

B&Q Cricklewood ES Volume III

Appendix 7-1: EIA Scoping Report and
EIA Scoping Opinion

Montreaux Cricklewood Developments Ltd

July 2020

B&Q Cricklewood

EIA Scoping Report

Montreaux Cricklewood Developments Ltd

December 2019

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1. Introduction

1.1 Background

- 1.1.1 This Environmental Impact Assessment (EIA) Scoping Report has been prepared on behalf of Montreaux Cricklewood Developments Ltd (hereafter referred to as the 'Applicant'). It sets out the proposed scope of the EIA and associated Environmental Statement (ES) to support an outline planning application for a mixed-use development, comprising residential, commercial, retail, and public realm elements, known as the B&Q Cricklewood scheme (hereafter referred to as the 'Proposed Development').
- 1.1.2 The Proposed Development is located in the London Borough of Barnet (LBB), adjacent to Cricklewood railway station (postcode NW2 1ES, National Grid Reference TQ 23857 85892) (hereafter referred to as the 'Site').
- 1.1.3 Figure 1.1-1 and Figure 1.1-2 show the indicative Site boundary (the 'application boundary') and the location of the Site.
- 1.1.4 Given the likely scale of the Proposed Development, the location of the Site and the potential for likely significant environmental effects, the Applicant has chosen to submit an Environmental Statement (ES) alongside the planning application for the Proposed Development. The EIA will be undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (hereafter referred to as the 'EIA Regulations')¹.
- 1.1.5 This EIA Scoping Report brings together the results of early consultations, and desk-based assessments already undertaken, which have enabled the scope and methodology of the EIA to be established. The Site falls within the jurisdiction of the LBB and as such, the EIA Scoping Opinion (and future planning application/ES) will be determined by the LBB.

¹ Her Majesty's Stationary Office, HMSO (2017); 'The Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2017.

Figure 1.1-1 The Application Boundary

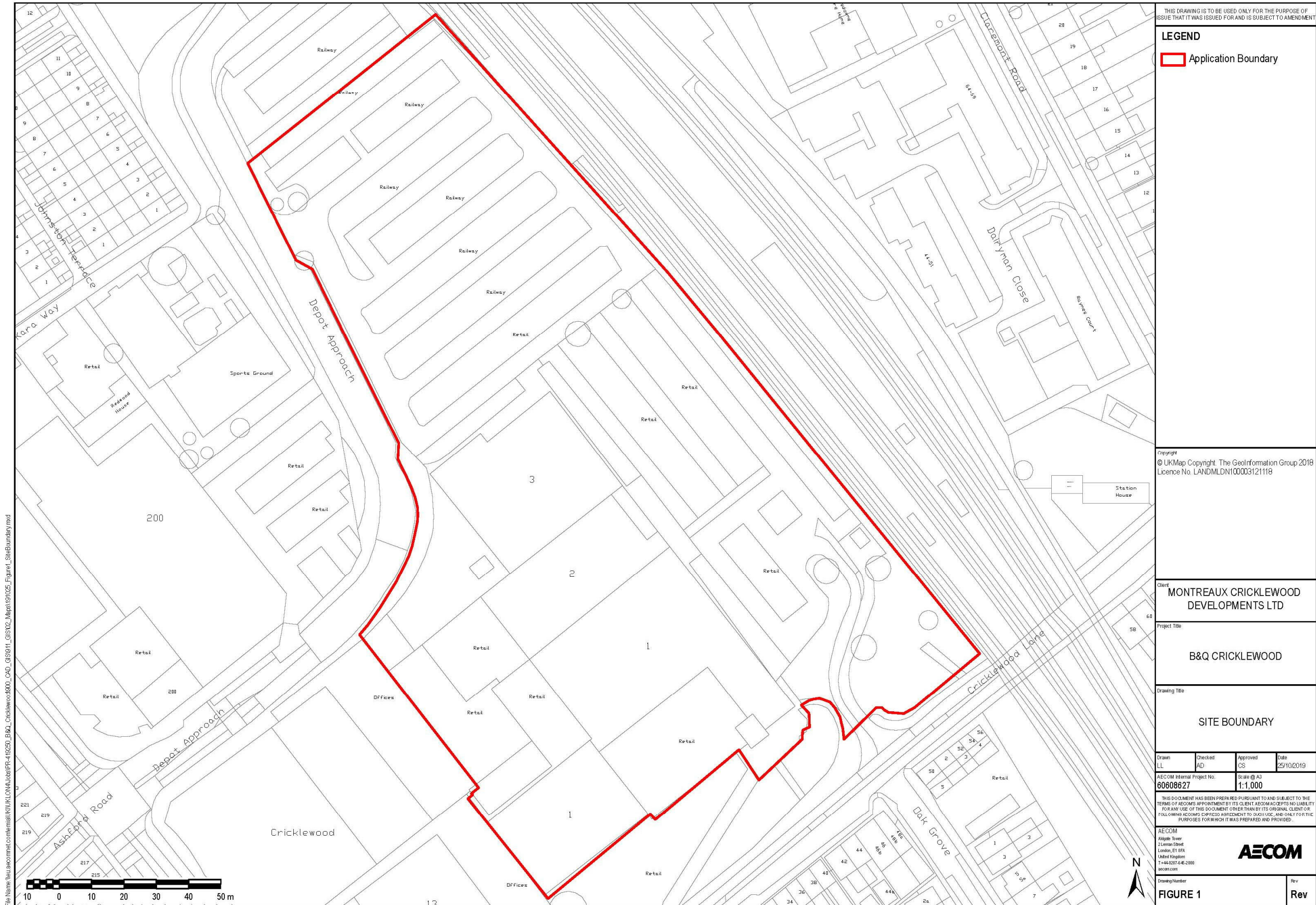
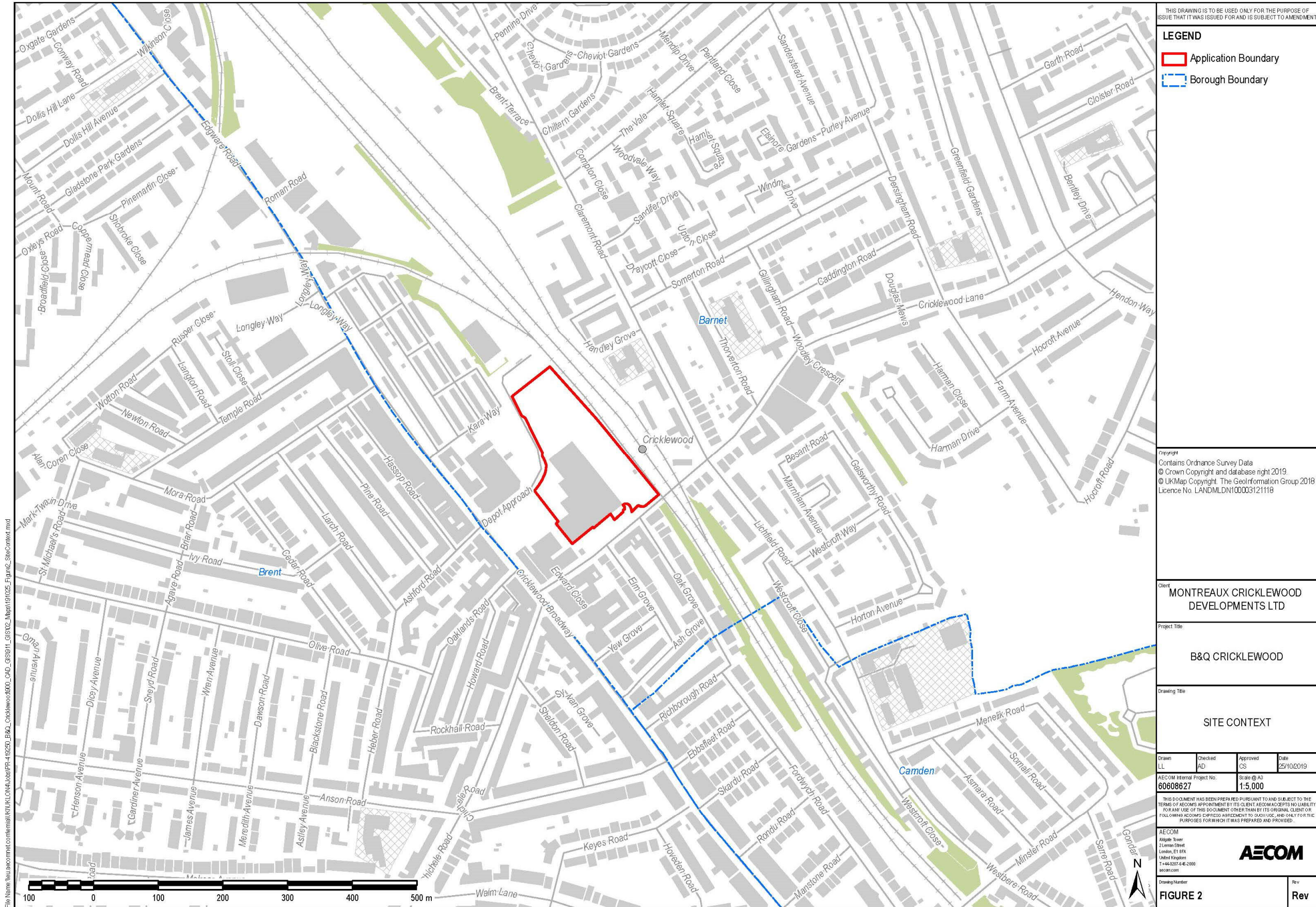


Figure 1.1-2 Site Context



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LEGEND

- Application Boundary
- Borough Boundary

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MONTREAUX CRICKLEWOOD DEVELOPMENTS LTD

Project Title
B&Q CRICKLEWOOD

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SITE CONTEXT

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1.2 The Purpose of Scoping in the EIA Process

- 1.2.1 EIA 'Scoping' forms one of the early stages of the EIA process and refers to the activity of identifying the environmental 'topics' that should be considered within the EIA. In addition, EIA Scoping allows for the early identification of the receptors that may be affected or impacted by a new development. Through consideration of environmental 'topics' and potential receptors (both existing and introduced as a result of a new development), EIA Scoping initiates the process of defining the potential for significant effects, which in turn results in the identification of the impacts to be addressed in the EIA.
- 1.2.2 Regulation 15 of the EIA Regulations allows an applicant to ask the Local Planning Authority (LPA) (who in turn would seek the opinion of other relevant Statutory Consultees – see *Section 5: EIA Consultation*) to state in writing their opinion as to the scope of the EIA. This report constitutes a formal request for an EIA Scoping Opinion under Regulation 15 of the EIA Regulations.
- 1.2.3 The objectives of this report are to:
- Set out the proposed scope of the EIA (i.e. identifying which environmental topics are to be '**Scoped In**' or '**Scoped Out**'), taking into account what is currently known about the Site and the Proposed Development;
 - Set out what additional information needs to be collected (i.e. through desk-based studies or field survey work) to characterise the baseline environment of the Site;
 - Define the assessment methods to be used to determine the likely significant environmental effects of the Proposed Development;
 - Identify potential effects and opportunities for mitigation;
 - Facilitate consultation with the LBB and other relevant statutory bodies on the environmental issues to be addressed as part of the EIA and design development process;
 - Support a request for an EIA Scoping Opinion from the LBB under Regulation 15 of the EIA Regulations; and
 - Set out the proposed structure of the ES.

1.3 Structure of the EIA Scoping Report

- 1.3.1 The remainder of the EIA Scoping Report will include the following information:
- An overview of the existing Site, it's surroundings and planning context;
 - A summary of potential sensitive receptors;
 - An overview of the Proposed Development;
 - Key legislative and planning policy documents;
 - A preliminary list of EIA consultees;
 - Proposed EIA methodology;
 - Topic-by-topic overview of the baseline conditions, potential sensitive receptors, potential impacts of the Proposed Development, proposed methodology for consideration in the EIA and scope for mitigation;
 - Other environmental considerations;
 - The proposed structure of the ES; and
 - Summary and conclusions of the EIA Scoping Report.

2. Site Description and Context

2.1 Overview of the Existing Site

- 2.1.1 The Site is located within the administrative jurisdiction LBB, adjacent to Cricklewood railway station (postcode NW2 1ES, National Grid Reference TQ 23857 85892). The Site is bound by Kara Way and Campion Terrace to the north, national railway lines and Cricklewood railway station to the east, Cricklewood Lane to the south and Cricklewood Broadway (A5) to the west. The Site area is approximately 2.88 ha.
- 2.1.2 The Site is currently occupied by a range of retail outlets, including a large B&Q DIY Store, Pound Stretcher and Tile Depot. These large warehouse buildings are situated in the south-western aspect of the Site. The northern and eastern aspects of the Site mainly consist of car parking associated with the previously identified retail outlets, as well as soft landscaping adjacent to the railway lines, and the southern entrance to the Site. Additional retail properties are situated adjacent to the south-western boundary, including a large Co-op supermarket, as well as numerous local business such as pharmacies, food take-aways, international supermarkets, barbers and other general stores. Towards the north-eastern boundary of the Site, a Travel Lodge, Cricklewood Timber and Building Supplies, Beacon Bingo, Jewson building materials supplier and a Tesco Direct. Residential properties are situated on the eastern boundary of the railway lines, southern boundary of Cricklewood Lane, western boundary of Cricklewood Broadway and to the north of the Travelodge, all within approximately 150m of the Site boundary.

2.2 Environmental and Socio-economic Context

- 2.2.1 This section provides an overview of the key environmental considerations relating to the Site.

Air Quality

- 2.2.2 The LBB has declared all areas close to main roads within the borough as Air Quality Management Areas (AQMA) due to exceedances of the UK National Air Quality Strategy (AQS) objectives for both particulate matter (PM₁₀ - 24-Hour Mean) and nitrogen dioxide (NO₂ – Annual Mean). This is a reflection of the busy surrounding road network and the associated emissions from vehicles, particularly the high frequency of Heavy Goods Vehicles (HGVs) which visit the retail developments on the Site to in order to deliver goods for the stores.

Archaeology and Heritage

- 2.2.3 The Site does not contain any statutory designated heritage assets, such as Scheduled Monuments, Listed Buildings, Conservation Areas or Registered Battlefields, Parks and Gardens. There are three Grade II listed structures within a 500m radius of the Site, including Milestone Sited Outside Numbers 3 and 4 Gratton Terrace, Three Lamp Standards in front of the Crown Public House and the Crown Public House, all of which are along the eastern boundary of the Site. Cricklewood Railway Terraces, which is designated as a conservation area is located immediately north-west of the Site (see Figure 7.11-1). At a 1km radius, the number of listed structures increases to 18, including Hampstead Cemetery, which is designated as a Grade II Registered Park and Garden. Other structures of note include a number of tombs and monuments within Hampstead Cemetery, such as the Grade II* listed Tomb of Marthe Goscombe John and Sir William Goscombe John.

Ecology

- 2.2.4 In terms of ecological features, the urban nature of the Site and the surrounding areas offer minimal opportunities for habitats suitable for protected species. However, the railway lines towards the east may present the opportunity for a biological corridor, allowing species a safe route to travel adjacent to the Site, although this area does not lie within the application boundary. The Site is not situated within any statutory designated sites for ecological value, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Areas of Conservation (SAC) or Ramsar Sites, nor are there any located within a 1km radius of the Site.

Socio-economics: Education, Healthcare Facilities and Open Space

- 2.2.5 A number of schools are located within 1 kilometre (km) of the Site. The closest schools situated within 500m of the Site are St Agnes Roman Catholic (RC) Primary School, Childs Hill School and Anson Primary School, located approximately 270m, 300m and 630m east and south-west of the Site. The only secondary school within 500m is Hampstead Secondary School, located approximately 500m south of the Site.
- 2.2.6 Several healthcare facilities are also within a 500m radius of the Site, including Cricklewood GP Health Centre, adjacent to the western boundary. The Sheldon Practice, Chichele Road Surgery and Willesden Green Surgery are also located 250m, 280m and 475m south-west respectively of the Site.
- 2.2.7 The closest open spaces to the Site Hampstead Cemetery, Clitterhouse Playing Fields and Gladstone Park, being located around 600m, 1km and 1.3km respectively away from the Site.

Transport

- 2.2.8 The Site currently has a Public Transport Accessibility Level (PTAL) of 5 in the southern section, with the northern section of the Site being designated as 4. Both of these ratings are towards the higher end of the PTAL scale, which is a nine-point system ranging from 0 to 6b. This means that the Site is well connected to a variety of modes of public transport. Cricklewood Railway Station is located approximately 50m west of the Site, thus providing access to the Thameslink rail services. There are also a number of bus services located within 500m of the Site, including (but not limited to) routes 16, 32, 189, 226, 245, 260, 266, 316, 332 and 460, ranging from five to nine vehicles per hour.

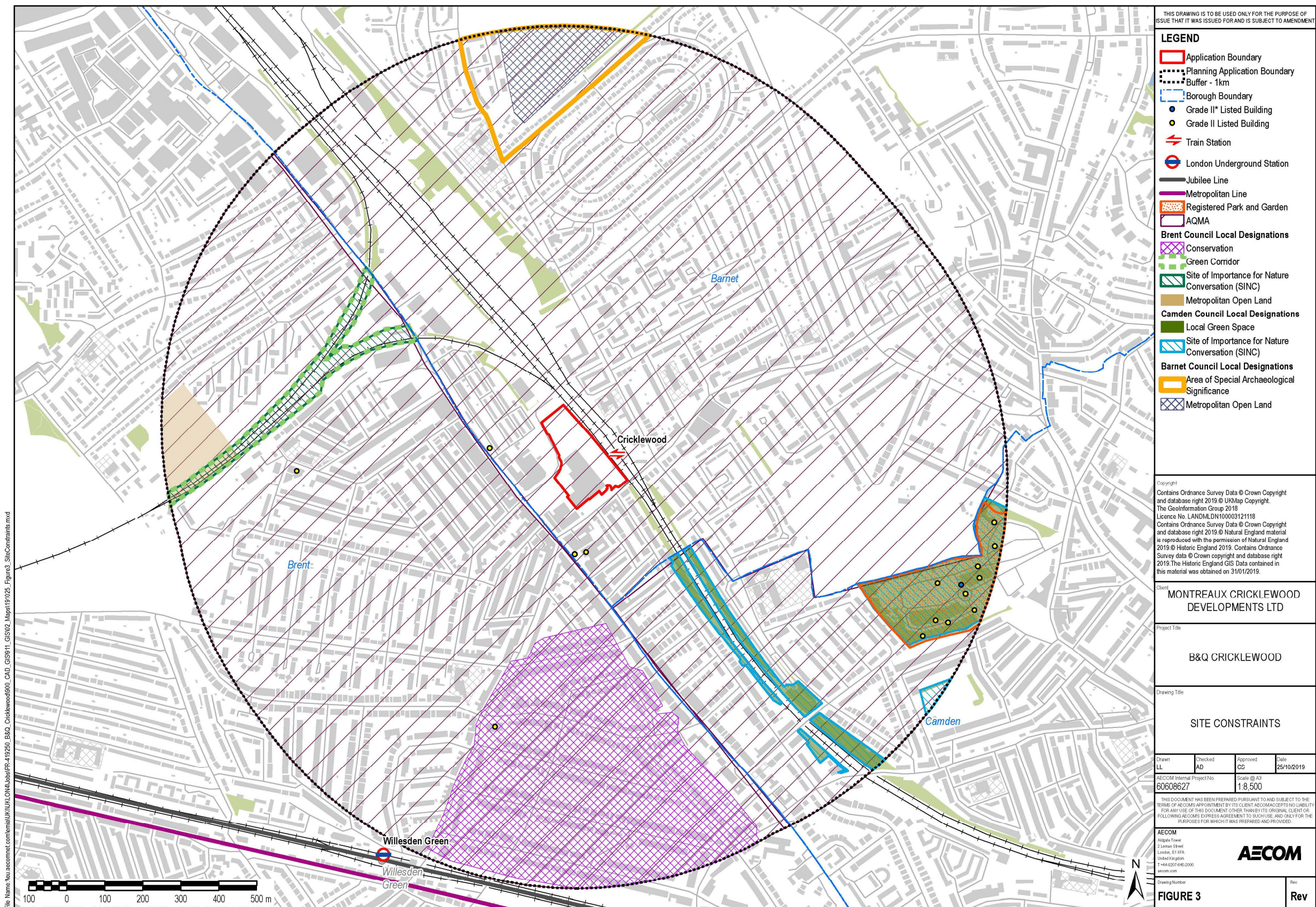
Water Environment

- 2.2.9 There are no natural watercourses within the Site or within close proximity to the Site. The closest open water body is the Brent Reservoir situated approximately 2.15km to the north of the Site, which is connected to the Brent River at approximately 1.75km north. Furthermore, the Site falls within Flood Zone 1, meaning that there is a less than 1 in 1,000 annual probability of river or sea flooding that could affect the Proposed Development.

2.3 Summary of Potential Sensitive Receptors

- 2.3.1 When undertaking an EIA, it is important to understand how the Proposed Development may impact on the surrounding environment and whether the Proposed Development is suitable within the context of the existing constraints. An initial review of existing and publicly available information has revealed the following environmental constraints to the Proposed Development.
- Future residents/ on-site users of the Proposed Development (e.g. due to potential ground contamination from previous uses, noise and vibration from the adjacent railway lines, air quality etc.);
 - Public health;
 - UK National Carbon Budget;
 - Statutory listed buildings within close proximity to the Site;
 - Underlying aquifers and the surrounding drainage system;
 - Below-ground utilities and services;
 - Adjacent residential and commercial properties;
 - Community amenity facilities including Gladstone Park and Clarefield Park;
 - Local education and healthcare facilities, including St Agnes Roman Catholic (RC) Primary School, Childs Hill School and Cricklewood GP Health Centre;
 - Local road networks and public transport including the local rail, bus and cycle networks;
 - Local air quality within the LBB AQMA; and
 - Pedestrians, cyclists and road users within proximity of the Site.

Figure 2.3-1 Environmental Constraints



3. The Proposed Development

3.1 Scheme Description

3.1.1 It is the intention of the Applicant to submit an outline planning application for a residential led mixed-use scheme. The maximum parameters of the Proposed Development will comprise the following:

- Demolition of existing buildings and structures within the Site;
- Up to 1,200 residential units (Use Class C3), with an aspiration to provide 35% affordable units including up to 500 Built to Rent (BtR) units;
- Up to 2,000m² of commercial, retail, non-residential institutions and leisure floorspace;
- Associated Public, Semi-Private and Private Realm (including landscaped roof terraces), Public Open Space, including enhancement of Cricklewood Green;
- Access and a new internal road network.

3.1.2 Buildings will range in height from 3 up to a maximum of 25 storeys, split across 4 Blocks (A – D).

3.1.3 The Proposed Development will be powered by an all-electric system, consisting of air source heat pumps and photovoltaic (PV) panels. Therefore, there will be no Combined Heat and Power (CHP) boilers or associated plant.

3.1.4 Further information on the Proposed Development design, including but not limited to the tenure of the proposed residential units, landscaping proposals and location of open space will be provided within the ES.

3.2 Demolition and Construction Works

3.2.1 The demolition and construction works are anticipated to commence in Q3 2021, lasting for a duration of approximately 5 years and concluding in Q3 2026. Prior to the construction of buildings on any parts of the Site, site clearance (including the demolition of all structures on the Site), enabling works, remediation (if required) and utilities diversion will be undertaken across the Site. Subsequently, it is expected that the demolition and construction works will be carried out in phases with part occupation occurring throughout this process. However, it should be noted that construction phasing at the Site is yet to be confirmed.

3.2.2 Where available, the ES will provide details of an indicative enabling works, demolition and construction programme together with proposed enabling works, demolition and construction activities and methods, and their anticipated duration. Information to be provided may include Site preparation and construction logistics, including: Site access and egress; welfare facilities; and working hours. Details of any assumptions made will be in the ES narrative. An estimate of the peak periods of daily HGV movements will be provided where sufficient construction information is available – it is anticipated that this will be provided in annual average daily traffic (AADT) and annual average weekday traffic (AAWT) format.

3.2.3 The mitigation and best practice measures identified within the technical topics as part of embedded and additional mitigation will inform the production of a Construction Environmental Management Plan (CEMP), once secured by an appropriately worded planning condition. Individual contractors and developers will be required to implement the construction environmental management measures as set out in the ES and confirmed within a subsequent CEMP.

4. Key Legislative and Planning Documents

4.1 EIA Statutory Requirements and Guidance

4.1.1 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 (but not limited to):

- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017;
- Institute of Environmental Management and Assessment's (IEMA) Guidelines for Environmental Impact Assessment, 2004 (as amended 2006)²;
- Office of the Deputy Prime Minister (ODPM) Environmental Impact Assessment – A Guide to Procedures (2006)³;
- Planning Practice Guidance (PPG) online resource⁴;
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development', July 2016⁵; and
- IEMA ES Review Criteria (where applicable)⁶

4.2 Summary of Planning Policy Context

4.2.1 Each of the technical chapters contained within the ES will include reference to relevant national, regional and local planning policy. The most pertinent planning policy documents to the Site are summarised below.

- National Planning Policy Framework (2019);
- National Planning Practice Guidance (2017);
- The London Plan (2016) (Although due consideration will also be given to the Draft London Plan 2019);
- A Green Future: Our 25 Year Plan to Improve the Environment;
- London Borough of Barnet's Local Plan (Core Strategy) (2012);
- Cricklewood, Brent Cress and West Hendon Regeneration Area Development Framework (2005); and
- Brent Cross – Cricklewood Opportunity Area (2015).

National Planning Policy

National Planning Policy Framework

4.2.2 The National Planning Policy Framework⁷ (NPPF) summarises in a single document the Government's planning policies for England and how these are expected to be applied.

4.2.3 The NPPF sets out the Government's requirements for the planning system, only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

4.2.4 The NPPF introduces the presumption in favour of sustainable development, where Section 2, Paragraph 10 stating that local planning authorities should apply this presumption in favour of sustainable development when assessing and determining development proposals.

² Institute of Environmental Management and Assessment, IEMA (2006); 'Guidelines for Environmental Impact Assessment'.

³ Office of the Deputy Prime Minister, ODPM (2006); 'Environmental Impact Assessment – A Guide to Procedures'.

⁴ Planning Practice Guidance Online Resource. Accessed from: <https://www.gov.uk/government/collections/planning-practice-guidance>

⁵ IEMA (2016); Environmental Impact Assessment Guide to: Delivering Quality Development

⁶ IEMA ES Review Criteria.

⁷ Department of Communities and Local Government (DCLG), 2012; National Planning Policy Framework (NPPF)

- 4.2.5 The NPPF was recently updated in February 2019, superseding the previous version published in March 2012 and, revised in July 2018.

National Planning Practice Guidance

- 4.2.6 The Planning Practice Guidance (PPG)⁸ was published on the 6 March 2014 to provide more in-depth guidance to the NPPF. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date. As such, the PPG was amended in July 2017⁹ to reflect the updated EIA Regulations. Relevant guidance from the PPGs and how it relates to the technical assessments undertaken as part of the EIA will be provided in the relevant technical chapters of this ES.

Regional Planning Policy and Guidance

The London Plan 2016 – Spatial Development Strategy for Greater London

- 4.2.7 The London Plan¹⁰ sets out the spatial development strategy for Greater London and provides an integrated economic, environmental, transport and social framework for the development of London over a 20 - 25-year period. Borough's local development documents have to be 'in general conformity' with the London Plan, which is also part of the statutory development plan, and must be considered when planning decisions are taken across London. While policy will be applied, material considerations may also influence the outcome of a planning decision.
- 4.2.8 The current London Plan of 2016 was published, and amended, in January 2017¹¹ (hereafter referred to as the 'Draft London Plan 2017'), which is an alteration of the 2011 Plan produced by the former Mayor of London, Boris Johnson. The Draft London Plan 2017 was published for consultation by the current Mayor of London, Sadiq Khan. The consultation period took place between 1 December 2017 – 2 March 2018. Another version was then issued, titled the Draft London Plan – Showing Minor Suggested Edits.¹²
- 4.2.9 The Draft London Plan 2017 was considered by a formal Examination in Public (EiP), led by independent inspectors appointed by the Secretary of State. The EiP opened on 15 January 2019, with the final session held on 22 May 2019. As such, the EiP has now concluded and results in the 'Draft London Plan 2019'¹³ which shows all the Mayor's suggested changes, as well as findings from the EiP and recommendations relating to the content of the most recently published plan.
- 4.2.10 The London Plan 2016 is still the adopted development plan; however, the Draft London Plan 2019 is a material consideration in planning decisions and still carries weight in the decision-making process. The significance given is a matter for the decision maker, however the Draft London Plan 2019 gains more weight as it moves through the process to adoption. Consideration will be given to the requirements of both the current London Plan 2016 and the emerging Draft London Plan 2019, however it is noted that the latter will not form a material consideration for determining planning applications until adopted.
- 4.2.11 In the London Plan 2016, Barnet is estimated to provide 31,340 new homes between 2019/20 – 2028/29, thus an annual target of 3,134 new homes.

A Green Future: Our 25 year Plan to Improve the Environment

- 4.2.12 A Green Future: Our 25 Year Plan to Improve the Environment¹⁴ is the Mayor of London's Environment Strategy. It was published in May 2018 and sets out the Mayor's vision of London's environment up to 2050. The strategy includes a number of policies and aspirations, with an accompanying implementation plan, setting out actions the Mayor is prioritising for the next five years to help implement the aims of the strategy. This is the first strategy to bring together approaches to every aspect of London's environment, integrating air quality, green infrastructure, climate change mitigation and adaptation, waste, noise and a low carbon circular economy.

⁸ DCLG (2015); National Planning Practice Guidance

⁹ DCLG (2017); National Planning Practice Guidance

¹⁰ Greater London Authority (GLA), 2016; The London Plan – The Spatial Development Strategy for London Consolidated with Alterations Since 2011

¹¹ GLA, 2017; The London Plan – Spatial Development Strategy for Greater London, Draft for public consultation. December 2017

¹² GLA, 2017; The London Plan – Spatial Development Strategy for Greater London – Showing minor suggested edits. December 2017

¹³ GLA, 2019; The London Plan – Spatial Development Strategy for Greater London – Consolidated Suggested Changes. July 2019

¹⁴ Mayor of London, 2018: London Environment Strategy

Local Planning Policy and Guidance

London Borough of Barnet Local Plan

4.2.13 The LBB's Local Plan is comprised of a suite of documents to guide planning and development in the borough. The Local Plan replaces the Unitary Development Plan (UDP) (adopted May 2006), with the exception of the 13 policies for Brent Cross and Cricklewood which remain the same (Appendix A of the Local Plan). It covers spatial planning – the practice of 'place shaping' to deliver positive social, economic and environmental outcomes and to provide the overarching local policy framework for delivering sustainable development in Barnet. The Local Plan comprises the following key documents:

- LBB's Core Strategy Development Plan Document (DPD), 2012¹⁵;
- LBB's Site Allocations DPD, currently emerging (LBB have only progressed to 'Call for Sites' stage to date¹⁶;
- LBB's Development Management Policies DPD, 2012¹⁷;
- Mill Hill Area Action Plan (AAP), 2009¹⁸; and
- Colindale AAP, 2010¹⁹.

4.2.14 The Core Strategy contains the 'vision' for the Local Plan and the most fundamental, cross-cutting objectives and policies that the local authority and its partners will seek to deliver. It also contributes to achieving the objectives of LBB's Sustainable Community Strategy, a strategy which demonstrates how local organisations and agencies work together to improve the economic, social and environmental well-being of their respective areas. The four core values and priorities which matter most to LBB's communities are the following:

- Strong, safe communities for everyone;
- Healthy and independent living;
- Investing in children, young people and their families; and
- A successful London suburb.

Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework

4.2.15 The LBB and the GLA have identified the Cricklewood, Brent Cross and West Hendon area as a major opportunity for regeneration in the borough over the next twenty years, as of 2005. This led to the production of the Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework Supplementary Planning Guidance (SPG)²⁰, where the Site is situated within the southern aspect. However, it is understood that the SPG does not provide any specific details regarding land use principles for redevelopment of the Site. This is likely due to the fact that the Site was in operation as the B&Q store present today at the time of writing, with no plans for redevelopment.

