site can be considered to have a low ecological value. However there are pockets of ecological interest and linear linking habitat features with greater ecological value'. Based upon aerial photos, this appears to be a fair assumption. The scoping report does not however mention the Local Wildlife Site. Particular attention must be paid to assessing the botanical interest, habitat quality and management history of the Local Wildlife Site, in order that the impact of the development on ecology and the local ecological network can be fully considered, and suitable mitigation and compensation can be proposed and implemented in the event that the Local Wildlife Site is lost as a result of the development.

The report indicates that a number of baseline surveys have been carried out, including an Extended Phase 1 Habitat Survey, and surveys for badger, water vole, white-clawed crayfish, reptiles and bats (inspection survey). We are pleased to see that the ecological surveys are to be checked and updated as part of the EIA process. The survey work done and to be updated, based on the report, includes:

- River corridor survey – to be updated;
- Aquatic and terrestrial invertebrate surveys – done in 2012, no further work required;
- NVC assessment to identify notable and protected plant species – recommended;
- Breeding bird surveys – done in 2012, further work in 2013;
- Bat surveys 2011-2013, including dawn and dusk surveys of mature trees and buildings;
- Reptile surveys – done in 2011, currently being updated.

The list of surveys done and to be completed appears suitable, based upon the habitats affected. All ecological survey work must follow the accepted industry best-practice standards and guidance for that particular species and survey type. The ES should include proposed avoidance and mitigation measures to reduce the likely adverse impacts of construction and post-construction use of the site on protected, priority and otherwise notable species.

I would encourage the council to request a survey of the Local Wildlife Site, following the Hertfordshire Wildlife Sites Partnership's methodology for surveys (please contact HMWT for more information), in order to confirm the ecological interest of the site and therefore allow a proper assessment of the impact of the development on ecological assets.

HMWT considers that the EIA and Environmental Statement must also assess and take account of the impact that development will have on local biodiversity networks and ecological connectivity through the landscape. The assessment therefore needs to look beyond the boundaries of the application site and take an integrated approach to consider the likely impact on ecosystem functioning and resilience.

Given its scale and Green Belt/Greenfield location, there is an expectation that the development will include high quality green infrastructure and biodiversity enhancement proposals. HMWT considers that the development will need to include proposals for significant habitat mitigation and compensation, including habitat creation, restoration and long-term management, to minimise and offset adverse impacts on biodiversity networks and seek to achieve a net gain for nature, as encouraged by the NPPF and the Natural Environment White Paper.

Yours sincerely,

Odette Carter
Planning and Policy Officer

01727 858901 ext 236
odette.carter@hmwt.org

Herts & Middlesex
Protecting **Wildlife** for the Future
Registered in England No 816710 Registered Charity No 239863

Andrew MacDougall

From: Diane Parsley
Sent: 24 July 2013 13:47
To: Andrew MacDougall
Subject: FW: ES Scoping Report

FYI.....

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953

From: Jackie Cottingham
Sent: 24 July 2013 13:45
To: Diane Parsley
Cc: Stephen Tingley
Subject: RE: ES Scoping Report

Dear Diane

Thank you for the notification of this report which it is helpful to know about. No comments at present.

Jackie Cottingham
Housing Policy and Project Manager
Community Services
Broxbourne BC, Bishops' College, Churchgate, Cheshunt, Herts EN8 9XD
Tel: 01992 785521

From: Diane Parsley
Sent: 17 July 2013 11:56
To: 'caroline.sabberton@environment-agency.gov.uk'; 'Andy.Hardstaff@hertfordshire.gov.uk'; Stephen Tingley; Jackie Cottingham; Dave Renouf; Property Inbox; Roland Childerhouse; 'Jacqueline.Nixon@hertfordshire.gov.uk'; 'andy.instone@hertfordshire.gov.uk'; 'consultations@naturalengland.org.uk'; 'planning@hmwt.org'; 'devcon.team@thameswater.co.uk'; 'broxbourne.consult@hertscc.gov.uk'; Christopher Franks; Chris Allison; Environmental Health; 'plantprotection@nationalgrid.com'; 'Sarah.Poppy@english-heritage.org.uk'
Cc: Andrew MacDougall
Subject: ES Scoping Report

ES Scoping Opinion

Redevelopment Scheme on Land West of Cheshunt

The Council has received a scoping opinion for the above development; documentation can be viewed on our website http://www.broxbourne.gov.uk/environment_and_planning/planning/public_notices.aspx If you have any observations you wish to make on the proposal can we please receive them within 14 days, they can be emailed to planning@broxbourne.gov.uk

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will endeavour to agree this with the applicant.

Please note any representations received may be subject to inspection by the applicant or by third parties.

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953

Save Paper - Do you need to print this e-mail?

Plant Protection
National Grid
Block 1; Floor 1
Brick Kiln Street
Hinckley
LE10 0NA
E-mail: plantprotection@nationalgrid.com
Telephone: +44 (0)800 688588

Diane Parsley
Broxbourne Council
Bishops' College
Churchgate
Cheshunt
Hertfordshire
EN8 9XQ

National Grid Electricity Emergency Number:
0800 40 40 90*

National Gas Emergency Number:
0800 111 999*
* Available 24 hours, 7 days/week.
Calls may be recorded and monitored.

www.nationalgrid.com

Date: 25/07/2013
Our Ref: EA_TE_Z6_2F_09878
Your Ref: High Leigh (rf)

RE: Formal Enquiry, EN11 8SG, High Leigh to the West of Hoddesdon

Thank you for your enquiry which was received on 17/07/2013.

Please note this response and any attached map(s) are valid for 28 days.

An assessment has been carried out with respect to National Grid Electricity Transmission plc's and National Grid Gas plc's apparatus. Please note it does not cover the items listed in the section "Your Responsibilities and Obligations", including gas service pipes and related apparatus.

For details of National Grid's network areas please see the National Grid website (http://www.nationalgrid.com/uk/Gas/Safety/work/) or the enclosed documentation.

Are My Works Affected?

National Grid has identified that it has apparatus in the vicinity of your enquiry which may be affected by the activities specified.
Can you please inform National Grid, as soon as possible, the decision your authority is likely to make regarding this application.
If the application is refused for any other reason than the presence of National Grid apparatus, we will not take any further action.
Please let us know whether National Grid can provide you with technical or other information that may be of assistance to you in the determination of the application.

National Grid is a trading name for:
National Grid Electricity Transmission plc
Registered Office: 1-3 Strand, London WC2N 5EH
Registered in England and Wales, No 2366977

National Grid is a trading name for:
National Grid Gas plc
Registered Office: 1-3 Strand, London WC2N 5EH
Registered in England and Wales, No 2006000

Due to the presence of National Grid apparatus in proximity to the specified area, the contractor should contact National Grid before any works are carried out to ensure our apparatus is not affected by any of the proposed works.

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your scheduled activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near National Grid's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to National Grid Electricity Transmission plc (NGET) and National Grid Gas plc (NGG) apparatus. This assessment does **NOT** include:

- National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact National Grid.
- Gas service pipes and related apparatus
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities. Further "Essential Guidance" in respect of these items can be found on the National Grid Website (http://www.nationalgrid.com/NR/rdonlyres/6D6525F9-59EB-4825-BA89-DBD7E68882C7/51319/EssentialGuidance.pdf).

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to National Grid's easements or wayleaves nor any planning or building regulations applications.

NGG and NGET or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the National Grid Plant Protection team via e-mail (click here) or via the contact details at the top of this response.

Yours faithfully

National Grid Plant Protection Team

ASSESSMENT

Affected Apparatus
The National Grid apparatus that has been identified as being in the vicinity of your proposed works is:

- Low or Medium pressure (below 2 bar) gas pipes and associated equipment. (As a result it is highly likely that there are gas services and associated apparatus in the vicinity)

Land Use Planning Distances
These are distances defined by the Health and Safety Executive (HSE) to allow them to advise on the acceptability of new developments next to hazardous installations and are controlled through the HSE's Planning Advice for Developments near Hazardous Installations (PADHI) process.

Further guidance on how these are applied can be found on the HSE's website:
http://www.hse.gov.uk/landuseplanning/padhi.pdf

Requirements

BEFORE carrying out any work you must:

- Carefully read these requirements including the attached guidance documents and maps showing the location of National Grid apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' and GS6 – 'Avoidance of danger from overhead electric power lines'. This guidance can be downloaded free of charge at http://www.hse.gov.uk
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

GUIDANCE

Excavating Safely - Avoiding injury when working near gas pipes:
http://www.nationalgrid.com/NR/rdonlyres/2D2EEA97-B213-459C-9A26-18361C6E0B0D/25249/Digsafe_leaflet3e2finalamends061207.pdf

Standard Guidance

Essential Guidance document:
http://www.nationalgrid.com/NR/rdonlyres/6D6525F9-59EB-4825-BA89-DBD7E68882C7/51319/EssentialGuidance.pdf

General Guidance document:
http://www.nationalgrid.com/NR/rdonlyres/55C13C4D-A1AA-4B13-BFDA-1CF59F88B326/51318/GeneralGuidance.pdf

Excavating Safely in the vicinity of gas pipes guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/A3D37677-6641-476C-9DDA-E89949052829/44257/ExcavatingSafelyCreditCard.pdf

Excavating Safely in the vicinity of electricity cables guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/35DDEC6D-D754-4BA5-AF3C-D607D05A25C2/44858/ExcavatingSafelyCreditCardelectricitycables.pdf

Copies of all the Guidance Documents can also be downloaded from the National Grid Website:
http://www.nationalgrid.com/uk/Gas/Safety/work/downloads/

ID: EA_TE_Z6_2F_09878	View extent: 2890m, 3670m
USER: rebecca.flint	LP MAINS
DATE: 25/07/2013	MP MAINS
DATA DATE: 24/07/2013	IP MAINS
REF: High Leigh (rf)	LHP MAINS
MAP REF: TL3609	NHP MAINS
CENTRE: 536252, 209074	0m 200m Approximate scale 1:10000 on A3 Colour Portrait

Valve | Depth of Cover | Syphon | Diameter Change | Material Change

Do not proceed without further consultation

This plan shows those pipes owned by National Grid Gas plc in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Map 1 of 1 (GAS)

MAPS Plot Server Version 1.7.4

nationalgrid

Requested by: Broxbourne Council

This plan is reproduced from or based on the OS map by National Grid Gas plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024886

ENQUIRY SUMMARY

Received Date
17/07/2013

Your Reference
High Leigh (rf)

Location
Centre Point: 536252, 209074
X Extent: 870
Y Extent: 1400
Postcode: EN11 8SG
Location Description: EN11 8SG, High Leigh to the West of Hoddesdon

Map Options
Paper Size: A3
Orientation: PORTRAIT
Requested Scale: 10000
Actual Scale: 1:10000 (GAS)
Real World Extents: 2890m x 3670m (GAS)

Recipients
pprsteam@nationalgrid.com

Enquirer Details
Organisation Name: Broxbourne Council
Contact Name: Diane Parsley
Email Address: dp.environment@broxbourne.gov.uk
Telephone: 01992 785 555
Address: Bishops' College, Churchgate, Cheshunt, Hertfordshire , EN8 9XQ

Description of Works
p/a The Council has received a Request for an Environmental Impact Assessment Scoping Opinion for a mixed use development at High Leigh to the West of Hoddesdon. (db)

Enquiry Type
Formal Enquiry

Activity Type
Development Project

Notice Types
Notice Type: Formal Planning Application (Standard Planning Application)

Date: 26 July 2013
Our ref: 92695
Your ref: Land West of Cheshunt

Broxbourne District Council
Bishops' College
Churchgate
Cheshunt
Hertfordshire
EN8 9XQ

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire CW1 6GJ

T 0300 060 3900

BY EMAIL ONLY

Dear Sir/Madam

Environmental Impact Assessment Scoping consultation (Regulation 15 (3) (i) of the EIA Regulations 2011):
Location: Land West of Cheshunt

Thank you for your consultation dated and received by Natural England on 17 July 2013.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

The scoping request is for a proposal that does not appear, from the information provided, to affect any nationally designated geological or ecological sites (SAC, Ramsar, SPA, SAC, SSSI, NNR) or landscapes (National Parks, AONB's, Heritage Coasts, National Trails), or have significant impacts on the protection of soils (particularly of sites over 20ha of best or most versatile land), nor is the development for a mineral or waste site of over 5ha.

At present therefore it is not a priority for Natural England to advise on the detail of this EIA. We would, however, like to draw your attention to some key points of advice, presented in annex to this letter, and we would expect the final Environmental Statement (ES) to include all necessary information as outlined in Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2011. If you believe that the development does affect one of the features listed in paragraph 3 above, please contact Natural England at consultations@naturalengland.org.uk, and we may be able to provide further information.

Yours sincerely
Aileen Waldron-Kelly
Customer Service Consultation Team

Annex A – Advice related to EIA Scoping Requirements

1. General Principles

Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2011, sets out the necessary information to assess impacts on the natural environment to be included in an ES, specifically:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen.
- A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects. Effects should relate to the existence of the development, the use of natural resources and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- A non-technical summary of the information.
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.

2. Biodiversity and Geology

2.1. Ecological Aspects of an Environmental Statement

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EcIA) have been developed by the Institute of Ecology and Environmental Management (IEEM) and are available on their website.

EcIA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework (NPPF) sets out guidance in S.118 on how to take account of biodiversity interests in planning decisions and the framework that local authorities should provide to assist developers.

2.2. Internationally and Nationally Designated Sites

Natural England undertakes an initial assessment of all development consultations, by determining whether the location to which they relate falls within geographical 'buffer' areas within which development is likely to affect designated sites. The proposal is located outside these buffer areas and therefore appears unlikely to affect an Internationally or Nationally designated site. However, it should be recognised that the specific nature of a proposal may have the potential to lead to significant impacts arising at a greater distance than is encompassed by Natural England's buffers for designated

sites. The ES should therefore thoroughly assess the potential for the proposal to affect designated sites, including Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites and Sites of Special Scientific Interest (SSSI). Should the proposal result in an emission to air or discharge to the ground or surface water catchment of a designated site then the potential effects and impact of this would need to be considered in the Environmental Statement

Local Planning Authorities, as competent authorities under the provisions of the Conservation of Habitats and Species Regulations 2010 (the 'Habitats Regulations), should have regard to the Habitats Regulations Assessment process set out in Regulation 61 of the Habitats Regulations in their determination of a planning application. Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process.

Statutory site locations can be found at www.magic.gov.uk. Further information concerning particular statutory sites can be found on the Natural England website.

2.3. Protected Species

The ES should assess the impact of all phases of the proposal on protected species. Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.

The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System*. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.

Natural England has adopted standing advice for protected species. It provides a consistent level of basic advice which can be applied to any planning application that could affect protected species. It also includes links to guidance on survey and mitigation.

Natural England does not hold comprehensive information regarding the locations of species protected by law, but advises on the procedures and legislation relevant to such species.

2.4. Regionally and Locally Important Sites

The ES should thoroughly assess the impact of the proposals on non-statutory sites, for example Local Wildlife Sites (LoWS), Local Nature Reserves (LNR) and Regionally Important Geological and Geomorphological Sites (RIGS). Natural England does not hold comprehensive information on these sites. We therefore advise that the appropriate local biological record centres, nature conservation organisations, Local Planning Authority and local RIGS group should be contacted with respect to this matter.

2.5. Biodiversity Action Plan Habitats and Species

The ES should thoroughly assess the impact of the proposals on habitats and/or species listed in the UK Biodiversity Action Plan (BAP). These Priority Habitats and Species are listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, recently published under the requirements of S14 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available in the Defra publication 'Guidance for Local Authorities on Implementing the Biodiversity Duty'.

Government Circular 06/2005 states that BAP species and habitats, 'are capable of being a material consideration...in the making of planning decisions'. Natural England therefore advises that survey,

impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the ES. Consideration should also be given to those species and habitats included in the relevant Local BAP.

The record centre for the relevant Local Authorities should be able to provide the relevant information on the location and type of BAP habitat for the area under consideration.

3. Landscape, Access and Recreation

3.1. Landscape and Visual Impacts

The consideration of landscape impacts should reflect the approach set out in the *Guidelines for Landscape and Visual Impact Assessment* (The Landscape Institute, 2002), the *Landscape Character Assessment Guidance for England and Scotland* (Scottish Natural Heritage and The Countryside Agency, 2002) and good practice. The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England would expect the cumulative impact assessment to include those proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

The assessment should refer to the relevant National Character Areas which can be found on our website. Links for Landscape Character Assessment at a local level are also available on the same page.

3.2. Access and Recreation

The ES should include a thorough assessment of the development's effects upon public rights of way and access to the countryside and its enjoyment through recreation. With this in mind and in addition to consideration of public rights of way, the landscape and visual effects on Open Access land, whether direct or indirect, should be included in the ES.

Natural England would also expect to see consideration of opportunities for improved or new public access provision on the site, to include linking existing public rights of way and/or providing new circular routes and interpretation. We also recommend reference to relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

4. Land use and soils

Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the NPPF.We also recommend that soils should be considered under a more general heading of sustainable use of land and the valuing of the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF.

Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society; for instance as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. It is therefore important that the soil resources are protected and used sustainably. The Natural Environment White Paper (NEWP) *'The Natural Choice: securing the value of nature'* (Defra , June 2011), emphasises the importance of natural resource protection, including the conservation and sustainable management of soils and the protection of BMV agricultural land.

Development of buildings and infrastructure prevents alternative uses for those soils that are permanently covered, and also often results in degradation of soils around the development as result of construction activities. This affects their functionality as wildlife habitat, and reduces their ability to support landscape works and green infrastructure. Sealing and compaction can also contribute to increased surface run-off, ponding of water and localised erosion, flooding and pollution. Defra

published a Construction Code of Practice for the sustainable use of soils on construction sites (2009). The purpose of the Code of Practice is to provide a practical guide to assist anyone involved in the construction industry to protect the soil resources with which they work.

As identified in the NPPF new sites or extensions to new sites for Peat extraction should not be granted permission by Local Planning Authorities or proposed in development plans.

General advice on the agricultural aspects of site working and reclamation can be found in the Defra Guidance for successful reclamation of mineral and waste sites.

5. Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example over 97% of sensitive habitat area in England is predicted to exceed the critical loads for ecosystem protection from atmospheric nitrogen deposition (England Biodiversity Strategy, Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

6. Climate Change Adaptation

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment "by establishing coherent ecological networks that are more resilient to current and future pressures" (NPPF Para 109), which should be demonstrated through the ES.

Andrew MacDougall

From: Colin Haigh
Sent: 30 July 2013 10:48
To: Andrew MacDougall
Subject: West of Cheshunt ES

Hi Andy

Agree with their chapter list – water/hydrology/flood/drainage, archaeology, ground conditions, ecology, landscape/visual, transport and socio-economic. I expect flood/drainage and landscape/visual to be fundamental. Transport should have strategic as well as local focus, as main impacts may occur on surrounding residential streets and A10 junctions. The socio-economic chapter is light, particularly given possible impacts on Rosedale sports club.

There is no mention of: noise (most likely associated with construction and transport); air quality (most likely associated with transport); or utilities (inc gas, elec, water supply, sewerage, broadband/telecoms).

Colin

Andrew MacDougall

From: Diane Parsley
Sent: 25 July 2013 08:07
To: Andrew MacDougall
Subject: FW: Broxbourne - ES Scoping Opinion, Land West Of Cheshunt,

FYI....

Diane Parsley
Office Manager
Planning & Building Control Admin
Tel: 01992 785 555 ext: 5953

Save Paper - Do you need to print this e-mail?

From: Mark Dickinson [mailto:Mark.Dickinson@thameswater.co.uk]
Posted At: 24 July 2013 17:44
Posted To: Planning Mailbox
Conversation: Broxbourne - ES Scoping Opinion, Land West Of Cheshunt,
Subject: Broxbourne - ES Scoping Opinion, Land West Of Cheshunt,

Dear Diane Parsley

Thank you for giving Thames Water the opportunity to comment on the above document. The provision of water and waste water infrastructure is essential to any development.

It is unclear at this stage what the net increase in demand on our infrastructure will be as a result of the proposed development. Thames Water is concerned that the network in this area may be unable to support the demand anticipated from this development. The developer needs to consider the net increase in water and waste water demand to serve the development and also any impact the development may have off site further down the network, if no/low water pressure and internal/external sewage flooding of property is to be avoided

We would therefore recommend that any report should be expanded to consider the following.

- The developments demand for water supply and network infrastructure both on and off site and can it be met
- The developments demand for Sewage Treatment and network infrastructure both on and off site and can it be met
- The surface water drainage requirements and flood risk of the development both on and off site and can it be met

Should the developer wish to obtain information on the above issues they should contact our Developer Services department on 0845 850 2777

Yours Sincerely

Mark Dickinson
Development Planning Manager

Mark Dickinson
Development Planning
Manager

Thames Water Utilities Ltd,
Maple Lodge STW,

Denham Way,
Rickmansworth
WD3 9SQ

07747640591

02035770591

mark.j.dickinson@thameswater.co.uk

http://corporate/dts/Pn_DevPlan/DevPlanDetails.asp?selDevPlan=2998

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APPENDIX 2 – DRAFT PHASE 1 GROUND CONDITION ASSESSMENT

Proposed Residential Development, Rosedale Park, Cheshunt

Phase 1 Ground Condition Assessment

draft

On behalf of: Crest Nicholson

Project Ref: 29732/3500 | Document: R001/rev0| September 2015

Office Address: Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN
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Document Control Sheet

Project: **Proposed Residential Development, Rosedale Park, Cheshunt**

Project Ref: **29732/3500**

Document: **Phase 1 Ground Condition Assessment**

Doc Ref: **R001/rev0**

Date: **September 2015**

	Name	Position	Signature	Date
Prepared by:	Martyn Higham	Associate		
Approved and Reviewed by:	Richard Thomas	LLP Director		
For and on behalf of Peter Brett Associates LLP				

Issue	Date	Description	Prepared	Reviewed	Approved
rev0	Sep 2015	Issued draft for information	mdh	rht	rht

draft

Peter Brett Associates LLP disclaims any responsibility to the Client and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence within the terms of the Contract with the Client and generally in accordance with the appropriate ACE Agreement and taking account of the manpower, resources, investigations and testing devoted to it by agreement with the Client. This report is confidential to the Client and Peter Brett Associates LLP accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

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Summary

This report presents the findings of a Phase 1 Ground Condition Assessment to support a planning application for the proposed residential development at Rosedale Park, Cheshunt.

Site Description The Site is situated on the undulating land to the west of the valley of the River Lee, within the valley of the Rag's Brook and a low ridge to the south. The natural ground conditions comprise the London Clay Formation locally overlain by River Terrace Deposits and Glacial Sands and Gravels.

Historically the Site has been used for agricultural purposes and, in part, recreational purposes. The current development of the Site is limited to the buildings of Garryross Farm and Grangebrook Nursery.

Ground Stability Risk Assessment A review of potential geological hazards has identified the risk for potentially adverse foundation conditions to be present, in general, to be **Very Low**. The exceptions relates to a **Moderate** potential risk associated with shrinking/swelling clays of the Head Deposits and London Clay.

Tier 1 Geoenvironmental Risk Assessment There are no known sources of contamination within the Site and the historical and current use of the Site makes the presence of significant concentrations of potential contaminants unlikely.

The findings of a qualitative risk assessment carried out to assess hazards and constraints posed by the existing site conditions to the proposed development are summarised in the following table.

Potential Receptor	Risk Assessment	Description
Site Workers	Low	The risk to site workers will effectively be mitigated by wearing appropriate protective clothing and equipment, and adopting good standards of hygiene to prevent prolonged skin contact, inhalation and ingestion of soils.
Future Site Users	Very Low	The proposed buildings and hard surfaces, together with the provision of a layer of clean soil cover to gardens and soft landscaping in the areas of Garryross Farm and Grangebrook Nursery will effectively mitigate the exposure of future site occupiers and users to any potential contaminants.
Groundwaters and Surface Waters	Very Low	The potential for any mobile contaminants to adversely affect the quality of ground and surface waters will be unaffected by the proposed development and is assessed to remain as Very Low.
Ecology and Wildlife	Very Low	Owing to the potential for contaminants to be present in the ground and the distance to the nearest ecological receptor the risk to ecology and wildlife is expected to be Very Low.
Built Environment	Very Low	The assessed risk is limited as potential contaminants are not present at concentrations that would have a deleterious affect on building materials.

The geoenvironmental risk assessment indicates no significant risk to human health, controlled waters or ecology and wildlife associated with the development of the Site as currently proposed. On this basis, there is no reason that the site would be designated as Contaminated Land under Part IIa of the Environmental Protection Act 1990.

The summary contains an overview of the key findings and conclusions. However no reliance should be placed on any part of the summary until the whole of the report has been read.

draft

1.0 Introduction

Peter Brett Associates LLP (PBA) has been commissioned by the Crest Nicholson (the Client) to carry out a Phase 1 Ground Condition Assessment to support a planning application for the proposed residential development at Rosedale Park, Cheshunt.

The object of the study is to review readily available information to assess the likely ground conditions at the Site and immediate surrounding land, thereby to identify potential geoenvironmental and geological hazards and constraints to the proposed redevelopment.

In accordance with the requirements of the National Planning Policy Framework (DCLG, 2012), the assessment has been carried out in accordance with "established procedures" using current UK best practice and guidance as given in British Standard 10175 (BS 10175, 2013), Contaminated Land Report 11 (EA, 2004) and NHBC Standards Chapter 4.1 (NHBC, 2014a) with regard to land contamination, and DCLG (2104) with regard to land stability.

The scope of work performed by PBA comprises:

i) A review of readily available geological, hydrogeological and aquifer vulnerability maps; and historical Ordnance Survey maps; together with any ground investigation data; and construction drawings and reports.

ii) A qualitative assessment of geological hazards and ground stability risk to identify the potential risk arising from artificial cavities; natural cavities; and other potential adverse foundation conditions.

iii) A qualitative Tier 1 contamination risk assessment utilising a Conceptual Site Model to identify 'source-pathway-receptor' linkages to assess the potential risk and hazards, if any, associated with existing or potential future contamination in the ground.

This report presents the findings of the study together with a qualitative assessment of any hazards and constraints posed by the existing ground conditions to the proposed development. This report also comments on any mitigation or remediation measures that may be required as part of the proposed redevelopment.

Guidance on the context of this report and any general limitations or constraints on its content and usage are given in a separate guidance note included after the text of this report.

Draft

2.0 The Site

2.1 Site Location

The Site is centred at National Grid Reference TL 337 034 about 2.0 km northwest of Cheshunt town centre. The location of the Site is shown on a Site Location Plan presented as **Figure 1**.

The Site has overall plan dimensions of about 950 by 1000 m. The Site is located within the area bounded by Rags Lane to the west, Peakes Way to the north, Rosedale Way to the east, and Goff's Lane to the south. The Site is bisected by Andrews Lane aligned east-west through the central part of the Site. The layout of the Site is shown on a Site Layout Plan presented as **Figure 2** of this report.

The Site is situated on the undulating land to the west of the valley of the River Lee, within the valley of the Rag's Brook and a low ridge between the valleys of the Rag's Brook and Theobald's Brook to the south. Rag's Brook and Theobald's Brook are tributaries of the River Lee that flow east, respectively, through the northern part of the Site and approximately 0.8 km to the south of the Site. Natural ground levels are between about 55 and 65 m OD along the western site boundary, reducing at a gradient of about 1 vertical in 20 horizontal to between about 45 and 55 m OD along the eastern boundary. Within the Site the land falls towards the line of the Rag's Brook at a gradient of about 1 vertical in 15 horizontal.

2.2 Site History

Information on the history of the Site and surrounding area has been determined by reference to a number of readily available historical and current Ordnance Survey (OS) maps, supplemented where possible by reference to early maps and other historical records. Copies of the extracts from the historical and current OS maps are presented in **Appendix 1**; for ease of presentation the OS maps are presented at a reduced scale (from A3 to A4) with duplicate and blank maps omitted.

The earliest detailed OS maps available date from the early-1870s and show the Site to be undeveloped farmland and woodland comprising a number of fields with boundary ditches and hedgerows. Rag's Lane and Andrews Lane are shown on about their present alignment, respectively, to the west and through the central part of the Site. The buildings of a number of farms, including Colesgrove Farm, Claramont Farm and Elm Farm, and associated farm workers cottages are shown in the area surrounding the Site, together with a number of large residential properties including Burton Grange, Digdag Hall and Claramont.

By the early-1910s, the area to the east of the Site had been developed for market gardening with the construction of extensive areas of glasshouses and nurseries. By the late-1930s, two isolation hospitals had been constructed adjacent to the northern and southwest boundaries of the Site. By the early-1960s, a field to the south of Andrews Lane had been developed as the Rosedale Sports Ground, with tennis courts, bowling green and a pavilion. Also by this date, further areas of glasshouses had been developed to the northwest and southwest of the Site, including a nursery, Grangebrook Nursery, on the northwest part of the Site.

Between the mid-1970s and mid-1980s, a number of areas of former glasshouses to the east of the Site were redeveloped for residential use comprising a mix of semi-detached and terraced houses on a series of local estate roads. By the late-1990s, the area of a former nursery to the north of the Site was also redeveloped for residential use. Also by this date a farm, denoted Garryross Farm, comprising a house with outbuildings and stables had been constructed on the western part of the Site whilst the Grangebrook Nursery on the northwest part of the Site was being used as a commercial vehicle business.

No significant changes are shown between the late-1990s and the latest OS map produced in 2014.

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2.3 Current Site Use

The Site is currently used for agriculture comprising open arable fields and pasture with hedgerows along field boundaries. Rag's Brook bisects the Site whilst the built development on the Site is limited to the buildings of Garrymore Farm on the western part of the Site and the former Grangebrook Nursery on the northwest part of the Site. The sports pitches and associated pavilion and car parking of the Rosedale Sports Ground are present to the south of Andrews Lane on the southern part of the Site.

The layout of the Site is shown on the Site Layout Plan presented as **Figure 2**.

2.4 Environmental and Industrial Setting

Information on the environmental and industrial setting of the Site is presented in an EnviroInsight Report (Emap, 2015a) prepared for the Site, a copy of this report is reproduced in **Appendix 2**. Additional information has been provided by Borough of Broxbourne Council Environmental Health, a copy of this information is reproduced in **Appendix 3**. The results of the database search are summarised on the following table and discussed in the following sections.

Summary of Environmental and Industrial Setting

Data Type	Number on Site [1]	Number within 250 m of Site [1]
Waste Regulation		
Landfill Sites	0 (0)	0 (0)
Licensed Waste Management Facilities	0 (0)	0 (0)
Statutory Permits/Authorisations		
Part A(1) and IPPC Permitted Activities[2]	0 (0)	0 (0)
Part A(2) and Part B Permitted Activities	0 (0)	0 (0)
Radioactive Substance Authorisations	0 (0)	0 (0)
Planning Hazardous Substances[3]	0 (0)	0 (0)
Potential Contaminative Uses		
Historical Land Use	11	>50
Current Land Use	1	>25
Fuel Stations	0	0

Note: 1) Numbers in brackets denotes number of authorisations, licences or permits that are lapsed, revoked, cancelled, superseded, defunct, surrendered, not applicable, withdrawn or not yet started.
2) Includes historic Integrated Pollution Controls, Integrated Pollution Prevention and Control, Local Authority Integrated Pollution Prevention and Control and Local Authority Pollution Prevention and Control permits.
3) Includes COMAH (Control of Major Accident Hazards) and NIHHS (Notification of Installations Handling Hazardous Substances) sites.

draft

Statutory Permits/Authorisations/Potential Contaminative Uses The current potentially contaminative land use identified on the Site relate to the commercial vehicle business in the former Grangebrook Nursery on the northwest part of the Site, whilst those identified in the vicinity of the Site relate to local commercial activities and local infrastructure facilities. The historical land uses relate principally to the former nurseries located on and in the vicinity of the Site.

Given its historical use, the area of the former Grangebrook Nursery may represent a potential risk of environmental hazard to the Site and the proposed development. Given their nature, size and/or distance from the Site, none of the activities listed in the vicinity of the Site are considered to represent a particular risk of environmental hazard to the Site or the proposed development.

Areas of Environmental Sensitivity The closest statutory designated area of environmental sensitivity to the Site is Cheshunt Park, a designated Local Nature Reserve (LNR), located approximately 0.7 km

northeast of the Site. The park comprises mixed grass and woodland with ancient hedgerows, wildflower meadows, a pond and an orchard.

The Site is also within the "Impact Risk Zones" to the Lee Valley Ramsar site located approximately 3.0 km to the east of the Site and the Wormley-Hoddesdonpark Wood Site of Special Scientific Interest (SSSI) located approximately 1.8 km northwest of the Site. Impact Risk Zones define zones around each designated site within which changes to the environment could result in significant damage to the designated site.

The Site area is currently classified as a 'Nitrate Vulnerable Zone' (NVZ) by the Environment Agency. This however is an agricultural control measure and no particular significance with respect to the proposed development of the Site.

2.5 Proposed Development

The proposed development comprises predominantly residential use with a primary school, local shops, community facilities and associated areas of soft landscaping and public open space. The valley of the Rag's Brook on the northern part of the Site and the areas of the sports ground on the southern part of the Site will remain as undeveloped green open space.

Access would be provided by local connector roads to the existing road network around the Site.

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3.0 Geology, Hydrogeology and Hydrology

3.1 Geology

The 1:50 000 scale geological sheet of the area (IGS, 1978) indicates that the natural stratum underlying the Site comprises the London Clay Formation. River Terrace Deposits (Taplow Gravel) and Glacial Sands and Gravels (Pebble Gravel) are shown to be present overlying the solid geology, respectively, in the lower part of the valley of the Rag's Brook on the eastern part of the Site, and on the low ridge on the southern part of the Site with Glacial Till (Boulder Clay) overlying the Glacial Sand and Gravels to the southwest of the Site.

In addition, it is expected that the mapped strata are overlain by Head Deposits formed by natural geomorphological processes with limited deposits of Alluvium present in the valley of the Rag's Brook. It is expected that the natural strata are locally overlain by Made Ground in the limited areas of build development on the Site associated with the previous and current use and local regrading of the Site.

An extract of the geological sheet for the area of the Site is presented as **Figure 3**.