Brent Cross – Cricklewood Opportunity Area

4.2.16 The Site is situated within the southern aspect of the Brent Cross – Cricklewood Opportunity Area²¹, as outlined within the London Plan. It is identified as an Opportunity Area (324 ha) with a minimum target of 20,000 jobs and 10,000 new homes delivered between 2011 and 2031.

4.2.17 In 2010, outline planning permission was secured for a £4 billion masterplan of the Brent Cross – Cricklewood Opportunity Area to create a new town centre, including 841,615 ft² of retail space, 7,500 homes, 27,000 jobs, three re-built schools and new parks and community facilities. An additional train station on the Thameslink line and major road and public transport improvements were also major features of the plans. The masterplan for the area covers 141 hectares.

¹⁵ London Borough of Barnet (LBB), 2012; Local Plan (Core Strategy)

¹⁶ LBB, Emerging; Site Allocations Development Plan Document (DPD)

¹⁷ LBB, 2012; Development Management Policies DPD

¹⁸ LBB, 2009; Mill Hill Area Action Plan (AAP)

¹⁹ LBB, 2010, Colindale AAP

²⁰ LBB, 2005; Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework Supplementary Planning Guidance

²¹ GLA, 2014; Brent Cross – Cricklewood Opportunity Area Framework

- 4.2.18 In March 2015, the LBB resolved to make a Compulsory Purchase Order (CPO) to assist with the land assembly for the initial phases of the development. In December 2017, the Secretary of State approved the CPO granted to the LBB. However, in July 2018, the decision was taken to defer the start on site for the development works due to increased market risks in the UK with the intention to start once conditions are more settled. Construction timescales are still to be confirmed.

5. EIA Consultation

- 5.1.1 The process of consultation is important to the Proposed Development for a comprehensive and balanced ES. Views of the interested parties serve to focus the environmental studies and to identify specific issues which required further investigation.
- 5.1.2 Consultees involved in the evolution of the design of the Proposed Development, consideration of environmental effects and the potential design considerations will include, but are not limited to:
- London Borough of Barnet (LBB);
 - Greater London Authority (GLA);
 - Environment Agency (EA);
 - Transport for London (TfL);
 - Natural England (NE);
 - Historic England (HE), including the Greater London Archaeological Advisory Service (GLAAS);
 - Thames Water Utilities Limited (TWUL); and
 - Local residents, community organisations and other local businesses.
- 5.1.3 Consultation is an ongoing process and information gathered during consultation will be fed back into the emerging design of the Proposed Development as appropriate. A summary of the key consultation responses received from consultees which are relevant to the EIA process will be included within the ES.

6. Proposed EIA Methodology

6.1 Introduction

6.1.1 The EIA and associated technical studies will reflect current guidelines and relevant legislation and will be carried out in accordance with statutory guidance, including the requirements for the contents of an ES set out in Schedule 4 of the EIA Regulations. As required under the EIA Regulations, the EIA will be undertaken by competent experts and the ES will be accompanied by a statement of competence, outlining the relevant expertise and qualifications of such experts.

6.1.2 For the EIA to be an effective decision-making tool, the ES needs to focus on the likely significant environmental effects, within a range of topics. These issues have been identified through a review of existing information, baseline studies and a preliminary review of the emerging proposals for the Proposed Development.

6.1.3 During the preparation of this EIA Scoping report, consideration has been given to whether potentially significant effects are likely to be associated with the following environmental topics:

- Air Quality;
- Archaeology;
- Climate Change;
- Daylight, Sunlight, and Overshadowing;
- Ecology and Biodiversity;
- Ground Conditions and Contamination;
- Human Health;
- Major Accidents and Hazards;
- Noise and Vibration;
- Socio-Economics;
- Telecommunications (Electronic Interference);
- Townscape, Visual and Built Heritage Impact Assessment (TVBHIA);
- Traffic and Transport;
- Waste and Recycling;
- Water Environment; and
- Wind Microclimate.

6.1.4 *Section 7: Identifying Potentially Significant Effects* of this Scoping Report provides details on each of the above environmental topics, specifically, the scope of work proposed to fulfil the requirements of the EIA process.

6.2 EIA Methodology

6.2.1 This section outlines the methodology to be used throughout the ES. Details relating to the assessment methodology and approach for individual technical topics are provided in the technical sections of this Report (refer to *Section 7: Identifying Potentially Significant Effects*).

6.2.2 The EIA will identify the likely direct, indirect, cumulative, short, medium and long-term, permanent, temporary, beneficial and adverse significant effects arising from the Proposed Development. The main mitigation measures envisaged in order to avoid, reduce or remedy any likely significant adverse effects identified will be described in the ES.

6.2.3 Each technical chapter of the ES will define the baseline against which the likely significant environmental effects of the Proposed Development will be assessed. Study areas for defining baseline conditions will vary according to the technical assessment, available baseline information and the nature

of potential impacts. The study area for each topic has been defined within the technical sections of this EIA Scoping Report (refer to *Section 7: Identifying Potentially Significant Effects*).

- 6.2.4 Following on from the definition of the baseline conditions, the potential impacts of the Proposed Development will be assessed during the demolition and construction phase, and on completion and operation of the Proposed Development. Mitigation measures will be identified to eliminate, mitigate or reduce adverse effects and following the incorporation of mitigation measures, the significance of any remaining residual effects will be defined by applying a standard set of significance criteria. Cumulative effects will then be assessed (see below for further details in *Section 6.7: Approach to Effect Interactions and Cumulative Effects*).
- 6.2.5 The following sections provide further detail on the proposed EIA methodology for establishing assessment scenarios and years, and determining baseline conditions.
- 6.2.6 In summary, each technical chapter of the ES will:
- Define baseline conditions;
 - Assess the likely effects of the Proposed Development; and
 - Assess the likely effects of the Proposed Development together with likely effects arising from cumulative schemes.

6.3 Approach to Assessment Scenarios

- 6.3.1 The EIA will identify the direct effects of the Proposed Development in addition to the indirect, cumulative, short-, medium- and long-term, permanent, temporary, beneficial and adverse likely significant effects arising from the Proposed Development. The main mitigation measures envisaged in order to avoid, reduce or remedy significant adverse effects will be described. The concluding chapters will provide a summary of the cumulative and residual effects of the Proposed Development.
- 6.3.2 The methodology will define the scenarios against which the environmental effects will be assessed. This will include the following scenarios:
- The baseline as it is today (i.e. the existing Site) - The baseline conditions will be determined based on a combination of desk study, publicly available information, third-party information and site surveys;
 - Demolition and construction assessment – The Proposed Development will be delivered in phases, as described in *Section 3.2*. Impacts during the construction phase on any future on-site occupants or users of parts of the Site while construction is still on-going will be qualitatively considered as part of the demolition and construction assessment of certain technical chapters and will be discussed within their respective methodology sections. However, any quantitative modelling will only be undertaken for the peak year of construction that is considered to represent the worst case scenario. The level of assessment is for each technical discipline to determine, but it must be justified, robust and defensible;
 - The complete and operational Proposed Development; and
 - The complete and operational Proposed Development, in addition to a number of schemes identified in order to assess cumulative effects (see *Appendix A*).

6.4 Environmental Design and Management

- 6.4.1 Throughout the EIA (including this EIA Scoping Report and the ES), where applicable, the way that likely environmental effects have been or will be avoided, prevented, reduced or offset through design and/or management measures will be described. These are measures that are inherent in the design and construction of the Proposed Development (also known as 'embedded measures'). Some of these embedded measures have been identified at the scoping stage and are described, where relevant, in *Section 7: Identifying Potentially Significant Effects*.
- 6.4.2 Embedded measures relevant to the construction phase will be summarised within the demolition and construction chapter of the ES, as well as the environmental design and management section within each of the technical assessment chapters. These measures are to be included within a CEMP, the requirement for which is proposed to be secured via an appropriately worded planning condition.

- 6.4.3 For the complete and operational phase, such embedded measures will be either integral to Proposed Development or represented in the Design Codes. A number of technical studies (e.g. wind microclimate, daylight and sunlight) are being undertaken to inform the design and allow early identification of mitigation measures so that these can be incorporated into the Proposed Development. Embedded measures are therefore either incorporated into the design from the outset or identified through the assessment process. Proposed environmental enhancements will also be described, where applicable.
- 6.4.4 Embedded measures will be considered prior to the assessment of effects to avoid considering assessment scenarios that are unrealistic in practice, i.e. do not take account of such measures even though they are likely to be standard practice and/or form part of the Proposed Development's design. These will then be followed through the assessment to ensure that realistic likely environmental effects are identified. Where likely significant adverse effects are identified after considering these embedded measures, 'further mitigation measures' will be proposed.
- 6.4.5 All embedded mitigation and enhancement measures will be described within the Proposed Development chapter of the ES with the rationale for the inclusion of the identified embedded measures and the associated commitment to implementing such measures clearly stated. In addition, mitigation and enhancement measures and any monitoring requirements will be summarised within the Summary of Mitigation chapter of the ES, which will also indicate the mechanism for securing these measures (e.g. through planning conditions and/ or Section 106 agreement obligations).

6.5 Approach to Significance Criteria

- 6.5.1 For each technical ES chapter, the significance of effects will be evaluated with reference to definitive standards, accepted criteria and legislation where available. Where it has not been possible to quantify effects, qualitative assessments will be carried out, based on expert opinion and professional judgement. Where uncertainty exists, this will be noted in the relevant ES chapter.
- 6.5.2 Specific significance criteria for each technical discipline will be developed, giving due regard to the following:
- Extent and magnitude of the impact;
 - Effect duration (whether short, medium or long-term);
 - Effect nature (whether direct, indirect, reversible or irreversible);
 - Whether the effect occurs in isolation, is cumulative or interactive;
 - Performance against any relevant environmental quality standards;
 - Sensitivity of the receptor; and
 - Compatibility with environmental policies.

Significance Assessment Terminology

- 6.5.3 In order to provide a consistent approach across the different technical disciplines addressed within the ES, the following terminology will be used throughout the ES to define residual effects (i.e. the effect post the application of any required additional mitigation measures):
- **No Effect** – No positive and/or negative influence from the Proposed Development;
 - **Adverse** – Detrimental or negative effects to an environmental resource / receptor; or
 - **Negligible** – Imperceptible effects to an environmental resource / receptor; or
 - **Beneficial** – Advantageous or positive effect to an environmental resource / receptor; or
 - **Neutral** – A mixture of beneficial and adverse effects that are considered to be on balance an overall neutral effect on an environmental resource / receptor. This type of effect is most relevant to the consideration of townscape, visual and built heritage effects.

- 6.5.4 Where adverse or beneficial effects are identified, these will be assessed against the following scale:
- **Minor** – Slight, very short or highly localised effect of no significant consequence; or
 - **Moderate** – Limited effect (by extent, duration or magnitude), which may be considered significant; or
 - **Major** – Considerable effect (by extent, duration or magnitude) that may be in breach of recognised acceptability, legislation, policy or standards.
- 6.5.5 When addressing the duration of an effect, the following terminology will be used:
- **Temporary** – Short, medium or long-term (e.g. a short-term temporary effect relates to an activity with a duration from several weeks to a few months, a medium-term temporary effect estimated to be several months to a year and long –term estimated to be several years); and
 - **Permanent** - effects that are non-reversible, generally associated with the complete and operational Proposed Development.
- 6.5.6 The scale of the effect will be referenced as follows, where applicable:
- **Local level** – effects affecting the Site and/ or the neighbourhood; or
 - **Borough level** – effects affecting the LBB; or
 - **Regional level** – effects influencing Greater London; or
 - **National level** – effects impacting different parts of the country or the UK.

Significance Criteria

- 6.5.7 For each topic, the technical assessment will consider the magnitude of impacts and the sensitivity of the resources / receptors that could be affected in order to classify the significance of the effect. Each technical discipline will have its own method of detailing significance based on various standards and approaches. The method for determining significance will be detailed in a transparent and understandable way within the ES chapter.
- 6.5.8 An example of how this might be undertaken is given in Table 6.5-1, below.

Table 6.5-1 Example Significance Criteria

Magnitude of Potential Change/Impact	Importance of the Resource/Sensitivity of the Receptor			
	High	Medium	Low	Very Low/Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low/Negligible	Minor	Negligible	Negligible	Negligible

- 6.5.9 In general, residual effects found to be ‘**moderate**’ or ‘**major**’ are deemed to be ‘**significant**’. Effects found to be ‘**minor**’ are considered to be ‘**not significant**’, although they may be a matter of local concern. ‘**Negligible**’ effects are considered to be ‘**not significant**’ and not a matter of local concern.

6.6 Alternatives Assessment

- 6.6.1 The EIA process provides an opportunity to consider alternative development options with their respective environmental effects 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**’ – the rationale behind choosing 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 summary justification for the final design.

6.6.2 In addition, the alternatives assessment will consider the responses of statutory consultees and the outcomes of public consultation.

6.7 Approach to Effect Interactions and Cumulative Effects Assessment

6.7.1 In accordance with the EIA Regulations, the EIA will include consideration of 'cumulative effects'. By definition, these are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the Proposed Development.

6.7.2 For the cumulative assessment, two types of effect will be considered:

- The combined effect of individual effects, for example noise, airborne dust or traffic on a single receptor (known as 'effect interactions'); and
- The combined effects of nearby consented developments or development schemes under construction which may, on an individual basis be insignificant but, cumulatively, have a likely significant effect (known as 'cumulative effects').

Effect Interactions (Type 1)

6.7.3 A review of potential effects identified within technical assessments on individual sensitive receptors will be undertaken in order to determine the potential for effect interactions. Only residual effects classified as being minor, moderate, or major will be considered in relation to the potential for effect interactions. Negligible residual effects will be excluded from the assessment

Cumulative Effects (Type 2)

6.7.4 The Zone of Influence (ZOI) of the Proposed Development (i.e. the area within which potential effects arising from the Proposed Development may combine with the effects arising from other developments) will be determined on the basis of the maximum study areas of the technical assessments undertaken within the EIA. It is considered that for the majority of technical assessments this will not exceed 1km, with the exception of the Townscape, Visual and Built Heritage Impact Assessment (TVBHIA), for which the study area will be determined on the basis of 'viewshed' analysis, resulting in the identification of a theoretical zone of visibility of the Proposed Development. Reference will be made to relevant guidance relating to cumulative effects assessment as appropriate, including the Planning Inspectorate's Advice Note 17²².

6.7.5 A long list of schemes within the ZOI to be included in the cumulative effects assessment will be identified and filtered on the basis of project-specific criteria to short list 'other developments' for purposes of the assessment of cumulative effects together with the Proposed Development.

6.7.6 The project specific criteria for 'other developments' or 'cumulative schemes' to be included in the cumulative effects assessment comprise those schemes:

- Which are located within an approximate 1km radius of the Site; and
- Result in an increase of more than 10,000m² gross external area (GEA) in floor area (or over 150 residential units); and
- Which have a planning application submitted, have planning permission or a resolution to grant consent, or are under construction; or
- Which are key regional infrastructure projects.

6.7.7 A short list of cumulative schemes within the ZOI and a map indicating their locations and current status are included in *Appendix A* of this report. Consideration will be given within the EIA, as relevant, to which of these schemes may result in cumulative effects together with the Proposed Development from the perspective of the relevant technical assessment.

²² Planning Inspectorate, (2019); Advice Note 17: Cumulative Effects Assessment

- 6.7.8 It should be noted that there may be some schemes in the vicinity of the Site that are currently 'under construction' and/or due to be occupied imminently. As a result, these schemes may be considered 'as complete' within the EIA baseline (particularly for those studies that involve modelling of the proposed built development massing, such as wind microclimate studies). Where this is the case, this will be stated within the relevant ES chapter.
- 6.7.9 For the majority of topics, the assessment of cumulative effects will be a qualitative assessment and will be reported as a collective assessment of the cumulative schemes rather than an assessment of each individual cumulative scheme identified. For daylight, sunlight and overshadowing, TVBHIA and wind microclimate the relevant cumulative schemes will be integrated into the 3D models used for the assessment.

7. Identifying Potentially Significant Effects

7.1 Air Quality

Summary of Existing Baseline Context

- 7.1.1 The Site is located within the LBB, the whole of which was designated an Air Quality Management Area (AQMA) in 2001²³ on account of exceedances of the Air Quality Strategy²⁴ (AQS) objectives for nitrogen dioxide (NO₂) and particulate matter (PM₁₀). Road traffic has been identified by LBB as the prominent source of these pollutants within the borough²³.
- 7.1.2 The Site is located close to the LBB's boundaries with the London Boroughs of both Camden (LBC) and Brent (LB Brent). Both of these have also declared AQMAs within their jurisdictions, due to exceedances of the AQS objectives for NO₂ and PM₁₀. LBC has designated the entire borough as an AQMA, whilst LB Brent has declared the entire area south of the North Circular Road and all housing, schools and hospitals along the North Circular and other major roads within the borough as an AQMA.
- 7.1.3 The Greater London Authority (GLA) has declared 187 Air Quality Focus Areas (AQFAs) in London, identifying areas of high human exposure where they are in exceedance of the national / EU air quality objective(s)²⁵ for NO₂. The AQFA designation was designed to address concerns relating to forecasted air pollution trends, or those raised during the Local Air Quality Management (LAQM) review process. It is noted, however, that this does not represent an exhaustive list of London's air pollution 'hotspot' locations, but rather where the GLA believes the problems to be most acute. There are 14 AQFA's within the LBB.
- 7.1.4 The Proposed Development is situated within AQFA 10, an area comprising Cricklewood Junction A407 Cricklewood Lane/A5 Broadway.
- 7.1.5 The LBB undertakes air quality monitoring via a network of two continuous monitors and 15 NO₂ diffusion tube monitoring sites²⁶. The closest monitoring site to the Proposed Development is diffusion tube PBN20, which is located 50m south of the Site, on Cricklewood Lane.
- 7.1.6 The relative locations of the Site, nearby diffusion tube monitoring sites, and the designated AQFA's are illustrated in Figure 7.1-1.

Sensitive Receptors

- 7.1.7 Sensitive receptors to potential changes in local air quality due to the Proposed Development will be identified through undertaking a desktop review of the Site, utilising aerial photography and OS mapping. These may include neighbouring residential and/or commercial properties, schools, healthcare facilities etc., as well as future on-site occupants (see *Section 2.2* and *2.3* of this EIA Scoping Report). A representative set of receptors will be selected from those identified. Committed developments (i.e. cumulative schemes) anticipated to introduce potential new sensitive receptors to the air quality study area during either the demolition and construction and/or complete and operational phases of the Proposed Development will also be considered, wherever possible.

Potential Impacts

- 7.1.8 The potential air quality impacts are likely to include the following:

Demolition and Construction Impacts

- Impacts of fugitive emissions (i.e. dust and PM₁₀) arising from demolition and construction related activities; and
- Impacts of emissions associated with vehicles and plant engaged in demolition and construction activities.

²³ London Borough of Barnet, (2017), London Borough of Barnet Air Quality Action Plan 2017-2022 (Draft for Consultation).

²⁴ Defra, (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1).

²⁵ GLA, (2016), GLA and LAEI Air Quality Focus Areas.

²⁶ London Borough of Barnet, (2019), Air Quality Annual Status Report for 2018.

Complete and Operational Impacts

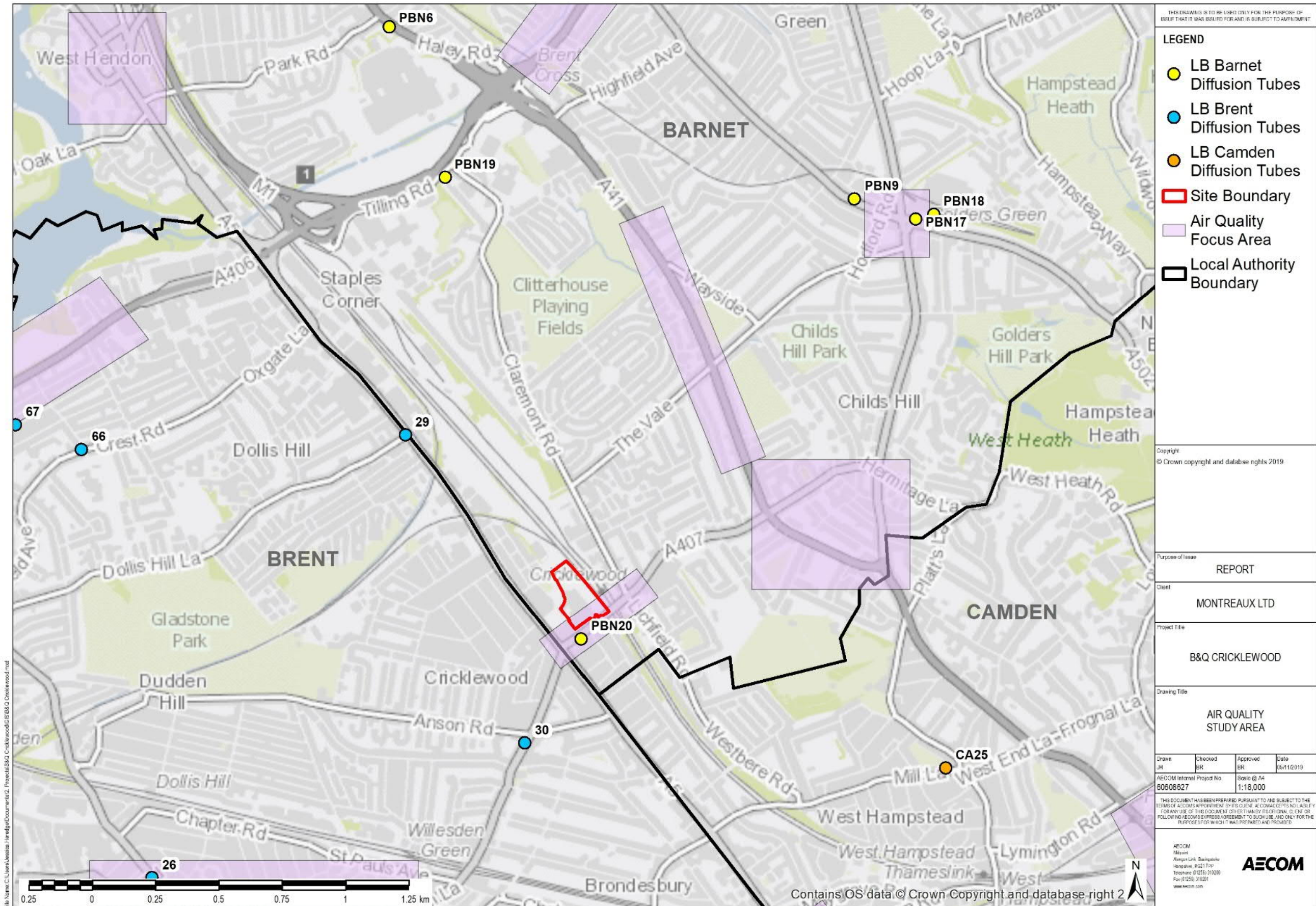
- Introduction of new human sensitive receptors (future on-site occupants) into an area of potentially existing poor air quality; and
- Reduction in road traffic flows on the local network compared to the current Site use, with a commensurate reduction in emissions from vehicles.

Summary

7.1.9 The designation of the entire borough as an AQMA requires any proposed development within the borough, with the potential to adversely impact air quality, to carry out an air quality impact assessment and site suitability study. Therefore, in combination with the potential impacts identified above, the assessment of air quality impacts of the demolition and construction phase, and the evaluation of site suitability (in terms of air quality) once the Proposed Development is complete and operational have been **Scoped In** to the EIA.

7.1.10 However, the proposals are predicted to generate less traffic than the current Site use. As such, there are not anticipated to be any adverse off-site local air quality impacts arising from the operation phase of the Proposed Development. Therefore, the evaluation of operational traffic impacts on air quality have been **Scoped Out** of the assessment.

Figure 7.1-1 Air Quality Study Area



Outline Scope of Assessment

7.1.11 The scope of the air quality assessment will include:

- Review of baseline air quality conditions in the vicinity of the Proposed Development;
- Assessment of demolition / construction phase dust impacts;
- Modelling of baseline air quality from road traffic emissions (focussing on the pollutants NO₂, PM₁₀ and PM_{2.5}, during both demolition/construction and complete/operational phases) at sensitive receptor locations;
- Assessment of Site suitability in terms of air quality expected in the opening year of the Proposed Development; and
- Undertaking an Air Quality Neutral Assessment (AQNA).

Establishing the Baseline

7.1.12 The data sources that will be considered in the baseline conditions review will include the latest published LBB Air Quality Annual Status Report²⁶, the LBB's air quality monitoring data, and background pollutant concentration maps provided by the Department for Environment, Food and Rural Affairs (Defra)²⁷. The baseline conditions will also be established at selected receptor locations via atmospheric dispersion modelling.

7.1.13 The LBB operates a relatively small air quality monitoring network, with limited coverage close to the Site.

7.1.14 There are two NO₂ diffusion tube monitoring sites within 500m of the Site (one operated by the LBB - PBN20 and the other by the LB Brent – DT30). Monitoring data collected from these sites for the past four years are provided in Table 7.1-1.

Table 7.1-1 Selected Local Authority Monitoring Survey Results

Site ID	Local Authority	Site Name	Site Type	OS Grid Ref. (X,Y)	Annual Mean NO ₂ Concentration (µg/m ³)			
					2015	2016	2017	2018
PBN20	Barnet	Flats above 16 Cricklewood Lane	Urban Centre	523885, 185764	54.6	55.3	-	43.1
DT30	Brent	Chichele Road (near Melrose Avenue)	Roadside	523663, 185353	52.6	<u>62.6</u>	51.3	41.6

Notes:

1. Exceedances of the NO₂ annual mean AQS objective of 40µg/m³ are shown in **bold**.
2. NO₂ annual mean concentrations above 60µg/m³ (indicating that the potential for exceedances of the NO₂ 1-hour mean AQS objective exists) are shown in **bold and underlined**.

7.1.15 The results show that the annual mean AQS objective was exceeded at both of these locations in recent years. In 2018, whilst measured concentrations appear to have shown a significant reduction from previous years, the annual mean AQS objective was still exceeded.

7.1.16 The total concentration of a pollutant comprises those contributions from explicit local emission sources such as roads, chimney-stacks, etc., and those that are transported into an area from indeterminate sources (e.g. by wind from further away). If all the explicit local sources were removed, all that would remain is that which comes from indeterminate sources; it is this component that is called 'background'.

7.1.17 Background pollutant concentrations of NO₂, PM₁₀ and PM_{2.5} for the area in the vicinity of the Site for 2018 have been sourced from Defra's background pollutant maps²⁷. The pollutant concentrations for the relevant 1km x 1km grid squares are presented in Table 7.1-2. All of the background pollutant concentrations presented are below the corresponding AQS objective (or EU limit value in the case of PM_{2.5}).

²⁷ Defra, (2019), 2017-based Background Concentration Maps.

Table 7.1-2 Defra Background Pollutant Concentrations at the Site, 2018

OS Grid Ref. (X,Y)	Annual Mean Background Concentration ($\mu\text{g}/\text{m}^3$)		
	NO ₂	PM ₁₀	PM _{2.5}
523500,186500*	25.3	17.0	11.9
523500,185500*	25.5	17.5	12.0
524500,185500	24.8	17.1	11.8
524500,186500	26.1	17.7	12.2

Note: The Site itself falls within two grid squares, denoted by an asterisk.

Standards and Guidance

7.1.18 The air quality assessment will take account of the following key legislation, policy and guidance:

- Air Quality Standards Regulations (as amended) (2016)²⁸;
- National Air Quality Strategy (2007)²⁵;
- Clean Air Strategy (2019)²⁹;
- National Planning Policy Framework (2019)³⁰ and Planning Practice Guidance (2018)³¹;
- Institute of Air Quality Management (IAQM) / Environmental Protection UK (EPUK) Guidance on land-use planning and development control: planning for air quality (2017)³²;
- GLA London Local Air Quality Management Technical Guidance (2019)³³;
- IAQM Guidance on the assessment of dust from demolition and construction (2014)³⁴; and
- Air quality and emission mitigation guidance for London authorities^{35, 36}, including the London Plan³⁷, the Draft London Plan³⁸ and the London Environment Strategy³⁹.

Impact Assessment Methodology

Demolition and Construction

7.1.19 Dust impacts during the demolition and construction phases will be assessed by providing a qualitative assessment of the potential sources and effects, along with a risk assessment identifying those receptors most likely to be at risk. Suitable mitigation measures will then be proposed, proportional to the calculated risk. The risk assessment will be undertaken in line with IAQM³⁴ and GLA³⁶ guidance on the assessment of dust from demolition and construction activities, which include the following:

- Demolition;
- Earthworks;
- Construction; and
- Track out.

²⁸ H.M. Government, (2016) Air Quality Standards Regulations (as amended) 2016.

²⁹ Defra, (2019), Clean Air Strategy.

³⁰ Ministry of Housing, Communities and Local Government, (2019), National Planning Policy Framework.

³¹ Department for Communities and Local Government, (2018), National Planning Policy Framework, Planning Practice Guidance: Air Quality.

³² IAQM & EPUK, (2017), Guidance on Land-Use Planning & Development Control: Planning for Air Quality.

³³ GLA, (2019), London Local Air Quality Management Technical Guidance (LLAQM.TG(19)).

³⁴ IAQM, (2014), Guidance on the assessment of dust from demolition and construction (Version 1.1).

³⁵ GLA, (2014), Sustainable Design and Construction Supplementary Planning Guidance.

³⁶ GLA, (2014), The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance.

³⁷ GLA, (2016), London Plan (January 2017 fix).

³⁸ GLA, (2019), Draft London Plan (Version July 2019) Consolidated Suggested Changes.

³⁹ GLA, (2018), London Environment Strategy.

- 7.1.20 As the Proposed Development will be delivered in phases, impacts during the demolition and construction phase on any future on-site occupants or users of parts of the Site while construction is still on-going will be qualitatively considered as part of the assessment.
- 7.1.21 Demolition and construction-related plant emissions will not be explicitly modelled, as these are anticipated to represent a small source of emissions relative to ambient local conditions in the vicinity of the Site. However, suitable mitigation measures for plant and motorised equipment will be presented as part of the mitigation measures, based on advice presented in the relevant guidance.
- 7.1.22 The number of demolition and construction vehicles associated with this phase of the Proposed Development will be considered in the context of the guidance published by EPUK / IAQM³². The threshold proposed for determining whether a quantitative assessment of demolition and construction related road traffic is required is:
- “Large, long-term construction sites that would generate large HGV flows (>200 per day) over a period of a year or more.”*
- 7.1.23 It is expected that detailed modelling of the impacts to air quality from demolition and construction-related road traffic will not be necessary, however if the proposed threshold is likely to be exceeded, then the assessment would be conducted in accordance with the methodology for assessing the impacts from road traffic in the complete and operational phase.

Complete and Operational

- 7.1.24 Advanced air dispersion modelling will be used to assess air quality for the complete and operational Proposed Development. The following road traffic scenarios will be considered in the assessment:
- Existing baseline condition; and
 - Opening year baseline conditions.
 - Opening year ‘without development’ scenario, including cumulative schemes; and
 - Opening year ‘with development’ scenario, including cumulative schemes.
- 7.1.25 One year of hourly sequential meteorological data (corresponding with the baseline year of assessment) from Heathrow Airport will be utilised for the dispersion modelling.
- 7.1.26 An air quality neutral assessment will be undertaken in accordance with the GLA’s guidance⁴⁰, to evaluate predicted emissions associated with the operation of the Proposed Development against prescribed performance benchmarks. The calculations for the air quality neutral assessment will be presented as an Appendix to the Air Quality Chapter, and a summary of these results will be presented in the chapter and incorporated into the consideration of the overall evaluation of significance.
- 7.1.27 The assessment will also consider the suitability of the Site for the proposed uses. This assessment will involve the prediction of air quality at the Site in the future opening year/s (at locations representing likely areas of exposure for future occupants). If predicted concentrations at these receptors exceed the applicable UK AQS objectives, mitigation measures would need to be employed to ensure the Site is suitable for use.

Assessment Criteria

- 7.1.28 The construction assessment will not use a magnitude of change approach, but rather a risk-based approach in determining the likely effects on local air quality. This is the approach specified within the IAQM³⁴ and GLA³⁶ guidance.
- 7.1.29 The overall significance of air quality effects will be described based on the approach outlined in the EPUK/IAQM guidance³². The potential change in pollutant concentrations, relative to the baseline concentrations, shall be evaluated at receptors that are representative of exposure to impacts on local air quality within the study area. The assessment will also consider the absolute level of pollutant concentrations to identify the risk of the air quality objective values being exceeded.

⁴⁰ Greater London Authority (2014) Air Quality Neutral Planning Support Update GLA 80371

Scope for Mitigation

7.1.30 Where necessary, mitigation and monitoring measures will be recommended for each development phase to reduce air quality impacts at sensitive locations within and around the Site. Mitigation requirements will be determined based on an evaluation of the results of the air quality assessment, a review of source apportionment of pollutants (i.e. background contributions and road sources), the location of existing / future receptors to local pollutant sources and relevant planning policy. Such measures could include the following:

- Ensuring appropriate dust mitigation measures are in place and adhered to throughout the demolition and construction phase;
- Use of low-emission construction plant and construction vehicles; and
- Building ventilation strategies which aim to protect future occupants of the Proposed Development from potential poor air quality.

7.2 Archaeology

Summary of Existing Baseline Context

- 7.2.1 This assessment focuses solely on buried heritage assets (i.e. archaeology). Consideration of the impacts on the existing baseline relating to above ground heritage assets (i.e. built heritage) within the Site and the surrounding area as a result of the Proposed Development is provided in *Section 7.11: Townscape, Visual and Built Heritage Impact Assessment (TVBHIA)*.
- 7.2.2 To assist with the EIA Scoping assessment, an initial study area of a 1km buffer surrounding the application boundary of the Site has been utilised in order to gain an understanding of the nature of the existing archaeological landscape. Data sources include:
- Historic England's National Heritage List for England (NHLE)⁴¹;
 - Archaeological Data Service (ADS)⁴² ;
 - The Greater London Historic Environment Record (GLHER)⁴³;
 - London Borough of Barnet (LBB) Planning Portal⁴⁴;
 - Online historic mapping⁴⁵; and
 - British Geological Society⁴⁶.

Designated Archaeological Assets

- 7.2.3 There are no designated archaeological assets within the study area, however there are two Archaeological Priority Areas (APA) which lie within the wider study area.
- 7.2.4 The nearest APA is the Cricklewood APA designated by the LBB as being of archaeological and historic significance based on the presence of possible remains associated with the medieval settlement of Cricklewood. This APA is located adjacent the Site's western boundary.
- 7.2.5 The second APA is a that of Watling Street defined as a Tier 2 APA by the London Borough of Camden (LBC) (APA 2.4). Tier 2 APA's are:
- 'Used for a local area within which the GLHER holds specific evidence indicating the presence or likely presence of heritage assets of archaeological interest. Planning decisions are expected to make a balanced judgement for non-designated assets considered of less than national importance considering the scale of any harm and the significance of the asset (NPPF 135).'*⁴⁷
- 7.2.6 This APA is based on the known route of the Roman Watling Street, one of the most important roads of Roman Britain that stretched from Dover to London and from London to St Albans and beyond. Minor roadside settlements and other land uses such as cemeteries or quarry pits may have developed along the road and while any evidence would have been impacted upon by modern developments, some may survive. The Roman Watling Street APA does not extend to the boroughs of Barnet or Brent, being 280m south-east of the Site. The continuation of the line of Watling Street follows Cricklewood Broadway, which runs past the Site in proximity to Watling Street and therefore forms an important consideration in determining the potential for the Site to contain Roman remains.

Non-Designated Archaeological Assets

- 7.2.7 A high-level appraisal of publicly accessible data identified no known non-designated archaeological remains within the Site. However, this desk study did identify 12 non-designated assets within the study area.

⁴¹ Historic England's National Heritage List for England (NHLE); <https://historicengland.org.uk/listing/the-list/> [Date Accessed 07/11/2019]

⁴² Archaeological Data Service (ADS); <https://archaeologydataservice.ac.uk/>; [Date Accessed 07/11/2019]

⁴³ The Greater London Historic Environment Record (GLHER); <https://www.heritagegateway.org.uk/gateway/> [Date Accessed 07/11/2019]

⁴⁴ London Borough of Barnet (LBB) Planning Portal; www.barnet.gov.uk/ [Date Accessed 07/11/2019]

⁴⁵ National Library of Scotland; <https://maps.nls.uk/index.html> [Date Accessed 07/11/2019]

⁴⁶ British Geological Society Online Database; via <https://www.bgs.ac.uk/geoindex/> [Date Accessed 07/11/2019]

⁴⁷ Historic England, 2016. p.6. Greater London Archaeological Priority Area Guidelines

- 7.2.8 Despite 11 archaeological evaluations having been carried out within the study area, no prehistoric features have yet been identified. The Proposed Development is located along lightly sloping ground in a perennial drainage channel that feeds the River Brent 3km to the west. Hampstead Heath, the high hill dominating the landscape, lies 2km to the east. Given the Site's distance from major landforms that would have formed focal points of prehistoric activity, it is probable that the Site and study area were not an important focus of human activity during these periods.
- 7.2.9 Edgware Road follows the line of Watling Street and presents the only substantive evidence of the Roman period in the study area. The only other evidence of Roman activity within the study area being a single Roman ditch and nearby undated post-hole 650m north-west of the Site. Nevertheless, given the proximity of the Site to Watling Street and the APA associated with it, there is some potential for Roman period remains to be present. Any surviving Roman remains are likely to consist of occupation or agricultural features relating to small agricultural settlements, villas, or farmsteads that are typically found in close proximity to major Roman roads.
- 7.2.10 The small linear medieval settlement of Cricklewood is reported to have been founded between 1294 and 1321 along Watling Street. The expected core of this medieval village is captured by the Cricklewood APA, which lies immediately west of the Site. Although the Site lies outside of the core of the medieval settlement, its proximity suggests it likely formed part of its agricultural land. A moated house of possible medieval date is also attested within the study area, approximately 600m east of the Site. The GLHER entry suggests that it may have been the manor house for the manor of Cricklewood, although this appears to be conjecture. Given the location of the Site to the east of a medieval village, there is some potential for medieval remains to be present. These would be likely to consist of agricultural features.
- 7.2.11 Historic maps suggest that the Site remained largely undeveloped throughout the post-medieval period until the 19th century. The First Edition Ordnance Survey Drawing of Hampstead, dated to 1807⁴⁸, shows a small settlement where Cricklewood's town centre now exists which is marked as 'The Slade'. This area appears to have consisted of a series of small farms or estates, all of which are located south and west of the intersection of Edgware Road and Cricklewood Lane. The map shows the Site as open fields. By the time of the First Ordnance Survey First Edition County series of the 1870s, but prior to the arrival of the railway, Cricklewood was comprised of terraced and detached houses, lining Edgware Road. Immediately west of the Site was Rockhalls Lodge. The Crown public house and coaching station were present to the south. During this period of time, the Site appears to have remained undeveloped, with historic maps indicating that it was in use as a parkland for the Rockhalls Lodge estate. Several circular features within the Site may indicate the presence of small ponds or wells.
- 7.2.12 Contrastingly, much of the Cricklewood area appears to have developed rapidly following the arrival of the Midland Railway in 1868 and the construction of Cricklewood railway station in 1870 (then known as the Childs Hill and Cricklewood station, renamed in 1903). By 1884 the station had become the terminus for the Midland Railway suburban services and much of the area north of the railway station was in use as a major rail depot. The Site was, by this point covered by the Child's Hill Sidings. These sidings were removed in the 1980s and a large low development was erected on the Site which was eventually purchased by B&Q owner Kingfisher in 2001. The Site appears to have been heavily landscaped and the B&Q is elevated several metres above the surrounding street level.

Archaeological Potential

- 7.2.13 This high-level archaeological assessment has found that the Site has an uncertain, but likely low potential to contain prehistoric remains and a moderate potential to contain Roman remains associated with road side activity due to its proximity to the Roman road of Watling Street. The Site was also identified as having a moderate potential to contain medieval agricultural remains and a high potential to contain post-medieval agricultural ditches and remains associated with the late 19th/early 20th century Cricklewood railway station and Child's Hill Sidings.

Previous Ground Disturbance

- 7.2.14 A review of historic boreholes in the vicinity of the Proposed Development, available from the British Geological Survey Database, shows that the area is covered by a thin layer of topsoil approximately 0.3m thick, overlying London Clay. Archaeological features would be expected to be cut into the London Clay.

⁴⁸Ordnance Survey, London (First Editions c1850s) VII (Hampstead) Surveyed: 1866 Published: 1870

- 7.2.15 it is possible that late 19th and 20th century development of the Site could have truncated any earlier archaeological deposits that may be present. This would have affected the survival and therefore significance of such deposits.

Summary

- 7.2.16 Given the scale and nature of 19th-20th century developments, it is likely that any previously unrecorded archaeological remains pre-dating the 19th would have been truncated. The late post-medieval and modern remains are not considered to be of archaeological or historical interest. Therefore, any surviving archaeological deposits that may be present within the Site would be of low value.
- 7.2.17 On the basis of the above and in specific consideration of the Sites close proximity to Roman road of Watling Street and the possibility that related remains may survive within the Site it is recommended that archaeology be **Scoped In** to the EIA.

Potential Impacts

- 7.2.18 It is expected that the demolition of existing buildings, enabling works (including piling), land remediation (if required), utilities diversion, and construction of the Proposed Development would require extensive intrusive groundworks across the Site. No basements are currently proposed as part of the scheme and as a result no deep intrusive ground works are expected to be carried out over large open areas. There may, however, be a need for future design changes that may include isolated lowering of levels to accommodate certain plant rooms which could have an impact on the archaeological resource. Any such amendments would be clearly set out in the detailed design stage and the impacts of these basements would be appropriately considered in the ES.

Outline Scope of Assessment

Legislation

- 7.2.19 The following legislation and national policies will be considered as part of the EIA.
- The Ancient Monuments and Archaeological Areas Act 1979 (as amended)⁴⁹;
 - The Planning (Listed Buildings and Conservation Areas) Act 1990⁵⁰; and
 - National Planning Policy Framework, 2019.

Regional and Local Policy

- 7.2.20 Relevant policies from the documents listed within *Section 4* of this EIA Scoping Report, including: NPPF (2019), NPPG (2017); The London Plan (2016) (Although due consideration will also be given to the Draft London Plan 2019), A Green Future: Our 25 Year Plan to Improve the Environment, LBB Local Plan (Core Strategy) (2012), Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework (2005) and Brent Cross – Cricklewood Opportunity Area (2015).

Standards and Guidance

- 7.2.21 The assessment would be carried out following the guidelines of the Chartered Institute for Archaeologists (CIfA): the Standard and Guidance for Historic Environment Desk-Based Assessments⁵¹ and the Code of Conduct⁵².
- 7.2.22 The following methodology will be used to undertake the EIA. The results of which will be presented in the ES.

Establishing the Baseline

- 7.2.23 A more detailed baseline for the Site will be established in the ES. This will be achieved through a desktop study of relevant resources including Historic Environment Records and local archives. A Site

⁴⁹ Ancient Monuments and Archaeological Areas Act (1979) (as amended). 1979 c. 46.
<http://www.legislation.gov.uk/ukpga/1979/46>

⁵⁰ IEMA (2017); Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance.

⁵¹ CIfA (2017) Standard and guidance. Historic environment desk-based assessment. Chartered Institute for Archaeologists, Reading, January 2017. Available online at: www.archaeologists.net/sites/default/files/CIfAS%26GDBA_3.pdf

⁵² CIfA (2014) Code of Conduct. Chartered Institute for Archaeologists, Reading, December 2014. Available online at: www.archaeologists.net/sites/default/files/node-files/CodesofConduct.pdf

visit will be conducted to inform the baseline of the current condition of the Site and surrounding assets. The baseline study will pay particular attention to further assessing the extent of disturbance resulting from 19th and 20th century development. The aims of the desktop study are the:

- Identification of all known designated and non-designated archaeological assets and/or areas within the Site and in the study area;
- Assessment of the condition, significance and setting of any archaeological assets within the Site and the study area and, where appropriate, assess the contribution that the setting makes to their significance; and
- Identification of areas of modern disturbance within the Site that might have affected the survival and condition of the potential archaeological resource.

7.2.24 The study area for the desktop study would consist of a 1km buffer surrounding the application boundary of the Proposed Development. In addition to data sources used to produce this scoping report and listed above, baseline data sources would also include, but may not be limited to:

- The GLHER and Historic Landscape Characterisation (HLC);
- Existing or newly acquired geotechnical data;
- The results of a walkover survey; and
- Documentary, cartographic, aerial photography, and other resources as deposited within the Local Archives and Local Studies Library, the National Archives at Kew, and/or the Historic England Archives in Swindon.

Impact and Assessment Methodology

Significance criteria

7.2.25 The significance (heritage value) of a heritage asset is derived from its heritage interest which may be archaeological, architectural, artistic or historic (NPPF Annex 2, Glossary). The significance of a place is defined by the sum of its heritage values. Taking these criteria into account, each identified heritage asset can be assigned a level of significance (heritage value) in accordance with a three-point scale as set in Table 7.2-1.

Table 7.2-1 Criteria for determining the significance (heritage value) of heritage assets

Significance (heritage value)	Criteria
High	Assets of inscribed international importance, such as World Heritage Sites, Scheduled monuments, Non-designated archaeological assets of schedulable quality and importance.
Medium	Non-designated heritage assets of a regional resource value.
Low	Non-designated heritage assets of a local resource value as identified through consultation, Non-designated heritage assets whose heritage values are compromised by poor preservation or damaged so that too little remains to justify inclusion into a higher grade.

7.2.26 Having identified the significance of the heritage asset, the next stage in the assessment will be to identify the level and degree of impact to an asset arising from the Proposed Development. Impacts may arise during construction or operation that can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

- 7.2.27 When professional judgement is considered, some sites may not fit into the specified category in Table 7.2-1. Each heritage asset will be assessed on an individual basis and takes into account regional variations and the individual qualities of each site.
- 7.2.28 The level and degree of impact (impact rating) will be assigned with reference to a four-point scale as set out in Table 7.2-2.

Table 7.2-2 Criteria for determining the magnitude of impact on heritage assets

Magnitude of Impact	Description of Impact
High	Change such that the significance of the asset is totally altered or destroyed. Comprehensive change to setting affecting significance, resulting in a serious loss in our ability to understand and appreciate the asset.
Medium	Change such that the significance of the asset is affected. Noticeably different change to setting affecting significance, resulting in erosion in our ability to understand and appreciate the asset.
Low	Change such that the significance of the asset is slightly affected. Slight change to setting affecting significance resulting in a change in our ability to understand and appreciate the asset.
Minimal	Changes to the asset that hardly affect significance. Minimal change to the setting of an asset that have little effect on significance resulting in no real change in our ability to understand and appreciate the asset.

- 7.2.29 An assessment of the level of significance of effect, having taken into consideration any embedded mitigation, will be determined by cross-referencing between the significance (heritage value) of the asset (Table 7.2-1) and the magnitude of impact (Table 7.2-2). The resultant level of significant effect (Table 7.2-3) can be negligible, adverse or beneficial.

Table 7.2-3 Criteria for determining the significance of effect

Significance (heritage value)	Magnitude of impact			
	High	Medium	Low	Minimal
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible

- 7.2.30 An assessment of the predicted significance of effect will be made after the implementation of mitigation to identify any residual effects. This first highlights where mitigation may be appropriate and then demonstrates the effectiveness of mitigation and provides the framework for the assessment of significance which takes mitigation measures into consideration.

Scope for Mitigation

- 7.2.31 Following the desk-based assessment of the archaeological potential and potential impacts on the archaeological assets in and around the Site, further evaluation or mitigation may be required.
- 7.2.32 These works will be determined in consultation with the GLAAS to agree the exact nature of the works, and at which stage of the development process any archaeological works would need to be implemented.
- 7.2.33 All work will be undertaken following guidance from the Chartered Institute for Archaeologists.

7.3 Climate Change

- 7.3.1 To align with the requirements of the EIA Regulations and the Institute of Environmental Management and Assessment's (IEMA's) guidance for assessing climate change resilience and adaptation in EIA⁵³, consideration has been given within this EIA Scoping Report to the three aspects of the climate change assessment identified in Table 7.3-1 below.

Table 7.3-1: Definition of the Elements of the Climate Change Assessment

Lifecycle greenhouse gas (GHG) impact assessment	Impact of GHG emissions arising from the Proposed Development on the climate.
In-combination climate change impact assessment (ICCI)	Combined impact of the Proposed Development and potential climate change on the receiving environment ⁵⁴ .
Climate change resilience (CCR) review	The resilience of the Proposed Development to climate change impacts.

Summary of Existing Baseline Context

GHG Impact Assessment

- 7.3.2 For the GHG assessment, the baseline is a 'business as usual' scenario where the Proposed Development is not implemented. The baseline comprises of existing carbon stock and sources of GHG emissions within the boundary of the existing Site. Based on the existing uses of the Site as retail and commercial, (including a car park); the GHG emissions would come from the following sources:

- Energy consumption;
- Waste generation;
- Potable water provision;
- Wastewater treatment; and,
- Employee commuting.

- 7.3.3 Regarding carbon stock, the existing Site consists mostly of hard standing surface area, with a line of trees forming the eastern boundary. The hardstanding surface area will not store a significant amount of carbon when compared to top soiled surfaces or to above or below-ground vegetation (i.e. the trees forming the eastern boundary).

ICCI Assessment

- 7.3.4 The baseline for the ICCI assessment considers the existing and projected future climate conditions for those climatic factors that are identified as being relevant to the geographical location and assessment timeframe without the Proposed Development. It identifies the extent to which receptors are vulnerable to and affected by these factors. The receptors for the ICCI assessment are those within the surrounding environment that will be impacted by the Proposed Development. These impacts will be assessed in liaison with the technical specialists responsible for preparing other technical chapters of the ES.

Climate Change Resilience Review

- 7.3.5 The receptor for climate resilience is the Proposed Development itself. The climate change resilience review will provide commentary on how the design of the Proposed Development will be resilient to climate change within the context of predicted future climate conditions.

Potential Impacts

- 7.3.6 The potential climate change impacts from the Proposed Development are outlined below, with consideration being given to the demolition and construction and the complete and operational phases.

⁵³ IEMA (2015); Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation

⁵⁴ In line with IEMA guidance, the combined effect of the impacts of the Proposed Development and potential climate change impacts on the receiving environment are referred to as 'in-combination climate change impacts' and 'in-combination climate change effects'.

GHG Assessment

7.3.7 Potential impacts for the GHG assessment applicable to the Proposed Development are presented in Table 7.3-2 below.

Table 7.3-2: Potential source of GHG Emissions of the Proposed Development

Lifecycle stage	Activity	Primary emission sources
Pre-construction stage	<ul style="list-style-type: none"> Enabling works 	<ul style="list-style-type: none"> GHG emissions from fuel consumption used in construction plant and vehicles, generators on-site, and worker commuting Embodied emissions in any materials used GHG emissions from transport and disposal of waste
	<ul style="list-style-type: none"> Land clearance 	<ul style="list-style-type: none"> Loss of carbon sink (expected to be negligible)
Product stage	<ul style="list-style-type: none"> Raw material extraction and manufacturing of products required for the construction of the Proposed Development. 	<ul style="list-style-type: none"> Embodied GHG emissions in materials
	<ul style="list-style-type: none"> On-site construction activity Transport of construction materials (where these are not included in embodied GHG emissions) Construction worker commuting 	<ul style="list-style-type: none"> Energy (such as electricity and fuel) consumption from plant and vehicles, generators on-site, and construction workers commuting Fuel consumption from transport of materials to the Site (where these are not included in embodied GHG emissions) Emissions from transport of construction workers
Construction phase	<ul style="list-style-type: none"> Disposal of any waste generated during the construction processes 	<ul style="list-style-type: none"> GHG emissions from disposal of waste GHG emissions from fuel consumption from transportation of waste
	<ul style="list-style-type: none"> Water use 	<ul style="list-style-type: none"> Provision of potable water Treatment of waste water
Operational phase	<ul style="list-style-type: none"> Operation of the Proposed Development Disposal of any waste generated by the Proposed Development Maintenance of the Proposed Development 	<ul style="list-style-type: none"> GHG emissions from energy, provision of potable water, and treatment of waste water GHG emissions from transport and disposal of waste GHG emissions energy consumption from maintenance activities Embodied emissions in any materials used in maintenance
	<ul style="list-style-type: none"> Removal and or renewal of the full Proposed Development 	<ul style="list-style-type: none"> GHG emissions arising from fuel consumption by plant and vehicles GHG emissions from the transportation and disposal of materials.

7.3.8 Based on the information presented above the GHG assessment is **Scoped In** to the EIA. The following Lifecycle stages are **Scoped Out** of the EIA:

- Land use change: Emissions from loss of carbon stock will be minimal as the existing site mainly consists of hardstanding and some trees along the eastern boundary, hence is low in carbon stock;
- Maintenance: Emissions from maintenance are likely to be minimal in proportion to the overall footprint; and
- Decommissioning: It is anticipated that the Proposed Development will be in use beyond the design life of the building. Any future decommissioning would require a separate EIA.

In-Combination Climate Change Impact Assessment (ICCI)

- 7.3.9 The ICCI assessment will identify how the resilience of various receptors in the surrounding environment is affected by a combination of future climate conditions and the Proposed Development. UKCP18⁵⁶ climate projections relevant for the construction period and the design lifetime of the Proposed Development and for the geographical location would be used for this assessment. The climate parameters relevant to the Proposed Development are detailed in Table 7.3-3 below, together with the rationale for scoping.

Table 7.3-3: Climate Parameters for the ICCI Assessment of the Proposed Development

Parameter	Scoped In/Out	Rationale for Scoping Conclusion
Temperature change	Out	While impacts are expected as a result of projected temperature increases, these temperature increases in combination with the Proposed Development are not expected to have a significant impact upon receptors identified by other environmental disciplines. Given the scale of the Proposed Development in the context of the surrounding area, it is anticipated the Proposed Development will have a negligible impact on the urban heat island effect.
Sea level rise	Out	The Proposed Development is not located in an area that is susceptible to sea level rise.
Precipitation change (e.g. increased frequency and magnitude of precipitation events and rainfall and low precipitation and drought conditions)	Out	Climate change may lead to an increase in substantial precipitation events that could lead to flash flooding in the surrounding environment, which may be exacerbated by the additional hardstanding as a result of the Proposed Development. Projected increases in rainfall due to climate change will be considered as part of the Flood Risk Assessment and Drainage Strategy submitted in support of the outline planning application. Climate change may lead to periods of decreased precipitation resulting in water scarcity. Suitability of vegetation used for landscaping for future climate conditions will be considered in the Landscape Strategy.
Wind	Out	The Proposed Development, in combination with projected changes in wind patterns, is not expected to have a significant impact upon receptors identified by other environmental disciplines. Further assessment on the wind microclimate surrounding the Proposed Development will be assessed within the wind microclimate assessment as part of the ES.

- 7.3.10 Inclusion of an ICCI has been **Scoped Out** of the Climate Change assessment on the basis that any identified in-combination climate change impacts will be addressed in other relevant planning documents, namely the Drainage Strategy, Ecological Appraisal, Flood Risk Assessment, Landscaping Strategy and Wind Microclimate ES Chapter.

Climate Change Resilience Review

- 7.3.11 Climate parameters relevant to the CCR review are detailed in Table 7.3-4 below.

Table 7.3-4: Climate parameters for the Climate Change Resilience Review

Parameter	Scoped In/Out	Rationale for Scoping Conclusion
Extreme weather events	In	The Proposed Development may be vulnerable to extreme weather events such as storm damage to structures and assets.
Temperature	In	Increased temperatures could impact on the structural integrity of materials and assets.
Precipitation	In	The Proposed Development may be vulnerable to changes in precipitation, for example, damage to structures and drainage systems during periods of heavy rainfall. Annual precipitation also has the potential to decrease leading to drought conditions. Resilience to future Water shortage will need to be considered.
Wind	Out	There are no compelling trends in storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades. Assessment of increased wind hazards have therefore been scoped out of the assessment.
Sea level rise	Out	The Proposed Development is not located in an area that is susceptible to sea level rise.

- 7.3.12 Therefore, consideration of how the Proposed Development has been designed to be resilient to climate change for the above parameters is **Scoped In** to the EIA. Not all parameters have been scoped in as they will be addressed in other relevant documents, i.e. the Wind Microclimate ES chapter and technical report, and the Flood Risk Assessment and Drainage Strategy.

Outline Scope of Assessment

Establishing the Baseline

GHG Impact assessment

- 7.3.13 The baseline for the GHG impact assessment will be determined through a desk-based quantification of the GHG emissions associated with the baseline land uses of the Site, in line with the key anticipated GHG emissions sources described in Table 7.3-2 above.

Climate change resilience review

- 7.3.14 The baseline for the CCR review will be developed through a desk-based review of the UK Meteorological Office's historic data⁵⁵ and UKCP18 data⁵⁶.
- 7.3.15 The study area for the climate change resilience review is the land within the application boundary, i.e. it covers all assets and infrastructure which constitute the Proposed Development.

Standards and Guidance

- 7.3.16 Legislation, planning policy and guidance relating to climate change, and pertinent to the Proposed Development comprises:

Legislation

- Climate Change Act 2008 (2050 Target Amendment) Order 2019⁵⁷; and
- Carbon Budgets Order 2009⁵⁸.

National planning Policy

- National Planning Policy Framework (NPPF) (2018)– Particularly paragraphs 8, 20 and 149 in relation to adaptation, mitigation and climate change resilience; paragraphs 148 and 157 in relation to flood risk and damage to property and people; paragraphs 150 and 153 in relation to reduction of CO₂ emissions through design and reduced energy consumption; and paragraphs 155 to 165 in relation to climate projections, associated flood risk and adaptation;
- National Planning Practice Guidance (February 2019 update) – Particularly paragraphs 149 and 150 in relation to climate change adaptation and resilience, as well as climate change mitigation through reducing GHG emissions; and paragraph 157 in relation to adapting to the current and future impacts of climate change, particularly flood risk; and
- A Green Future: Our 25 Year Plan to Improve the Environment (2018, last update 2019) - Sets out the actions the UK Government will take to help the natural world regain and retain good health. The goals include clean air, minimising waste and mitigation against climate change.

Regional planning policy

- The London Plan – The Spatial Development Strategy for London (2016) – Particularly in relation to Policy 5.1 Climate Change Mitigation; Policy 5.2 Minimising Carbon Dioxide Emissions; Policy 5.3 Sustainable Design and Construction; Policy 5.5 Decentralised Energy networks; Policy 5.6 Decentralised Energy in Development Proposals; Policy 5.7 Renewable Energy; Policy 5.9 Overheating and Cooling; Policy 5.13 Sustainable Drainage; and Policy 5.18 Construction, Excavation and Demolition Waste; and
- The Draft London Plan (last update July 2019) - identifies climate change as a major global problem and states that a responsible city must limit its impact on climate change, while also

⁵⁵ UK Met Office (2010) UK Climate Averages.

<https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages>

⁵⁶ UK Met Office (2018) UK Climate Projections 2018 (UKCP18).

<https://ukclimateprojections-ui.metoffice.gov.uk/>

⁵⁷ Her Majesty's Government (2019) The Climate Change Act 2008 (2050 Target Amendment).

⁵⁸ Her Majesty's Government (2009) The Carbon Budgets Order.

adapting to the consequential changes in climate already being experienced. The Plan also requires developments to contribute towards London's ambitious target to become zero carbon by 2050 by increasing energy efficiency, including through the use of smart technologies, and utilising low carbon energy sources. Other objectives include effective water and flood risk management, sustainable construction techniques and implementation of green infrastructure.

Local planning policy

- Barnet's Local Plan – Core Strategy (2012) details that one of the key priorities for Barnet's future is to reduce the borough's carbon footprint where possible particularly in new development. Reducing carbon dioxide (CO₂) emissions, adapting to future climate change, ensuring resource use is kept within sustainable levels, promoting biodiversity and improving quality of life are all key issues for Barnet. The Core Strategy aims to influence future development in the borough to make the fullest contribution to the mitigation of, and adaptation, to climate change. Brent Cross/Cricklewood is identified as high priority area given the scale of regeneration taking place.

Other relevant policy, standards and guidance

- IEMA Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (2017)⁵⁹; and
- IEMA Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation (2015)

Impact Assessment Methodology

GHG Impact Assessment

- 7.3.17 The GHG assessment will follow a project lifecycle approach to calculate estimated GHG emissions arising from the demolition and construction and completion and occupation of the Proposed Development and to identify GHG 'hot spots' (i.e. emissions sources likely to generate the largest amount of GHG emissions). This will enable the identification of priority areas for mitigation in line with the principles set out in IEMA guidance.
- 7.3.18 In line with the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) GHG Protocol guidelines⁶⁰, the GHG assessment will be reported as tonnes of carbon dioxide equivalent (tCO_{2e}) and will consider the seven Kyoto Protocol gases:
- Carbon dioxide (CO₂);
 - Methane (CH₄);
 - Nitrous oxide (N₂O);
 - Sulphur hexafluoride (SF₆);
 - Hydrofluorocarbons (HFCs);
 - Perfluorocarbons (PFCs); and
 - Nitrogen Trifluoride (NF₃).
- 7.3.19 Expected GHG emissions arising from the construction activities, embodied carbon in materials and operational emissions of the Proposed Development, as well as baseline emissions, will be quantified using a calculation-based methodology as per the following equation and aligned with the GHG Protocol:
- Activity data x GHG emissions factor = GHG emissions*
- 7.3.20 Defra 2019 emissions factors⁶¹ and embodied carbon data from the Inventory of Carbon and Energy (ICE)⁶² will be used as the source data for calculating GHG emissions.

⁵⁹ IEMA (2017) Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance.

⁶⁰ World Business Council for Sustainable Development and World Resources Institute (2001) The GHG Protocol, A Corporate Accounting and Reporting Standard.

⁶¹ Defra. 2019. Conversion Factors Database (2019),

<https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

⁶² Inventory of Carbon and Energy Database (2011),

<http://www.circularecology.com/embodied-energy-and-carbon-footprint-database.html#.XDR322nFJhF>

Climate Change Resilience Review

- 7.3.21 The Proposed Development's resilience to climate change will be considered qualitatively. This will be completed in liaison with the project design team and the EIA technical specialists by considering the climate projections for the geographical location and timeframe of the proposed development.

Assessment Criteria

GHG impact assessment

- 7.3.22 The classification and significance of effects will be determined using a matrix comparing sensitivity of the receptor to the magnitude of the impact. The sensitivity of the receptor (global climate) to increases in GHG emissions is always defined as high, as any additional GHG impacts could compromise the UK's ability to reduce its GHG emissions and therefore meet its 2050 carbon target and interim 5-year carbon budgets. Also, the importance of limiting global warming to below 2°C this century is broadly asserted by the International Paris Agreement⁶³ and the climate science community. Additionally, a recent report by the Intergovernmental Panel on Climate Change (IPCC) highlighted the importance of limiting global warming below 1.5°C⁶⁴.
- 7.3.23 Due to the absence of any defined industry guidance for assessing the magnitude of GHG impacts for EIA, standard GHG accounting and reporting principles will be followed to assess impact magnitude. In GHG accounting, it is common practice to consider exclusion of emission sources that are <1% of a given emissions inventory on the basis of a de minimis contribution. Both Department of Energy and Climate Change (DECC)⁶⁵ and the PAS 2050 (2011)⁶⁶ specification allow emissions sources of <1% contribution to be excluded from emission inventories, and these inventories to still be considered complete for verification purposes. This would therefore suggest that a development with emissions of <1% of the UK inventory and relevant carbon budget would be minimal in its contribution to the wider national GHG emissions.
- 7.3.24 A further reference is that the International Finance Corporation (IFC)⁶⁷ includes a reporting threshold for projects that it contributes funding to of over 25,000 tCO_{2e} in any year. The magnitude of the impact will therefore be determined by a boundary of less than or more than 1% of total emissions arising during the five-year carbon budgets or more than 25,000 tCO_{2e} in any year.
- 7.3.25 Significance of effects will be determined using the matrix in Table 7.3-5. The sensitivity of the receptor (global climate) to increases in GHG emissions is considered always 'high', and the magnitude of the impact is determined by a boundary of less than or more than 1% of the carbon budgets, or more than 25,000 tCO_{2e} in any year. This is in line with the IEMA guidance⁵⁹, which states that the application of the standard EIA significance criteria is not considered to be appropriate for climate change mitigation assessments.