3.2 Ground Conditions

The ground conditions in the area of the Rosedale Sports Ground present to the south of Andrews Lane have been investigated by ST Consult (STL, 2013). The ground investigation comprised four windowless sample boreholes to a maximum depth of 4.5 m. The ground conditions revealed by the investigation are in agreement with the published geological information and are summarised in the following table.

Summary of Ground Conditions

Formation	Base of Stratum, m bgl	Strata Thickness, m	Description
Made Ground	0.5	0.5	Gravel of brick and concrete with a matrix of sand and clay
Head Deposits	1.2 to 2.1	0.7 to 1.6	Firm brown mottled grey CLAY with occasional gravel
London Clay	>4.5	>3.3	Stiff fissured brown CLAY

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Groundwater entries were not noted during the fieldwork for the ground investigation. It is expected that the absence of any groundwater entries was due to the short time that the exploratory holes were open and the expected low mass permeability of the soils encountered.

Concentrations of potential heavy metal and hydrocarbon contaminants measured in the soils encountered (STL, 2013) are below the assessment criteria for a residential with plant uptake land use given by CL:AIRE (2014) and CIEH (2015).

3.3 Geological Hazards

Radon Radon is a naturally occurring radioactive gas and emanates from geological formations to varying degrees, depending on the type, porosity and permeability. An assessment of potential for radon gas to be present is given in a GeoInsight Report (Emap, 2015b) and reproduced in **Appendix 4**. This assessment indicates that Site is situated in area where protection measures are currently not required for radon gas.

3.4 Hydrogeology

The latest indicative maps included in the EnviroInsight Report (Emap, 2015a) indicates the London Clay Formation is classified as Unproductive Strata, these are rock layers or drift deposits with low permeability and have negligible significance for water supply or river base flow. However, groundwater flow through such formations, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants.

The overlying River Terrace Deposits and Glacial Sands and Gravels are classified as Secondary (A) Aquifers, which are formations of variable permeability that, although seldom producing large quantities of water for abstraction, may be important for local supplies and in supplying base flow to rivers.

The published groundwater vulnerability map of the area (NRA, 1994) indicates the soils overlying River Terrace Deposits and Glacial Sands and Gravels are, respectively, of intermediate and low leaching potential. Soils of intermediate leaching potential can possible transmit a wide range of pollutants, whilst soils of a low leaching potential are unlikely to be penetrated by pollutants. The leaching potential of the soils overlying the London Clay Formation has not been determined as the potential mobility of non-absorbed diffuse source pollutants and liquid discharges will be determined by the properties of the underlying strata.

The latest indicative maps included in the EnviroInsight Report (Emap, 2015a) indicate that the Site is not located in any groundwater source protection zone. Groundwater source protection zones are defined as the groundwater catchment zones for significant public water supply and private wells or boreholes that supply water to potable or equivalent standards.

3.5 Hydrology

The nearest surface water feature is the Rag's Brook, a tributary of the River Lee, that flows east through the northern part of the Site. The River Lee flows south approximately 1.5 km east of the Site. It is understood that the Site currently drains by a series of open ditches that flow towards to the Rag's Brook.

3.6 Groundwater and Surface Water Control

Information on ground and surface water controls is presented in the EnviroInsight Report (Emap, 2015a) reproduced in **Appendix 2**. The results of the database search are summarised on the following table.

Summary of Groundwater and Surface Water Control

Groundwater and Surface Water Controls	Number on Site [1]	Number within 0.5 km of Site [1]
Abstractions	0 (0)	0 (0)
Discharge Consents	0 (0)	12 (9)
Pollution Incidents to Controlled Waters	0	1
Prosecutions Relating to Controlled Waters	0	0

Notes: 1) Numbers in brackets denotes number of authorisations, licences or permits that are lapsed, revoked, cancelled, superseded, defunct, surrendered, not applicable or not yet started.

Abstractions The closest licence for potable water relates to the abstraction of groundwater from the Chalk aquifer from the water supply boreholes at Cheshunt Pumping Station located approximately 1.2 km east of the Site.

Discharge Consents The closest active discharge consent relates to the discharge of treated effluent from a residential property on Andrews Lane immediately south of the site boundary.

draft

Given the nature of the discharges and the regulatory regime under which licensed discharges operate, the discharges listed are not considered to represent a particular risk of environmental hazard to the Site or the proposed development.

Pollution Incidents The sole recorded pollution incident is classified as Category 3 – Minor Incident and relates to the discharge of sewage in 2003 at a site located about 100 m southwest of the Site.

Given the distance from the Site, the nature of the incident and the time since it occurred, the pollution incident listed is not considered to represent a particular risk of environmental hazard to the Site or the proposed development.

draft

4.0 Ground Stability Risk Assessment

4.1 Introduction

In accordance with the requirements of the National Planning Policy Framework (DCLG, 2012), the potential for the proposed development to contribute to or to be adversely affected by land instability has been assessed. Accordingly, consideration is given below to the potential risk of land instability arising from Artificial Cavities; Natural Cavities; and Potential Adverse Foundation Conditions associated with the existing ground conditions across the Site, as identified by the desk study.

4.2 Artificial and Natural Cavities

The Natural and National Mining Cavities Database maintained and updated by PBA has been searched for relevant natural and mining cavity records. No record was found of natural and mining cavities within a 1.0 km radius of the Site. It must be noted that the absence of existing records does not, in itself, demonstrate that natural or mining cavities are not present on the Site. Given the geology and geomorphological setting of the Site, the potential for such features to be present is assessed to be **Very Low**.

4.3 Potential Adverse Foundation Conditions

An assessment of potential geological hazards that may give rise to adverse foundation or construction conditions as supplied by the British Geological Society from their National Geoscience Information Service are presented in the GeoInsight Report (Emap, 2015b) reproduced in **Appendix 4**. The assessment is generated automatically based on digital geological maps and the scope and the accuracy is limited by the methods used to create the dataset and is therefore only indicative for the search area.

The information contained in the GeoInsight Report has been reviewed and where considered necessary reassessed by PBA considering the specific information available for the Site. The modified assessment of the potential for geological hazards to be present on the Site is summarised below.

Summary of the Geological Hazards

Stability Hazard	Hazard Potential	Comment
Shrinking or Swelling Clay	Moderate	The Head Deposits and London Clay are expected to have a high volume change potential (NHBC, 2014b).
	Very Low	The River Terrace Deposits and Glacial Sands and Gravels present, respectively, on the eastern and southern parts of the Site are expected to be not shrinkable (NHBC, 2014b).
Landslide	Very Low	The gradient of the Site is significantly flatter than the expected maximum safe gradient of the ground.
Ground Dissolution	Very Low	The ground conditions are not considered to be susceptible to the development of natural cavities as a result of dissolution
Compressible Ground	Very Low	The ground conditions are such that layers of very soft compressible materials such as organic clay or peat are not expected to be present. Any Alluvium present in the valley of the Rag's Brook may contain very soft compressible materials such as organic clay or peat. However, as this area is to remain as undeveloped green open space, the presence of any compressible ground is of no particular concern to the proposed development.

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Stability Hazard	Hazard Potential	Comment
Collapsible Ground	Very Low	The ground conditions are such that a rapid reduction in volume is not expected to occur when they are loaded and saturated with water.
Running Sand	Very Low	The ground conditions are such that there is expected to be no significant potential for internal erosion associated with groundwater flows into excavations below the water table.

4.4 Surface Working

The historical OS maps indicate a number of pond features were present within the area of the Site. It is expected that the ponds were excavated to provide a store of water for grazing animals. Given the size and nature of the ponds they are not considered to represent a particular stability hazard to the Site and to the proposed development.

4.5 Assessed Ground Stability Risk

The review of potential geological hazards has identified a **Moderate** potential risk associated with shrinking and swelling clays owing to the Head Deposits and London Clay present on the Site.

To mitigate the potential risk associated with shrinking/swelling clays, due allowance will need to be made for the presence of the trees and shrubs in the design of foundations, floor slabs and infrastructure founded on the Clay-with-flints in accordance with the guidelines given in NHBC (2014b).

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5.0 Tier 1 Geoenvironmental Risk Assessment

5.1 Risk Assessment Strategy

To assess the potential risk to the proposed residential development in relation to the quality of the ground and groundwaters, a qualitative risk assessment has been carried out utilising a Conceptual Site Model to identify 'source-pathway-receptor' linkages. This assessment has been made from consideration of the information currently available.

For the purposes of this study the potential for a significant source, pathway or receptor being present have been assessed in terms of their probability and magnitude as being very low, low, moderate, high or very high. The geoenvironmental risk is determined by the interrelationship between the potential for a source of contamination to be present, the potential for migration along a given pathway, and the significance of potential receptors for any plausible source-pathway-receptor linkage. This approach allows the probability and magnitude of the possible consequences that may arise as a result of a hazard to be assessed and possible unacceptable risks to be identified. Details of the methodology used are given in a separate guidance note included after the text of this report.

Draft

5.2 Potential Sources

Historically the Site has been used for agricultural purposes and, in part, recreational purposes. The current development of the Site is limited to the buildings of Garryross Farm present on the western part of the Site and the buildings of the former Grangebrook Nursery on the northwest part of the Site which are currently being used as a commercial vehicle business.

Based on the known history of the Site the overall potential for significant contamination being present in the soils and groundwaters on the Site is, in general, assessed to be **Very Low**. The exceptions relate to the areas of Garryross Farm and Grangebrook Nursery where the potential for significant contamination to be present is considered to be **Low**. The presence of localised areas of contamination associated with, for example, the storage and use of fuel oils or fertilisers and the presence of “diffuse source” pollutants associated with, for example, spreading of sewage sludge on the Site cannot, at this time, be discounted.

Based on the available information on ground conditions, the potential for any deleterious material producing hazardous ground gases to be present is, in general, assessed to be **Very Low**. The exception relates the area of any Alluvium in the valley of the Rag's Brook where the potential for hazardous ground gases to be present is considered to be **Low**.

The area surrounding the Site typically comprises areas of residential development and local commercial activity. Overall the potential for significant contamination to be present in the area around the Site is assessed to be **Low**.

5.3 Potential Exposure Pathways

Potential pathways for the uptake of contaminants by potential receptors include skin contact, inhalation and ingestion of soils and dust by site workers and after users; absorption by crops and other vegetation; and indirectly associated with leaching of potential contaminants by infiltrating ground and surface waters.

Contact, Uptake and Leaching During the construction works, the clearance of the Site and the excavation of the near-surface soils associated with, for example, construction of foundations will result in a significant potential for skin contact, inhalation and ingestion of any potential contaminants in the

near-surface soils. As such, the potential for the uptake of any contaminants by those workers involved in earthworks or ground works is assessed to be **High**.

With regard to the proposed development, the presence of buildings and hard surfaces will limit the potential for skin contact, inhalation and ingestion of any potential contaminants in the near-surface soils. Similarly the buildings and hard surfaces will limit surface water infiltration and the potential for leaching of potential contaminants from the near-surface soils on the Site. In the areas of the Site covered by buildings or hard surfacing, the potential for significant contact, uptake or leaching of any potential contaminants in the near-surface soils is assessed to be **Very Low**. In the areas of proposed gardens, community open space and soft landscaping the potential is assessed to be **Moderate**.

Site Drainage It is expected that the existing drainage infrastructure on the Site is limited to a number of field drains and ditches. Given the potential flow volumes, the potential for significant migration of contaminants between potential sources and receptors directly connected by the site drainage is considered to be **Very High**.

Groundwater Flow The London Clay Formation present on the Site represents a plausible pathway for potential contaminants to enter or leave the Site, however, owing to the expected low mass permeability of the London Clay the potential for significant migration of contaminants associated with groundwater flow through this stratum is considered to be **Very Low**. On the eastern and southern parts of the Site the London Clay Formation is expected to be overlain, respectively, by River Terrace Deposits and Glacial Sands and Gravels, these deposits represent a minor aquifer of variable permeability. Overall the potential for significant migration of contaminants associated with groundwater flow in the River Terrace Deposits and Glacial Sands and Gravels is considered to be **Moderate**.

Surface Water Flow Rag's Brook that flows through the northern part of the Site represents a pathway for potential contaminants to leave the Site. Given the potential flow volumes, the potential for significant migration of contaminants between potential sources and receptors directly connected by the brook is considered to be **Very High**.

5.4 Potential Receptors

Potential receptors include site workers and future site users, ground and surface waters, and ecology and wildlife. With regard to site workers and future site users, their potential significance is related directly to the cumulative length of time they will be on or in the immediate vicinity of the Site. With regard to ground and surface waters, and ecology and wildlife, their potential significance is based on the value of the attributes of the receptor and will be influenced by a number of factors such as the relative quality, sensitivity, scale, rarity and substitutability.

Site Workers The construction of the proposed development will require an increase in the number and length of time that workers are present on the Site. Considering the number and length of time they are likely to be on the Site, the potential significance of site workers involved in earthworks or ground works as a receptor is assessed to be **High**.

With regard to future site works, this is expected to be limited to maintenance work with little if any additional earthworks or ground works. Considering the length of time they are likely to be on the Site and the nature of the required work, the potential significance of future site workers as a receptor is assessed to be **Very Low**.

Future Site Users The proposed redevelopment of the Site for predominantly residential use will result in unrestricted access to the Site by future site users such that they may be exposed to any potential contaminants present on the Site. The potential significance of future site users as a receptor is assessed to be **High** given the cumulative length of time they are likely to be on the Site.

Ground and Surface Water Resources Although the groundwaters in the River Terrace Deposits and Glacial Sands and Gravels are not within any groundwater Source Protection Zone they are considered

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to represent a sensitive receptor. This is in line with the Environment Agency requirement to protect groundwater in those parts of aquifers that lie outside source protection zones as part of its policy of 'Groundwater Protection' (EA, 2012). Considering the number of and distance to the abstraction points from groundwater in these strata in the vicinity of the Site, the relative importance of the groundwater resource in the River Terrace Deposits and Glacial Sands and Gravels as a receptor is considered to be **Low**. Given that the London Clay Formation is classified as Unproductive Strata, the relative importance of the groundwater resource in this stratum as a receptor is assessed to be **Very Low**.

With regard to the surface water resources, given the absence of abstraction points from surface water in the vicinity of the Site, the relative importance of the surface water resources as a receptor is assessed to be **Very Low**.

Ecology and Wildlife Considering the nature of and distance to the areas of environmental sensitivity on and in the vicinity of the Site, the relative importance of the local ecology and wildlife is assessed to be **Low**.

Built Environment The proposed buildings on the Site are assessed to be of local importance and hence their potential significance with respect to land contamination is assessed to be **Low**.

5.5 Assessed Pollution Linkages

Based on the Conceptual Ground Model the assessed environmental risks, associated with the Site and proposed residential development, are discussed in this section with respect to the identified potential receptors.

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5.5.1 Site Workers

The effect on site workers relates to the risk of ingestion, inhalation or prolonged skin contact of contaminated material on the Site and inhalation of any potentially hazardous ground gases.

Considering the very low/low potential for sources of contamination to be present on Site, the potential risk to site workers is, in general, assessed to be **Very Low** both during construction and future maintenance works. The exception relates to the risk to site workers in the areas of Garryross Farm and Grangebrook Nursery where the risk is assessed to be **Low** during construction works. With regard to potential sources of contamination in the areas surrounding the Site, given the distance to, the nature of and potential for migration from these sources, the associated potential risk to site workers is assessed to be **Very Low** both during construction and future maintenance works.

With regard to the risk associated with the inhalation of potentially hazardous ground gases, given the very low potential for such gases to be present on the Site and surrounding areas, the potential risk to site workers is assessed to be **Very Low**. The possible exception relates to the area of any Alluvium in the valley of the Rag's Brook, however, no construction works are proposed in this area. Notwithstanding the assessed risk, in line with current regulations and best practice, appropriate ventilation should be provided to all confined spaces and appropriate procedures adopted to ensure they are checked for hazardous gases prior to man-entry to ensure any potential risk associated with ground gases does not occur.

5.5.2 Future Site Users

The effect on future site users relates to the risk of ingestion, inhalation or prolonged skin contact of contaminated material on the site and inhalation of any potentially hazardous ground gases.

In the areas of the buildings and hard surfaces of the proposed development, the potential risk to future site users associated with contaminated material is assessed to be **Very Low** owing to the very low potential for skin contact, inhalation and ingestion of any potential contaminants. In areas of proposed gardens, community open space and soft landscaping, the potential risk to future site users associated

with contaminated material is, in general, assessed to be **Very Low** owing to the very low potential for sources of contamination to be present on Site. The potential exceptions relate to the areas of Garryross Farm and Grangebrook Nursery where the risk is assessed to be **Low**.

With regard to potential sources of contamination in the areas surrounding the Site, given the distance to, the nature of and potential for migration from these sources, the associated potential risk to future site users is assessed to be **Very Low**.

With regard to the risk associated with the inhalation of potentially hazardous ground gases, given the very low potential for such gases to be present within the proposed development areas, the potential risk to future site users associated with the build up of any such gases within confined spaces is expected to be **Very Low**.

5.5.3 Ground and Surface Water Resources

The effect on groundwater relates to the movement of potential contaminants by surface water infiltration and drainage and the leaching of any such contaminants from the near-surface soils on the Site. The effect on surface waters relates to the risk of movement of potential contaminants by groundwater flows and surface water drainage into adjacent watercourses.