Table 7.3-5: Significance of Effects Matrix for GHG Impact Assessment

Magnitude	Significance
Low (<1% of carbon budget or less than 25,000 tCO _{2e} in any year)	Minor
High (≥1% of carbon budget or more than 25,000 tCO _{2e} in any year)	Major

Climate Change Resilience Review

- 7.3.26 As the climate change resilience review is a review and not an assessment, the significance of climate change resilience will not be assessed. Instead, a statement will be provided to describe how the design of the Proposed Development has been designed to improve its resilience to future climate change.

⁶³ United Nations (2015) Paris Agreement.

⁶⁴ Intergovernmental Panel on Climate Change (IPCC) (2018).

⁶⁵ Department of Energy and Climate Change (DECC) (2013) Guidance on Annual Verification for Emissions from Stationary Installations.

⁶⁶ PAS 2050:2011 (2011) Specification for the assessment of the life cycle greenhouse gas emissions of goods and services.

⁶⁷ International Finance Corporation. 2017. Greenhouse Gas Reduction Accounting Guidance for Climate-Related Projects.

Scope for Mitigation

GHG Impact Assessment

7.3.27 Measures to reduce GHG emissions associated with the demolition and construction phase might include the following:

- Use of construction materials with lower embodied carbon, for example materials with a higher recycled content or locally sourced materials with fewer associated transportation emissions;
- Waste reduction to reduce emissions associated with transportation and disposal; and
- Encouraging the use of lower carbon transport options for the construction workforce, for example through cycle to work schemes and promotion of public transport options.

7.3.28 GHG mitigation measures during the complete and operational phase of the Proposed Development might include the following:

- Installation of energy efficient systems and equipment to reduce operational energy use;
- Increasing the accessibility of the Site to pedestrians, cyclists and via public transport to encourage the use of lower carbon transport options, therefore reducing operational emissions associated with additional vehicle journeys;
- Installation of electric vehicle charge points to encourage the uptake and use of more sustainable transport options; and
- Installation of water efficient systems and fittings to reduce water use and therefore emissions associated with water supply and treatment.

CCR review

7.3.29 During the demolition and construction phase, potential mitigation measures to help to increase the resilience of the Proposed Development to the potential impacts of climate change would be to consider the potential impacts of extreme weather events to reduce the risk of damage to materials and assets, as well as safeguard human health and safety.

7.3.30 Mitigation measures to increase the resilience of the Proposed Development once completed and operational might include:

- Use of construction materials that are more resilient to the impacts of climate change, for example heat resistant materials or stronger materials that are more resilient to strong winds;
- Incorporation of Flood Risk Assessment and Sustainable Drainage Systems (SuDS) to increase resilience to potential flooding as a result of increased winter precipitation;
- Installation of water efficient systems and fittings to increase resilience to potential water shortages as a result of decreased summer precipitation; and
- Consideration of future climate impacts on plant species when considering which species to incorporate into the design of the Proposed Development.

7.4 Daylight, Sunlight and Overshadowing

Summary of Existing Baseline Context

- 7.4.1 The Site currently comprises low-rise retail warehouses to the south-west, with the rest of the Site comprised of carparking, landscaped areas with trees along the eastern boundary and hardstanding. The Site is located adjacent to a railway line to the west, residential properties to the south, west and north, as well as buildings of commercial use including a hotel to the east.
- 7.4.2 The surrounding area is identified in the London Plan as a designated Opportunity Area (i.e. Brent Cross Cricklewood Opportunity Area), and as such, the area surrounding the Site is undergoing significant regeneration, with a number of large-scale residential and mixed-use developments having recently obtained planning permission (see *Appendix A*); some of which will replace existing buildings identified above. Further emerging large scale residential and mixed-use developments are planned for the area, subject to obtaining the necessary permissions.

Potential Impacts

- 7.4.3 The potential significant daylight, sunlight and overshadowing effects associated with Proposed Development are outlined below:

Demolition and Construction Impacts

- Temporary changes to the daylight and sunlight amenity currently received by surrounding receptors which have a reasonable expectation to natural light due to the demolition and construction works; and
 - Temporary changes to the overshadowing of surrounding outdoor amenity spaces due to the demolition and construction works.
- 7.4.4 The construction of the Proposed Development will have a gradual impact on the levels of daylight, sunlight and overshadowing on the surrounding sensitive receptors. Initially, as the buildings currently on-site are demolished, and then during the construction of the Proposed Development the massing of the buildings will increase over time, thus generating potential adverse effects as the Proposed Development is built out. However, the demolition and construction effects will be no greater than the complete and operational Proposed Development (see below), with a potentially lessened impact after completion as construction equipment, cranes and hoarding are removed from the Site.

Complete and Operational Impacts

- Permanent changes to the daylight and sunlight amenity currently received by surrounding receptors having a reasonable expectation to natural light due to the complete and operational Proposed Development; and
 - Permanent changes to overshadowing of surrounding outdoor amenity spaces because of the complete and operational Proposed Development.
- 7.4.5 Once the Proposed Development is complete and operational, due to its scale and proximity to sensitive receptors, it is likely to change the amount of daylight and sunlight received at nearby properties, and increase the level of overshadowing of nearby amenity areas compared to existing conditions. Existing and proposed commercial properties are not considered sensitive receptors and therefore will not be assessed for daylight and sunlight impacts.

Summary

- 7.4.6 As a result of the potential for significant environmental effects to occur, a daylight, sunlight and overshadowing assessment will be **Scoped In** to the EIA with regards to both the demolition and construction phase, and once the Proposed Development is complete and operational.
- 7.4.7 The BRE guidelines⁶⁸ provide that 'glare or solar dazzle can occur when sunlight is reflected from a glazed façade or area of metal cladding'. This is considered a potential issue in relation to road users whereby sun reflections can obscure the view of traffic signals, consequently reducing the driver's

⁶⁸ British Research Establishment, (2011), Guidelines: Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice, Second Edition

visibility and responsiveness. Given the outline nature of the planning application, the detailed elements of the façade treatment will not be known for the purposes of the assessment period. Therefore, a realistic assessment of solar glare cannot be undertaken at this stage and is **Scoped Out** of this EIA. However, owing to the close proximity of potentially sensitive locations on the nearby railway line and road junctions, a solar glare assessment will be undertaken as part of Reserved Matters Applications (RMAs), if necessary.

- 7.4.8 The daylight and sunlight assessment will focus on the adjoining residential properties, where the occupants have a reasonable expectation of daylight and sunlight. Overshadowing to surrounding public and private amenity areas, such as the rear gardens of adjoining properties will also be considered.

Outline Scope of Assessment

- 7.4.9 The assessment will include:

- A daylight and sunlight assessment of the likely significant effects of the Proposed Development on existing neighbouring residential properties during both demolition and construction, and once complete and operational; and
- An overshadowing assessment of the likely effects of the Proposed Development on existing amenity areas during both demolition and construction, and once complete and operational.

Establishing the Baseline

- 7.4.10 Desk top analysis, using mapping and online resources, will be undertaken in accordance guidance provided in the BRE Guide to identify the existing sensitive receptors which need to be considered for assessment.

- 7.4.11 Residential receptors have a reasonable expectation to daylight and sunlight. Therefore, properties within close proximity to the Site and with windows facing the Site will be considered to be sensitive receptors. These include terraced houses on:

- Cricklewood Lane;
- Cricklewood Broadway; and
- Champion Terrace.

- 7.4.12 . The baseline levels of daylight and sunlight to the relevant existing sensitive receptors will be quantified by reference to the Vertical Sky Component (VSC), No-Sky Line (NSL) and Annual Probable Sunlight Hours (APSH) methods.

- 7.4.13 In terms of overshadowing, potentially sensitive receptors include public and private amenity areas within close proximity to the Site. These include:

- Rear gardens on Gratton Terrace;
- Rear gardens on Midland Terrace;
- Rear gardens on Johnson Terrace; and
- Rear gardens on Champion Terrace.

- 7.4.14 Transient Overshadowing and Sun Hours on Ground methodologies are used to determine the overshadowing baseline conditions.

- 7.4.15 Photogrammetry and site visits will also be undertaken, and this information will be utilised, alongside OS mapping and planning portal drawings to create a 3D computer generated scale model of the Site and the surrounding context, both in the present and future conditions, as well as the potential cumulative future conditions.

Standards and Guidance

- 7.4.16 The following guidance and national, regional and local planning policy requirements is relevant to the consideration of daylight, sunlight, overshadowing and solar glare.

- British Research Establishment (BRE) guidelines;

- The National Planning Policy Framework⁶⁹;
- The National Practice Guidance⁷⁰;
- The London Plan⁷¹;
- Draft London Plan⁷²;
- Housing Supplementary Guidance⁷³ ;
- London Borough of Barnet's Local Plan⁷⁴; and
- Cricklewood, Brent Cross and West Hendon Regeneration Development Framework Supplementary Planning Guidance⁷⁵.

Impact Assessment Methodology

- 7.4.17 The potential impact of the Proposed Development on daylight, sunlight and overshadowing, in relation to adjacent sensitive receptors will be assessed against the existing baseline, demolition and construction phase, once the Proposed Development is complete and operational and an anticipated cumulative scenario including surrounding consented projects that are not yet under construction. Therefore, the following scenarios will be assessed:
- Baseline;
 - Proposed Development; and
 - Cumulative.
- 7.4.18 Owing to the evolving and changing nature of construction activities, where conditions would be gradually expected to transition between those of the baseline and those with the Proposed Development completed and occupied, the assessment of potential effects during construction of Proposed Development effects on daylight, sunlight, overshadowing and solar glare to surrounding receptors during construction will not be modelled. Instead, a qualitative assessment of the Proposed Development will be undertaken using professional judgement, with the worst-case scenario represented by the completed and operational Proposed Development.
- 7.4.19 Each of the assessment scenarios will be undertaken in line with the BRE guidance. Both the Vertical Sky Component (VSC), No-Sky Line (NSL) methods will be used to assess daylight and Annual Probable Sunlight Hours (APSH) methods will be used to assess sunlight amenity within sensitive receptors.
- 7.4.20 With shadows being cast in a northerly direction in the northern hemisphere, this assessment will consider windows serving living areas which face the Site and are located within 90 degrees of due south.
- 7.4.21 The overshadowing analysis on surrounding areas of amenity space will be undertaken by reference to the Transient Overshadowing method of assessment.
- 7.4.22 For this assessment, the path of shadow will be mapped for each of the scenarios on the following dates as suggested by the BRE:
- 21st March (Spring Equinox);
 - 21st June (Summer Solstice); and
 - 21st December (Winter Solstice).
- 7.4.23 Depending on the outcome of this analysis, the Sun Hours on Ground assessment may be required for any amenity areas that appear to be significantly impacted by the Proposed Development. The Sun Hours on Ground assessment considers the proportion of a designated amenity space which receives two hours of direct sunlight on 21st March.

⁶⁹ MHCLG, (2019), National Planning Policy Framework

⁷⁰ DCLG, (updated 2015), Planning Practice Guidance

⁷¹ GLA, (2016), The London Plan - The Spatial Development Strategy for London Consolidated with Alterations Since 2011;

⁷² GLA, (2017), The London Plan – The Spatial Development Strategy for Greater London, Draft for Public Consultation

⁷³ GLA, (2016), Housing Supplementary Planning Guidance.

⁷⁴ LBB, (2012), London Borough of Barnet's Local Plan.

⁷⁵ LBB (2005), Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework Supplementary Planning Guidance.

Assessment Criteria

- 7.4.24 For the assessment of daylight and sunlight, the significance of effects will be determined using professional judgement and by reference to Appendix I of the BRE Guidelines:

“Where the loss of skylight or sunlight fully meets the guidelines in this book (the BRE guide) the impact is assessed as negligible or minor adverse.”

“Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse.”

- 7.4.25 The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of overshadowing effects will be determined using professional judgement.

Scope for Mitigation

- 7.4.26 Any effects during the demolition and construction phase, including the use of associated equipment (i.e. cranes) will be temporary and fluctuate in significance as the works are undertaken. Mitigation for any short-term and medium-term effects will not be required.
- 7.4.27 Owing to the outline nature of the application, mitigation will be presented within the Design Codes to ensure the outline massing represents the worst case daylight, sunlight and overshadowing effects. Subsequent designs as part of a RMA will include improved massing and therefore lesser daylight, sunlight and overshadowing effects.

7.5 Ecology

Summary of existing baseline

- 7.5.1 The Site is situated centrally within an urban area and is located adjacent to a principle Network Rail line. The Site is separated from the railway by a wire mesh fence and a hedgerow with trees running the length of the Site's eastern boundary. Immediately surrounding the Site is the densely-populated commercial and residential properties of Cricklewood.
- 7.5.2 A Preliminary Ecological Appraisal (PEA) for the Site was carried out to identify whether there are known or potential ecological receptors (i.e. sites designated for their biodiversity value, and protected and notable habitats and species including any scheduled invasive non-native species) that may constrain or influence the design and implementation of the Proposed Development. The PEA report is provided in *Appendix B: Preliminary Ecological Appraisal* of this report.
- 7.5.3 In order to deliver the PEA, a desk study and an extended Phase 1 Habitat Survey were undertaken in July 2019 by a Suitably Qualified Ecologist (SQE) to identify ecological features within the Site and the wider zone of influence. The findings of the PEA are summarised below.
- 7.5.4 The Site predominantly comprised buildings and hardstanding surfaces (approximately 87% of Site area). Vegetation included an area of amenity grassland with scattered parkland trees, several introduced shrub and ephemeral/short perennial areas and a hedgerow with trees in the eastern boundary (Figure 7.5-1). Suitable habitat for common nesting birds was present within the Site and the Poundstretcher and Tile Depot (Building 1) was assessed as having low suitability for roosting bats. The Site was unsuitable for all other notable and protected species.
- 7.5.5 Three species of invasive non-native plants were found on the Site. Additional details are discussed below on a topic-by-topic basis.

Designated Sites

- 7.5.6 The results of the desk study showed that there were no sites of international statutory nature conservation designation within 5km of the Site. Two sites of national statutory nature conservation designation were identified within 2km of the Site, the closest of which is Westbere Copse Local Nature Reserve located 800m south of the Site.
- 7.5.7 As a result of the data search undertaken by Greenspace Information for Greater London (GiGL), a total of eight sites with non-statutory designations for nature conservation are situated within 1km of the Site. The closest identified non-statutory designated site is the Dell Doorstep Green (0.6km to the south of the Site), which is designated as a Site of Local Importance to Nature Conservation (SLINC).
- 7.5.8 Due to the distance to the Site (further than 0.6 km for the nearest designated site), coupled with the presence of urban and railway barriers, no designated sites could act as a constraint for the Proposed Development.

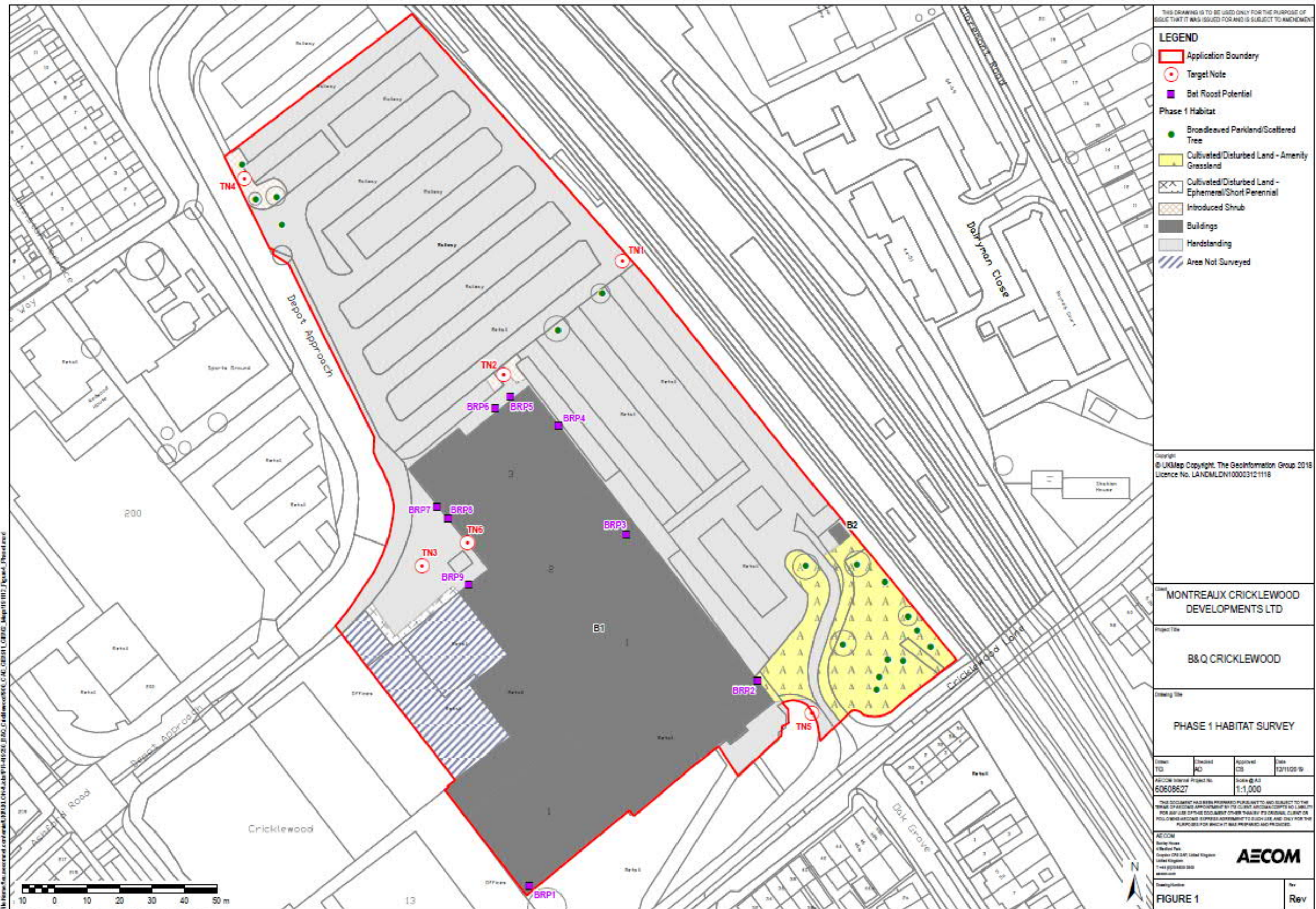
Habitats within the Site

- 7.5.9 The Phase 1 Habitat map for the Site is presented as Figure 7.5-1
- 7.5.10 There are no protected or notable habitats within the Site. The majority of habitat within the Site was comprised of buildings and hardstanding (approximately 87%) in the form of the commercial premises operated by B&Q, Poundstretcher and Tile Depot (hereafter referred to as Building 1), it's associated car park and service yards.
- 7.5.11 The vegetation present within the Site mainly consisted of an area of amenity grassland with scattered parkland trees to the south-east boundary, several introduced shrub planters and a species-poor mature hedgerow. The hedgerow itself is dominated by common hawthorn (*Crataegus monogyna*) and occasional London plane tree (*Platanus x acerifolia*), which forms part of the Site's eastern boundary. To the west of the Site exists a small area of ephemeral/short perennial vegetation.
- 7.5.12 There are a number of trees of varying height (8 - 16 m) found in the amenity grassland area and around the boundary of the Site (see *Appendix B* and *Appendix C: Arboricultural Tree Survey Report* for details). They comprise a mixture of native and introduced species. Trees observed at the Site were in good

condition with no signs of disease, had no broken branches or cavities. The trees had moderate ecological value and provided foraging and nesting opportunities for invertebrates and bird species.

- 7.5.13 Two buildings were present within the Site. Building 1 located in the centre, with most of its structure comprising concrete block and brick construction, with some areas featuring plastics, glass, metals and other materials typical of urban construction design. The vast majority of the roof of Building 1 was flat and featured plant and communications equipment.
- 7.5.14 Building 2, situated in the south-eastern area of the Site was a flat roofed structure of all metal design. It appeared to be in excellent condition with all doors, gaps and vents sealed with mesh.
- 7.5.15 Three species of invasive non-native plant species were identified during the extended Phase 1 Habitat survey in different areas across the Site.
- 7.5.16 Virginia creeper (*Parthenocissus quinquefolia*) (TN5 in Figure 7.5-1 is listed under Schedule 9 (but not by London Invasive Species Initiative (LISI)). As such, it is offence to allow this species to escape into the wild. Also recorded within the Site boundary during the Phase 1 Habitat survey were buddleia (*Buddleia davidii*), which is listed by the LISI as Category 3 and Holm oak (*Quercus ilex*) LISI species listed as risk level Category 5. Species under Category 3 are species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate. Species under Category 5 are species for which insufficient data or evidence was available from those present to be able to prioritise.

Figure 7.5-1 Phase 1 Habitat Survey Map



Protected and Notable Species

- 7.5.17 Potential protected species constraints identified via the Phase 1 Habitat survey within the Site included bats and nesting birds.

Bats

- 7.5.18 The most recent bat record returned by GiGL was in 2010 from a pipistrelle bat species (*Pipistrellus spp.*) found 1 km from the Site.
- 7.5.19 Building 1 was assessed as having low bat roosting suitability. Bat roosting features include gaps in the soffit box and between the soffit box and barge board. The external inspection found that the roof void was suitable for roosting bats due to low disturbance, appropriate thermal conditions and ample opportunity to tuck into crevices afforded by the roof timbers and lining. However, the urban surroundings of the Site do not provide good quality corridors or good foraging habitats for bats. Further surveys were recommended within the PEA (*Appendix B*) for bats for Building 1 to determine any potential impact upon this receptor and any future requirement for Natural England licensing. Consequently, a dusk emergence survey was carried out for the potential roosting features of Building 1 on 20th August 2019. The survey report can be found in *Appendix D: Bat Survey Report*. No bats were recorded emerging from the building and very limited bat activity was recorded around the building.
- 7.5.20 Building 2 and trees within the Site were assessed as having negligible suitability for roosting bats due to an absence of potential roost features.

Birds

- 7.5.21 Building 1 also has the potential to support nesting birds. Potential species include house sparrow (*Passer domesticus*), swift (*Apus apus*) and feral pigeon (*Columba livia domestica*). Trees and the hedgerow present within the Site also provide suitable habitat for common nesting birds, although no nests were observed during the survey.

Legislation

- 7.5.22 The following wildlife legislation is relevant to the Proposed Development:
- The Conservation of Habitats & Species Regulations 2017 (the Habitats Regulations)⁷⁶;
 - Wildlife and Countryside Act (WCA) 1981 (as amended)⁷⁷;
 - Natural Environment and Rural Communities (NERC) Act 2006⁷⁸;
 - Wild Mammals (Protection) Act 1996⁷⁹; and
 - Animal Welfare Act 2006⁸⁰.
- 7.5.23 A number of national, regional and local planning policies are also applicable to biodiversity. Key planning documents considered include:
- National Planning Policy Framework (NPPF) (2019);
 - Mayor's London Environment Strategy (May 2018);
 - The Mayor's London Plan, Spatial Development Strategy for Greater London Plan (March 2016);
 - Barnet's Local Plan Core Strategy – CS7: Enhancing and protecting Barnet's open spaces (September 2012);
 - Barnet Unitary Development Plan. Chapter 12. Cricklewood, Brent Cross and West Hendon Regeneration Area (2006);
 - Barnet's Local Plan (Development Management Policies) (September 2012); and

⁷⁶ The Conservation of Habitats & Species Regulations 2017 (the Habitats Regulations). Strasbourg, European Parliament and European Council

⁷⁷ Wildlife and Countryside Act (WCA) 1981 (as amended). London, Her Majesty's Stationery Office

⁷⁸ Natural Environment and Rural Communities (NERC) Act 2006. London, Her Majesty's Stationery Office

⁷⁹ Wild Mammals (Protection) Act 1996. London, Her Majesty's Stationery Office

⁸⁰ Animal Welfare Act 2006. London, Her Majesty's Stationery Office

- Green Infrastructure Supplementary Planning Document⁸¹ (October 2017)

Potential Impacts

Demolition and Construction Impacts

- 7.5.24 Potential impacts during the demolition and construction phase are likely to be habitat loss through site clearance and demolition, risk of death or injury to protected species, disturbance during construction (noise, vibration, dust and artificial light spillage) and risk of spreading invasive non-native species.
- 7.5.25 Disturbance during demolition and construction is likely to be a short term negative effect that will end once construction is complete. Species present within the Site or passing through/using the Site would be displaced to nearby locations. This potential impact can be mitigated with the development and implementation of a Construction Environmental Management Plan (CEMP) or similar, secured through an appropriately worded planning condition.
- 7.5.26 Habitat loss during demolition and construction is likely to comprise a short to medium term negative effect until the Proposed Development is complete. Demolition of Building 1 would lead to the loss of bat roosting opportunities for bats, as the building currently has low suitability for supporting roosting bats. Similarly, the demolition of the building and the clearance of trees and the hedgerow within the Site will reduce the habitat suitable for nesting birds. Mitigation should be embedded in design of the Proposed Development in the form of green infrastructure, including areas of soft landscaping (hedges, shrubs, amenity grassland, street trees, etc.) and the incorporation of artificial habitat for invertebrates, birds and bats.
- 7.5.27 The risks of mortality to bats and nesting birds are likely to be of a short-term negative effect occurring during vegetation clearance and demolition works within the Site. This potential impact can be mitigated by undertaking pre-construction checks by a SQE.
- 7.5.28 Building 1 was assessed as having low suitability for bats. Following Good Practice Guidelines from the Bat Conservation Trust⁸², a single presence/absence bat survey was recommended and undertaken for potential roosting features in Building 1. The dusk emergence survey was undertaken for Building 1 to determine the use of the Site for roosting bats and to assess the potential impacts of the Proposed Development with regards to roosting bats. As bats were not recorded emerging from the building and very limited bat activity was recorded around the building, it is concluded that roosting bats are likely to be absent and the Proposed Development is unlikely to impact on roosting bats.
- 7.5.29 Vegetation clearance and demolition works of a wall (TN5 on Figure 7.5-1) have the potential to cause invasive non-native species, such as Virginia creeper, buddleia and holm oak, to spread both across the Site and potentially beyond it. This could increase the risk of non-native species becoming established within and outside the Proposed Development, creating a negative impact on nearby habitats and species and risk causing an offence, in the case of Virginia creeper, under the Wildlife and Countryside Act 1981 (as amended). A Non-native Invasive Species Management Plan should be prepared for the Site (again, secured through an appropriately worded planning condition) to assess the risks the plants pose including; disruption to built structures (i.e. buddleia), the risk of spreading invasive species, but should also present an evaluation of their value, e.g. habitat and mitigating air pollution.

Complete and Operational Impacts

- 7.5.30 Potential impacts once the Proposed Development is complete and operational may include increased disturbance through noise, artificial lighting and human disturbance. However, should bats and nesting birds utilise the Site as it currently exists, they would already experience and tolerate disturbance due to the close proximity to the operational railway adjacent to the eastern boundary of the Site, artificial lighting and active use of the B&Q store and car park. Therefore, it is expected these species would be habituated to the pre-existing disturbance levels. As such, it is expected that there will not be any negative impacts upon bats and nesting birds as a result of the complete and operational Proposed Development. The only impacts would stem from the loss of habitat assessed in the construction phase.

⁸¹ LBB, 2017. [Green Infrastructure Supplementary Planning Document \(SPD\)](#).

⁸² Collins, J. (ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn.). The Bat Conservation Trust. London.

Summary

- 7.5.31 It is anticipated that both construction and operational impacts will not result in any significant adverse effects on the ecology of the Site. Based on the above, the findings of the PEA report presented in *Appendix B* and the results of the bat surveys (*Appendix D*), it is appropriate to **Scope Out** an ecology assessment within the EIA. Whilst ecological considerations will inform the design of the Proposed Development, there is no potential for significant ecological impacts to arise as a result of the Proposed Development.
- 7.5.32 As bats were not seen emerging from Building 1, an European Protected Species Mitigation Licence is not required from Natural England prior to the implementation of the Proposed Development.

Scope for Mitigation

- 7.5.33 It is anticipated whilst ecological considerations will inform the demolition and construction works, and complete and operational Proposed Development, there is no potential for significant adverse ecological effects which cannot be mitigated to arise. The likely mitigation measures required are summarised below.
- 7.5.34 A CEMP should be developed and implemented to reduce disturbance during the works. The CEMP will include best practice measures to control lighting, noise, vibration dust and pollution as a consequence of site clearance and development works.
- 7.5.35 The bat survey report completed as a result of the dusk emergence survey (*Appendix D*) also recommends precautionary measures during the demolition and construction work stage appropriate to the Proposed Development. Measures include the inspection of the identified potential roosting features within Building 1 prior the commencement of the works by an SQE and a toolbox talk immediately prior to demolition to all site staff, in order to ensure that they are aware that the building has low potential to support roosting bats. Furthermore, a lighting scheme that reduces disturbance to bats, should be incorporated as part of the Proposed Development design.
- 7.5.36 Without appropriate controls, site clearance works could result in the injury and potential death of nesting birds, as well as the destruction of nests, which would be an offence under the Wildlife and Countryside Act 1981 (as amended). For this reason, wherever possible, habitat of potential value to nesting birds will be removed outside of the period when bird species are likely to be using active nests (between September and February). If this is not possible, site clearance between March and August will not take place until a SQE has confirmed absence of nesting birds immediately prior to clearance works commencing.
- 7.5.37 Mitigation for the loss of habitat should be incorporated into the design of suitable habitats for bats and nesting birds in the form of green infrastructure (soft landscaping) and artificial habitat for these species (bird and bat boxes). This would be in accordance with the NPPF, regional and local policies and Biodiversity Action Plans.
- 7.5.38 An Invasive Non-native Species Management Plan is recommended for the Site before works commence to eradicate and control the spread of Virginia creeper, buddleia and holm oak. This Management Plan should assess the risks and benefits of the different plants and, if necessary, determine the best method and timing to eradicate these invasive species. A biosecurity protocol will be essential to avoid the spread of any of these plants outside of the Site.

Scope for Enhancement

- 7.5.39 The PEA also identifies opportunities for enhancement that would provide biodiversity net gains accordingly to the NPPF and the LBB's Local Plan and Development Framework, that contain statements and policies relating to the enhancement and creation of biodiversity opportunities in the Borough and for the promotion of sustainable design, air and water quality. Local or regional planning policies underpin the following recommendations for enhancing the biodiversity of the Proposed Development. These comprise:
- Landscaping strategy to include native and near-native plant species for the benefit of wildlife;
 - Installation of insect habitats;

- Creation of extensive biodiverse green roofs. Pebbles, boulders, gravels, sands, branches and logs may also be incorporated into an extensive green roof to offer suitable habitats; and
- Installation of living walls on external walls of the Proposed Development, if appropriate to the architectural design.

7.5.40 The provision of a green roof would provide numerous benefits including⁸³:

- Surface water management. Green roofs are an ideal source-control, covering otherwise impermeable surfaces and absorbing and slowing down stormwater. They can reduce the volume and smooth out peak flows, whilst simultaneously removing some pollutants (supporting flood and water quality regulation);
- Urban cooling. Green infrastructure can reduce the temperature of a building's exterior, as well as the rooms within, by shade, insulation, albedo (reflectivity) and evapotranspirative cooling (the cooling which occurs when water is evaporated from leaves). Insulation provided by green roofs can also reduce heat loss from a building in winter. These effects can, in turn, reduce energy consumption for cooling and heating;
- Biodiversity. Habitats can be provided that can be colonised by a range of plants and animals (overall invertebrates, birds and bats). Green roofs will serve as a stepping stone, enabling wildlife to move between core areas. Increase in invertebrates support pollination;
- Air quality. Air pollutants can be reduced by filtering and capturing particulates and absorbing and breaking down gases by vegetation;
- Health and wellbeing. A combination of factors including improving the quality of the air and providing tranquillity through noise reduction contributes to human health and well-being;
- Noise reduction. Sound is absorbed through soils and substrates;
- Local climate change. Modest quantities of carbon can be stored in the green roof; and
- Cultural service. A green roof adds value to the site (increase of aesthetic, spiritual values, health and wellbeing benefits).