Given the very low potential for contaminants to be present the potential risk of any mobile contaminants present within the ground below the Site adversely affecting the quality of ground and surface water is, in general, currently assessed to be **Very Low** and is expected to remain at this level both during the construction works and on completion of the scheme. Although there is a low potential for contaminants to be present in the areas of Garryross Farm and Grangebrook Nursery, these areas are underlain by the London Clay Formation, and consequently the potential risk in these areas is also assessed to be **Very Low**.

5.5.4 Ecology and Wildlife

The effect on ecology and wildlife relates, primarily, to the risk of potentially mobile contaminants being present within the ground and surface waters on and adjacent to the Site. Considering the very low potential for mobile contaminants to be present and the distance to the identified sites of ecological and wildlife interest, the risk to the ecology and wildlife in the vicinity of the Site is considered to be **Very Low**.

5.5.5 Built Environment

The effect on the built environment relates, primarily, to the risk of chemical attack and decay of buried concrete structures, including pile foundations, and the permeation of water supply pipes by contaminants. Considering the potential for sources of contamination to be present on Site at concentrations that would have a deleterious affect on building materials, the potential risk to the build environment is assessed to be **Very Low**. Notwithstanding this assessment, in line with current regulations and best practice, appropriate concrete design and water supply pipes will be specified to mitigate the risks of chemical attack and permeation as required.

5.6 Required Remediation/Mitigation Measures

The geoenvironmental risk assessment presented in **Section 5.5** indicates that any potential contaminants in the ground or groundwater are unlikely in by themselves to represent an unacceptable risk to human health, controlled waters or ecology and wildlife, associated with the development of the Site as currently proposed provided remediation and/or mitigation measures are taken to ensure that the risks associated with potential contaminants are not realised; the specific measures required will need to be informed by an intrusive geoenvironmental investigation and agreed with the Local Authority.

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The remediation measures required relate to:

i) The risks to site workers associated with ingestion, inhalation or prolonged skin contact of contaminated material during the construction works.

ii) The risks to future site users associated with ingestion, inhalation or prolonged skin contact of contaminated material present in areas of gardens and soft landscaping in the areas of Garryross Farm and Grangebrook Nursery following completion of the proposed development.

5.6.1 Ingestion, Inhalation or Contact of Contaminated Material by Site Workers

Measures to be adopted to mitigate the risk to site workers will include (i) informing the site workers of any potential contamination on the site and the potential health effects from exposure through site induction and 'tool box talks'; (ii) the provision of appropriate protective clothing and equipment to be worn by site workers; (iii) the adoption of good standards of hygiene to prevent prolonged skin contact, inhalation and ingestion of soils during construction. In addition, in line with current regulations and best practice, appropriate methods of working will be selected to limit disturbance to any potentially contaminated materials and the potential for air-borne dust to arise associated with the excavation and disturbance of the soils present on the site.

Although the provision of appropriate protective clothing and adoption of good standards of hygiene and appropriate methods of working will mitigate many of the significant effects, the potential risk to site workers during the construction works will, at worst, remain as **Low**.

5.6.2 Ingestion, Inhalation or Contact of Contaminated Material by Future Site Users

To limit the potential risk of ingestion, inhalation or prolonged skin contact of contaminated material by future site users, a layer of clean soil cover is to be provided in areas of gardens, community open space and soft landscaping in the areas of Garryross Farm and Grangebrook Nursery.

The depth and form of the required soil cover depends on the risk associated with any potential contaminants and requirements for planting. Based on the available information the overall potential for significant contamination to be present in the areas of Garryross Farm and Grangebrook Nursery is assessed to be, in general, low. On this basis it is expected that 300 mm of clean soil cover to gardens and soft landscaped areas in the areas of Garryross Farm and Grangebrook Nursery will be required to limit any risk of bulk movement of contaminated material to the surface by gardening, burrowing animals or other similar activities (BRE, 2004). A greater depth of soil cover may be required in landscaped areas where trees or deep rooting shrubs are to be planted.

The actual depth of clean soil cover to be provided will be informed by an intrusive geoenvironmental investigation and agreed with the Local Authority. The provision of a layer of clean soil cover will effectively limit the exposure of future site users to any potential contaminants such that the potential risk will be **Very Low**.

5.7 Assessed Geoenvironmental Risk

The results of this Geoenvironmental Risk Assessment indicate that the potential risk to sensitive receptors is, in general, **Very Low**. The exceptions relate to the risk to site workers during the proposed construction works in the areas of Garryross Farm and Grangebrook Nursery for which the potential risk is assessed to be **Low**. On this basis, any potential contaminants and hazardous ground gases do not by themselves represent an unacceptable risk to the human health, controlled waters or ecology and wildlife associated with the development of the Site as currently proposed.

Given the information currently available and the assessed geoenvironmental risks, it is anticipated that a ground investigation is not required to verify the assessed geoenvironmental risks and support the planning application for proposed redevelopment of the Site. Any requirement to carry out an intrusive

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geoenvironmental investigation can be satisfactorily dealt with by incorporation of a suitable condition in any planning consent.

From consideration of the assessed geoenvironmental risks there is no reason that the Site would be designated as Contaminated Land under Part IIa of the Environmental Protection Act 1990.

5.8 Management of Unexpected Sources of Contamination

There is a possibility that unexpected sources of contamination may be encountered during the site clearance or ground works. Should visual and olfactory examination of any unusual solid materials or liquids encountered during the construction works identify areas of contamination specific management procedures will be adopted. These procedures will allow for the short-term storage of the suspected material in stockpiles and/or storage tanks while verification testing for potential contamination is carried out. The storage area will be contained to ensure that contamination does not migrate and affect other areas of the site.

Once the nature, location and extent of the unexpected contamination have been identified appropriate remediation or mitigation measures will be adopted. Although these cannot be identified at this time the main emphasis will be on methods of isolating or treating the affected materials. If such measures are unlikely to be practical or effective in mitigating the risk from the identified contamination, consideration will be given to excavating and removing the contaminated material from site for disposal or treatment at a suitably licensed facility.

Where remediation or mitigation of unexpected contaminants is required, an implementation and verification process will be established to identify the remediation activities required and to confirm that the remediation has been undertaken correctly. As part of this process, remediation objectives will be identified and remediation criteria selected for measuring compliance against these objectives in consultation with the Local Authority and other statutory consultees.

draft

References

BS 10175 (2013) Investigation of potentially contaminated sites – Code of practice. British Standards Institution, London.

CIEH (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment. The Chartered Institute of Environmental Health, Nottingham.

CL:AIRE (2014) Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report SP1010 (Rev 2), Contaminated Land: Applications in Real Environments, London.

DCLG (2012) National Planning Policy Framework. Department of Communities and Local Government, London.

DCLG (2014) Planning Practice Guidance on Land Stability. Document 45-001-20140306, Department for Communities and Local Government, London.

EA (2004). Model Procedures for the Management of Land Contamination. Contaminated Land Report CLR11. Environment Agency, Bristol.

EA (2012) Groundwater Protection, Principles and Practice (version 1). Environment Agency, Bristol.

Emap (2015a) GroundSure EnviroInsight Report, Rosedale Park, Cheshunt,. Report EMS-328578_442663, Emapsite, Eversley, Hampshire.

Emap (2015b) GroundSure GeoInsight Report, Rosedale Park, Cheshunt,. Report EMS-328578_442662, Emapsite, Eversley, Hampshire.

IGS (1978) Hertford, England and Wales Sheet 239, Drift, 1 to 50 000 scale Geological Sheet. British Geological Survey (formerly Institute of Geological Sciences), Keyworth, Notts.

NHBC (2014a) NHBC Standard Part 4 Foundations, Chapter 4.1, Land quality - managing ground conditions. National House Building Council, Amersham, Buckinghamshire.

NHBC (2014b) NHBC Standard Part 4 Foundations, Chapter 4.2, Building near trees. National House Building Council, Amersham, Buckinghamshire.

NRA (1995) Groundwater Vulnerability of Thames Estuary, Sheet 40, 1 to 100 000 scale groundwater vulnerability map. Environment Agency (formerly National Rivers Authority), Bristol.

STL (2013) Desk Study, Site Investigation and Risk Assessment Report, Rosedale Sports Ground, Andrews Lane, Cheshunt. Report J11540, Southern Testing Laboratories Limited, East Grinstead.

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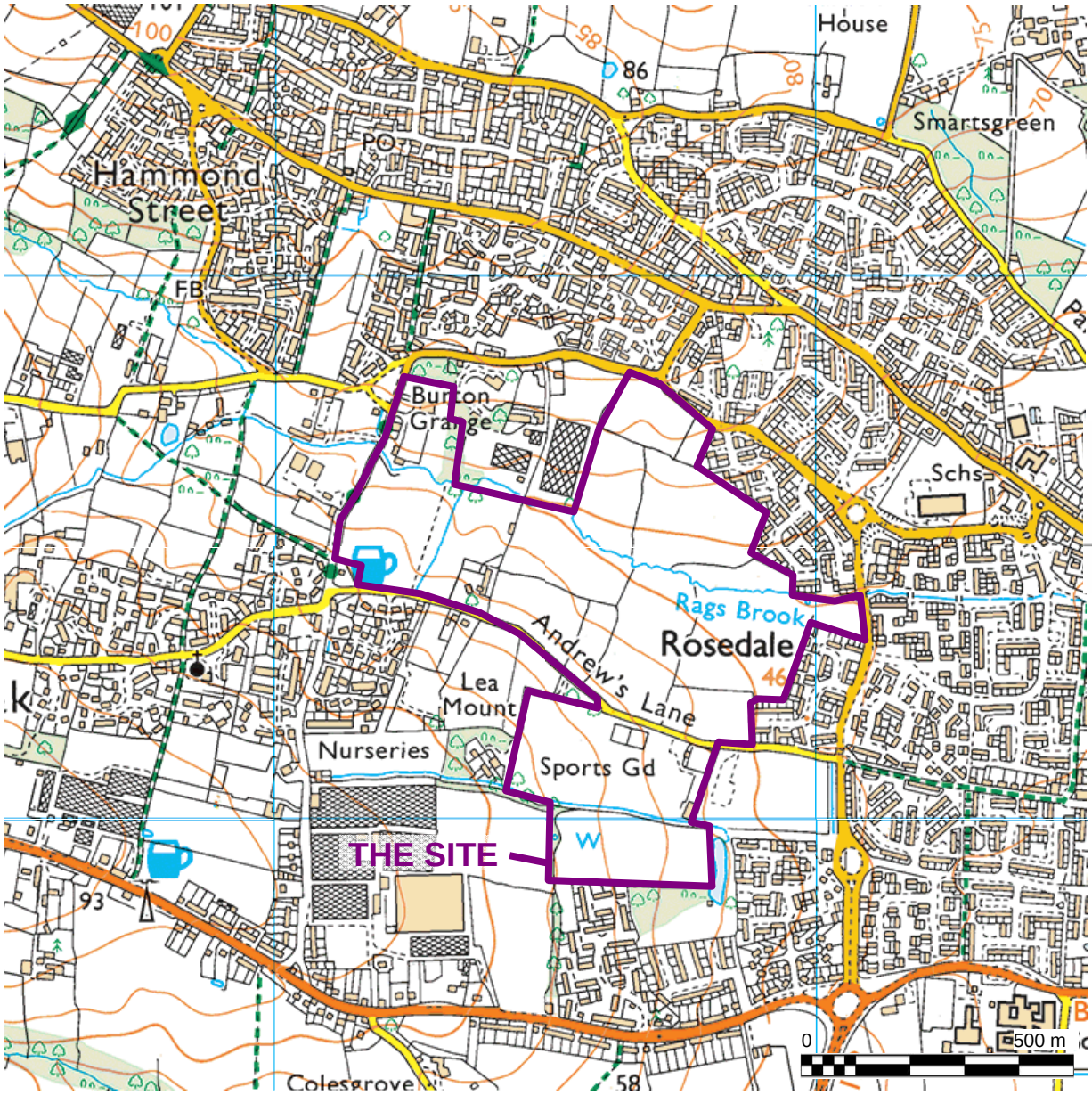

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National Grid Reference	TL 337 034
Coordinates	N51:42:50 W0:03:57
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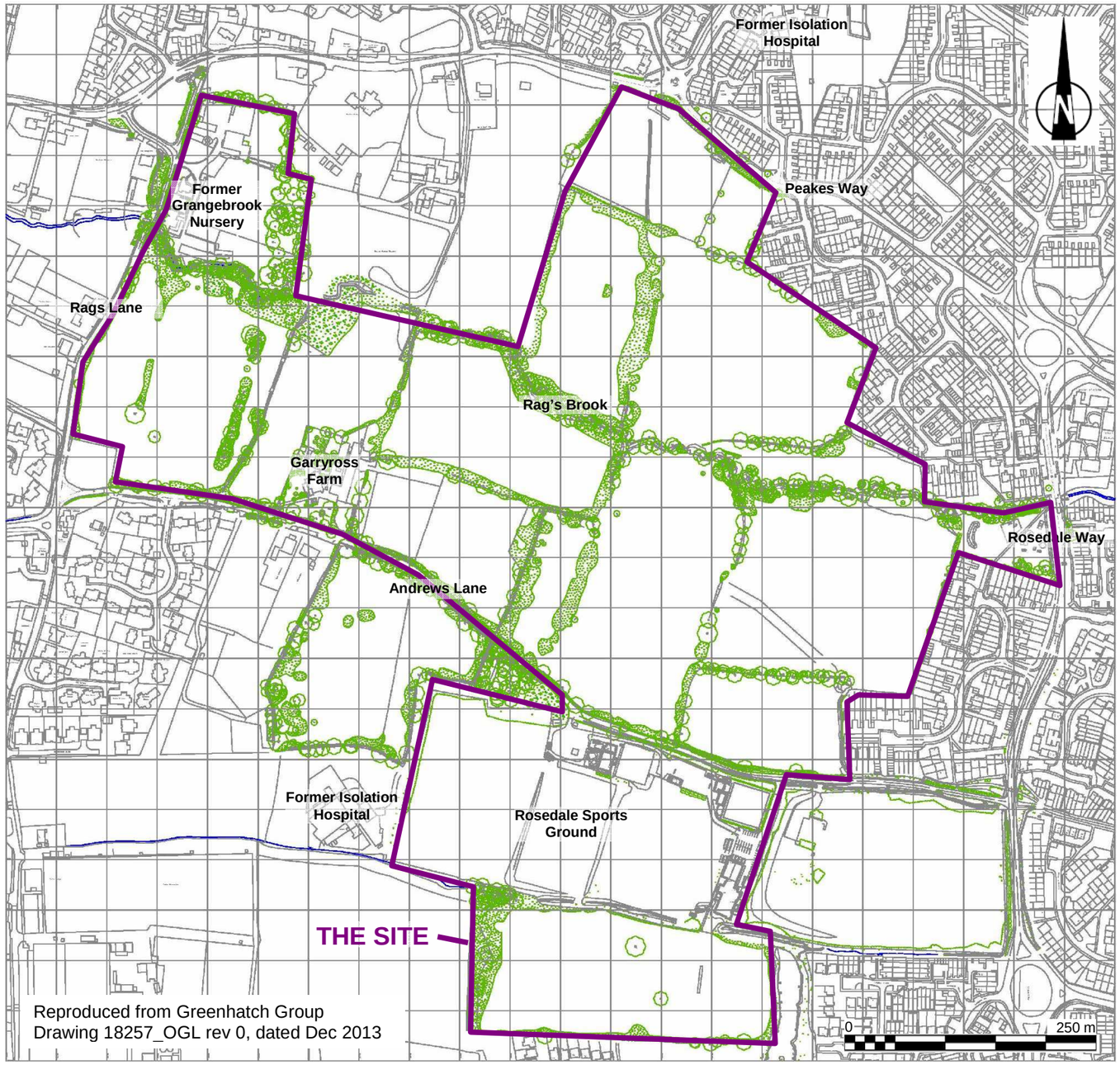
SITE LOCATION PLAN

ROSEDALE PARK, CHESHUNT

Date	Sep 2015
A4 Scale	1:12 500
Drawn	mdh
Checked	mdh
Figure	1



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SITE LAYOUT PLAN

ROSEDALE PARK, CHESHUNT

Date	Jun 2015
A3 Scale	approx 1:5000
Drawn	mdh
Checked	mdh
Figure	**2**

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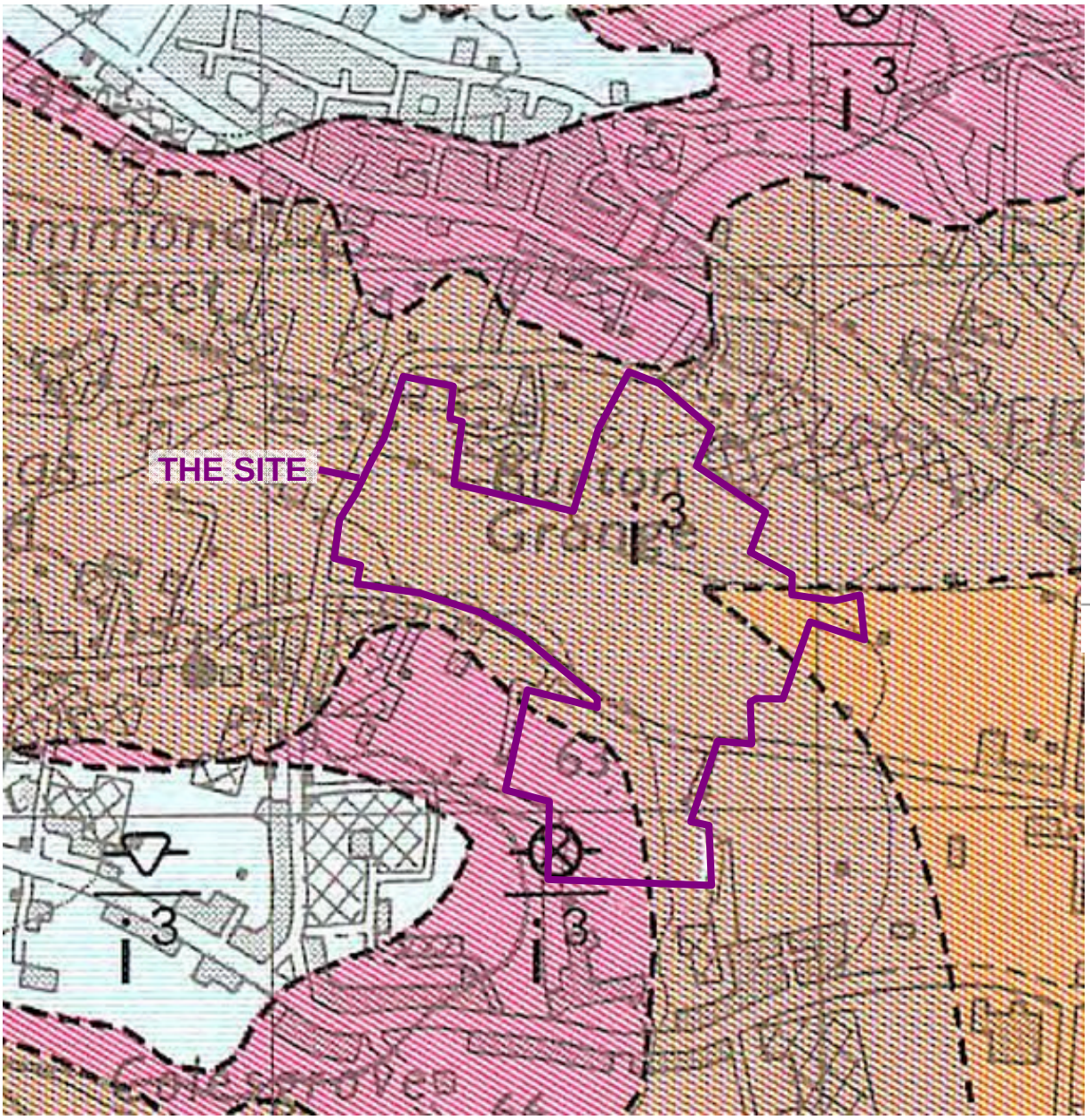

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Explanation of Geological Symbols and Colours

T	*Taplow Gravel*
	Boulder Clay
	Pebble Gravel
i^3	London Clay

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EXTRACT FROM GEOLOGICAL SHEET

ROSEDALE PARK, CHESHUNT

Date	Sep 2015
A3 Scale	1:12 500
Drawn	mdh
Checked	mdh
Figure	**3**

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APPENDIX 3 – TECHNICAL NOTE ON THE ASSESSMENT OF MINERAL RESOURCES

TECHNICAL NOTE

Project Title:	Rosedale Park, Cheshunt
Project No:	29732/3500
Note No:	001 rev 0
Date:	22 August 2016
Subject	Assessment of Mineral Resources
Prepared By:	Martyn Higham

1.0 Introduction

This technical note presents an assessment of the mineral resources on the Site of the proposed development at Rosedale Park, Cheshunt.

This assessment is based on a review of readily available geological, hydrogeological and aquifer vulnerability maps; available historical maps; and available records held in the BGS archives together with information contained in the following report:

i) The sand and gravel resources of the country around Hatfield and Cheshunt, Hertfordshire. Mineral Assessment Report 67, British Geological Survey, Keyworth, Notts, dated January 1981.

2.0 Site Location

The Site is situated on the undulating land to the west of the valley of the River Lee, in the valley of the Rag's Brook and a low ridge between the valleys of the Rag's Brook and Theobald's Brook to the south. Rag's Brook and Theobald's Brook are tributaries of the River Lee that flow east, respectively, through the northern part of the Site and approximately 0.8 km to the south of the Site. The layout of the Site is shown on a Site Layout Plan attached as **Figure 1**.

The Site is primarily used for agriculture comprising open arable fields and pasture with hedgerows along field boundaries. Rag's Brook bisects the Site whilst the built development on the Site is limited to the buildings of Garrymore Farm on the western part of the Site and the former Grangebrook Nursery on the northwest part of the Site. The sports pitches and associated pavilion and car parking of the Rosedale Sports Ground are present to the south of Andrews Lane on the southern part of the Site.

3.0 Geology

The 1:50 000 scale geological sheet of the area indicates that the solid geology underlying the Site comprises the London Clay Formation. Superficial deposits comprising River Terrace Deposits (Taplow Gravel) and Glacial Sands and Gravels (Pebble Gravel) are shown to be present overlying the solid geology, respectively, in the lower part of the valley of the Rag's Brook extending onto a small area on the eastern part of the Site, and on the low ridge on the southern part of the Site south of Andrews Lane. Glacial Till (Boulder Clay) is shown overlying the Glacial Sand and Gravels about 100 m beyond the southwest boundary of the Site.

In addition, it is expected that the mapped strata are overlain by Head Deposits formed by natural geomorphological processes with limited deposits of Alluvium present in the valley of the Rag's Brook. It is expected that the natural strata are locally overlain by Made Ground in the limited areas of build development on the Site associated with the previous and current use and local regrading of the Site.

An extract of the geological sheet for the area of the Site showing the extent of the mapped sand and gravel deposits is attached as **Figure 2**.

4.0 Potential Mineral Resources

In accordance with the Mineral Consultation Areas in Hertfordshire Supplementary Planning Document the area of the Site is located within the Sand and Gravel Belt Mineral Consultation Area.

The Minerals Resource Information report for Hertfordshire (BGS, 2003)[1], indicates the potential sand and gravel resources on the Site relate to the River Terrace Deposits in the lower part of the valley of the Rag's Brook on the eastern part of the Site and the Glacial Sands and Gravels on the low ridge on the southern part of the Site.

An extract of the BGS Mineral Resources Map for the area of the Site, attached as **Figure 3**, shows the extent of the 'potentially workable' sand and gravel deposits as determined using the following criteria:

a) The deposit average is at least 1 m in thickness
b) The ratio of overburden to sand and gravel is no more than 3:1.
c) The proportion of fines (particles less than 1/16 mm) is less than 40%
d) The deposit lies within 25 m of the surface

5.0 Assessment of Mineral Resources

The Hertfordshire Minerals Local Plan Initial Consultation Document August 2015 gives the following criteria for the first stage, Sieve 1 – Resource Assessment, of the proposed methodology to identify appropriate sand and gravel sites for future minerals extraction:

a) There should be an estimated minimum resource of approximately 1 million tonnes available (but smaller quantities - anything more than 500,000 tonnes - should be allowed for extensions to existing sites).
b) There should be a minimum mean thickness of sand and gravel of 5 metres gross (i.e. including any material near the top or bottom of the deposit which may not be capable of full extraction).
c) The maximum ratio between overburden/interburden (i.e. the layers of materials other than sand and gravel that lie above or within the sand and gravel deposits) and the deposit itself should be 1:1.
d) There should be a maximum fines content (i.e. the proportion of silt and clay within the deposit) of 15%.

It is noted that these criteria are more stringent that the criteria adopted by the BGS for determining 'potentially workable' deposits. On this basis, the 'potentially workable' sand and gravel deposits shown on the BGS Mineral Resources Map for the area of the Site do not, necessarily, represent appropriate sand and gravel sites for future minerals extraction.

Information on the nature, extent and thickness of the potential sand and gravel resources in the vicinity of the Site is given in the BGS Mineral Assessment Report for the area. The report indicates that the potential sand and gravel resources in the vicinity of the Site have a mean thickness of 1.6 m, a silt and clay content up to about 15 per cent and a mean overburden to mineral ratio of about 2.0. Given that the sand and gravel present on the Site is located at the feather edge of the potential resource areas, it is expected that the material on the Site will be thinner, have a greater silt and clay content and greater overburden to mineral ratio.

From consideration of the information presented in the BGS Mineral Assessment Report and the Sieve 1 – Resource Assessment given above, the limited volume of potential resources available on the Site are considered insufficient to justify extraction owing to the significant silt and clay content; the poor quality of the deposits and the high overburden to mineral ratio.

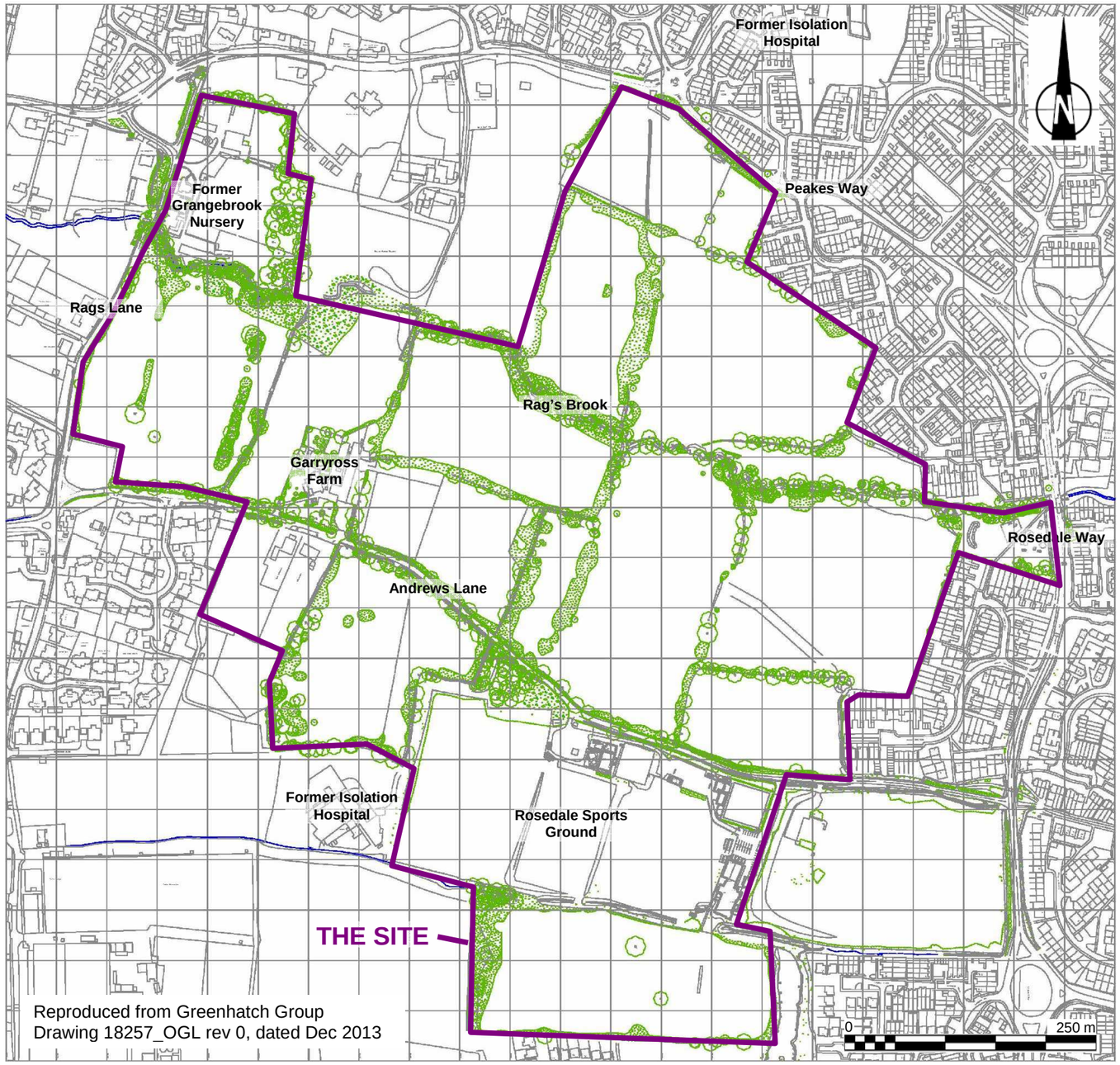
[1] BGS (2003) Mineral Resource Information in Support of National, Regional and Local Planning, Hertfordshire and Northwest London Boroughs. Report CR/03/075/N, British Geological Survey, Keyworth, Notts.

It is therefore concluded that the potential sand and gravel resources on the Site do not represent commercially viable mineral resources. Consequently, the proposed development of the Site will not adversely affect the availability of commercially viable sand and gravel reserves in the area.

6.0 Mineral Safeguarding Area

As part of the ongoing review the county's existing Minerals Local Plan, Hertfordshire County Council will be reviewing the existing Minerals Consultation Areas and additionally defining Mineral Safeguarding Areas. Mineral Safeguarding Areas are defined as areas which cover known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.

In accordance with the Hertfordshire Minerals Local Plan Site Selection Methodology Report May 2015, initial resource identification will be based on the first stage, Sieve 1 – Resource Assessment, criteria of the proposed methodology to identify appropriate sand and gravel sites for future minerals extraction as given above. On this basis the areas of potential resources on the Site are considered unsuitable for designation as Mineral Safeguarding Areas.



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SITE LAYOUT PLAN

ROSEDALE PARK, CHESHUNT

Date	Aug 2016
A3 Scale	approx 1:5000
Drawn	mdh
Checked	mdh
Revision	2
Figure	1

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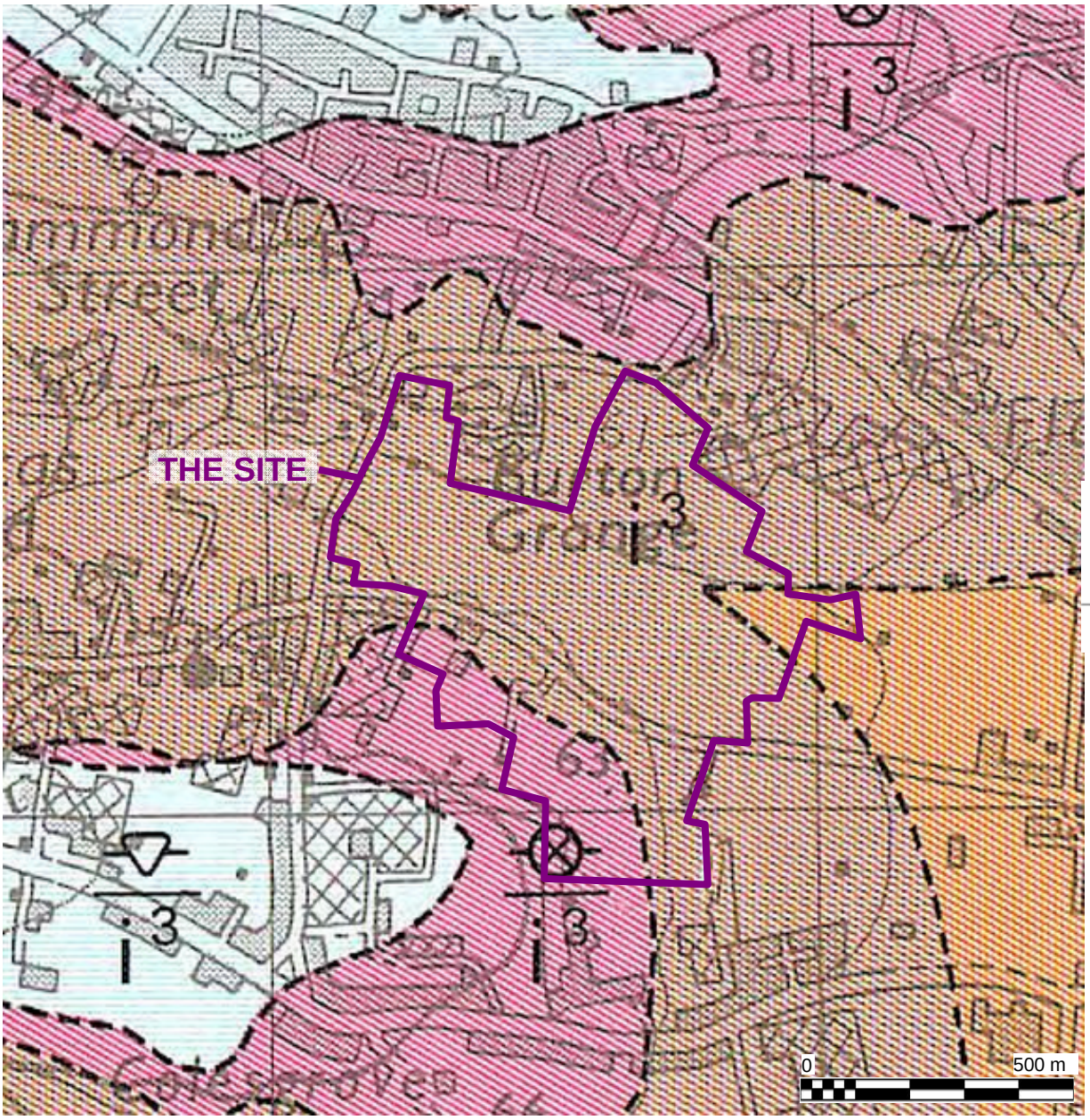