⁸³ Mayor of London, 2019. Living Roofs and Walls, from policy to practice. 10 years of urban greening in London and beyond.

7.6 Ground Conditions and Contamination

Summary of the Existing Baseline

7.6.1 The Site baseline has been established using a variety of information sources, including:

- Online information from publicly available sources such as the:
- Environment Agency (EA) MAGIC Maps (<https://magic.defra.gov.uk/MagicMap.aspx>)
- Environment Agency (EA) Flood map for planning (<https://flood-map-for-planning.service.gov.uk>)
- Environment Agency (EA) National River Flow Archive (<https://nrfa.ceh.ac.uk/data/search>)
- British Geological Society (BGS) Borehole Geindex and Geology Map Viewer (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)
- Google Maps and Google Earth Pro Ordnance Survey Maps (<https://osmaps.ordnancesurvey.co.uk/>)
- UK Soils Observatory (UKSO) (<http://mapapps2.bgs.ac.uk/ukso/home.html>)
- National Library of Scotland (NLS) (<https://maps.nls.uk/view/103313201>)

7.6.2 In summary, the above mentioned sources have established the following:

- The bedrock geology on-site is the London Clay Formation. The BGS records no superficial geology on-site. The nearest superficial geology recorded by BGS is the Dolls Hill Gravel Member, over 1km to the north-west of the Site;
- BGS borehole TQ28NW1 c.250m south-west of the Site, shows the Woolwich and Reading Beds underlying the London Clay Formation at a depth of 66m below ground level (bgl) followed by chalk at a depth of 84m bgl;
- The Environment Agency's (EA's) website classifies the London Clay Formation as unproductive strata;
- The Site is not located within a nitrate vulnerable zone (NVZ) or groundwater Source Protection Zone (SPZ) for the protection of potable water supply abstractions. There are no recorded aquifer classifications for the Site;
- The main watercourses in the study area are the River Brent c.1.75km north-west, which runs north east-south west;
- There are no special nature reserves or ecological designations on-site. The nearest area of any notable natural designation is a local nature reserve (LNR) Westbere Copse c.700m south east of the Site;
- The Site is (and was) in a residential and industrial area in London therefore the potential for UXOs should be considered; and
- Historical maps from National Library of Scotland (NLS) show the Site was previously occupied prior to the Second World War by a junction of railway tracks. Off-site industrial buildings such as motor works, aeroplane works and clock works are within a 1km of the Site.

Potential Impacts

7.6.3 The likely significant effects of the Proposed Development relating to ground conditions can be differentiated into those effects that could be realised during the demolition and construction works and the complete and operational phases. These include, though are not limited to, the following:

Demolition and Construction Impacts

7.6.4 Demolition and construction works have the potential to mobilise existing sources of contamination via:

- Disturbance of contaminated ground and creation of stockpiles causing potential leaching and lateral migration and discharge to surface water. Vertical migration of any contaminants into a groundwater is unlikely given the local thickness (c.60m) of the aquitard London Clay Formation;

- Creation of increased surface water run-off and discharge to surface water. Although the nearest river is the River Brent, approximately 1.75km to the north;
 - Disturbance of contaminated ground (and demolition/construction works) potentially mobilising volatile organic vapours, ground-gas and dust impacting both construction workers and neighbouring properties to the Site (effect of dust would also be covered in *Section 7.1: Air Quality*); and
 - Direct transfer of contaminants in made ground to the machinery and workers which could leave site via dirty vehicles or contaminated clothing.
- 7.6.5 Demolition and construction workers are at risk from exposure to contaminated soils and shallow groundwater through dermal contact, ingestion, inhalation of soil dust and inhalation of volatile organic vapours/ground-gas from contaminated soils and groundwater.
- 7.6.6 The demolition and construction works may also introduce potential new sources of contamination such as fuels, oils and other construction materials. Incorrect storage and handling leading to leakages or spillages of fuels, oils and other construction materials could present a potential risk to demolition and construction workers, Site neighbours and controlled waters.

Complete and Operational Impacts

- 7.6.7 Existing contamination has the potential to have a significant adverse effect upon future on-site users and those using neighbouring sites without appropriate mitigation measures being implemented during the demolition and construction phase. Existing contamination has the potential to impact upon buried structures and services without appropriate design (e.g. suitable class of concrete to mitigate against chemical attack from contaminants such as sulphates) or the adoption of suitable construction materials (e.g. the use of an appropriate specification of water supply pipes to mitigate against contaminant permeation).
- 7.6.8 The Proposed Development may introduce sources of contamination such as from the storage of fuels, oils and chemicals, or spillages from vehicles. Soil and controlled waters may be at risk of contamination should uncontrolled spillages or leaks from these sources occur.

Summary

- 7.6.9 On the basis of the information presented above, the assessment of the ground conditions and contamination at the Site during both the demolition and construction phase, and once the Proposed Development is complete and occupied has been **Scoped In** to the EIA.

Outline Scope of Assessment

Establishing the Baseline

- 7.6.10 The baseline context of the Site will be established through a review of available third party information, where available, (such as from any previous desk studies, asbestos surveys etc.); the collection, review and assessment of environmental information (such as from the EA, BGS and Magic); and information from the previous site visits to determine the current environmental sensitivity at the Site and the immediate surrounds.
- 7.6.11 The extent of the study area to be used in the technical assessment is up to 1km from the Site boundary, as is standard practice for Contaminated Land desk based assessments.
- 7.6.12 The ZOI to inform the identification of cumulative effects is up to 1km buffer from the Site boundary.

Standards and Guidance

- 7.6.13 There is no published EIA guidance for transposing a risk-based contaminated land assessment into significance criteria for the purposes of EIA. The likelihood of ground contamination at the Site, and its potential effect on sensitive receptors, has been assessed using a conceptual model and risk-based framework, using a combination of knowledge of the characteristics and extent of the contamination identified. The assumption is that all areas of the Site would be subject to disturbance as part of the works required for the Proposed Development. Accordingly, an assessment of the potential for impact on human health or consequential impacts on other environmental receptors would be undertaken.

- 7.6.14 In the absence of published guidance, the assessment of significance will be determined using relevant guidance, in particular with reference to CIRIA Report 'Contaminated Land Risk Assessment: A Guide to Good Practice', the Model Procedures for the Management of Land Contamination CLR11 and professional judgement.

Impact Assessment Methodology

- 7.6.15 The assessment method will follow a risk-based approach, with potential environmental risks assessed qualitatively using the 'source-pathway-receptor pollutant linkage' concept to assess risk, as introduced in the Environmental Protection Act 1990. This allows the identification of potential pollutant linkages and whether these linkages have the potential to pose significant harm to human health, pollution of controlled waters or risks to the built environment in relation to the Proposed Development. With regard to soil and groundwater contamination, the assessment will focus on:
- The potential for existing contamination to be present on the Site, and whether this could be mobilised by the Proposed Development, during both the demolition and construction, and once complete and operational; and
 - Whether the Proposed Development could result in any additional contamination of the Site during both the demolition and construction, and once complete and operational phases.

Assessment Criteria

- 7.6.16 A level of significance will be assigned to both potential effects (pre-mitigation) and residual effects (post-mitigation). The combination of the sensitivity of the receptor and the magnitude of change (from the baseline condition), as a result of the Proposed Development, qualitatively assess the significance of the effect.

Scope for Mitigation

- 7.6.17 A number of environmental design and management measures are expected to be employed as standard best practice, to minimise impacts to both human health and controlled waters during the demolition/construction phase of the Proposed Development. A number of potential environmental impacts will be avoided, prevented, reduced or offset through the implementation of these mitigation measures. Mitigation measures implemented have the potential to alter the magnitude of impact through changing the source-receptor-pathway interaction.
- 7.6.18 Mitigation measures, in addition to the standard environmental design and management measures, may also be employed during the demolition and construction phase of the Proposed Development, to minimise impacts to human health, controlled waters, land stability and properties (both proposed and existing surrounding properties).
- 7.6.19 A possible mitigation measure for the Site would be to carry out an intrusive ('Phase 2') Site Investigation to evaluate the quality of shallow soil and groundwater. The Phase 2 Investigation would allow for soil, groundwater, and gas monitoring to be carried out on the Site; and could also be combined with a geotechnical assessment to assist with foundation design. An unexploded ordnance (UXO) assessment could also be recommended prior to intrusive investigation depending on the risk levels identified.

7.7 Major Accidents and Disasters

- 7.7.1 The Proposed Development is not located in an area which is anticipated to be at risk of foreseeable major disasters or accidents.
- 7.7.2 Consideration will also be given to the design of the Proposed Development to ensure that it is safe and secure in line with the Draft London Plan Policy D8. The Proposed Development will be design, constructed and maintained in accordance with the relevant building and fire safety regulations and will include measures ensure the security of the building. The Design and Access Statement (DAS), which will be submitted with the planning application, will include further details including Secure by Design.
- 7.7.3 It is therefore proposed that major accidents and disasters are **Scoped Out** of the EIA.

7.8 Noise and Vibration

Summary of Existing Baseline Context

7.8.1 Following a desktop review, it is identified that the dominant sources of noise across the Site are road traffic on surrounding roads, in particular Cricklewood Broadway (A5) to the west, and train movements on the rail lines which are located along the eastern boundary of the Site. Cricklewood railway station is adjacent to the Site; noise from public address (PA) system at the station as well as trains braking/accelerating will also contribute to the noise environment. Train movements may also result in perceptible levels of ambient vibration within the Site.

7.8.2 The nearest identified noise sensitive receptors to the Site are:

- Residential properties located at: Dairyman Close on the opposite side of the rail lines to the east (approx. 60 metres (m) from the Site boundary);
- Residential properties on Cricklewood Lane to the south (approx. 20m from the Site boundary);
- Residential properties on Kara Way to the north and west (approx. 30m from the Site boundary); and
- Travelodge hotel to the west (approx. 100m from the Site boundary).

Potential Impacts

Demolition and Construction Impacts

7.8.3 It is likely that the demolition and construction activities will result in noise and vibration impacts on nearby sensitive receptors as listed above. The potential impacts throughout the works programme are likely to include the following:

- Noise and vibration due to Site enabling, demolition and construction works activities (including plant or equipment used on-site); and
- Noise from HGV movements along the local road network.

7.8.4 The noise and vibration levels will vary at different phases of the work and will depend on the type of work performed and its location relative to receptors. It is considered that noise impacts are likely to be greatest during the early stages of the works programme, e.g. during ground works when heavier plant is likely to be used. It should be noted that adverse noise and/or vibration effects may occur during demolition and construction works, however these would be temporary and short term in nature, thus having no permanent residual impact.

7.8.5 The level of vibration experienced at a sensitive receptor depends on the type of works taking place, ground conditions of the Site, and receptor distance to the source. Based on the separation distance between the Site boundary and existing receptors (in particular residential properties on Cricklewood Lane and Kara Way), it is considered that there is the potential for demolition and construction activities to cause disturbance to nearby receptors.

Complete and Operational Impacts

7.8.6 The potential noise and vibration impacts once the Proposed Development is complete and operational are likely to include the following:

- Noise from the introduction of fixed plant and building services; and
- Changes to road traffic noise levels along the local road network due to traffic associated with the Proposed Development (i.e. servicing and maintenance, residential trips).

7.8.7 Preliminary traffic generation assessments have concluded that there will be a net reduction in trips generated by the proposed development when compared to the baseline. There will be no increases in traffic noise along the local road network due to the introduction of the Proposed Development. Therefore, no significant effects associated with development traffic noise are expected.

Summary

- 7.8.8 On the basis of the potential impacts presented above, the assessment of the noise and vibration impacts during the demolition and construction phase, and once the Proposed Development is complete and operational has been **Scoped In** to the EIA. However, no major vibration sources or increases in traffic flows are envisaged to be introduced as part of the Proposed Development, and therefore operational vibration and operational traffic noise will have no impact and is **Scoped Out** from the EIA.
- 7.8.9 The vibration experienced by the Proposed Development as a result of the proximity to the network rail lines to the east will be identified in the Site Suitability aspect of the ES Chapter, which will recommend any outline requirements to achieve suitable amenity noise and vibration levels for the intended use of the Proposed Development.

Outline Scope of Assessment

- 7.8.10 The noise and vibration ES Chapter will include the following assessments:
- Review of the baseline noise and vibration conditions in the vicinity of the Proposed Development;
 - Assessment of the following impacts at identified sensitive receptors:
 - Demolition and construction activity noise;
 - Demolition and construction vibration;
 - Demolition and construction traffic noise; and
 - Complete and operational noise from building services and plant associated with the Proposed Development.

Establishing the Baseline

- 7.8.11 Baseline noise and vibration monitoring will be carried out to establish the typical noise and vibration background environment around the Site boundary and representative of surrounding noise sensitive receptors.
- 7.8.12 The noise monitoring procedures will follow guidance from BS 7445-1:2003 'Description and measurement of environmental noise - Part 1: Guide to quantities and procedures'⁸⁴. The vibration monitoring procedures will follow guidance from BS 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings - Part 1: Vibration sources other than blasting'⁸⁵.
- 7.8.13 It is proposed to undertake long-term monitoring around the Site boundaries at positions representative of the typical noise environment (minimum five days to include weekday and weekend periods). Vibration monitoring of rail movements will be undertaken along the eastern Site boundary.
- 7.8.14 The LBB will be consulted regarding the locations and methodology for monitoring will be consulted in advance of any monitoring taking place.

Standards and Guidance

- 7.8.15 Legislation, planning, and guidance documents of relevance to this assessment include the following:
- Control of Pollution Act (1974)⁸⁶
 - Environmental Protection Act (1990)⁸⁷
 - National Planning Policy Framework (NPPF) (2019)
 - Noise Policy Statement for England (NPSE) (2010)⁸⁸

⁸⁴ British Standards Institute (2003); BS 7445 – Description and measurement of environmental noise. Part 1: Guide to quantities and procedures, BSi, London.

⁸⁵ British Standards Institute (2008); BS 7445 – Guide to evaluation of human exposure to vibration in buildings - Part 1: Vibration sources other than blasting, BSi, London.

⁸⁶ Her Majesty's Stationery Office (1974); Control of Pollution Act

⁸⁷ Her Majesty's Stationery Office (1990); Environmental Protection Act 1990

⁸⁸ Department for Environment Food and Rural Affairs (Defra) (2010); Noise Policy Statement for England

- National Planning Practice Guidance: Noise (PPGN) (2019)⁸⁹
- BS 7445-1:2003 'Description and Measurement of environmental noise. Part 1: Guide to quantities and procedures'
- BS 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings - Part 1: Vibration sources other than blasting'
- BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings'⁹⁰
- BS 5228:2009+A1:2014 'Noise and vibration control on construction and open sites'⁹¹, Part 1: Noise and Part 2: Vibration
- BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'⁹²
- World Health Organisation (WHO) 'Guidelines for Community Noise' (1999)⁹³
- World Health Organisation (WHO) 'Night Noise Guidelines for Europe' (2009)⁹⁴
- World Health Organisation (WHO) 'Environmental Noise Guidelines for the European Region' (2018)⁹⁵
- Calculation of Road Traffic Noise (CRTN) (1988)⁹⁶
- Association of Noise Consultants, Institute of Acoustics, and Chartered Institute of Environmental Health, (2017); Professional Practice Guidance (ProPG) on Planning & Noise⁹⁷
- Institute of Environmental Management and Assessment (IEMA) (2014); Guidelines for environmental noise impact assessment⁹⁸

Impact Assessment Methodology

- 7.8.16 The study area for demolition and construction and complete and operational noise and vibration effects will consider noise-sensitive receptors within 100 metres (m) of the Site boundary. The study area for road traffic noise effects due to the temporary and permanent changes to the highway network will be limited to receptors located along roads included in the Transport Assessment experiencing at least a 25% increase in traffic flows.
- 7.8.17 NPSE describes the following levels at which noise effects may be identified:
- NOEL - No Observed Effect Level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.
 - LOAEL - Lowest Observed Adverse Effect Level. This is the level above which not significant adverse effects on health and quality of life can be detected.
 - SOAEL - Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.
- 7.8.18 The standards and guidance combined with the impact assessment methodology presented above will be used to determine the scale of noise and vibration effects with reference to NPSE and the NOEL/LOAEL/SOAEL categories.

⁸⁹ Ministry of Housing, Communities & Local Government (MHCLG) (2019); Planning Practice Guidance: Noise

⁹⁰ British Standards Institute, (2014); BS 8233 – Guidance on sound insulation and noise reduction for buildings, BSI, London

⁹¹ British Standards Institute (2014) BS 5228:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Noise, BSI, London

⁹² British Standards Institute (2019); BS 4142 – Methods for rating and assessing industrial and commercial sound, BSI, London

⁹³ Berglund, B., Lindvall, T. and Schwela, D.H. (1999) Guidelines for Community Noise. Geneva: World Health Organization

⁹⁴ World Health Organization (2009) Night Noise Guidelines for Europe. Geneva: World Health Organization

⁹⁵ WHO European Centre for Environment and Health, Bonn Office (2011) Burden of disease from environmental noise: Quantification of healthy life years lost in Europe. Copenhagen: WHO Regional Office for Europe

⁹⁶ Department of Transport/Welsh Office (1988); Calculation of Road Traffic Noise

⁹⁷ Association of Noise Consultants, Institute of Acoustics, and Chartered Institute of Environmental Health, (2017); Professional Practice Guidance (ProPG) on Planning & Noise

⁹⁸ Institute of Environmental Management and Assessment (2014); Guidelines for environmental noise impact assessment

Assessment Criteria

Receptor Sensitivity

- 7.8.19 Sensitive receptors have been classed depending on their use and subsequent sensitivity to noise and vibration. The sensitivity to noise and vibration has been defined in Table 7.8-1 below.

Table 7.8-1 Criteria Used to Define Sensitivity of Noise and Vibration Receptors

Sensitivity	Description	Examples of receptor usage
Very High	Receptors where noise will significantly affect the function of a receptor	<ul style="list-style-type: none"> Auditoria/studios; Specialist medical/teaching centres; and Libraries.
High	Receptors where people or operations are particularly susceptible to noise	<ul style="list-style-type: none"> Residential and student accommodation; Hotels; Places of worship; Conference facilities; Schools in daytime; and Hospitals/residential care homes.
Medium	Receptors of low sensitivity to noise, where it may cause some distraction or disturbance	<ul style="list-style-type: none"> Offices/retail units; Restaurants; External amenity spaces; and Sports grounds when spectator or noise is not a normal part of the event and where quiet conditions are necessary (e.g. tennis, golf).
Low	Receptors where distraction or disturbance from noise is minimal	<ul style="list-style-type: none"> Factories and working environments with existing high noise levels; and Sports grounds when spectator or noise is a normal part of the event.

Suitability of Site for Proposed Uses

- 7.8.20 An assessment will be carried out to determine the Site's suitability for the proposed residential uses, as well as external amenity spaces. Reference will be made to relevant internal and external amenity noise level guidance such as those given in BS 8233:2014, WHO guidance, and ProPG (summarised in Table 7.8-2), and vibration level guidance in BS 6472-1:2008 (summarised in Table 7.8-3). Outline design advice and recommendations for mitigation measures will be provided in order to achieve relevant guidance levels.

Table 7.8-2 Criteria for Indoor Ambient Noise Levels for Dwellings when they are Unoccupied

Activity	Location	16 h day (07:00-23:00)	8 h night (23:00-07:00)
Resting	Living Room	35 dB L _{Aeq,16hr}	-
Dining	Dining Room/Area	40 dB L _{Aeq,16hr}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq,16hr}	30 dB L _{Aeq, 8hr} 45 dB L _{Amax} (10-15 events)

Table 7.8-3 Vibration Dose Value Ranges which Might Result in Various Probabilities of Adverse Comment within Residential Buildings

Place and time	Low probability of adverse comment m·s ^{-1.75}	Adverse comment possible m·s ^{-1.75}	Adverse comment probable m·s ^{-1.75}
Residential buildings 16 h day (07:00-23:00)	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8 h night (23:00-07:00)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

- 7.8.21 Note that this assessment is not intended to form part of the impact assessment, but rather to determine any outline requirements as to achieve suitable amenity noise and vibration levels for the intended usage of the Proposed Development.

Preparatory, Demolition and Construction Works

- 7.8.22 Noise associated with the demolition and construction works will be assessed (at chosen sensitive receptors) using the data and procedures given in BS 5228 Part 1: Noise. Proposed assessment criteria are presented in Table 7.8-4 below.

Table 7.8-4 Magnitude of Construction Noise Impacts

Magnitude of Impact	Construction noise level at façade of receptor, $L_{Aeq,T}$		
	Daytime (07.00–19.00) and Saturdays (07.00–13.00)	Evenings and weekends (19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays)	Night-time (23.00–07.00)
Negligible	≤ 65 dB	≤ 55 dB	≤ 45 dB
Low	≥ 65 dB and < 70 dB	≥ 55 dB and < 60 dB	≥ 45 dB and < 50 dB
Medium	≥ 70 dB and < 75 dB	≥ 60 dB and < 65 dB	≥ 50 dB and < 55 dB
High	≥ 75 dB	≥ 65 dB	≥ 55 dB

- 7.8.23 Table 7.8-5 details vibration peak particle velocity (PPV) levels and their potential impact on humans to be used in the assessment, as per BS 5228 Part 2: Vibration, which provides a simple method of determining annoyance associated with vibration.

Table 7.8-5 Criteria for Magnitude of Demolition and Construction Vibration Impacts (Human Response)

Magnitude of Impact	Peak particle velocity (PPV) level	Description
Negligible	0.14 to < 0.3 mm/s	<i>“Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.”</i>
Low	0.3 to < 1.0 mm/s	<i>“Vibration might be just perceptible in residential environments.”</i>
Medium	1.0 to < 10.0 mm/s	<i>“It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.”</i>
High	≥ 10.0 mm/s	<i>“Vibration is likely to be intolerable for any more than a very brief exposure to this level.”</i>

- 7.8.24 In terms of demolition and construction vibration, the recommended PPV vibration limits for transient vibration, above which cosmetic damage could occur for different types of buildings are provided in BS 5228-2 and presented in Table 7.8-6. For these limits, 'minor damage' is possible at vibration magnitudes which are greater than twice those given in Table 7.8-6, and 'major damage' can occur at values greater than four times the tabulated values.

- 7.8.25 Given that these criteria relate to the risk of cosmetic damage dependent on the type of building and its physical sensitivity to vibration, rather than impacts on human occupants with varying sensitivities (as shown in Table 7.8-1), a semantic scale for determining the significance of effect has been provided. Note that the criteria presented relate to the potential for cosmetic damage, not structural damage; cosmetic damage would precede the onset of any structural damage.

Table 7.8-6 Criteria for Magnitude of Demolition and Construction Vibration Impacts (Building Response)

Significance of Effect	Multiple of vibration threshold values	Type of building	Peak component particle velocity in frequency range of predominant pulse, at which cosmetic damage could occur
Negligible	Up to x1	Reinforced or framed structures,	50 mm/s at 4 Hz and above
Minor	Up to x2	Industrial and heavy commercial buildings	
Moderate	Up to x4	Unreinforced or light framed structures,	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz, and increasing to 50 mm/s at 40 Hz and above
Major	Greater than x4	Residential or light commercial buildings	

Construction Traffic

7.8.26 The temporary changes in road traffic noise levels along the local road network will be calculated based on guidance from CRTN and assessed based on IEMA guidance. The predictions will be based on baseline traffic data prepared as part of the Transport Assessment.

7.8.27 Proposed assessment criteria are presented in Table 7.8-7.

Table 7.8-7 Road Traffic Noise Impacts (Temporary Changes)

Magnitude of Impact	Noise Change Band, $L_{A10,18h}$
Negligible	≥ 0 dB and < 1 dB
Low	≥ 1 dB and < 3 dB
Medium	≥ 3 dB and < 5 dB
High	≥ 5 dB

Operational Noise – Fixed Plant, Building Services, and Commercial Activity

7.8.28 The impact of proposed plant and any operational activities will be assessed following guidance from BS 4142:2014, based on information on the operating conditions and the levels of noise generated by the plant. If a schedule of plant or details of operational activities is not yet available suitable criteria for operational noise limits will be provided based on baseline noise measurements. Proposed assessment criteria are presented in Table 7.8-8.

Table 7.8-8 Magnitude of Impact for Fixed Plant, Building Services and Commercial Activity Noise

Magnitude of Impact	Difference between rating level ¹ and background level ²
Negligible	< 0 dB
Low	≥ 0 dB and < 5 dB
Medium	≥ 5 dB and < 10 dB
High	≥ 10 dB

1 - The rating level is the noise level attributable to the new source(s), plus penalties if the new source has tonal or intermittent characteristics;

2 - The background level is taken as the L_{A90} ; this is the ambient noise level in the absence of the source which is exceeded for 90% of the time.

Scope for Mitigation

- 7.8.29 The Proposed Development has the potential to give rise to noise and vibration impacts during the demolition and construction phase and noise impacts once complete and operational. Where appropriate, mitigation measures will be proposed to minimise the impact of the Proposed Development on surrounding sensitive receptors. The residual noise and vibration impacts, after the implementation of the mitigation measures, will be identified and their significance established.
- 7.8.30 BS 5228 provides practical information on construction noise and vibration reduction measures and promotes a 'Best Practicable Means' approach to noise and vibration control. Mitigation measures will help to further reduce the scale of construction phase noise effects at surrounding noise-sensitive receptors. BS 5228 does not state absolute limits for construction noise or vibration; therefore, the preferred approach is to reduce noise levels (where possible), but with due regard to practicality. Sometimes, a greater level of noise and/or vibration may be acceptable if the overall construction time and therefore length of disruption is reduced. Individual HGV movements, when in close vicinity to the Site, have the potential to cause disturbance to nearby receptors. It is therefore important that the routing and timing of vehicle movements is carefully managed.
- 7.8.31 Mitigation would be required to achieve the recommended internal and external noise levels in particular for the proposed residential uses. Suggested mitigation measures will include the use of appropriate glazing, ventilation and building fabric, internal room layouts, and locating more sensitive uses (e.g. residential units) away from dominant sources of sound. Mitigation measures to address rail vibration affecting the Proposed Development may include locating less sensitive uses (e.g. commercial units) at ground floor, or locating more sensitive uses (e.g. residential units) away from the boundary of Site nearest to the rail lines. Outline mitigation recommendations which will be provided in the ES.
- 7.8.32 Any proposed building service and fixed plant may have an adverse impact on sensitive receptors. However, these can be controlled by using noise control and mitigation measures to be confirmed during detailed design. The ES will provide recommendations for appropriate operational noise limits equivalent to a negligible effect. Note that specific plant noise assessments and mitigation requirements if necessary, will be undertaken during detailed design.

7.9 Socio-economics

Summary of Existing Baseline Context

- 7.9.1 The Site is located in the LBB, immediately west of and adjacent to Cricklewood railway station. The population of the LBB was estimated to be 392,140 in 2018 making it the most populated borough in London. This population is projected to increase by 16.5% to 456,800 in 2038. The LBB has a slightly lower proportion of working-age residents (64.2% of the total population is aged 16-64 years) than the average for London (67.5%), but a higher proportion than the average for England (62.8%)⁹⁹. The Site is currently occupied by retail outlets, including a large B&Q DIY Store, Pound Stretcher and Tile Depot.
- 7.9.2 The proportion of the population of the LBB which are economically active (75.8%) is slightly lower than the average recorded for both London (78.2%) and England (78.7%). The unemployment rate in the LBB (4.9%) is in-line with the London average (5.1%) but slightly higher than the average for England (4.2%)¹⁰⁰. The proportion of residents in the LBB that are qualified to NVQ Level 4+ (51.5%), is slightly lower than the average for London (53.1%) but still considerably higher than the average for England (39.0%).
- 7.9.3 The LBB is ranked as the 183th most deprived local authority in England (out of 317)¹⁰¹, meaning its slightly less deprived than average. However, there are wide variances in deprivation rankings across lower layer single output areas (LSOA) within the LBB. The LBB has a considerably smaller proportion of social or intermediate houses (12.5%) than that recorded both for London (22.8%) and England (17.3%) overall.
- 7.9.4 There are 63 GP surgeries within NHS Barnet Clinical Commissioning Group (CCG). The closest GP surgery is adjacent to the Site (the Cricklewood Health Centre) and there are several other GP surgeries in close proximity. The Site is also located approximately 900m away from Cricklewood Library which offers a wide variety of services.
- 7.9.5 The LBB contains many primary and secondary schools, including a number of private/independent sector establishments. The closest primary schools are St Agnes Roman Catholic Primary School, Childs Hill School and Anson Primary School, located approximately 270m, 300m and 630m away from the Proposed Development. The closest secondary school is Hampstead Secondary School, located approximately 500m south of the Site.
- 7.9.6 In 2015, there were 465.2 hectares of parkland within the LBB, comprising around 5.4% of the total area¹⁰². The Site is particularly close to Hampstead Cemetery, Clitterhouse Playing Fields and Gladstone Park, being located around 600m, 1km and 1.3km respectively away from the Site. There are also numerous smaller parks and green spaces accessible from the Site which offer child play space, allotment space and some space for outdoor sport.
- 7.9.7 Cricklewood Broadway, which can be accessed around 100m from the Site, offers a wide range of retail facilities, shops and restaurants. There are also several gymnasiums located within walking distance of the Site. The Manor Health & Leisure Club is located around 400m away on Cricklewood Broadway, which includes a swimming pool, exercise classes and a gymnasium.

Potential Impacts

- 7.9.8 The Proposed Development is expected to generate a range of socio-economic effects, some of which would be temporary (during demolition and construction), whilst others would be long-term/permanent (during operation). Further information on these potential impacts are provided below.

Demolition and Construction Impacts

- 7.9.9 The following temporary demolition and construction phase effects will be assessed:
- The employment generated through the demolition and construction of the Proposed Development, including direct, indirect and induced employment; and

⁹⁹ ONS (2018); Mid-Year Population Estimates.

¹⁰⁰ ONS (2019); Annual Population Survey (January 2018 to December 2018).

¹⁰¹ MHCLG (2019); English Indices of Deprivation (2019).

¹⁰² Barnet Borough Council (2016); Parks and Open Spaces, Our Strategy for Barnet 2016-2026.

- The employment lost through the demolition of any existing employment generating floorspace within the Site.

Complete and Operational Impacts

7.9.10 The impacts of the Proposed Development once complete and operational will be assessed in relation to their likely scale, nature and duration associated with the following:

- The net employment generated from the Proposed Development's employment-generating floorspace, including direct, indirect and induced employment including consideration of existing employment on-site (if relevant);
- The provision of new homes, including affordable homes in the context of existing policy and supply;
- Local expenditure arising from new residents at the Proposed Development;
- The role of the scheme in providing new and flexible office and community or leisure floorspace; and
- Impacts arising from the Proposed Development on social infrastructure in the area which could be used by any future residents, including primary health care (GP surgeries), primary and secondary education facilities, open space, child play space and leisure facilities.

7.9.11 On the basis of the potential impacts presented above, the assessment of socio-economic effects has been **Scoped In** to the EIA.

Outline Scope of Assessment

Establishing the Baseline

7.9.12 A baseline assessment will be undertaken as part of the Socio-economics ES chapter. The assessment will be a desk-based analysis of secondary data, key legislation and guidance, and will include a review of baseline indicators such as population, employment, the labour market and the regional and local economy. The assessment will also include a review of the existing provision of community infrastructure (i.e. primary and secondary education facilities, healthcare facilities, open and play space) that is in close proximity to the Site. This will be undertaken using established statistical sources including but not limited to:

- 2011 Census Data;¹⁰³
- Mid-Year Population Estimates (2018)¹⁰⁴;
- English Indices of Deprivation (2019)¹⁰⁵;
- Business Register and Employment Survey (BRES) (2018)¹⁰⁶;
- NHS General Practice Workforce data (2019)¹⁰⁷;
- Claimant Count Data (2019)¹⁰⁸; and
- Annual Population Survey (2018)¹⁰⁹.