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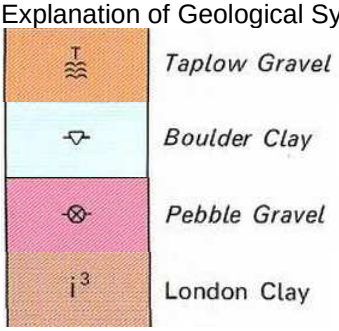
Explanation of Geological Symbols and Colours



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ROSEDALE PARK, CHESHUNT	
Date	Jul 2016
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Revision	01
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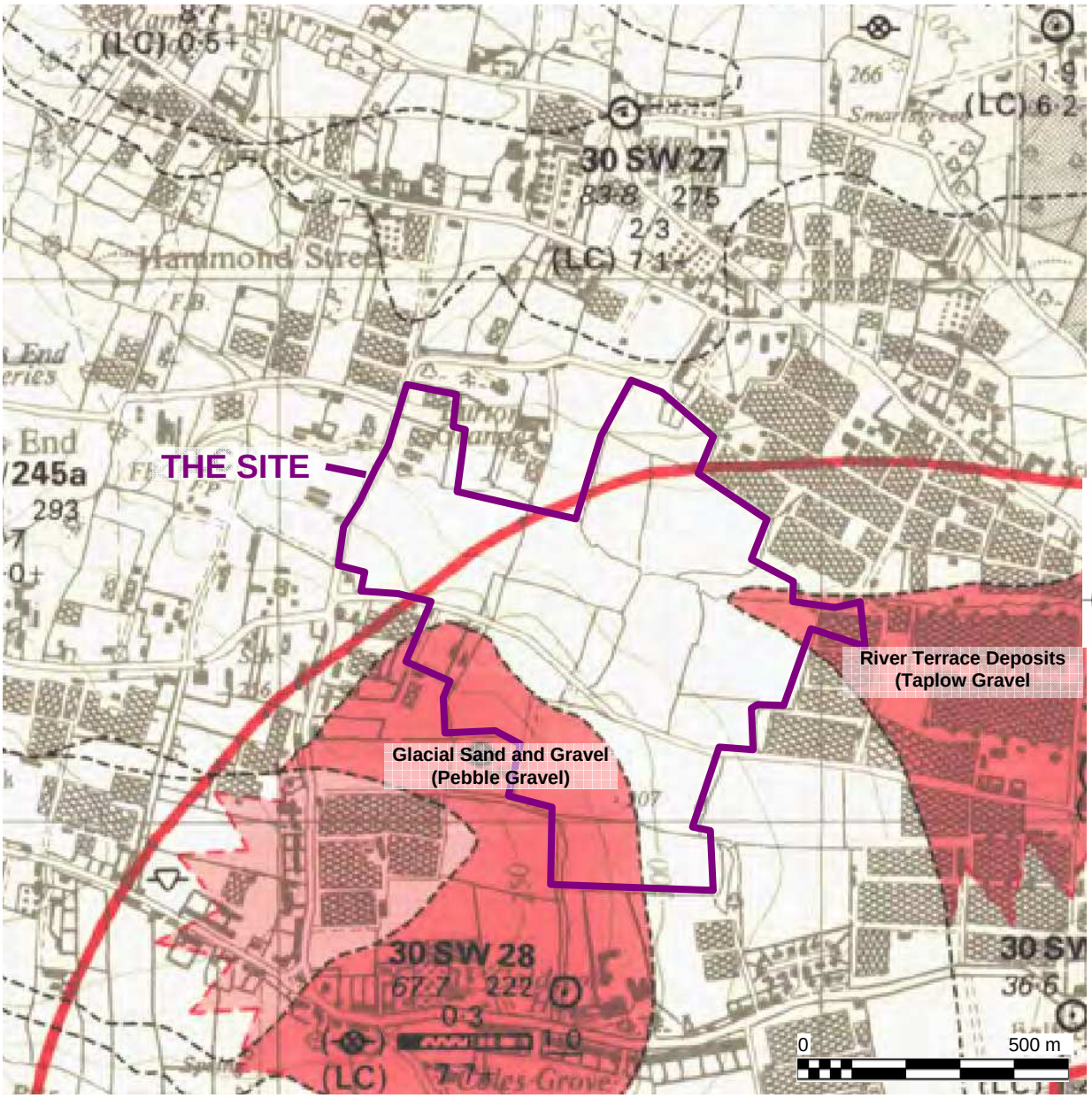

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Categories of Deposits

Exposed mineral, assessed.

Continuous or almost continuous spreads of mineral beneath overburden.

Client	Crest Nicholson
EXTRACT FROM MINERAL RESOURCES MAP	
ROSEDALE PARK, CHESHUNT	
Date	Aug 2016
A3 Scale	1:12 500
Drawn	mdh
Checked	mdh
Revision	00
Figure	**3**

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APPENDIX 4 – ARCHAEOLOGICAL DESK BASED ASSESSMENT

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ARCHAEOLOGICAL DESK BASED ASSESSMENT

Land at Rags Brook Park land west of Cheshunt Hertfordshire EN7 6EY

March 2014

Planning • Heritage

Specialist & Independent Advisors to the Property Industry

Local Planning Authority:
Broxbourne Borough Council

Site centred at:
TL 338 031

Author:
Duncan Hawkins BA (Hons) MSc FSA MIfA

Report Status:
FINAL

Issue Date:
March 2014

CgMs Ref:
DH/KB/16021

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APPENDIX 1:

LIST OF ILLUSTRATIONS

PLATES

EXECUTIVE SUMMARY

- The Rags Brook Par site, on land west of Cheshunt, Hertfordshire EN7 6EY has been assessed to consider the impact of a proposed residential development on archaeological assets.

- The study site remained within undeveloped agricultural and horticultural land until the twentieth century. The creation of the former Everest Sports Ground and Rosedale Sports Ground to the south of the site would have had a significant and widespread archaeological impact.

- The archaeological potential of the study site for all past periods of human activity is considered to be low.

- The proposed development is thought unlikely to impact on archaeological remains of more than local importance.

- On the basis of the available evidence, we would suggest that all further archaeological mitigation measures could follow planning consent secured by an appropriately worded archaeological planning condition.

1.0 INTRODUCTION AND SCOPE OF STUDY

1.1 This archaeological desk-based assessment has been prepared by Duncan Hawkins of CgMs Consulting, on behalf of Crest Strategic Projects.

1.2 The subject of this assessment is land at the Rags Brook Park, land to the west of Cheshunt, Hertfordshire EN7 6EY centred at TL 338 031 (Fig. 1).

1.3 In accordance with government guidance as set out in the NPPF, and the East of England Plan, this desk-based assessment has been commissioned to establish the archaeological potential of the site and assess any potential impacts from the proposed development.

1.4 This desk-based assessment comprises an examination of evidence in the Hertfordshire Historic Environment Record, the Hertfordshire Record Office and Local Studies Library, and published and unpublished sources. A site walkover was carried out during September 2013.

1.5 Data gathering to inform this desk-based assessment established that no Registered Parks & Gardens or Registered Battlefields lie on or in close proximity to the study site. However the remains of Half Mote house, a medieval moated manor house, lie south-east of the study site, the surviving moat is designated a Scheduled Ancient Monument (SAM No 11521).

1.6 The study therefore provides an assessment of the archaeological potential of the site and enables relevant parties to consider the need for design, engineering or other archaeological mitigation measures.

2.0 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

2.1 In March 2012, the government published the National Planning Policy Framework (NPPF), which replaces national policy relating to heritage and archaeology (Planning Policy Statement 5: Planning for the Historic Environment).

2.2 Section 12 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 12 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 assets make to our understanding of the past.

2.3 Section 12 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 128 states that planning decisions should be based on the significance of the heritage asset, and that 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.

2.4 *Heritage Assets* are defined in Annex 2 of the NPPF as: a building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. They include designated heritage assets (as defined in the NPPF) and assets identified by the local planning authority during the process of decision-making or through the plan-making process.

2.5 Annex 2 also defines *Archaeological Interest* as a heritage asset which holds or potentially could hold evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.

2.6 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.

2.7 *Significance* 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.

2.8 Setting 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.

2.9 In short, government policy provides a framework which:

- Protects nationally important designated Heritage Assets (which include World Heritage Sites, Scheduled Ancient Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields or Conservation Areas)
- 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.

2.10 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.

2.11 With the LDF New Local Plan yet to be adopted the relevant Local Plan framework is provided by the Borough of Broxbourne Local Plan Second Review 2001-2011 adopted on 8 December 2005. Policies relevant to archaeology state:

HD1 EFFECT OF DEVELOPMENT ON NATIONALLY IMPORTANT SITES AND MONUMENTS

PLANNING PERMISSION WILL NOT BE GRANTED FOR DEVELOPMENT WHICH WOULD ADVERSELY EFFECT THE SITE OR SETTING OF NATIONALLY IMPORTANT ARCHAEOLOGICAL REMAINS, WHETHER SCHEDULED OR UNSCHEDULED

HD2 REQUIREMENTS FOR EVALUATION OF HERITAGE ASSET

APPLICANTS FOR DEVELOPMENT ON, OR ADJACENT TO, SITES OF KNOWN ARCHAEOLOGICAL INTEREST OR SITES BELIEVED TO POSSESS POTENTIAL ARCHAEOLOGICAL SIGNIFICANCE, WILL BE REQUIRED TO SUBMIT THE RESULTS OF

AN ARCHAEOLOGICAL FIELD EVALUATION PRIOR TO DETERMINATION OF ANY APPLICATION FOR DEVELOPMENT.

HD3 PRESERVATION OF HERITAGE ASSET

(I) WHERE THE COUNCIL CONSIDERS THAT ARCHAEOLOGICAL SITES OR MONUMENTS OF LOCAL IMPORTANCE AND THEIR SETTINGS ARE LIKELY TO BE AFFECTED BY DEVELOPMENT, PHYSICAL PRESERVATION IN SITU WILL BE THE PREFERRED OPTION. THE DECISION WHETHER TO PRESERVE IN SITU WILL BE MADE ON THE BASIS OF THE INTRINSIC IMPORTANCE OF THE REMAINS AND. THE POSSIBILITY OF PRESERVATION IN SITU THROUGH THE CAREFUL DESIGN, LAYOUT AND SITING OF NEW DEVELOPMENT. WHERE PRESERVATION IN SITU IS NOT MERITED, PLANNING PERMISSION MAY BE SUBJECT TO CONDITIONS AND/OR A LEGAL AGREEMENT REQUIRING THAT PROVISION BE MADE FOR THE INVESTIGATION AND RECORDING OF THE REMAINS AND PUBLICATION OF A REPORT OF FINDINGS PRIOR TO COMMENCEMENT OF THE DEVELOPMENT

(II) THE COUNCIL WILL:

- **a. SEEK TO SECURE THE APPROPRIATE MANAGEMENT AND PRESENTATION OF ARCHAEOLOGICAL SITES AND THEIR SETTINGS AS PART OF THE GRANT OF PLANNING PERMISSION FOR DEVELOPMENT;**
- **b. ENSURE DESIGNS FOR DEVELOPMENT IN THE VICINITY OF ARCHAEOLOGICAL REMAINS ARE SYMPATHETIC TO THE SETTING OF THE REMAINS; AND REQUIRE THE DEVELOPER TO ALLOW OBSERVATION OF GROUNDWORKS**

(WHERE THE COUNCIL CONSIDERS THAT PHYSICAL PRESERVATION OF ARCHAEOLOGICAL REMAINS IN SITU IS NOT MERITED, TAKING INTO ACCOUNT THE IMPORTANCE OF THE REMAINS AND OTHER MATERIAL CONSIDERATIONS, PLANNING PERMISSION MAY BE SUBJECT TO CONDITIONS AND/OR AGREEMENTS REQUIRING THE DEVELOPER TO SECURE APPROPRIATE PROVISIONS FOR THE INVESTIGATION AND RECORDING OF THE ARCHAEOLOGICAL REMAINS AND THE PUBLICATION OF THE RESULTS. WHERE APPROPRIATE, THE COUNCIL WILL SEEK TO SECURE THE ENHANCED MANAGEMENT AND PRESENTATION OF ARCHAEOLOGICAL SITES AND THEIR SETTINGS).

(III) ADDITIONALLY THE COUNCIL WILL:

- **a. SEEK TO SECURE THE ENHANCEMENT, MANAGEMENT AND PRESENTATION OF ARCHAEOLOGICAL SITES AND THEIR SETTINGS AS PART OF THE GRANT OF A PLANNING PERMISSION FOR DEVELOPMENT;**
- **b. ENSURE DESIGNS FOR DEVELOPMENT IN THE VICINITY OF ARCHAEOLOGICAL REMAINS ARE SYMPATHETIC TO THE SETTING OF REMAINS; AND**
- **c. REQUIRE THE DEVELOPER TO ALLOW OBSERVATION OF GROUND WORKS**

2.11 In accordance with Policies HD1-3 this desk study seeks to establish whether potentially important archaeological remains occur on the site.

3.0 GEOLOGY AND TOPOGRAPHY

3.1 Geology

3.1.1 The solid geology of the study site is London Clay (British Geological Survey Sheet 239 – Hertford, 1978).

3.1.2 There are no drift deposits shown on the study site according to the BGS Survey sheet.

3.1.3 No geotechnical information is currently available for the study site.

3.2 Topography

3.2.1 The study site lies within the valley of the Rags Brook, a tributary of the River Lea which flows from west to east through the study site.

3.2.2 The study site lies on a gradual slope from c. 55m AOD (above ordnance datum) in the west down to c. 46m AOD in the east.

3.2.3 The River Lea lies c. 3.5km east of the study site.

4.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND, including map regression exercise

Timescales used in this report.

Prehistoric		
Palaeolithic	450,000 -	12,000 BC
Mesolithic	12,000 -	4,000 BC
Neolithic	4,000 -	1,800 BC
Bronze Age	1,800 -	600 BC
Iron Age	600 -	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

4.1 What follows is a consideration of archaeological finds and features from within a 1km radius of the study site, held on the Hertfordshire Historic Environment Record (HER) (Appendix 1). In addition, a comprehensive archaeological review of the area has been undertaken in the Extensive Urban Survey (EUS) for Cheshunt, and this has also been considered.

4.2 Palaeolithic and Mesolithic

4.2.1 The Cheshunt EUS identifies the area around Cheshunt as having 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. Early prehistoric activity in the area appears to have occurred along the line of the earliest gravel terraces (Edwards 1974).

4.2.2 Three flint handaxes, 5 retouched flakes, 58 unretouched flakes, a Levallois core and 2 miscellaneous flints were found in a gravel pit to the rear of the White Horse Inn, overlying a Taplow gravel terrace, east of the study site. Also, when gravel was being excavated at Flamstead End in 1890, on a site now occupied by playing fields,

abundant Palaeolithic flint flakes and occasional hand axes were found (HER 1856,TL 3488 0334).

4.2.3 There is no evidence of Mesolithic activity within a 1km radius of the study site. Within the wider area, Mesolithic assemblages have been found on the terraces to the west of the Lea Valley.

4.2.4 Overall the archaeological potential of the study site for the Palaeolithic and Mesolithic periods can be defined as low due to the sites geological and topographical location.

4.3 **Neolithic, Bronze Age and Iron Age**

4.3.1 From around 4000 BC the mobile hunter gatherer economy of the Mesolithic gradually gave way to a more settled agriculture-based subsistence. The period saw episodes of forest clearance, initially probably 'slash and burn' to create rapid clearance (which resulted in erosion and a greater volume of silt load within rivers), succeeded by a phase of more gradual seasonal expansion of existing clearings.

4.3.2 Two Neolithic flint flakes were recovered from Flamstead End, c. 850m east of the study site (HER 2080, TL 3490 0330).

4.3.3 There are no remains within the study area attributed to the Bronze Age or the Iron Age periods. The Cheshunt EUS speculates that the lack of Late Iron Age finds within the wider Cheshunt area is misleading and that much Iron Age and Roman activity has been concealed by alluvium and marsh and destroyed by erosion and gravel extraction (Hunns 2000).

4.3.4 Overall the archaeological potential of the study site for the Neolithic, Bronze Age and Iron Age periods can be defined as low.

4.4 **Roman**

4.4.1 The study site lies to the west of the principal Roman road from London to York, known as Ermine Street (Margary 1967). It was one of the main routes of Roman Britain and was a major piece of engineering, constructed in the mid 1st century heading directly towards the crossing of the Lea at Ware. As it crosses the undulating terrain to the west of the Lea Valley in the vicinity of Cheshunt, the route of this road is largely conjectural, based on fixed points on alignments to the south (near Theobald's Park) and to the north (at Cheshunt Park), (HER 4647, TL 337 041)

4.4.2 Small Roman settlements are known at Enfield and there is evidence for Roman roadside occupation in Cheshunt Park, c. 1km north-east of the study site (HER 2038, TL 3449 0425). Roman building foundations, an oven-like structure, roofing tiles, pottery and coins dating from 1st to the 4th centuries were recorded. The occupation was thought to have been the site of a posting station (a 'mansio'). A small excavation in 2001 showed that it is probably a small, roadside urban settlement approximately 20ha in area.

4.4.3 The place name *Cestrehunt* combines two Latin loan-words caster, and funta; the second is a rare element meaning spring or fountain, so that 'Cheshunt' means 'Roman settlement at a fountain'. Pump Meadow (TL 3444 0427), in Cheshunt Park, lies within the Roman settlement, it slopes up to the highest ground and is full of springs.

4.4.4 Amphorae and road materials were excavated in an orchard in Cheshunt Park, in 1954, c. 1km north-east of the study site (HER 2759, TL 3449 0425).

4.4.5 In view of the location of the study site at least 350m from the projected route of Ermine Street, a low potential for roadside activity is considered within the study site itself.

4.5 **Anglo-Saxon and Medieval**

4.5.1 A possible Saxon boundary forming a 'Bank Line' consists of a series of old single hedgerows, except north of Appleby Street where two parallel courses are shown (HER 2958, TL 3304 0320). The bank is said to have formed the boundary between Mercia and Essex and is recorded on the HER as running along Rags Lane c. 750m west of the study site and 'is now hardly distinguishable from the field banks'.

4.5.2 Little information from the 5th to 10th centuries is available from the area around Cheshunt and a single piece of evidence is located within a 1km radius of the site. An iron spearhead was dated as Anglo-Saxon and found to the west of Ermine Street, c. 750m south-east of the study site (HER 304, TL 3413 0210).

4.5.3 Land use evidence from the medieval period suggests that in the Saxon period the area of London Clay to the west of the Lea Valley was largely woodland and heath.

4.5.4 Cheshunt is recorded in the Domesday Survey of 1086 as *Cestrehunt* when it was assessed for 20 hides and had land for thirty-three ploughs. The land on this west bank of the River Lea was by this date divided into landholdings of differing sizes, each of which had woodland on the high ground, arable, meadow and pasture near the river, and fisheries on the river itself. Cheshunt had much woodland, enough for 1200 pigs, and also a good deal of meadow land.

4.5.5 An area of ridge and furrow is recorded on the HER, roughly triangular and running for approx. 200m along the northern boundary of the field south of the Rosedale Sports Ground within the southern part of the study site. The ridge and furrow are visible on the HCC digital aerial coverage; approximately 20-25m wide at its west end, narrowing and becoming increasingly indistinct in the eastern half of the field (HER 11913, TL 3358 0299). However, a walkover of this area in September 2013 indicated that there is little evidence of ridge and furrow above ground.

4.5.6 In addition the cropmark of a linear ditch was observed on aerial photographs within the field west of the Rosedale Sports ground to the south-west of the site (HER 7990, TL 33535 03128).

4.5.7 Three high status medieval moated manor sites lay within the current area of St Mary's High School, south of Goffs Lane to the south-east of the study site.

4.5.8 The oldest site was the Head Manor of Cheshunt, a large and wealthy estate in 1086 that comprised facilities such as a church (St Marys Churchgate - HER 315), manorial watermill and a fish weir, which lay c. 800m south-east of the study site (HER 6049, TL 3413 0210). By the end of the 16th century the house was disused and subsequent development occurred at the site. The moat that surrounded the site is still complete (HER 11842, TL 3471 0239) and the west and south arms survive as a part of College Brook.

4.5.9 Half Mote house belonged to the manor of La Mote and was first recorded in the early 14th century, the homestead within the moat had become redundant by the mid 15th century (HER 80, TL 3455 0250). The moat has survived in good condition and the site is designated as a Scheduled Ancient Monument, c. 750m south-east of the study site (SAM No 11521). A silver mounted iron dagger was found during explorations in 2001 (HER 1124). An evaluation between Ermine Street and the Half Mote revealed medieval features including a ditch and a large feature thought to be associated with the moat (HER 12618).

4.5.10 North of Goffs Lane, c. 600m south-east of the study site, lies the remains of the moated site of Cheshunt Great House, a 15th century manor house (HER 2039, TL 3460 0273). Excavations after a fire in 1965 revealed an earlier moat within the present enclosure. The moat was subsequently recut approximately along the original lines, revetted, filled with water and is now part of a public garden.

4.5.11 A small moated site is recorded at 'Darks', Goffs Oak probably enclosing a Medieval homestead (HER Ref: 2040; TL 3260 0298).

4.5.12 The potential for Saxon activity on the study site is considered to be low as the site probably remained woodland. In the medieval period the study site lay in the hinterland of the moated houses comprising woodland and open fields used for hunting and farming.

4.6 **Post-Medieval and Modern**

4.6.1 A Tudor resurfacing of Ermine Street assumed to relate to Cheshunt Great House, was recorded during an excavation in 1967 on both sides of the hedge along the line of Ermine Street c. 500m south-east of the study site. The Roman road was sealed with compressed soil, above which, on the east side of the hedge, was another gravel road. Below this and extending beyond it to the west was a scatter of Tudor brick and tile, associated by the excavators with Cheshunt Great House (HER 15389, TL 34470 02830).

4.6.2 The site of Caldecot House, formerly named Claramont, a late 18th century mansion house set in its own grounds, c. 250m south-west of the study site, was de-listed and demolished in the 1980's (HER 16133, TL 33672 02693). The icehouse for Claramont survives beneath an earth mound, c. 50m south of the study site, most of the brick-built pit is still surviving, and part of the entrance passage (HER 6066, TL 3373 0285). The lake which was formerly in the grounds of the house lies immediately south-west of the study site.

4.6.3 The Cheshunt enclosure Map and Award of 1799 shows the enclosure of common land north of the study site to the north and south of Rags Brook.

4.6.4 Following the re-arrangement of boundaries at enclosure of the common fields in 1804, new country estates were formed west of the town. Enclosure also made possible the start of the nursery gardening business.

4.6.5 The Ordnance Survey map of 1868-82 shows the study site lying within an agricultural or horticultural land (Fig. 2).

4.6.6 Profound changes came from 1880, when the nursery industry began to move out of north London into the Cheshunt area to escape the new housing. Country landowners around Cheshunt sold huge areas of land, and glasshouses for the growing of tomatoes, cucumbers, flowers, grapes and other items came to characterise the area (Archer 1923-4, 194; Edwards 1974, 32). The start of these changes can be seen in the Ordnance Survey map of 1899 (Fig. 3) with further expansion of the nursery industry by 1921 (Fig. 4) and 1960 (Fig. 5).

4.6.7 The Rosedale Sports field was created before 1960 by terracing this part of the site. Pavilions, hard standing and tennis courts were created. Between 1988 and 2011 the Everest Sports Ground was created by terracing part of the site to create a levelled playing field. A pavilion was constructed in the north-west of the sports field.

4.6.8 Overall the archaeological potential of the study site for the Post-Medieval and Modern periods can be defined as low.

5.0 SITE CONDITIONS AND THE PROPOSED DEVELOPMENT

5.1 Site Conditions

5.1.1 The study site comprises land to the west of Cheshunt, Hertfordshire (Plate 1).

5.1.2 The site has generally remained undeveloped agricultural land throughout the historic periods until it was partly redeveloped for two sports grounds in the latter half of the 20th century (Plate 1).

5.1.3 The creation of the Rosedale Sports Ground and Everest Sports Ground within part of the site in the latter half of the 20th century would have had a significant and widespread archaeological impact as a result of terracing for the creation of a levelled playing fields. The western half of the two sports fields were cut into the naturally sloping topography and the eastern halves were filled to make up site levels.

5.1.4 The construction of the pavilion buildings would have a further negative archaeological impact.

5.1.5 Post-Medieval and Medieval agricultural activity is unlikely to have had an archaeological impact, although any modern ploughing on the site may have had a widespread but moderate impact upon any archaeological deposits.

5.2 The Proposed Development

5.2.1 The proposed development would comprise the construction of a mixed use, primarily residential-led scheme.

5.2.2 Currently, details of the precise construction methodology of the proposed development are not available. However, it can be anticipated that soil stripping for house foundations, infrastructure and landscaping could have an impact on sub-surface archaeological deposits where they occur.

5.3 Impacts on the significance of heritage assets

5.3.1 There are no designated heritage assets on or in close proximity to the study site. There are several undesignated heritage assets in the area surrounding the site and on the site itself in the form of medieval ridge and furrow fields on the south of the site.

5.3.2 These archaeological remains are thought to be of purely local importance.

6.0 SUMMARY AND CONCLUSIONS

6.1 Land at Rags Brook Park, land west of Cheshunt, Hertfordshire EN7 6EY is proposed for redevelopment.

6.2 In accordance with central and local government policy, as set out in the NPPF, an assessment has been undertaken to clarify the potential impact of development on archaeological assets.

6.3 This desk-based assessment has examined and reviewed the available archaeological, historic and topographic information and has concluded that the site has a low archaeological potential for all past periods.

6.4 The study site has lain in agricultural land during the historic periods. Part of the site was developed as a sports ground in the late 20th century.

6.5 Overall it would appear that the proposed development of this site could potentially impact an archaeological remains of local importance.

6.6 On the basis of all the available evidence, a programme of further archaeological mitigation measures will be required in advance of development. However, as archaeological remains of purely local importance are anticipated it is suggested these can follow planning consent secured by an appropriately worded arcah planning condition.

SOURCES CONSULTED

British Library

Hertfordshire Historic Environment Record

Hertfordshire Record Office

Hertfordshire Local Studies Library

Bibliographic

Archer, P.	1932	*Historic Cheshunt*
Bourn, R	2000	*St. Mary's High School, Cheshunt, Hertfordshire: archaeological desk based assessment*
Edwards, J.	1974	*Cheshunt in Hertfordshire*
Gillman, G.R.	1968	The Ermine Street at Cheshunt. *Hertfordshire Archaeology Vol 1*
Hunns, T	2000	*Cheshunt Extensive Urban Survey Project Assessment Report*
Margary, I.D.	1967	*Roman Roads in Britain*
Mawer, F. & Stenton, F.M.	1938	*Place-Names of Hertfordshire*
RCHME	1910	*An Inventory of the Historical Monuments of Hertfordshire*
VCH	1973	*Hertfordshire Vol I*
VCH	1973	*Hertfordshire Vol II*
VCH	1973	*Hertfordshire Vol III*
Wymer, J.J.	1999	*The Lower Palaeolithic Occupation of Britain*
Wymer, J.J.	1977	*Gazetteer of Mesolithic sites in England and Wales (CBA Res. Rep. 22)*

Cartographic

Cheshunt Tithe Map 1799

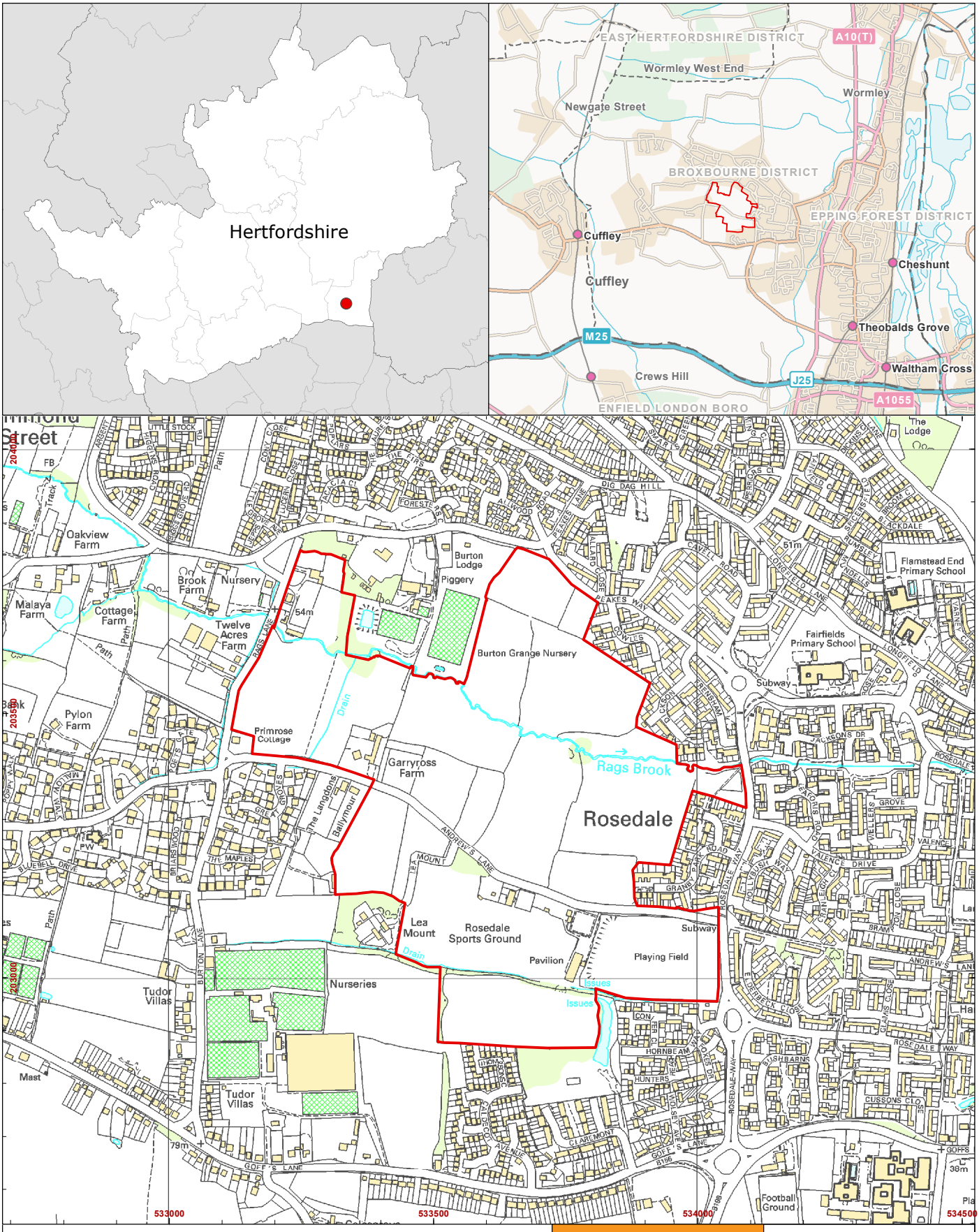
1868-82 Ordnance Survey

1899 Ordnance Survey

1921 Ordnance Survey

1960 Ordnance Survey

2013 Ordnance Survey



Scale at A4: 1:10,000

0 300 m

N

Figure 1:
Site Location

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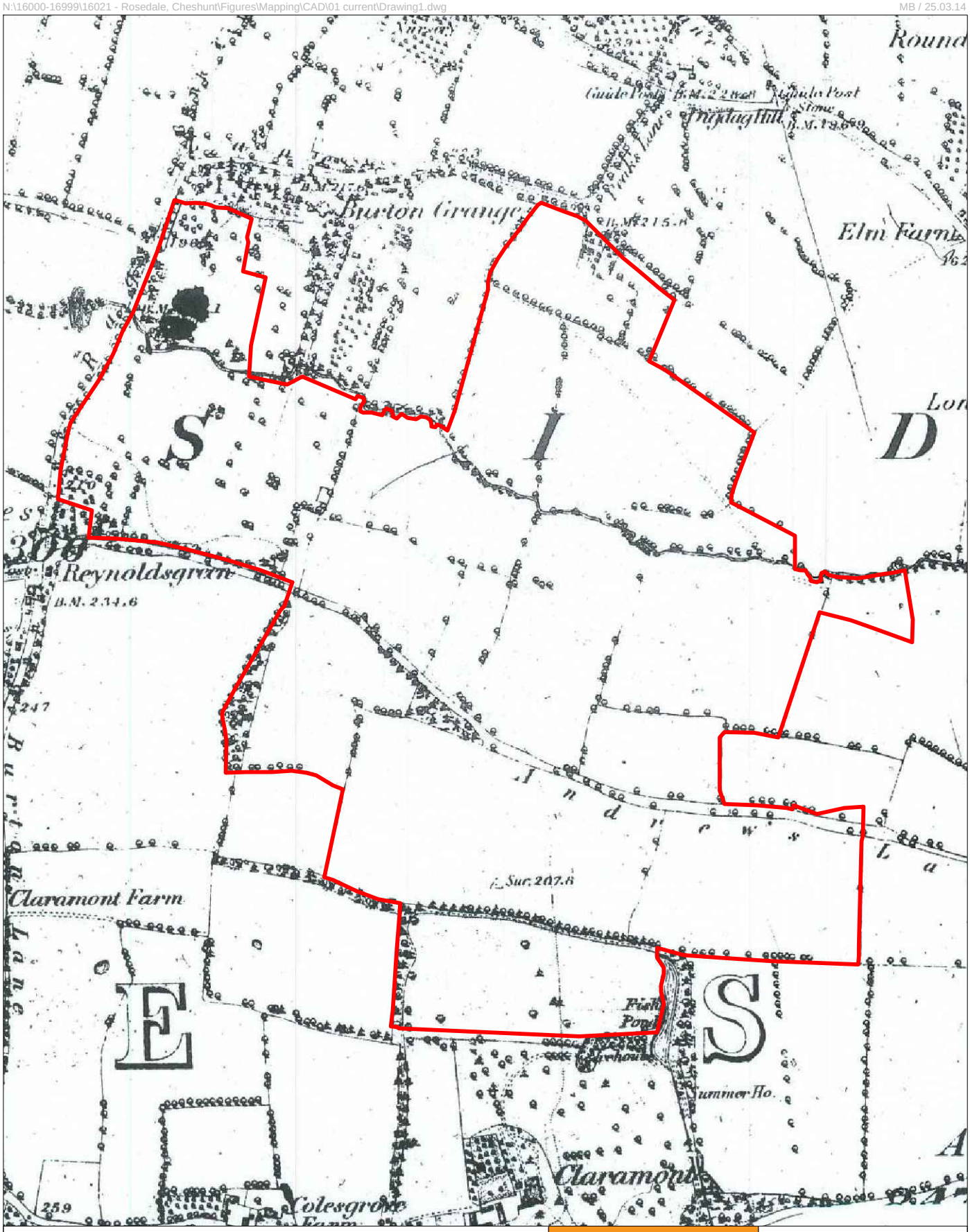