Standards and Guidance

7.9.13 The socio-economic assessment will include a review of relevant policy at the local (LBB), regional (London) and national (England) level to identify the key issues of relevance to the Proposed Development. This will include the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), the London Plan, the Draft London Plan, Barnet's Local Plan and the Cricklewood, Brent Cross, and West Hendon Regeneration Area Development Framework SPG (2005).

7.9.14 The assessment will be carried out using a number of recognised data sources, and wherever possible the impacts of the socio-economic assessment will be appraised against relevant national standards

¹⁰³ ONS (2011); Census 2011

¹⁰⁴ ONS (2018); Mid-Year Population Estimates

¹⁰⁵ MHCLG (2019); English Indices of Deprivation (2019)

¹⁰⁶ ONS (2018) Business Register and Employment Survey

¹⁰⁷ NHS Digital (2019) General Practice Workforce Data

¹⁰⁸ ONS (2019) Claimant Count

¹⁰⁹ ONS (2019); Annual Population Survey (January 2018 to December 2018).

such as those provided by HM Treasury and the Homes and Communities Agency (now Homes England). Where relevant standards do not exist, professional experience and expert judgement will be applied and justified.

Impact Assessment Methodology

7.9.15 For the assessment of potentially significant impacts, consideration will be given to the Proposed Development in terms of the following:

- The role of the Proposed Development in the provision of market, BtR, and affordable housing (including meeting the annual residential build target for the borough);
- The role of the Proposed Development in the generation of direct and indirect employment opportunities at the local and regional level, during demolition and construction and complete and operational of the Proposed Development, including consideration of existing on-site employment displacement;
- The role of the Proposed Development in providing additional commercial floorspace in the context of existing policy and supply.
- Local expenditure arising from new residents at the scheme; and
- Impacts arising from the scheme on social infrastructure in the area which could be used by future residents, including primary and secondary education, primary health care facilities, open space and child play space;

7.9.16 The methodology for assessing socio-economic impacts will follow standard EIA guidance and will involve:

- Consideration of local policy, plans and development constraints;
- Assessment of the likely magnitude, permanence and significance of impacts; and
- An assessment of the residual and cumulative impacts of the scheme.

7.9.17 The assessment will consider the likely direct, indirect and cumulative impacts associated with socio-economics during the following phases: demolition and construction, as well as once complete and operational.

Assessment Criteria

7.9.18 For the assessment of socio-economics, policy thresholds and expert judgment are used to assess the magnitude and nature of the effects of the Proposed Development against baseline conditions. For socio-economics there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that 'significance' reflects the relationship between the magnitude of effect and the sensitivity (or value) of the affected resource or receptor.

7.9.19 As such, the potential socio-economic impacts have been assessed based on:

- *Consideration of sensitivity to effects:* specific values in terms of sensitivity are not attributed to socio-economic resources/receptors due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change and turnover, their likely capacity to accommodate additional demand, and functionality (if appropriate);
- *Magnitude of effect:* this entails consideration of the size of the effect on people as residents, employees, or users of resources, or businesses in the context of the area in which effects will be experienced; and
- *Scope for adjustment or mitigation:* the socio-economic study is concerned in part with economies. These adjust themselves continually to changes in supply and demand, and the scope for the changes brought about by the project to be accommodated by market adjustment will therefore be a criterion in assessing significance.

7.9.20 The assessment aims to be objective and to quantify potential impacts as accurately as possible. However, some impacts can only be evaluated on a qualitative basis. Effects will be defined as follows:

- **Beneficial:** classifications of significance indicate an advantageous or beneficial effect on an area, which may be minor, moderate, or major in effect;
- **Negligible:** classifications of significance indicate imperceptible effects on an area;
- **Adverse:** classifications of significance indicate a disadvantageous or adverse effect on an area, which may be minor, moderate or major in effect; and
- **No effect:** classifications of significance indicate that there are no effects on an area.

7.9.21 Based on consideration of the above, where an effect is assessed as being beneficial or adverse, the scale of the effect has been assigned using the below criteria:

- **Minor:** a small number of receptors are beneficially or adversely affected. The effect will make a small measurable positive or negative difference on receptors at the relevant area(s) of effect;
- **Moderate:** a moderate number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect; and
- **Major:** all or a large number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect.

7.9.22 Those effects which are found to be moderate or major are considered to be 'significant' and those which are minor are 'not significant'.

7.9.23 Duration of effect will also be considered, with more weight given to permanent changes than to temporary ones. Temporary effects will be considered to be those associated with the demolition and construction works. Permanent effects are generally those associated with the complete and operational Proposed Development. For the purposes of this assessment, short term effects will be considered to be of one year or less, medium term effects of one to four years, and long-term effects for five or more years.

Scope for Mitigation

7.9.24 This section should outline any likely mitigation measures to be incorporated within design, construction environmental management and over and beyond. These measures would be implemented to avoid, reduce, mitigate or offset any adverse environmental impacts of the Proposed Development, during demolition and construction or once complete and operational, as well as to maximise or enhance the beneficial effects of the Proposed Development.

7.10 Telecommunications (Electronic Interference)

Summary of Existing Baseline Context

- 7.10.1 The Site is currently occupied by a range of retail outlets, including a large B&Q DIY Store, Pound Stretcher and Tile Depot. These large warehouse buildings are situated in the south-western aspect of the Site. The northern and eastern aspects of the Site mainly consist of car parking associated with the above retail outlets, as well as soft landscaping adjacent to the railway lines, and the southern entrance to the Site. Additional retail properties are situated adjacent to the south-western boundary, including a large Co-Op supermarket, as well as numerous local business such as pharmacies, food take-aways, international supermarkets, barbers and other general stores. Towards the north-eastern boundary of the Site, a Travel Lodge, Cricklewood Timber and Building Supplies, Beacon Bingo, Jewson building materials supplier and a Tesco Direct Click and Collect. Residential properties are situated on the eastern boundary of the railway lines, southern boundary of Cricklewood Lane, western boundary of Cricklewood Broadway and to the north of the Travelodge, all within approximately 150m of the Site boundary.
- 7.10.2 With respect to sensitive receptors (in this case TV viewers and other wireless / telecommunications networks), it is expected that there will be several different technologies in use around the Site. The majority of television users will be located in residential areas; mainly to the immediate south, west and north-west. Wireless communication technologies and radio-based safety systems are likely to be employed at Cricklewood station, to the east of the Site.

Potential Impacts

- 7.10.3 Sensitive receptors may be affected by the construction and the complete and operational phases of the Proposed Development.
- 7.10.4 New tall buildings and structures have the potential to impact on radio, television and other telecommunications services as a result of shadowing and reflection effects caused¹¹⁰. Table 7.10-1 provides an appraisal of the services that could potentially be affected by the Proposed Development.

Table 7.10-1: Telecommunication and Broadcast Services Appraisal

Service	Key Outcomes
Analogue Terrestrial Television	Due to the completed Digital Television Switchover, it is now not possible for the Proposed Development to impact analogue terrestrial television reception, as analogue television transmissions were switched off throughout the London TV region during 2012.
Digital Terrestrial Television (DTT)	<p>DTT is more commonly known as 'Freeview'. The area is served by DTT services from the Crystal Palace transmitter (NGR TQ 33940 71220), located 18km south-east of the Site.</p> <p>In relation to Crystal Palace television transmissions, the signal shadows from the Proposed Development would be created to the north-west.</p> <p>Residential use is dominant to the north-west (in what will be the signal shadow area) and whilst it is anticipated that the Proposed Development would not significantly affect transmissions in the locality. If transmissions are adversely affected, the Applicant would investigate the complaints, and if deemed authentic and attributable to the Proposed Development, mitigation measures in the form of the provision of digital satellite or cabled TV broadcast receivers could be provided. Standard practice is to investigate the effects and impacts of a scheme on television reception, and this would normally be secured by means of an appropriately worded planning condition.</p>
Digital Satellite Television	Digital satellite television services (such as Freesat and Sky) are provided by geo-stationary earth-orbiting satellites positioned above the equator. For the optimum reception of all satellite TV services, all receiving dishes must be positioned on the highest possible part

¹¹⁰ Ofcom, 2009; Tall structures and their impact on broadcast and other wireless services

Service	Key Outcomes
	<p>of the rooftop to ensure views to the sky's south-east horizon are free from obstruction by other local skyline building 'clutter'.</p> <p>Should there be any roof mounted satellite signal receiver dishes on the adjacent locations where line-of-sight views to the serving satellites may be obscured by the Proposed Development (in a well-defined area to the immediate north-west of the Proposed Development), relocating dishes to higher locations or on roof tops where views to those satellites remain clear, would ensure the good reception of satellite television signals.</p>
Cable Television	<p>A number of 'TV over cable' operators exist in London. TV services are provided to a property via cables and decoded using a set top box or an integrated television set. Virgin Media, Sky and BT all provide such services. The availability of cable TV depends on provider's cable infrastructure. London has comprehensive coverage from most providers.</p> <p>As cabled TV services operate via wired broadband, fibre and ADSL, interference effects cannot occur due to the nature of content delivery (through a cable, underground) and there is no possibility of effects from the Proposed Development on these services.</p>
Very High Frequency (FM) Radio	<p>The reception of VHF (FM) broadcast radio services e.g. BBC Radio 1, Classic FM and Absolute Radio are unlikely to be affected by the Proposed Development due to the nature of the radio broadcast network, the methods used for the encoding and decoding of signals and the likely current good coverage provided by the local and regional VHF (FM) radio transmitters.</p>
Digital Audio Broadcasting (DAB) Radio	<p>The reception of DAB radio would not be affected by the Proposed Development as coverage is currently excellent throughout London and the DAB radio network is designed to operate well in densely developed urban environments.</p>
Mobile Phone Communications	<p>The area is served well by 2G, 3G and 4G mobile phone networks. Recently introduced 5G networks may also be available from some mobile network operators in the area.</p> <p>The Proposed Development is unlikely to have any impact upon the operation of mobile telephones. The cellular nature of a mobile telephone network enables each handset to 'pick' the best cell site to ensure the correct operation of the handset. At this location, mobile telephone coverage would be optimal and robust due to the nature of the commercial requirements in buildings within the wider area.</p>
Fixed Microwave Links and other point-to-point Radio Communications Channels	<p>Radio and microwave links can be adversely affected by obstructions on and near to their transmission path such as construction cranes, tall buildings and overgrown trees. In general, the directional nature of radio links means that interference can be avoided by defining clearance zones beyond which any degradation will be insignificant, or by moving the link to avoid the obstruction.</p> <p>Should any existing links be impacted upon because of the Proposed Development, standard mitigation options would be likely to comprise the:</p> <ul style="list-style-type: none"> ● Use of other radio scanner sites; ● Use of a radio relay site; ● Construction of a new base station site; ● Use of private circuits or satellite services; and ● Redefining of the exclusion zones by the use of aerial engineering. <p>The identification of the appropriate measures would be determined by a detailed review of the existing radio communications infrastructure at each base station, confirmation of the data for the services operated by the link's owner from the identified radio sites; and review of the theoretical analysis of the Proposed Development layout on the existing radio communication systems, to identify the exclusion zone for any affected radio infrastructure.</p>

Service	Key Outcomes
New Telecommunication Services within the Proposed Development	<p>It is noted that such standard mitigation measures can be readily implemented to ensure the continuing operation of links such that the Proposed Development is not considered likely to generate any significant residual effects on these services.</p> <p>However, due to the site's proximity to the Cricklewood Railway Station, it is advised that an assessment of potential impacts and effects on telecommunications networks is undertaken as it is considered that there will be a high number of radio links in use in the area for communications use. This assessment would also include any feedback from TfL and Network Rail as part of a consultation process.</p> <p>All new telecommunications services into the Proposed Development would consider the expected growth in internet traffic and would provide bandwidth for heavy simultaneous use. The 'e-infrastructure' would be designed well and easily upgradeable for a modern building.</p> <p>Any signal distribution systems would be designed to be future proof and the nature of such networks would ensure that no unwanted or uncontrolled electromagnetic emissions would occur. Any radio transmitters used within the Proposed Development (for example, Wi-Fi or maintenance needs) would be CE certified. A CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area, meaning that theand such products have undergone stringent radio emission testing for use within the UK.</p>

Demolition and Construction Impacts

- 7.10.5 During the demolition and construction phases, reception conditions will change for all wireless services and radio networks. The demolition process is likely to improve coverage temporarily around the Site. However, during the construction phase, reception conditions may deteriorate as the Proposed Development gains height. DTT and satellite TV reception may be adversely affected. Impacts to the operations of local telecommunications may occur.
- 7.10.6 Due to the phased nature of the Proposed Development, in order to understand if any predicted impacts or effects have occurred, pre-construction, mid-term and post-construction reception surveys are usually required to determine if any reception impairment has occurred. This can be achieved by comparing difference in signal data from each survey.

Complete and Operational Impacts

- 7.10.7 The occupation of the Proposed Development is unlikely to have any impacts or effects on radio, television or wireless network operation in the vicinity. The Proposed Development is likely to have similar impacts and effects upon television and wireless reception to those created during the final period of construction; DTT and satellite TV reception may be adversely affected and impacts to the operations of local telecommunications may occur.

Summary

- 7.10.8 As set out in Table 7.10-1, potential impacts on telecommunication services associated with the Proposed Development are limited to DTT and satellite TV reception. However, these could be readily mitigated by means of standard measures as listed in Table 7.10-1.
- 7.10.9 On this basis and combined with the orientation and scale of the Proposed Development in terms of sensitive receptors, it is unlikely the Proposed Development would result in any significant adverse broadcast or telecommunication interference effects. Therefore, it is proposed that a Telecommunication (also referred to as electronic interference) assessment is **Scoped Out** of the ES.
- 7.10.10 A separate report is to be submitted with the planning application which will set out the potential impacts upon local telecommunications networks (including critical infrastructure and radio networks owned by TfL and Network Rail), as required in the NPPF, existing London Plan and the Draft New London Plan. This will inform the requirement for any mitigation that may be required. It is also recommended that a pre-construction television reception impact assessment is undertaken, to be secured by means of an appropriately worded planning condition, which would also identify any suitable mitigation.

Scope for Mitigation

- 7.10.11 There is little that can be practically be done to reduce, offset or minimise interference during the design process. Due to the attenuating properties of all building materials, the presence of any structure (of any size or shape) can only reduce the quality and availability of radio signals around it and inside it, once complete. However, mitigation as noted in Table 7.10-1 could be implemented to reduce adverse impacts on DTT, satellite TV and operation of local communications.

7.11 Townscape, Visual and Built Heritage Impact Assessment

Summary of Existing Baseline Context

Current Baseline

Heritage

- 7.11.1 The Site does not contain any designated built heritage receptors, however there are several present in the surrounding context. The development of the Site has the potential to impact the setting of these receptors.
- 7.11.2 Built heritage receptors within a study area of radius of 1.5km are shown on the Figure 7.11-1. The key within Figure 7.11-1 outlines all the identified built heritage receptors within the study area. To summarise, there are: two Grade II* listed assets, 45 Grade II listed assets, 8 Locally Listed assets, 4 Conservation Areas and 2 Registered Parks and Gardens. Albeit, assets within close proximity to each other have been grouped to form a singular asset area within Figure 7.11-1. Within the assessment, the setting of built heritage receptors will be considered.

Townscape

- 7.11.3 Townscape is the “*built up area, including the buildings, the relationships between them, the different types of urban open spaces, including green spaces, and the relationship between buildings and open spaces*”, as defined in GLVIA3¹¹¹.
- 7.11.4 The existing townscape surrounding the Site comprises mixed townscape typical of a busy town centre location, with the majority of buildings in commercial, retail or residential use and reflecting the locality’s historic industrial and residential character. Substantially built up from the mid-C20, the area’s main thoroughfares, Cricklewood Lane, Cricklewood Broadway and Chichele Road, comprise late-Victorian buildings interspersed with early-C20 and post-war developments. These routes, along with the railway lines and station form a key feature of the area, and define movement through Cricklewood. Other important townscape features include green spaces, such as Cricklewood Green adjacent to the Site and Cricklewood Millennium Green, located to the north beyond the railway line. As above, the relevant heritage designations within the Application Site’s wider setting are shown in Figure 7.11-1.

Visual

- 7.11.5 The baseline study identifies individuals and/or defined groups of people within the area who will be affected by changes in the views. These are the ‘visual receptors’. The impacts of the proposals on strategic views as defined in the London View Management Framework¹¹² (LVMF) are also considered. The visual baseline is summarised in the Table 7.11-1.

Table 7.11-1 Summary of Baseline Conditions

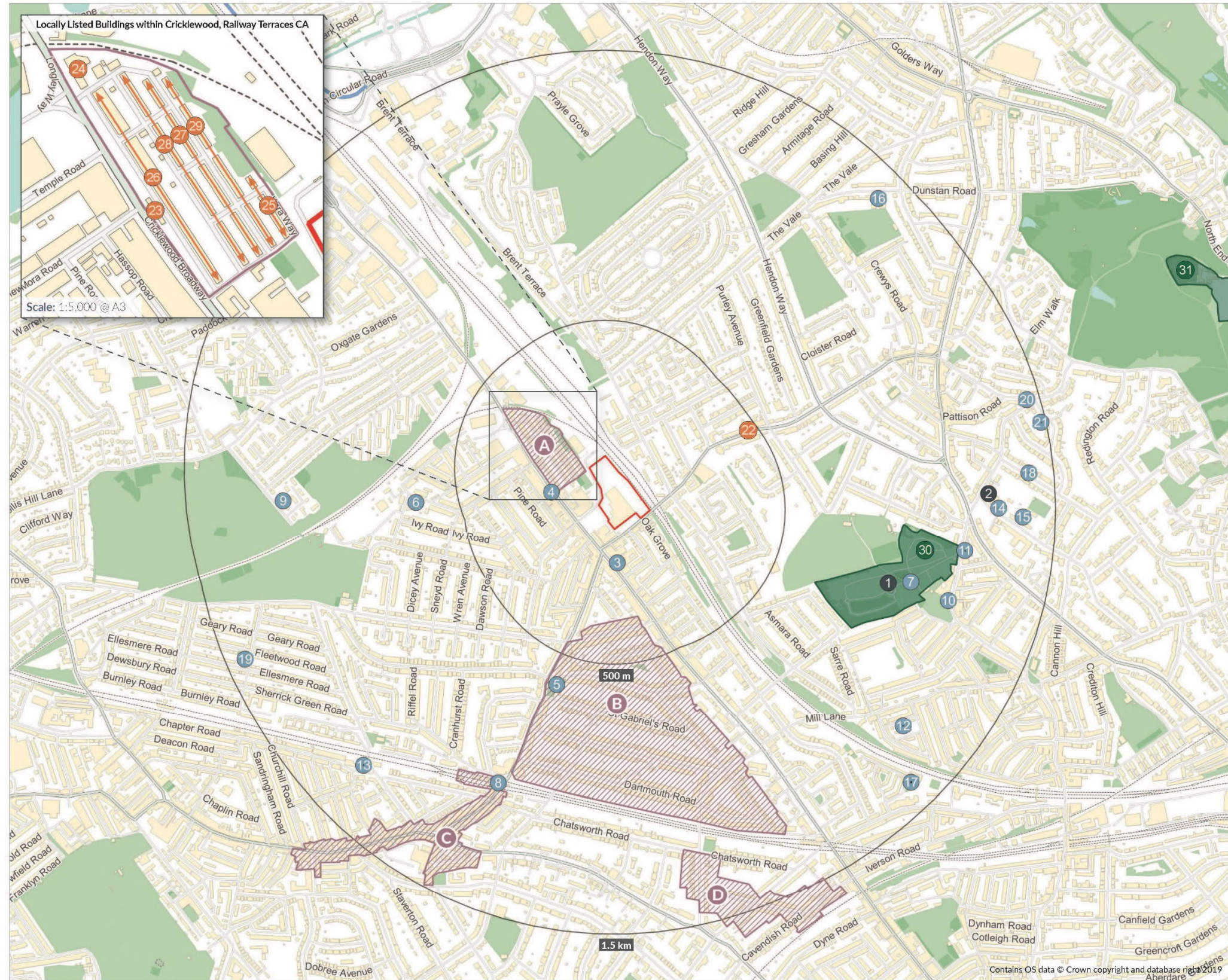
View	Location	Townscape Character	Heritage Assets	Visual Receptors	AVR Type
1	Clitterhouse Playing Fields looking South;	Green space Residential	N/A	Pedestrians Residents	Wire Line (AVR1)
2	Claremont Road/The Vale junction looking South;	Green space Residential	N/A	Pedestrians Road users	Wire Line (AVR1)
3	Hampstead Cemetery looking West;	Residential Educational	N/A	Pedestrians	Wire Line (AVR1)
4	Cricklewood Lane 01 (The Tavern) looking West;	Residential Commercial	The Cricklewood Tavern (Locally Listed)	Pedestrians Road users Residents	Wire Line (AVR1)
5	Cricklewood Station	Residential	N/A	Pedestrians Road users Commuters	Wire Line (AVR1)

¹¹¹ Landscape Institute, 2013, Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA);

¹¹² Greater London Authority, 2012, London View Management Framework Supplementary Planning Guidance (LVMF)

View	Location	Townscape Character	Heritage Assets	Visual Receptors	AVR Type
6	looking South-west; Oak Grove looking North-west;	Residential Commercial	N/A	Pedestrians Residents Road users	Wire Line (AVR1)
7	Elm Grove looking north-west;	Residential	N/A	Pedestrians Road users Residents	Wire Line (AVR1)
8	Cricklewood Broadway (The Crown Pub) looking North;	Commercial Residential	The Crown Public House (Grade II) Three Lamp Standards in front of the Crown Public House (Grade II)	Pedestrians Road users Residents Users of commercial premises	Wire Line (AVR1)
9	Chichele Road looking North-east;	Residential Place of Worship	N/A	Pedestrians Road users Residents Worshippers	Wire Line (AVR1)
10	Walm Lane/St Gabriel's Church looking North-east;	Residential Place of Worship	Brondesbury CA (Brent Council) Church of St Gabriel (Grade II)	Pedestrians Road users Residents Worshippers	Wire Line (AVR1)
11	Ashford Road looking North-east;	Residential	N/A	Pedestrians Residents Road users	Wire Line (AVR1)
12	Cricklewood Broadway looking South-east;	Residential Commercial	Cricklewood Railway Terraces CA (Barnet Council) 318 Cricklewood Broadway 1-6 Burlington Parade 1-40 Gratton Terrace	Pedestrians Road Users Residents Users of Commercial Premises	Wire Line (AVR1)
13	Railway Terraces Needham Terrace looking South-east;	Residential	Cricklewood Railway Terraces CA (Barnet Council) 1-40 Johnston Terrace 1-38 Needham Terrace	Pedestrians Residents Road users	Wire Line (AVR1)
14	Railway Terraces Allotments looking South-east;	Green Space Residential	Cricklewood Railway Terraces CA (Barnet Council) 1-14 Campion Terrace	Allotments Users Residents	Wire Line (AVR1)
15	Railway Terraces Johnston Terrace looking South-east; and	Residential	Cricklewood Railway Terraces CA (Barnet Council) 1-40 Johnston Terrace 1-38 Needham Terrace	Pedestrians Residents Road users	Wire Line (AVR1)
16	Railway Terraces Rockhall Way Gardens looking South-east.	Residential	Cricklewood Railway Terraces CA (Barnet Council) 1-40 Johnston Terrace 1-44 Midland Terrace	Pedestrians Residents Road users	Wire Line (AVR1)

Figure 7.11-1 Heritage Receptor Plan



HERITAGE RECEPTOR PLAN

- Application Site
- Conservation Areas**
 - A. Cricklewood, Railway Terraces (Barnet Council)
 - B. Brondesbury CA (Brent Council)
 - C. Willesden Green CA (Brent Council)
 - D. Mapesbury CA (Brent Council)
- Listed Buildings**
 - Grade II***
 - 1. Tomb of Marthe Goscombe John and Sir William Goscombe John in Hampstead Cemetery
 - 2. Church of St Luke and Annesley Lodge
 - Grade II**
 - 3. The Crown Public House and Three Lamp Standards in front of The Crown Public House
 - 4. Milestone Sited Outside Nos. 3 and 4 Gratton Terrace
 - 5. Church of St Gabriel
 - 6. Church of St Michael
 - 7. Hampstead Cemetery Mortuary Chapels
Monument to Martha Bianchi in Hampstead Cemetery
Tomb of Ardath De Sales Stean in Hampstead Cemetery
Tomb of Arnold Stuart and Family in Hampstead Cemetery
Tomb of Arthur Frankau and Family in Hampstead Cemetery
Tomb of Charles Barritt in Hampstead Cemetery
Tomb of Eleanor Adgey Edgar in Hampstead Cemetery
Tomb of Jacob Arnhold in Hampstead Cemetery
Tomb of James Wilson Pasha and Wife in Hampstead Cemetery
Tomb of Joan Moggridge in Hampstead Cemetery
Tomb of Joseph Maas in Hampstead Cemetery
Tomb of Marie Lloyd in Hampstead Cemetery
Tomb of Mordaunt Allen Gwynne in Hampstead Cemetery
Tomb of Sir Banister Fletcher and Family in Hampstead Cemetery
Tomb of Sir Joseph Lister in Hampstead Cemetery
Tomb of Sir William Randal Cremer in Hampstead Cemetery
Tomb of The Rider Family in Hampstead Cemetery
Tomb of The Storey Family in Hampstead Cemetery
 - 8. Willesden Green Underground Station
 - 9. Dollis Hill Synagogue and Forecourt Railings
 - 10. Pair of K2 Telephone Kiosks outside The Recreation Ground
 - 11. 128, Fortune Green Road
 - 12. Beckford Primary School, Attached Railings and Gateway, and Building approx 23m to East within Playground
 - 13. Kingsley Court
 - 14. St Lukes Church Vicarage
 - 15. Kings College: College Chapel, The Summerhouse, Kidderpore Hall, The Maynard Wing, and The Skeel Library
 - 16. Golders Green Synagogue
 - 17. Untitled [Listening] Sculpture
 - 18. 6, 8, 12, 14, 26, 26A, 33 and 35 Ferncroft Avenue
 - 19. Church of St Francis
 - 20. Cattle Trough at Junction with Hermitage Lane
 - 21. 17, Rosecroft Avenue
- Locally Listed (within 500m)**
 - 22. The Cricklewood Tavern (No.75 Cricklewood Lane)
- Within Railway Terrace CA (see insert):**
 - 23. 1-6 Burlington Parade
 - 24. 318 Cricklewood Broadway
 - 25. Nos.1-14 Campion Terrace
 - 26. Nos.1-40 Gratton Terrace
 - 27. Nos.1-40 Johnston Terrace
 - 28. Nos.1-44 Midland Terrace
 - 29. Nos.1-38 Needham Terrace
- Registered Park and Gardens**
 - 30. Hampstead Cemetery
 - 31. The Hill (Inverforth House)

Location: Cricklewood Lane

Date: July 2019

Scale: 1:15,000 @ A3

Figure:



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Potential Impacts

Demolition and Construction Impacts

Construction

- 7.11.6 The effects of the Proposed Development which occur during the construction period are likely to arise from the visual impact of demolition and construction activities, particularly the use of large items of machinery, hoardings, cranes, structures under construction and various operations. These activities have the potential to alter the existing townscape character and visual amenity of the Site and the surrounding townscape study area. Furthermore, , these activities can cause temporary effects on visual amenity, noise, vibration, and traffic.

Complete and Operational Impacts

- 7.11.7 The effects from the completed and operational Proposed Development are likely to arise from the introduction of new built form, including tall buildings, and intensification of built development on the Site, which again would have the potential to alter the existing townscape character, quality of the Site and the surrounding townscape locally, both beneficially and adversely.

Summary

- 7.11.8 On the basis of the information presented above and the nature/scale of the Proposed Development, a TVBHIA has been **Scoped In** to the EIA.

Outline Scope of Assessment

Establishing the Baseline

- 7.11.9 The ES will be informed by site observations and a desk-based review of relevant planning legislation, relevant policy and guidance. Similarly, it will be informed by characterisation studies, OS maps, a desk-based review of relevant heritage receptors, and an understanding of the concept design.
- 7.11.10 The study area will be informed by the visual envelope of the Site, building locations and heights, topography and townscape features, and an understanding of the scale of the Proposed Development.
- 7.11.11 The baseline study area for Townscape, Visual Impact and Built Heritage Assessment (TVIBHA) will comprise:
- All designated heritage receptors within a 1.5km radius of the Site boundary, including statutory listed buildings (Grade I, Grade II and Grade II*), Conservation Areas and Registered Parks and Gardens;
 - Locally listed buildings within a 500m radius of the Site boundary;
 - Townscape receptors within a 1.5km radius of the Site boundary; and
 - Visual receptors (with the potential for additional viewpoints as necessary following consultation with LBB and any further design iterations).
- 7.11.12 The framework for the identification of receptors has been prepared using the appropriate best practice guidance for each discipline, including:
- Guidelines for Landscape and Visual Impact Assessment (GLVIA)¹¹³;
 - An Approach to Landscape Character Assessment¹¹⁴;
 - Visual Representation of Development Proposals Technical Guidance Note 06/19¹¹⁵;
 - London View Management Framework Supplementary Planning Guidance (LVMF)¹¹⁶;
 - GPA2: Managing Significance in Decision-Taking in the Historic Environment¹¹⁷;

¹¹³ Landscape Institute. 2013, Guidelines for Landscape and Visual Impact Assessment, 3rd edn.

¹¹⁴ Christine Tudor, Natural England, 2014, An Approach to Landscape Character Assessment;

¹¹⁵ Landscape Institute, 2019, Visual Representation of Development Proposals Technical Guidance Note 06/19;

¹¹⁶ Greater London Authority, 2012, London View Management Framework Supplementary Planning Guidance (LVMF)

¹¹⁷ Historic England, 2015, Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment

- GPA3: The Setting of Heritage Assets¹¹⁸; and
- GPA4: Tall Buildings¹¹⁹

Standards and Guidance

7.11.13 The legislation, policy and guidance which is relevant to the consideration of environmental effects of the Proposed Development comprises the applicable statutory duties of the Planning (Listed Buildings and Conservation Areas) Act 1990, namely Section 66(1), as well as recent case law establishing the great weight which attaches to the avoidance of harm to designated heritage assets. Regard will also be had to the relevant policies contained within the statutory development plan, which comprises the London Plan (2016)¹²⁰ and LB Barnet's Core Strategy (2012)¹²¹ and Development Management Policies (2012)¹²² documents. The relevant policies are as follows:

- LP Policy 7.4 (Local Character)
- LP Policy 7.6 (Architecture)
- LP Policy 7.7 (Location and Design of Tall Buildings)
- LP Policy 7.8 (Heritage Assets and Archaeology)
- CS Policy CS2 (Brent Cross – Cricklewood)
- CS Policy CS5 (Protecting and enhancing Barnet's character to create high quality places)
- DMD Policy DM01 (Protecting Barnet's character and amenity)
- DMD Policy DM05 (Tall Buildings)
- DMD Policy DM06 (Barnet's heritage and conservation)

7.11.14 Along with the best practice guidance outlined at section 1.3.5, consideration will also be given to the Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework SPG (2005)¹²³.

7.11.15 With regard to emerging policy, the draft new London Plan¹²⁴ contains policies pertinent to the assessment of heritage, townscape and visual impact in Chapter 3 (Design) and Chapter 7 (Heritage and Culture). They broadly reflect existing policy and include Draft Policy D1 (London's form and characteristics) and Draft Policy HC1 (Heritage Conservation and Growth).

Impact Assessment Methodology

7.11.16 The EIA will address the following potential townscape, visual and built heritage impacts and their potential impacts:

- Temporary change in the setting of heritage assets, townscape character and views during demolition and construction works; and
- Permanent changes to the setting of heritage assets, local townscape and selected key views.

7.11.17 Effects relating to impacts upon air quality, noise and vibration and transport will be considered within their respective assessments.

7.11.18 The Townscape, Visual Impact and Built Heritage Assessment (TVIBHA) will be prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 and published best practice guidance using professional judgment.