Site Boundary

N

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Figure 2:
1868-82 Ordnance Survey

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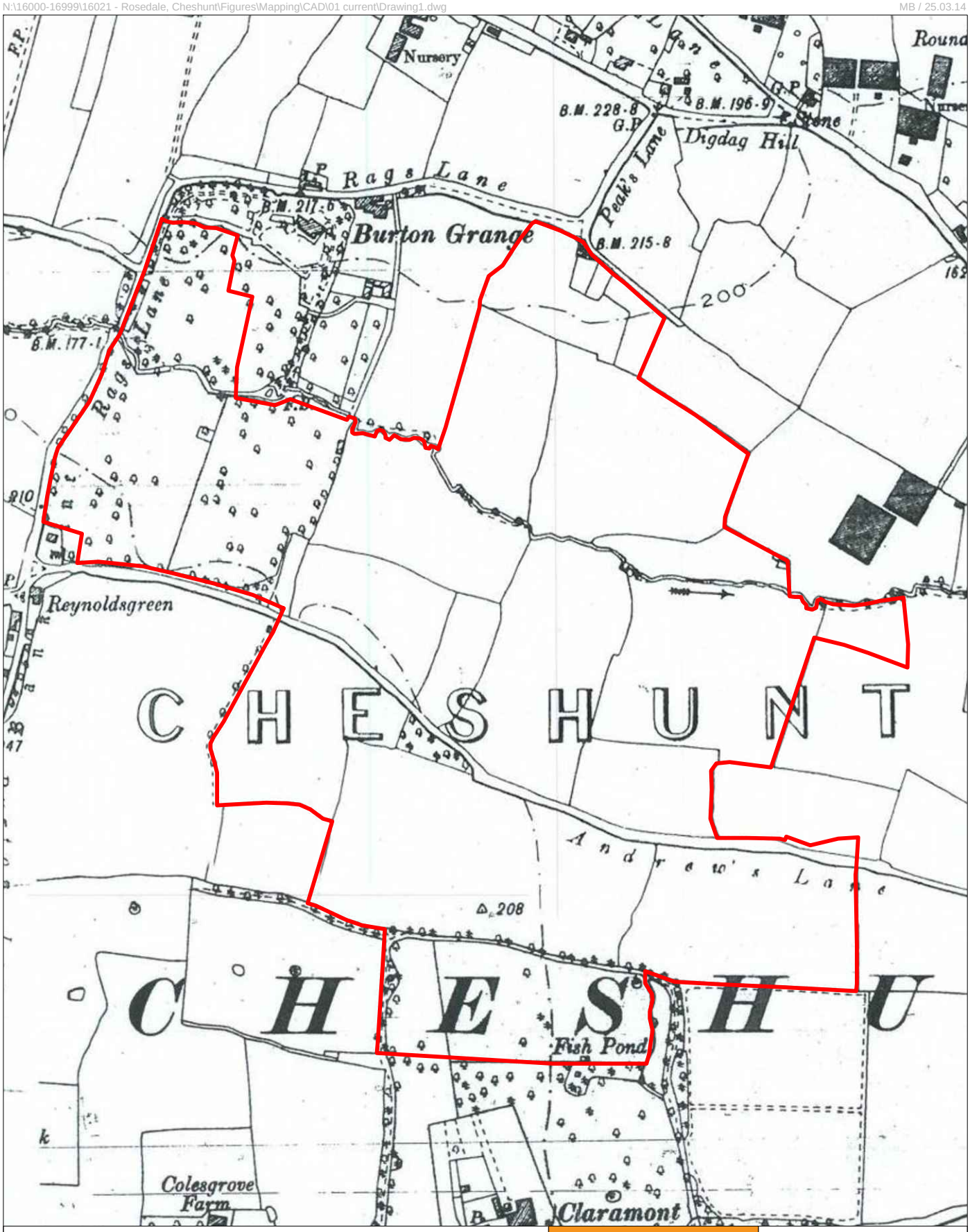

Site Boundary

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Figure 3:
1899 Ordnance Survey

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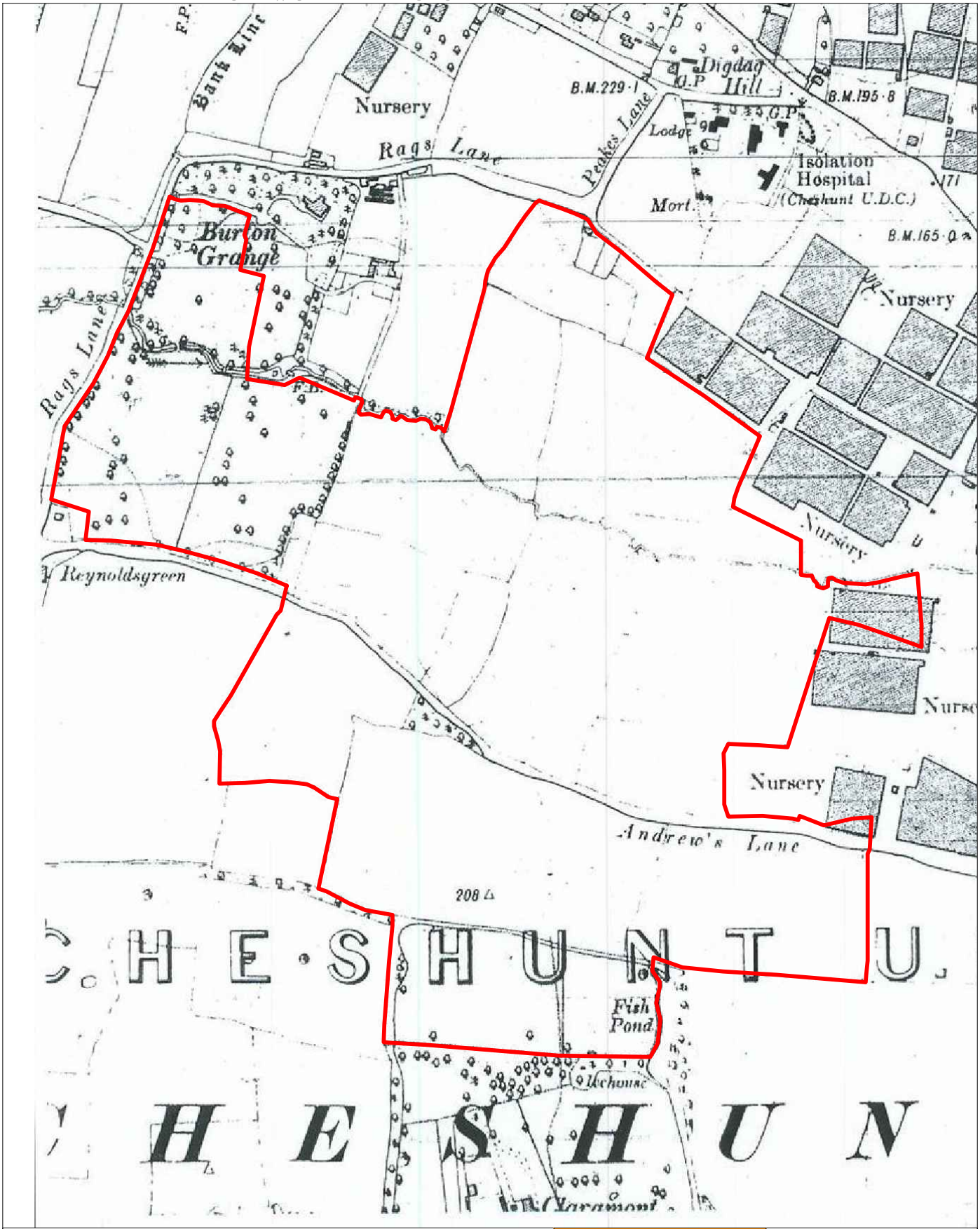

Site Boundary

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Figure 4:
1921 Ordnance Survey

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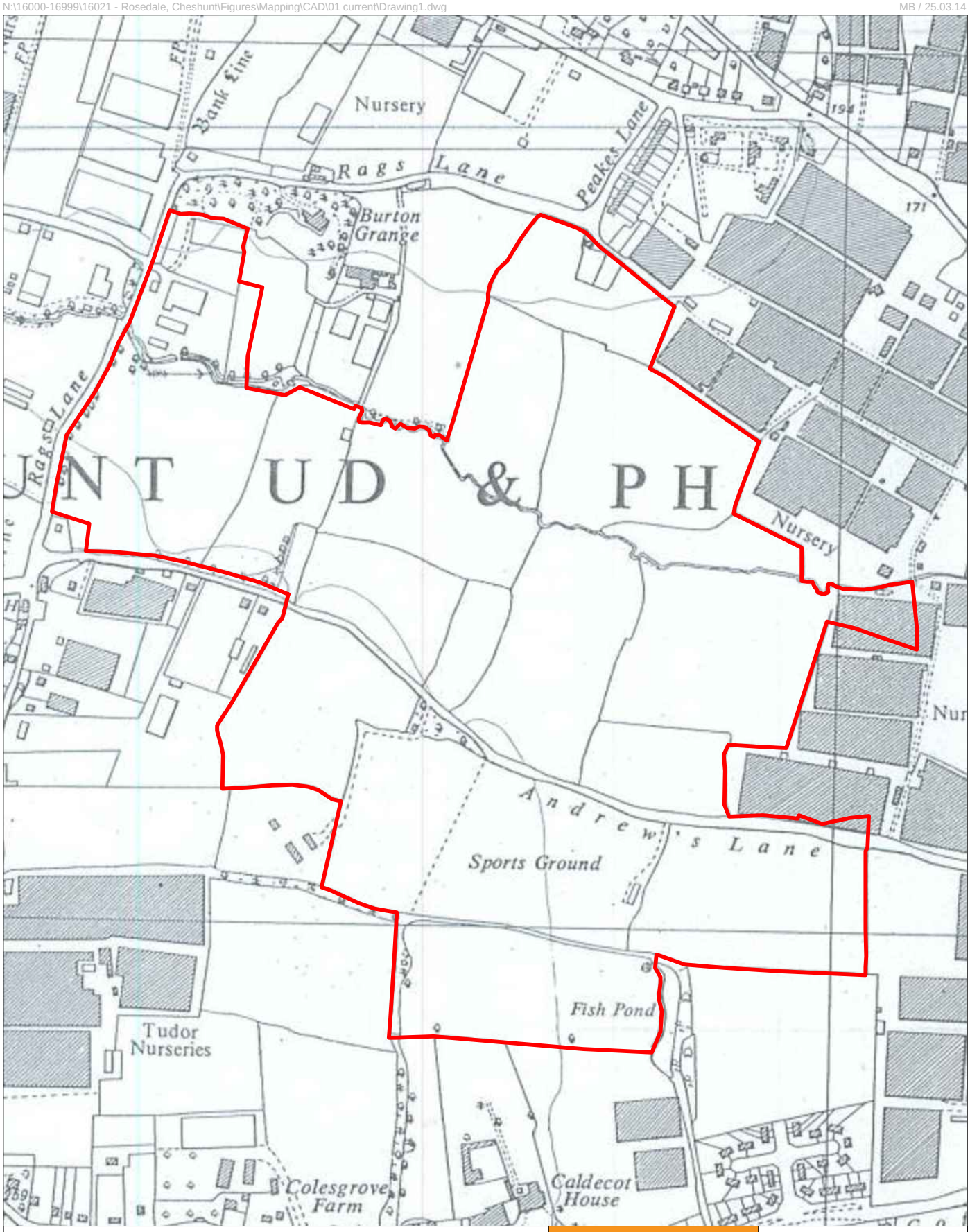

Site Boundary

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Figure 5:
1960 Ordnance Survey

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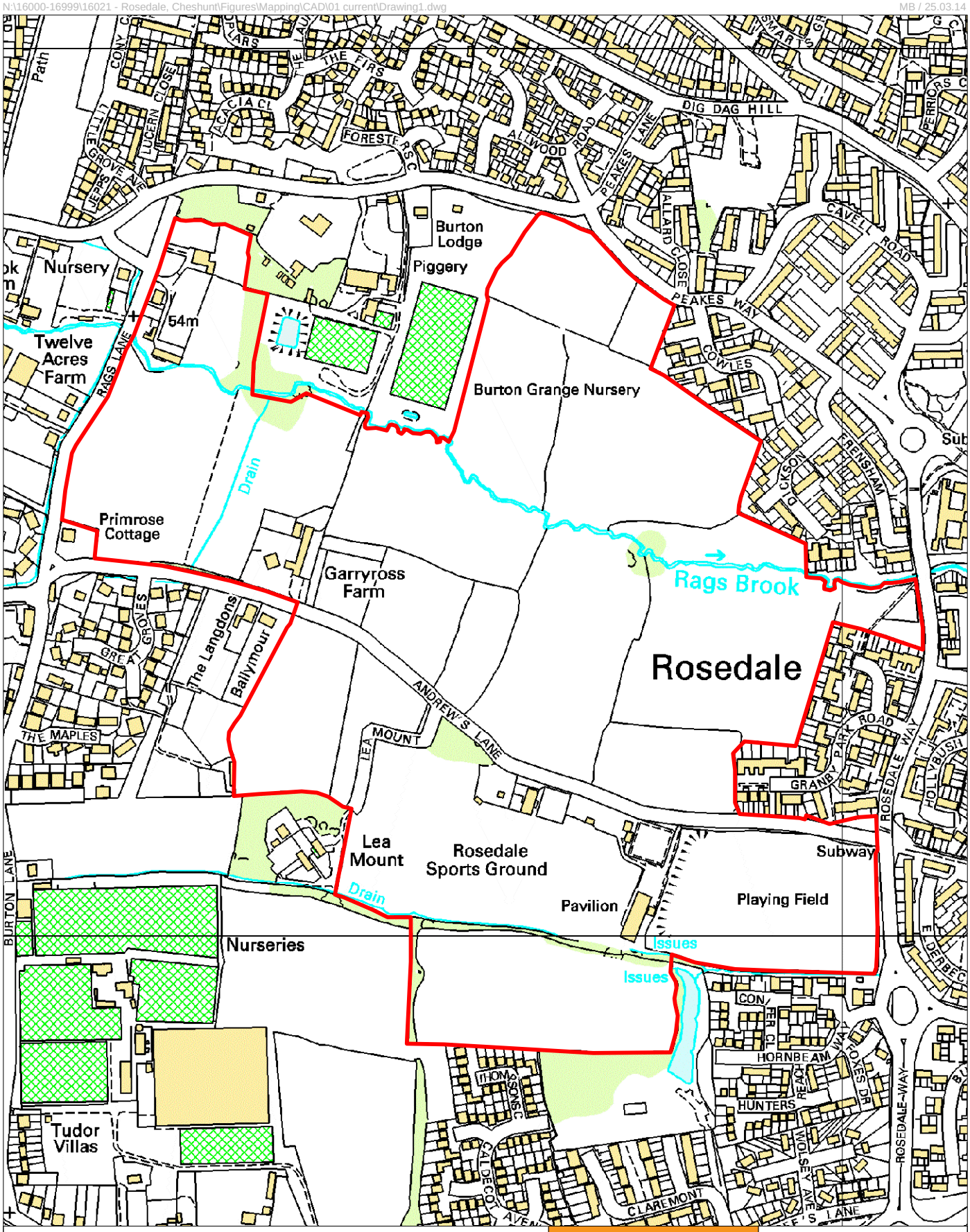

Site Boundary

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Figure 6:
2013 Ordnance Survey

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Plate 1: Google Earth 2006

APPENDIX 1

Hertfordshire HER maps

N:\16000-16999\16021 - Rosedale, Cheshunt\Figures\Mapping\GIS\Projects\HER Rosedale.mxd

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Archaeological Alert Area

Site Boundary

Search Area (1km radius)

Designated Heritage Assets:

- Listed Building

Non-Designated Heritage Assets:

- Monument Point
- Historic Building
- Ermine Street

Previous Archaeological Work:

- Event Point

N

Scale at A3: 1:8,000

0 250 m

Appendix 1: Hertfordshire HER Monuments and Events Map

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