Built Heritage

7.11.19 Where the Proposed Development may impact the surroundings in which built heritage receptors are experienced, a qualitative assessment will be made of whether, how and to what degree setting

¹¹⁸ Historic England, 2017, Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets;

¹¹⁹ Historic England, 2015, Tall Buildings: Historic England Advice Note 4.

¹²⁰ Greater London Authority (GLA), 2016, The London Plan – The Spatial Development Strategy for London Consolidated with Alterations Since 2011

¹²¹ London Borough of Barnet (LBB), 2012, Local Plan (Core Strategy)

¹²² LBB, 2012; Development Management Policies DPD

¹²³ LBB, 2005; Cricklewood, Brent Cross and West Hendon Regeneration Area Development Framework SPG

¹²⁴ GLA, 2019; The London Plan – Spatial Development Strategy for Greater London – Consolidated Suggested Changes. July 2019

contributes to the built heritage value of the receptor. The full assessment methodology will be provided in the relevant ES chapter, however, in brief, this assessment will be made using the following staged approach:

- First the built heritage value of each receptor will be assessed as part of the baseline assessment;
- Secondly, the sensitivity of the receptors and, subsequently, the magnitude of any impact will be assessed using professional judgment related to the receptors' susceptibility to change and the duration, extent and type of impact. Considerable weight will be given to the impact of the Proposed Development on identified built heritage receptors in undertaking this assessment;
- Thirdly, the assessment will combine the measures of built heritage value and magnitude of impact to provide a measure of the likely significance of effect. These effects range from no effect to major and may be beneficial or adverse; they are considered 'significant' when deemed to be moderate to major; and
- Once the Proposed Development's likely significance of effect on built heritage receptors is ascertained, consideration will then be given to the potential mitigation of any residual harm.

Visual

7.11.20 The following visual receptors are identified by GLVIA3 as being likely to be the most susceptible to change:

- Residents at home;
- People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focused on the landscape and on particular views;
- Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience; and/or
- Communities where views contribute to the landscape setting enjoyed by residents in the area.

7.11.21 Assessment viewpoints are identified based on a comprehensive review of the surrounding area, including the following criteria:

- Heritage receptors;
- Townscape character;
- Where the Proposed Development may be conspicuous;
- Where the Proposed Development may be visible from concentrations of residential areas;
- Open spaces (parkland, publicly accessible space);
- Potentially sensitive receptors (e.g. schools);
- Accessibility to the public;
- The viewing direction, distance and elevation; and/or
- Transport nodes.

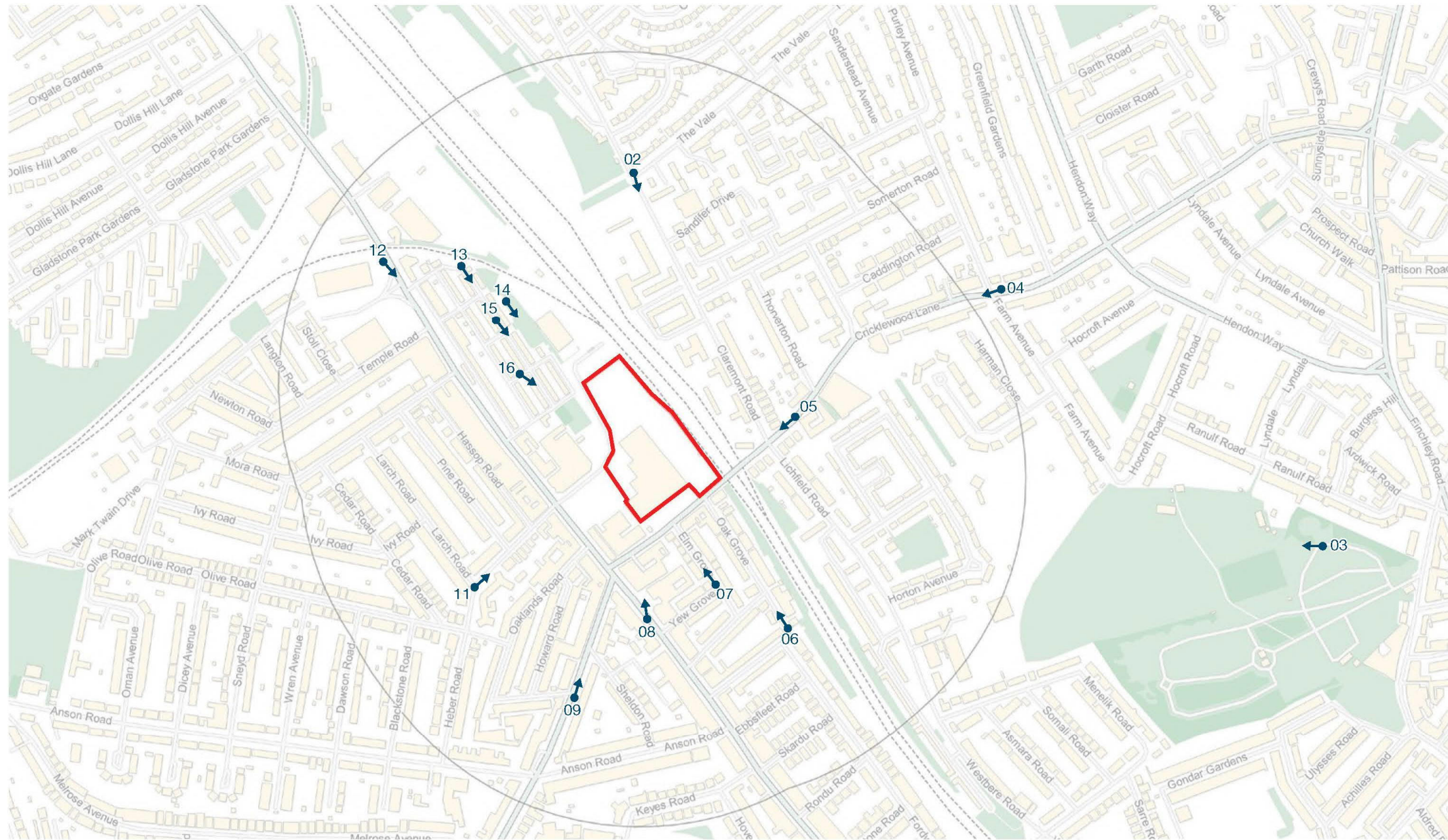
7.11.22 The identification of viewpoints adopted for the assessment has been developed with an awareness of the built context of the site; a list of views proposed for the assessment is appended at the end of this scope text. These are illustrated on the viewpoint location plan at Figure 7.11-2.

7.11.23 The study area is centred on the Site, and viewpoints limited to locations where the Site can be seen, or where the Proposed Development's height and massing has the potential to result in significant visual impact.

7.11.24 Viewpoints will be agreed with the LBB through receipt of the EIA Scoping Opinion and pre-application process. Viewpoint locations are to be informed by architectural and historic accounts of the area, an appraisal of the existing Site and surroundings, and relevant policy designations, with further viewpoints agreed if necessary. At present, 16 viewpoints have been agreed with the LBB, identified. Please refer to Table 7.11-1 and Figure 7.11-2.

Figure 7.11-2 View Location Plan

VIEW LOCATION MAP



CRICKLEWOOD LANE



- 7.11.25 In order to assess the full range of potential visual impacts of the Proposed Development, three separate Accurate Visual Representation ('AVR') images will be prepared from each viewing location selected:
- Existing: the view as it exists currently;
 - Proposed: with the Proposed Development inserted in wireline form; and
 - Cumulative: with the Proposed Development inserted in wireline form with cumulative developments shown in wireline form.
- 7.11.26 Images as proposed will take the form of AVRs produced by accurately inserting images of the Proposed Development created based on a three dimensional computer model of the Proposed Development into surveyed existing photograph. The view will show the Proposed Development diagrammatically, in a 'wireline' outline, due to the outline nature of the planning application.
- 7.11.27 For each of the identified views, a description of the view as existing will be given, providing an account of its character, quality, and sensitivity to change. A description of the view as proposed will then be given with a narrative assessment, based on the method outlined above, of the effect that the Proposed Development will have on the composition, quality and character of the view.
- 7.11.28 An overall assessment of cumulative effects (i.e. the effect of the Proposed Development taking into account other committed developments) will also be provided. The approach to cumulative assessment will consider the effects of the Proposed Development in combination with the cumulative developments. Where other committed developments in the wider area would be visible to a significant extent in the view, a further image showing these together with the Proposed Development will be produced, and a further assessment of the cumulative effects, if any, will be provided for each view.

Townscape

- 7.11.29 Townscape is the "built up area, including the buildings, the relationships between them, the different types of urban open spaces, including green spaces, and the relationship between buildings and open spaces", as defined in GLVIA3.
- 7.11.30 An initial assessment will define distinct and recognisable patterns of elements, or characteristics that make one area different from another, rather than better or worse. An assessment will be made of the Site and surrounding townscape in its existing state.
- 7.11.31 The objective of identifying the existing context is to provide an understanding of the townscape in the area that may be affected, this includes its constituent elements, its character and the way this carries spatially, its geographic extent, its history, its condition, the way the townscape is experienced, and the value attached to it.
- 7.11.32 This analysis will inform the division of the study area into townscape character areas; i.e. geographical areas which have readily identifiable characteristics in common.
- 7.11.33 The impact of the Proposed Development on the identified townscape character areas will be assessed, informed by conclusions drawn from the views analysis.
- 7.11.34 Professional judgement will be used to assess the impact of the Proposed Development on townscape receptors. This assessment will be carried out in line with the methodology and advice set out in GLVIA3 and the LVMF, using the following staged approach:
- An assessment will be made of the Site and surrounding townscape in its existing state and used to inform the division of the study area into townscape character areas; i.e. geographical areas which have readily identifiable characteristics in common; and
 - The impact of the Proposed Development on the identified townscape character areas will then be assessed, informed by conclusions drawn from the analysis of key views – this assessment will take into account the magnitude of change to the composition and character of an area as a result of the Proposed Development, with factors such as the proximity, scale and the contribution made by the Proposed Development to the composition of the area considered. The magnitude of the change resulting from the Proposed Development will be assessed as major, moderate, minor, negligible or no effect.

7.11.35 The assessment will also consider how potential impacts would vary with seasonal change and changes in atmospheric conditions where applicable. The sensitivity of the receptor as existing will be assessed as high, medium or low, depending on the importance, value and quality of the receptor. The assessment takes into account the contribution to the townscape or view of any listed buildings or conservation areas, and other areas, and the amenity value of the viewing location and the area in which it is located. The assessment of the sensitivity of the receptor under consideration is moderated to take into account a judgment about its quality.

Assessment Criteria

7.11.36 The sensitivity of a receptor to the Proposed Development is judged by calibrating the baseline value of the receptor and its susceptibility to change (i.e. the impact). Susceptibility is the ability of the receptor to accommodate change without undue consequences for the maintenance of the baseline situation, and/or the achievement of planning policies and strategies.

7.11.37 Construction related effects will be treated as less significant as they are considered to be temporary in nature. This approach is accepted practice as heritage values which are enduring are accepted to be capable of sustaining temporary intrusions without loss of intrinsic value.

7.11.38 At the operational phase, the Proposed Development will incorporate primary mitigation measures that have become embedded into the proposals. The mitigation measures employed are designed to prevent/avoid significant adverse effects through careful planning, access, layout and scale.

7.11.39 For effects which are judged to be minor, moderate or major, the effect has been further categorised as beneficial, neutral or adverse. Adverse effects are those that detract from the value of the townscape or view. This may be through the removal of valuable characterising elements, or the addition of new intrusive or discordant features.

7.11.40 Beneficial effects are those that contribute to the value of the area. This may be through the introduction of new positive attributes, for example, through improved legibility or setting.

7.11.41 A neutral effect would be one where townscape character, or the composition of a view, may change but its overall quality does not, or where the balance of positive and negative effects is finely balanced. Effects can be significant and neutral in quality terms, i.e. noticeably different but not better or worse in terms of quality.

7.11.42 Where the effect is minor, moderate or major, good design can reduce or remove potential harm or provide enhancement. Design quality may be the main consideration in determining the balance of harm and benefit.

Scope for Mitigation

7.11.43 Mitigation measures will be described within the ES Proposed Development Chapter, Design and Access Statement and the Design Code and would need to be implemented during the detailed design.

7.11.44 The design team has previously been advised on built heritage considerations, so that the masterplan design has reduced or removed harm to heritage receptors. Inherent mitigation measures for built heritage, townscape and visual receptors during the operation of the development could include the following:

- The high quality design of the proposed buildings, thus enhancing the existing general townscape of the area within the Opportunity Area. This is especially important in the design of tall buildings with regard to their impact upon the settings of designated heritage assets;
- Visually appropriate design materials to mitigate change to the immediate built environment;
- The provision of public benefits in terms of the increased level of accessibility and connectivity of the site with its wider surrounds; and
- Environmental improvements. These will be achieved as noted in the above points.

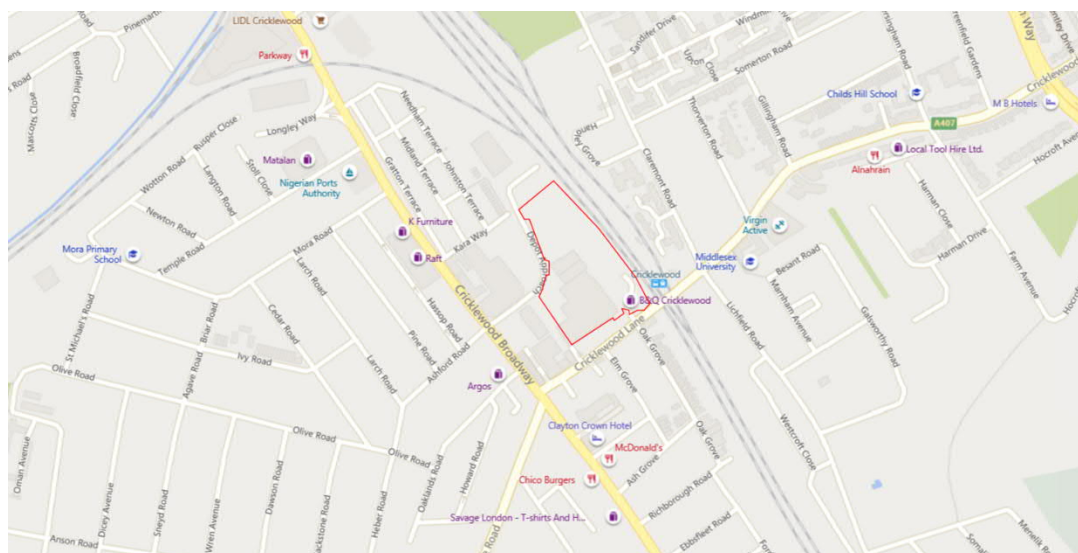
7.11.45 Mitigation measures to reduce the significance of construction effects will be agreed through a CEMP, secured via an appropriately worded planning conditions, prior to the commencement of works.

7.12 Traffic and Transport

Summary of Existing Baseline Context

- 7.12.1 Baseline traffic and transport conditions have been established from a combination of desktop studies, Site investigation and formal surveys. The Site is currently occupied by a retail warehouse (use class A1) owned and operated by B&Q. Two additional smaller retail warehouse units (Poundstretcher and Tile Depot) adjoin B&Q. The combined gross floor area (GFA) of the existing retail units is 7,990m².
- 7.12.2 The site location is shown in Figure 7.12-1 below.

Figure 7.12-1 Location Plan

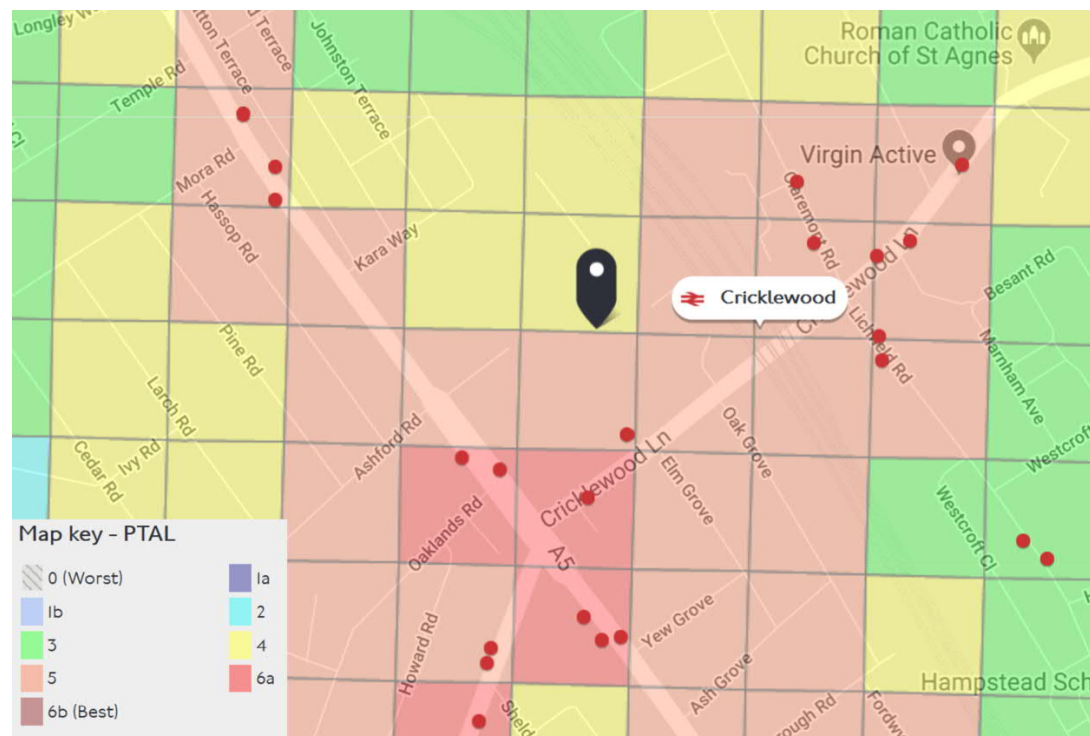


- 7.12.3 The existing Site use incorporates a car park with 470 car parking spaces. The Site has three vehicular accesses, one of which joins Cricklewood Lane (A407) whereas the other two join Depot Approach. The Cricklewood Lane access is a priority junction with a narrow ghost right-turn lane for drivers turning right into the Site, and a restricted-movements layout preventing right turns out of the Site. The two accesses onto Depot Approach comprise the service access and a second access into the car park. The service access takes the form of a wide bellmouth (to allow for large service vehicles) with gates at the back edge of the pedestrian footway. The service yard serves all three retail units situated within the Site. The car park entrance on Depot Approach is another wide bellmouth with entry and exit lanes divided by a central splitter island. The entry and exits are gated, and signage indicates that the private car park is for customer use with a maximum stay of three hours.
- 7.12.4 Site investigation indicates that 'We buy any car, Cricklewood' also trades from the Site and photographic evidence (Aug '14 - Jan '18) shows the small temporary office has been located within the car park for at least five years. In addition, 'The Lunch Box' is a mobile catering van which is also located within the car park.
- 7.12.5 Cricklewood Lane (A407) is a local distributor road joining the Cricklewood Broadway (A5) to the south west and Hendon Way (A41) to the north east.
- 7.12.6 Depot Approach is a private cul-de-sac serving a range of commercial premises including the Site, Beacon Bingo (premises and two car parks), Jewson building supplies, hand car wash, tyre supply and fitting business and a vacant development plot. Each of these businesses attract vehicular traffic in the form of customer cars and large service vehicles.
- 7.12.7 Depot approach takes access from Cricklewood Broadway (A5) by means of a four-arm signal controlled junction with yellow hatched box-junction markings.
- 7.12.8 All service vehicles visiting the Site currently use Depot Approach. Customers arriving at the Site from the north-west are most likely to use Depot Approach. Those arriving and departing to and from the north-east are most likely to use the Cricklewood Lane access. Those arriving from the south have a

choice of either access, but the right-turn ban out of the Cricklewood Lane exit means that all those leaving the Site to the south would use Depot Approach.

- 7.12.9 The Site is located in an area with a 2011 Public Transport Accessibility Level (PTAL) rating of 4 / 5. The PTAL rating for the Site takes into account the time taken to access the public transport networks. The methodology is based on a walk speed of 4.8km/hr (80m/min) and considers rail stations within a 12 minute walk (960m) of a site and bus stops within an 8 minute walk (640m). PTAL is categorised into six levels from 1 to 6 where 1 represents a low level of accessibility and 6 a high level. A PTAL contour plan is included below as Figure 7.12-2.

Figure 7.12-2 PTAL Contour Plan



- 7.12.10 The PTAL contour plan is based on 100m grid squares. This suggests the south-eastern portion of the Site is currently PTAL 5 whereas the north-western portion is PTAL 4. The lower PTAL rating at the north-western end of the Site is influenced by the walking distance to Cricklewood Station via Depot Approach. This walking distance would reduce if public access was formally allowed through the Site.
- 7.12.11 Transport for London describe PTAL 4/5 as a 'Good' level of accessibility, indicating that residents, staff or visitors in this location would not be solely reliant on travel by private car. This is a suitable location to promote travel by sustainable modes.
- 7.12.12 Committed transport improvements include LBB's planned upgrades to the Cricklewood Lane/Cricklewood Broadway junction, and the Cricklewood Lane/Claremont Road junction. Funding has been secured for these local improvements and work is planned to start in Q4 2019 or Q1 2020; however, further design work is currently being undertaken to improve the designs to comply with TfL Healthy Streets guidance.
- 7.12.13 The Brent Cross opportunity area will deliver substantial transport improvements. The Thameslink station quarter will bring forward the new Brent Cross West station which will link the Brent Cross Cricklewood development to King's Cross St Pancras in under 15 minutes. The new station is required to accommodate the additional travel demand generated by the opportunity area, but will also divert some existing rail passengers away from the existing Cricklewood Station.

Existing traffic flows

- 7.12.14 A detailed traffic study was carried out in June 2019. The traffic survey comprised peak hour manual turning counts at:

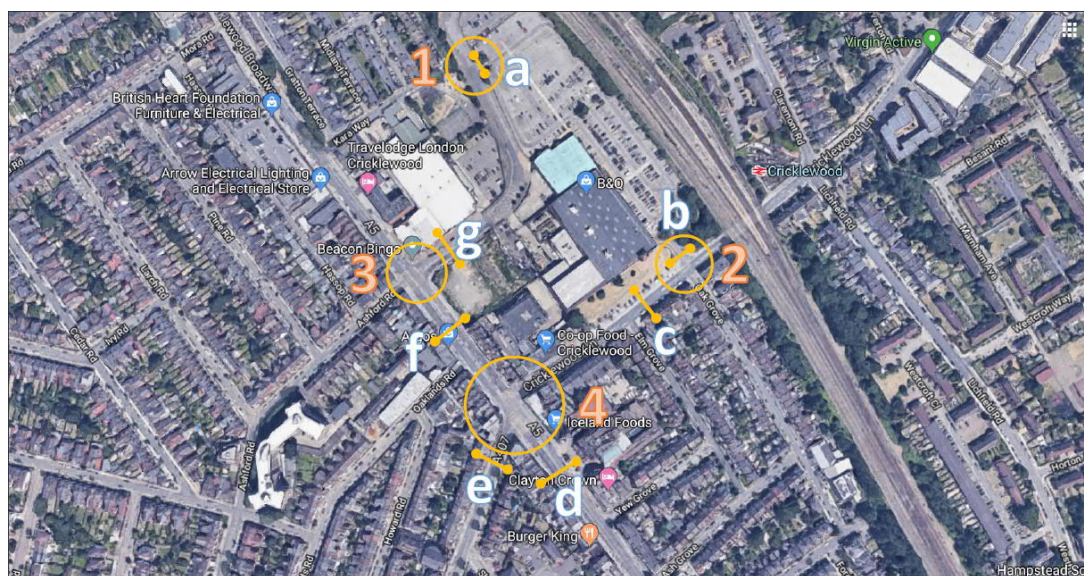
- North car park access;
- South car park access;
- Cricklewood Broadway (A5) j/w Depot Approach; and
- Cricklewood Broadway (A5) j/w Cricklewood Lane and Chichele Road (A407)

7.12.15 The traffic survey also included automatic traffic counts (ATC) in seven locations:

- North car park access;
- South car park access;
- Cricklewood Lane (A407);
- Cricklewood Broadway (A5) (SE);
- Chichele Road (A407);
- Cricklewood Broadway (A5) (NW); and
- Depot Approach.

7.12.16 The four traffic survey locations are illustrated in Figure 7.12-3 below.

Figure 7.12-3 Survey Locations



7.12.17 The observed baseline traffic flows are summarised in Table 7.12-1 below.

Table 7.12-1 Existing baseline traffic flows

Road link	Two way traffic (AADF)	Percentage HDV
North car park access	2075	7.7
South car park access	2516	2.4
Cricklewood Lane (A407)	14167	14.7
Cricklewood Broadway (A5)(SE)	21723	9.5
Chichele Road (A407)	11313	12.5
Cricklewood Broadway (A5)(NW)	24572	17.8
Depot Approach	1747	13.3

7.12.18 The traffic survey also specifically identified any traffic using the Site car park as a short-cut to avoid the Cricklewood Lane traffic signals. The survey identified 40 drivers cutting through the car park from Depot Approach to Cricklewood land during the morning peak hour (0800-0900) and 41 during the evening

peak (1700-1800). In the reverse direction, the survey only identified 2 or 3 vehicles during the peak hours.

Potential Impacts

7.12.19 The potential impacts associated with the type of development proposed for the Site can include:

- Disruption to road users due to construction activity;
- Disruption to bus services due to construction activity;
- Impacts on pedestrians and cyclists due to construction activity;
- The potential increase in traffic from residual car driver trips (operational phase);
- The potential increase in Site delivery activity (operational phase);
- Additional public transport use due to land intensification; and
- Additional walking/cycling activity due to land intensification.

7.12.20 It is therefore considered that the Proposed Development may affect:

- Operational capacity of road junctions;
- Highway safety;
- Public transport capacity;
- Pedestrian and cycle infrastructure capacity, journey time and level of crowding; and
- Severance, fear and intimidation, and journey times for pedestrians and cyclists as a result of any increased vehicular activity during construction and operational phases.

Demolition and Construction Impacts

7.12.21 The Proposed Development will be delivered in phases. Impacts during the demolition and construction phase on any future on-site occupants or users of parts of the Site while construction is still on-going will need to be considered as part of the demolition and construction assessment in the EIA. However, any quantitative modelling will only be undertaken for the peak year of construction that is considered to represent the worst-case scenario.

Complete and Operational Impacts.

7.12.22 It is noted that car parking provision for the complete and operational Proposed Development will comprise:

- 33 parking spaces for disabled residents (3%);
- 77 over-size parking spaces for residents (capable of being converted to additional disabled spaces (10% total)); and
- 12 operational spaces for commercial uses (capable of being standard or disabled spaces).

7.12.23 A total of 122 car parking spaces will be provide as part of the Proposed Development. Traffic generation resultant from the operational Proposed Development will therefore be low due to the suppressed level of parking provision when compared to the baseline of 470 car parking spaces, which reflects the highly accessible nature of the Site location.

7.12.24 An initial assessment of the traffic generation associated with the Proposed Development has been carried out by interrogating the TRICS database. Other development sites in London occupied by flats in private ownership were used to calculate the predicted traffic generation from the residential uses within the Proposed Development. The selection criteria resulted in surveys being selected from sites with parking provision at a ratio of 0.32 to 0.49 spaces per dwelling. This is significantly higher than the parking ratio for the Proposed Development. To address this, a trip rate per parking space was derived from the TRICS data (as opposed to a standard trip rate per dwelling).

7.12.25 Only operational parking is being proposed for the commercial uses of the Proposed Development. These spaces will be for essential staff, maintenance, disabled parking and potentially taxi drop-off. Due

to the nature of operational spaces, their turnover is extremely low, so an appropriately low trip rate per space figure has been applied to the operational spaces associated with the commercial and community uses. The resultant predicted traffic generation associated with the Proposed Development is as shown in Table 7.12-2.

Table 7.12-2 Operational parking predicted traffic generation for the Proposed Development

Time	Two-way Vehicle trips
0800-0900	42
1700-1800	29
Daily	312

7.12.26 The net change in traffic generation when comparing the existing use of the Site and the Proposed Development is shown in Table 7.12-3.

Table 7.12-3 Net reduction in vehicle trips

Time	Two-way Vehicle trips
0800-0900	-190
1700-1800	-249
Daily	-4,279

7.12.27 The redevelopment of the Site will result in a net reduction in daily vehicle trips on the local highway network, and a reduction in goods vehicle trips.

7.12.28 The TRICS database has also been interrogated to derive the predicted multi-modal travel demand associated with the Proposed Development. The results are shown in Table 7.12-4.

Table 7.12-4 Predicted multi-modal trips

Time	Vehicles	Car Passengers	Walk	Cycle	Bus	Rail
AM	42	63	193	4	116	123
PM	29	46	175	2	96	99
Daily	312	462	2046	57	980	901

7.12.29 The reduction in peak hour and daily vehicle trips is expected to have a positive effect on highway capacity and highway safety, details of which will be set out in detail in the Transport Assessment (TA) to be submitted in support of the planning application for the Proposed Development.

7.12.30 Irrespective of the above, full details of the traffic flows on the local highway network as well as existing and proposed Site traffic generation will be provided to LBB for inclusion in their assessment of planned local highway improvements.

7.12.31 The net change in multi-modal travel demand will also be set out in detail in the TA for each mode of travel in turn. The TA will assess number of pedestrians, cyclists and public transport passengers on each part of the transport network and determine the effects on that part of the network.

Summary

7.12.32 Given the potential for significant effects to occur as a result of the demolition and construction process, the assessment of potential effects from the construction of the Proposed Development on the operational capacity of road junctions; highway safety; severance, fear and intimidation, and journey times for pedestrians and cyclists have been **Scoped In** to the EIA.

- 7.12.33 As a result of the overall net reduction of trips generated by the operational Proposed Development, the assessment of likely significant effects on the capacity of the existing highways network during operation have been **Scoped Out** of the EIA.
- 7.12.34 The assessment of potential effects from the operation of the Proposed Development on highway safety; public transport capacity; pedestrian and cycle infrastructure capacity, journey time and level of crowding; severance, fear and intimidation, and journey times for pedestrians and cyclists have been **Scoped In** to the EIA.

Outline Scope of Assessment

Establishing the Baseline

- 7.12.35 The baseline traffic conditions have been established by means of a detailed traffic survey. The baseline multi-modal travel demand will be established by reference to the TRICS database for similar sites and Census (travel to work) data for Cricklewood. The study area for vehicle flows will be as shown in Figure 7.12-3 Survey Locations above. The study area for public transport will be contained to the interchanges closest to the Site. The study area for pedestrian and cycle movements will be determined by an Active Travel Assessment, included within the TA.

Standards and Guidance

- 7.12.36 The following policies and guidance is relevant to the Proposed Development, with regards to transport and will be considered in the Traffic and Transport ES chapter.

- Transport for London (TfL) Borough Planning Team transport assessment best practice guidance (TABPG);¹²⁵
- MHCLG Planning Practice Guidance – Travel Plans, transport assessments and statements in decision taking (2014);¹²⁶
- Guidelines for the Environmental Assessment of Road Traffic (1993);¹²⁷
- Mayor’s Transport Strategy (2018);¹²⁸
- The National Planning Policy Framework (2019);
- The London Plan (2016) and draft new London Plan (2017);
- The London Borough of Brent Local Plan; and
- The Brent Cross Opportunity Area Framework.
-

Impact Assessment Methodology

- 7.12.37 A TA will be undertaken by Entran Ltd for the Proposed Development in accordance with current local planning policies, including the London Plan, NPPF and the guidance given in TfL Transport Assessment Best Practice. The TA will include a four-part Transport Implementation Strategy (TIS) comprising a Framework Travel Plan, Delivery and Servicing Plan, Car Park Management Plan and Construction Logistics Plan. The detailed scope and methodology of the TA and TIS will be set out in a TA Scoping Report, which will be agreed with TfL and LBB.
- 7.12.38 The TA will outline the existing transport and access conditions at and surrounding the Site. This will include an evaluation of the accessibility of the Site and Healthy Streets conditions. It will also include an evaluation of the capacity of the surrounding highway network, including traffic flows and any planned improvements to the local network. The forecast number of multi-modal trips generated by the Proposed Development will be calculated. In addition, the TA will include an appraisal of pedestrian and cyclist access and movement through the Site and the surrounding area. The TIS will be taken into account as part of the Proposed Development and the residual effects on the transport network will be assessed.

¹²⁵ TfL, 2019, Borough Planning Team transport assessment guidance,

¹²⁶ MHCLG, 2014, Travel Plans, Transport Assessments and Statements,

¹²⁷ IEMA, 1993, Guidance Notes No1: Guidelines for the Environmental Assessment of Road Traffic

¹²⁸ TfL, 2018, Mayor’s Transport Strategy

- 7.12.39 The findings of the TA will be explained in the Traffic and Transport ES chapter, and the environmental effects of travel demand associated with the Proposed Development will be set out in accordance with the requirements of the EIA Regulations and current EIA good practice. Consideration will be given in the ES chapter to the likely significant impacts of demolition and construction traffic on the operation of the local highway, public transport and pedestrians and cyclists. Where necessary, measures will be identified to mitigate any adverse effects on transport and access. Mitigation measures may include 'soft' measures such as Travel Plan initiatives to reduce reliance on the private car and 'hard' measures such as infrastructure improvements.
- 7.12.40 The effects of construction traffic associated with the Proposed Development will be assessed in isolation, but also the cumulative effects of construction traffic when combined with cumulative schemes described in *Appendix A* will be considered.
- 7.12.41 As discussed above, the operational assessment of the Proposed Development will consider potential effects on highway safety, public transport capacity; pedestrian and cycle infrastructure capacity, journey time and level of crowding; severance, fear and intimidation, and journey times for pedestrians and cyclists. The effects of the Proposed Development will take account of the net increase in travel demand, but also the reduced walking and cycling distances and improved travelling environment to be delivered as an integral part of the Proposed Development.

Assessment Criteria

- 7.12.42 The magnitude of the potential impacts and residual impacts of the Proposed Development upon all transport modes will be assessed using the criteria in Table 7.12-5. These criteria have been based on the Guidelines for the Environmental Assessment of Road Traffic, published by the Institute of Environmental Assessment ('IEA'). Where specific criteria are not included in the IEA guidelines professional judgement has been used to outline the approach to categorising the magnitude of impacts identified within the TA as well as the effects of the whole Proposed Development.

Table 7.12-5 Impact Significance Criteria

Magnitude criteria	Definition of impact by category			
	Traffic	Public Transport	Walking and cycling	Construction traffic
High beneficial	No increase in traffic on any road with >60% reduction in daily and peak hour traffic flows on one or more roads.	>60% reduction in daily and peak hour passenger demand for public transport.	Walking and cycling actively promoted over other modes with on and off site facilities for pedestrians and cyclists enhanced.	Not applicable.
Medium beneficial	No increase in traffic on any road with 30%-60% reduction in daily and peak hour traffic flows on one or more roads.	30%-60% reduction in daily and peak hour passenger demand for public transport.	On and off site facilities for pedestrians and cyclists enhanced.	Not applicable.
Low beneficial	No increase in traffic on any road with 10%-30% reduction in daily and peak hour traffic flows on one or more roads.	10%-30% reduction in daily and peak hour passenger demand for public transport.	On site facilities for pedestrians and cyclists enhanced.	Not applicable.
Negligible	<10% change in daily and peak hour traffic flows on all roads.	<10% change in daily and peak hour passenger demand for public transport.	Facilities for pedestrians and cyclists neither enhanced nor degraded.	<10% change in daily and peak hour traffic flows on all roads.

Magnitude criteria	Traffic	Definition of impact by category		
		Public Transport	Walking and cycling	Construction traffic
Low adverse	10%-30% increase in either daily or peak hour traffic flows on any road.	10%-30% increase in either daily or peak hour passenger demand for public transport.	On site facilities for pedestrians and cyclists degraded.	10%-30% increase in either daily or peak hour traffic flows on any road.
Medium adverse	30%-60% increase in either daily or peak hour traffic flows on any road.	30%-60% increase in either daily or peak hour passenger demand for public transport.	On and off site facilities for pedestrians and cyclists degraded.	30%-60% increase in either daily or peak hour traffic flows on any road.
High adverse	>60% increase in either daily or peak hour traffic flows on any road.	>60% increase in either daily or peak hour passenger demand for public transport.	Other modes promoted over cycling and walking with on and off site facilities for pedestrians and cyclists degraded.	>60% increase in either daily or peak hour traffic flows on any road.

7.12.43 The combination of the sensitivity of the receptor and the magnitude of impact (in comparison to the existing baseline conditions), will be used to qualitatively assess the significance of the effect, as per Table 7.12-6. A level of significance will be assigned to both potential effects (pre-implementation of any mitigation not incorporated within the Proposed Development) and residual effects (following the implementation of any further mitigation to be conditioned).

Table 7.12-6 Impact Significance Criteria

Receptor Sensitivity	Magnitude of Change			
	High	Medium	Low	Very Low / Negligible
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Scope for Mitigation

7.12.44 Likely mitigation measures to be delivered by the Proposed Development include:

Hard measures

- New pedestrian and cycle links within and through the Site to enhance sustainable travel opportunities for the Proposed Development and wider opportunity area;
- Improvements to existing public transport facilities;
- Improved off-site pedestrian and cycle infrastructure;
- Improved off-site public transport infrastructure; and
- Site access safety improvements.

Soft measures

- Framework Travel Plan to influence sustainable travel behaviour;
- Delivery and Servicing Plan to manage and control the movement of goods and materials to and from the Site, to promote sustainable travel patterns and modes;
- Car Park Management Plan to regulate the use of on-site parking facilities, to make efficient use of land and to prevent any potential to displace parking onto the public highway; and
- Demolition and Construction Management Plan to control and regulate the movement of materials to and from the Site during the construction phase, to promote considerate operational practices, sustainable travel patterns and modes.

7.13 Waste and Recycling

Summary of Existing Baseline Context

- 7.13.1 The Proposed Development will provide residential accommodation, a mix of commercial, retail non-residential institutions and leisure purposes, along with a new internal road network. It is anticipated that the waste streams described in Table 7.13-1 will be generated by the Proposed Development during the demolition, construction and operational phases.

Table 7.13-1 Anticipated Waste Arisings from the Proposed Development

Waste Stream	Description	Responsibility
Construction Demolition and Excavation Waste (CD&E)	Waste arisings from construction, demolition and excavation of building and structures, including roads within the application boundary. CD&E waste consists of mostly of inert materials (i.e. brick, concrete, hard core, subsoil and topsoil, vegetation), in addition to timber, metals, plastics and (occasionally) hazardous materials.	CD&E waste generated during the construction phase will be managed by commercial waste operators/principle contractor
Commercial Waste	Waste generation by premises used wholly or mainly for the, retail, leisure, restaurant and cafe purposes (this waste stream excludes households or industrial waste).	LBB can provide commercial waste services at an additional cost. Arrangements can also be made with private waste management companies for this type of collection.
Hazardous waste	Waste that exhibits properties which render the material dangerous to the environment and/or human health. Under the Waste Framework Directive ¹²⁹ , hazardous waste is waste which exhibits one or more of the fifteen specified hazardous properties.	Services to receive such wastes must be provided at Civic Amenity (CA) or Household Waste Recycling Centre (HWRC) sites. A London-wide collection scheme for domestic hazardous waste is provided by City of London Corporation on behalf of all London Boroughs with the exception of Hillingdon. For all other hazardous waste, it is the responsibility of the waste producer to arrange for collection and disposal.
Litter	Waste generated on streets and other open areas either deposited in collection receptacles (i.e. litter bins) or on the ground.	Under the Environmental Protection Act 1990 ¹³⁰ (the EPA 1990) Waste Collection Authorities have a responsibility to prepare 'Litter Plans' that outline how they intend to deal with litter when it arises. All land for which LBB assumes responsibility will be graded and allocated a response time for dealing with litter. Litter falling on private land is the responsibility of the land owner.
Mixed Dry Recyclables (MDR)	MDR is the term for a collection of solid materials that can be sorted and collected in one bin. These materials	Residential MDR is the responsibility of LBB. Commercial MDR is the responsibility of private waste

¹²⁹ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and repealing certain Directives (Waste Framework Directive)

¹³⁰ Environmental Protection Act 1990

Waste Stream	Description	Responsibility
	include cardboard, paper, newspaper, plastic containers, plastic bottles, steel and aluminium cans and can be derived from households or commercial properties. Depending on who is responsible for the collection of the MDR (local authorities or private contractor) other materials may also be categorised under this term (e.g. glass).	management companies, however can be collected by LBB at an additional cost.
Organic Garden Waste	Waste that is organic in nature and generated from horticulture and gardening activities including grass clippings, tree pruning and fallen leaves; this waste type does not include food waste.	Green waste from private land is the responsibility of the land owner. Residents are provided a free fortnightly collection of garden waste from LBB. In public land and adopted roadways responsibility falls to LBB for removal.
Organic Food Waste (i.e. kitchen waste)	Waste that is organic in nature and comprises mainly food; cooked or uncooked from kitchens and other catering establishments. Food waste from retailers is also classified as putrescible. The treatment of putrescible wastes must be carried out in accordance with the Animal By-product Regulations 2011 ¹³¹ .	Separately collected putrescible waste is not current provided to households from LBB. Organic food waste is currently required to be disposed of with residual waste, however the council suggest this will change within the future. Such waste from private or commercial sources the collection is the responsibility of the land owner.
Residual Waste	Residual waste is the remaining waste material after the separate diversion of waste components through reduction, reuse, recycling, home composting and/or garden waste and food waste collections.	Residential residual waste is the responsibility of LBB. Commercial residual waste is the responsibility of private waste companies, however can be collected from LBB at an additional cost.

7.13.2 North London Waste Authority (NLWA) is the statutory joint waste disposal authority for North London and as such is responsible for the disposal of waste collected by seven North London boroughs including: Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest.

7.13.3 From reviewing the Mayor of London's Waste Map¹³², it is understood that the NLWA has 54 waste management facilities. These facilities deal with a range of waste types including Household, Industrial and Commercial (HI&C) waste, CD&E (Inert) and Hazardous waste. The total licensed waste management capacity within NLWA (excluding the Hazardous Waste) is 8,295,991 tonnes and the available waste management capacity is 4,814,415 tonnes.

¹³¹ HMSO, The Animal By-product Regulations (2013)

¹³² Mayor of London [Date accessed: 2019], Waste Map: <https://maps.london.gov.uk/waste/>

7.13.4 Table 7.13-2 provides details of the capacity of the existing waste infrastructure within NLWA.

Table 7.13-2 Existing Waste Infrastructure Capacity in LBB

Waste Type	Facilities	Licensed Tonnages	Available Capacity
HI&C	31	5,817,326	3,701,879
CD&E	23	2,478,665	1,112,536
Total	11	8,295,991	4,814,415

**These figures have been taken from the Mayor of London's Waste Map¹³² and doesn't include the Hazardous waste management facilities*

- 7.13.5 The EU Waste Framework Directive (2008/98/EC)¹²⁹ sets targets to achieve high levels of resource efficiency, including the following:
- By 2020 achieving 50% recycling rates (by weight) of the overall waste generated by households; and
 - By 2020 achieving minimum 70% (by weight) re-use, recycling and recovery of non-hazardous CD&E waste.
- 7.13.6 The London Plan (2016)¹³³ (updated 2017) sets out an apportionment target for the LBB to manage the following:
- 90,000 tonnes of Household (HH) waste per annum by 2026; and
 - 124,000 tonnes of Commercial & Industrial waste by 2026.
- 7.13.7 LBB Core Strategy¹³⁴ aims to manage Barnet's waste in accordance with the targets presented in the EU Waste Framework Directive (2008/98/EC) and with the waste apportionment set out in the London Plan (2016). LBB's Core Strategy aims to do this by identifying suitable areas for new waste management facilities. LBB aims to investigate new technologies and management techniques to avoid sending waste to landfill.

Potential Impacts

Demolition and Construction Impacts

- 7.13.8 During the construction works waste will be generated on-site, with the highest quantities of waste typically generated during demolition and earthworks. Materials that are brought to the Site could also end up as waste due to over-ordering or damage, if inappropriately stored.
- 7.13.9 If off-site disposal of CD&E waste is required, the associated environmental impacts may include an increase in traffic movements and associated impacts on air quality and noise (impacts which are considered within their respective assessments as outlined within this EIA Scoping Report); the use of landfill void space leading to a reduction in local or regional landfill capacity, and a non-compliance with meeting local, regional and national waste strategy targets. It is possible that excavation works may also result in the generation of contaminated soils which could be hazardous, requiring off-site treatment and/or disposal (which will be considered as part of the ground conditions assessments).
- 7.13.10 Other potential construction phase environmental impacts are associated with the extraction and transport of primary raw materials, the manufacture of products, and their subsequent transport to the construction site, resulting in the depletion of natural resources and contribution to greenhouse gas emissions from energy intensive extraction and/or processing.
- 7.13.11 As the Proposed Development will be constructed on land with pre-existing buildings, demolition works are anticipated to take place on the site for all buildings; B&Q, Pound Stretcher, Title Depot alongside three additional buildings South of B&Q. As a result of the construction, demolition and excavation works

¹³³ Greater London Authority (2016), The London Plan

¹³⁴ London Borough of Barnet (2012), Barnet's Local Plan (Core Strategy)

on the Site, a large quantities of CD&E waste is likely to be produced during this phase. CD&E activities on-site will be undertaken in accordance with principles of the Waste Management Plan for England (2013)¹³⁵ the National Planning Policy for Waste (2014)¹³⁶ and the Waste and Resources Strategy for England (2018)¹³⁷. A key aim during the construction phase will be to reduce the amount of waste that is generated and exported from the Site. This approach complies with the waste hierarchy, as set out in the Waste Framework Directive (2208/98/EC)¹²⁹, where the intention is first to prevent waste arising, the reuse and recycling, before finally as a last resort, disposing of waste off-site via recovery or landfill as necessary.

- 7.13.12 Precise quantities of CD&E waste arising from the Proposed Development cannot be estimated at this stage as these will be based upon a number of factors that include construction methodologies and the nature of the materials used. However, initial estimated of the quantities of CD&E waste have been provided.
- 7.13.13 Based on the Building Research Establishment (BRE) Smartwaste Data¹³⁸ for the construction waste, a worst-case assumption has been applied across the Proposed Development. outlines the methodology used to calculate construction waste. The anticipated commercial Gross External Areas (GEA) equals **699 m²**, residential GEA equals **97,545 m²**, and other space such as ancillary, shared amenities and community space equals **10,310 m²**. As this is a residential led development, the construction waste arisings from the Proposed Development has been based on the factor (tonnes per 100 m²) as provided in Table 7.13-3. It should be noted that that the GEA's applied represents a maximum parameter of the Proposed Development. For demolition data the Waste and Resources Action Programme (WRAP's) demolition quantities estimator¹³⁹ has been used and applied at a high level to all existing buildings on the Site. Table 7.13-4 provides the anticipated quantities of construction and demolition waste arisings from the Proposed Development.
- 7.13.14 The Proposed Development will be delivered in phases, as described in *Section 3* of this EIA Scoping Report. Due to this, both demolition and construction will be completed over a time period of approximately five years. CD&E waste has been calculated per year in order to show realistic waste arisings for the Proposed Development in comparison to available capacity.

Table 7.13-3 Construction Waste Arisings Methodology for the Proposed Development

Area	GEA (m ²)	Land Use (assumed for waste calculations)	Average tonnes of waste (100 m ²)
Overall Site	108,554	Residential	16.8

**Please note that for the purpose of calculating construction waste, the Proposed Development is considered as a residential led development. GEA has been taken from the document named: 'Scheme Overview 10965-EPR-XX-XX-SD-A-SD-0001'*

Table 7.13-4 Demolition and Construction Waste Arisings

Type of Waste	Waste Material Location	Anticipated Waste Arisings Per Year (tonnes)	Anticipated Total Waste Arisings (tonnes)
Demolition Waste	Proposed Development	6,409.836	32,049.180
Construction Waste	Proposed Development	3,647.414	18,237.072
Total	Proposed Development	10,057.25	50,286.252

¹³⁵ Her Majesty's Stationery Office, (2013), Waste Management Plan

¹³⁶ Her Majesty's Stationery Office, (2014), National Planning Policy for Waste

¹³⁷ Her Majesty's Government, (2018), Our waste our resources: A strategy for England

¹³⁸ Building Research Establishment, (2012), Waste Benchmark Data;

http://www.smartwaste.co.uk/filelibrary/benchmark%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2012.

¹³⁹ Waste and Resources Action Programme [Date accessed: 2019], Demolition Quantities Estimator, Net Waste Tool.

**Demolition waste has been calculated using average floor heights of 5m for ground floor and 3m for additional floor to assume building heights.*

- 7.13.15 Assuming a worst-case scenario of CD&E waste being disposed within NLWA, it is to be noted that 10,057.25 tonnes per year of waste are estimated to be generated from the Proposed Development's CD&E activities. When compared to the available capacity for disposal/treatment of CD&E waste within NLWA the estimated waste arisings from the Proposed Development is likely to represent 0.4% of this available capacity. The overall CD&E waste produced by the Proposed Development over the duration of the demolition and construction phase will produce a total of 50,286.252 tonnes of CD&E waste. When compared to the available capacity for disposal/treatment of CD&E waste within NLWA the estimated waste arisings from the Proposed Development is likely to represent 4.6% of the available capacity. Furthermore, within NLWA the CD&E waste requiring off-site treatment or disposal is likely to be managed by private waste contractors that typically operate on a regional basis both within, and outside, of Greater London. It is therefore unlikely that there will be any significant effects during the yearly phased construction and demolition of the Proposed Development on the local waste infrastructure.
- 7.13.16 Given the availability of sufficient waste management infrastructure/facilities to manage the types (as provided in Table 7.13-1 and Table 7.13-2) the anticipated quantities of waste to be generated during the CD&E phases of the Proposed Development (as provided in Table), it is unlikely that there will be any significant impacts on the local waste infrastructure and the environment as a result of the Proposed Development.
- 7.13.17 Whilst the Site Waste Management Plan Regulations (2008) were revoked as of 1 December 2013, producing a Site Waste Management Plan (otherwise known as an outline construction site waste management plan (CRMP)) for new developments is considered best practise and is a requirement of the London Plan 2016¹³³. It is therefore envisioned that a CRMP and a Construction Environment Management Plan (CEMP) will be a conditioned requirement of the planning application. The CRMP will set out the principles for construction waste management, identify measures to minimise waste by design, estimate construction waste quantities, set targets for waste minimisation and a framework for construction waste monitoring that the contractor will be required to implement on site. Furthermore, the CRMP will consider waste legislation and relevant planning policies, set out within the London Plan 2016¹³³ to ensure that construction waste from the Proposed Development is managed in line with the legal requirements and relevant planning policy objectives.
- 7.13.18 Design development will seek to design out the generation of waste, where possible (e.g. by achieving a cut and fill balance, incorporating site-won materials within design etc.), and designing out waste workshops that can be held to facilitate this process. Material selection during design development will seek to consider durability, incorporation of recycled materials, and the embodied carbon content of materials. The selection of materials will demonstrate how material resource efficiency has been maximised.

Complete and Operational Impacts.

- 7.13.19 The new residential, retail and commercial units will result in the generation of various types of waste once the Proposed Development is occupied. It is anticipated that operational waste will mainly comprise of household, retail and commercial waste and will be managed within the existing waste infrastructure located in the NLWA.
- 7.13.20 Based on the current land usage and area of the Proposed Development, (Table 7.13-5) shows the anticipated residential quantities of waste to be generated from the Proposed Development on a weekly basis. Waste airings for the residential units of the Proposed Development have been calculated based on LBB's guidance "Information for developers and architects, Provision of Household Recycling and Waste Service"¹⁴⁰. The 1,200 residential units will comprise of a mixture of one, two and three- bedroom units, however the exact mix is not yet known. Due to this, waste arisings have been calculated based on an assumption of two-bed average.

¹⁴⁰ London Borough of Barnet (2019), Information for developers and architects: Provision of Household Recycling and Waste Services.

Table 7.13-5 Anticipated Weekly Waste Arisings for Residential Waste

Units	Mixed Dry Recycling in Litres (L)	Residual (L)	Total (L)	Tonnes (per year)
1,200	204,000 L	204,000 L	408,000 L	~ 1,952

**MDR and Residual waste arisings have been calculated based on a weekly basis. Please note, this methodology is standard for collection by LBB. All litres have been converted to tonnes based on the following approximate densities: Mixed Dry Recyclables (MDR)- 84 kg/m³ (kilogrammes/ meters cubed) and Residual waste 100kg/m³.*

- 7.13.21 The commercial uses within the Proposed Development such as business, general industrial, non-residential institutions as well as the provision of possible retail and leisure will result in the generation of various types of waste once the Proposed Development is occupied. It is anticipated that operational waste will be comprised of commercial waste and will be managed by private waste contractors on behalf of the waste producers of site.
- 7.13.22 Based on the current land usage and area of the Proposed Development, Table 7.13-6 shows the anticipated commercial quantities of waste to be generated within the Proposed Development. Commercial waste arisings have been calculated based on methodologies produced in British Standards (BS) 5906:2005¹⁴¹ as seen in Table 7.13-6. Both retail and restaurant land uses have been used to calculate weekly commercial waste arisings. As commercial uses for the Proposed Development are not certain, a 50:50 split between restaurant (A3) and retail (A1) use for the Proposed Development has been used to calculate waste arisings, presenting a worst-case scenario. Table 7.13-7 highlights the commercial waste arisings for the Proposed Developments commercial land uses.

Table 7.13-6 Commercial Waste Arising Methodology

Land Use	Methodology	Waste Stream Split
Retail (A1)	10 L per m ² of Sales Floor Area (SFA)* per week	MDR : Residual 50 : 50
Restaurant (A3)	75 L per Cover per week with 1 Cover calculated as 1 per 3 m ² of NIA.	MDR : Food : Residual 50 : 30 : 20

**SFA is calculated as 2/3 of NIA (m²)*

Table 7.13-7 Combined Commercial Waste Anticipated Weekly Waste Arisings

Land Use	NIA	Working Capacity	MDR (L)	Food (L)	Residual (L)	Total	Tonnes (per year)
Combines A1 and A3	2,000 m ²	-	15,860	7,515	8,345	31,720	267.03
Total							

SFA is calculated as 2/3 of NIA (m²)

- 7.13.23 Assuming a worst-case scenario, it is to be noted that of the tonnes of waste (MDR – 84kg/m³ (kilogrammes/meters cubed), Food waste – 396 kg/m³ and Residual waste – 100 kg/m³) estimated to be generated from the operational commercial and retail uses of the Proposed Development each year, approximately 1,114.7061 tonnes of waste (~50 percent) will comprise of either recyclable or food waste i.e. in line with targets set out by LBB council for the year 2020. The 2,219.03 tonnes of per year when compared to the available capacity for disposal/treatment of HI&C waste within NLWA the estimated waste arisings from the Proposed Development is likely to represent 0.06 percent of available capacity.

Summary

¹⁴¹ British Standards Institute (2005), BS 5906:2005 Waste Management in Buildings- Code of Practise

- 7.13.24 Table 7.13-2) and the anticipated quantities of waste to be generated during operation of the Proposed Development (as provided in Table 7.13-5 and Table 7.13-7), it is unlikely that there will be any significant impacts on the local waste infrastructure and the environment as a result of the Proposed Development.
- 7.13.25 It is envisioned an Operational Waste and Recycling Management Strategy will be produced for the Proposed Development, which will provide further details on the weekly waste arisings, the number of bins required and how waste will be managed internally once the Proposed Development is occupied.
- 7.13.26 On the basis of the information presented above, the assessment for the demolition and construction and once the Proposed Development is occupied, waste and resource use arising from the Proposed Development has been **Scoped Out** of the EIA.

Scope for Mitigation

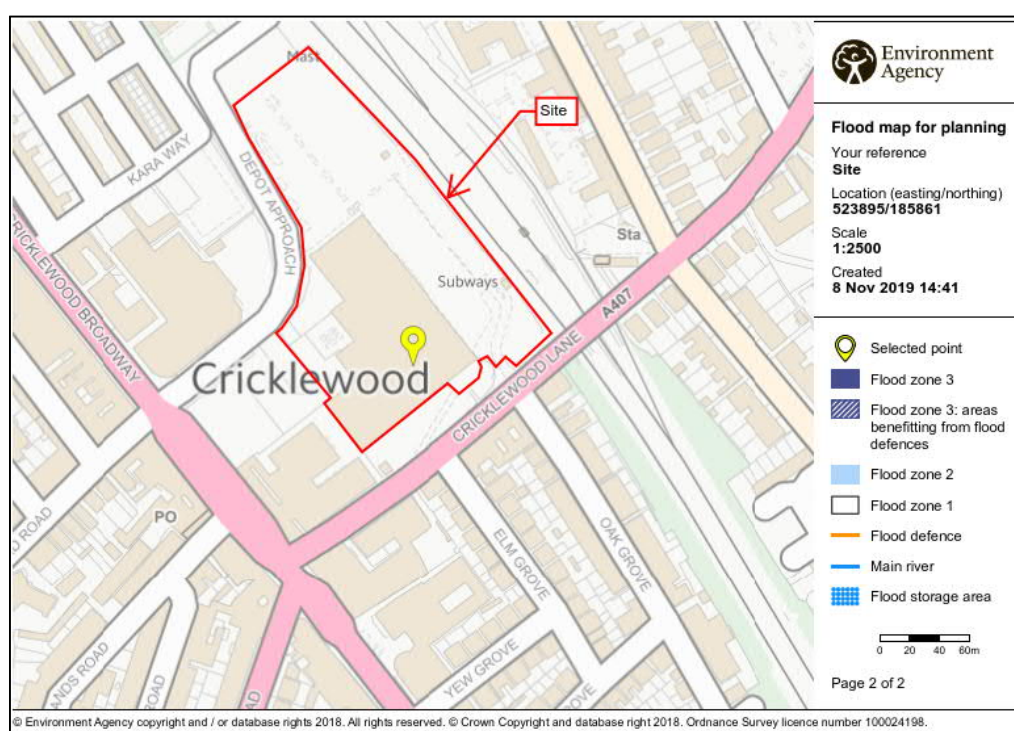
- 7.13.27 As discussed above, a CRMP will be secured through an appropriately worded planning condition in order to minimise the generation of waste throughout the construction and demolition phases of the Proposed Development. In order to minimise waste generation during the Proposed Development once occupied, an Operational Waste and Recycling Management Strategy will be prepared, and again, submitted with the planning application.

7.14 Water Environment

Summary of Existing Baseline Context

- 7.14.1 This section relates to identifying impacts on water resources, flood risk and drainage resulting from the Proposed Development. Consideration of the existing baseline relating to ground conditions and groundwater beneath the Site is presented in *Section 7.6: Ground Conditions and Contamination*.
- 7.14.2 The study area for this assessment includes the Site and a 1km radius from the Site in order to determine potential effects that the Proposed Development may have on water resources, flood risk and drainage within the vicinity of the Site.
- 7.14.3 The Site is located entirely in Flood Zone 1 (Figure 7.14-1), which is defined as an area of land that has less than 1 in 1,000 annual probability of river or sea flooding (<0.1% Annual Exceedance Probability, AEP).

Figure 7.14-1 Environment Agency (EA) Fluvial Flood Map¹⁴²



- 7.14.4 There are no natural watercourses either within close proximity to or within the Site. The closest open water body is the River Brent at 1.7km and Brent Reservoir situated approximately 2.15km to the north of the Site. There are no water quality monitoring stations within the study area. No abstraction licences or discharge consents have been identified within the study area.
- 7.14.5 The British Geological Society (BGS)¹⁴³ 1:50,000 Geological Map shows no record of superficial deposits within the Site. The BGS bedrock geological map indicates the Site is underlain by London Clay Formation (clay, silt and sand).
- 7.14.6 There are no recorded aquifer classifications for the Site. The Site does not lie in a source protection zone (SPZ). The nearby borehole records do not record any groundwater encountered.
- 7.14.7 The Site is mainly hardstanding comprising of existing buildings and associated car parking. The Site includes soft landscaping adjacent to the railway lines and southern entrance to the Site. The topography of the existing Site has a high point of approximately 55.99m Above Ordnance Datum (AOD) towards

¹⁴² Environment Agency, 8 Nov 2019; Flood map for planning. <https://flood-map-for-planning.service.gov.uk/>

¹⁴³ British Geological Society, 8 Nov 2019; Surface Geology. <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

the north of the Site and slopes towards a low point of approximately 52.10m AOD at the southern boundary.

Potential Impacts

- 7.14.8 The Proposed Development may impact the water environment during the demolition and construction phase and once it is complete and operational.

Demolition and Construction Impacts

- 7.14.9 Demolition and construction of the Proposed Development will be carried out in phases with part occupation occurring throughout this process. Therefore, there will be a reduced water supply demand due to part occupation onsite.
- 7.14.10 Below ground demolition/remediation/enabling works during demolition and construction may expose groundwater. However, the existing borehole records obtained from BGS do not identify shallow groundwater and the Site does not lie in a SPZ. Furthermore, a Construction Environment Management Plan (CEMP) secured via an appropriately worded planning condition will be produced for demolition and construction phase. The CEMP will include measures to prevent contamination of groundwater from demolition and construction activities. Therefore, the effect of groundwater pollution during demolition and construction is considered negligible.
- 7.14.11 There is potential impact on surface water quality from exposed construction materials, mobilisation of soils and accidental spillages of fuel and other contaminants. The CEMP will provide protective measures to retained drainage networks and minimise accidental spillages. The CEMP will also include requirements to ensure appropriate consents/permits are obtained for any construction-phase discharges of waste (including waste water) and permits obtained as necessary e.g. under the Environmental Permitting Regulations 2010 (as amended).
- 7.14.12 As the Site will only be partly occupied, foul water discharge from the Site will be low.
- 7.14.13 As the Site is in Flood Zone 1, the Flood Risk to the development is considered low.

Complete and Operational Impacts

- 7.14.14 As the Site is located in Flood Zone 1, the area is considered to be at a very low/low risk of fluvial/tidal flooding. The Proposed Development will be implementing Sustainable Drainage Systems (SuDS) and reduce water run off to Greenfield. Therefore, it is more likely the surface water runoff will be reduced.
- 7.14.15 There will be increased water demand through additional residential properties, retail and commercial areas. A full Thames Water assessment of the capacity of the existing network to supply the development has not yet been commissioned. This would be carried out once the design is further progressed and any necessary network improvements to the off-site network made on this basis. The development will also aim to meet the mains water consumption target of 105 litres or less per head per day (Policy 5.15 Water use and supplies within the London Plan). In addition, the Site is located within the Brent Cross – Cricklewood regeneration where a number of developments will be taking place over time and off-site infrastructure improvement works is expected as a result of these developments. The effect on off-site water supply infrastructure is therefore expected to be negligible.
- 7.14.16 There are no basements proposed for the Proposed Development at the time of preparing this EIA Scoping Report. The surface and foul water from the Site will discharge to nearest public drainage network. There is no evidence that either the foul or surface water sewer system are not functioning correctly. Therefore, it is considered that with appropriate design of surface and foul drainage systems that it is unlikely that there would not be any significant direct or indirect adverse impacts from flood risk to the Site or as a consequence of the Proposed Development. Therefore, effect on groundwater is expected to be negligible.

Summary

- 7.14.17 On the basis of the information presented above, an assessment of the potential impacts with regards to the surface water environment resulting from the demolition and construction, and the complete and operational Proposed Development have been **Scoped Out** of the EIA (Table 7.14-1).

Table 7.14-1 Water Environment Effects

Receptor	Effects	Scoped In/Out
Groundwater	Effect on groundwater quality is considered low	Out
Surface water	SuDS and reduced surface water flow rates will improve surface water quality and quantity	Out
Public drainage network	Increased foul water discharge to public drainage network Reduced surface water discharge to public drainage network	Out
Potable water supply resources	Increased water supply demand upon completion and operation	Out
Proposed Development	Flood risk to the development is considered low.	Out

Scope for Mitigation

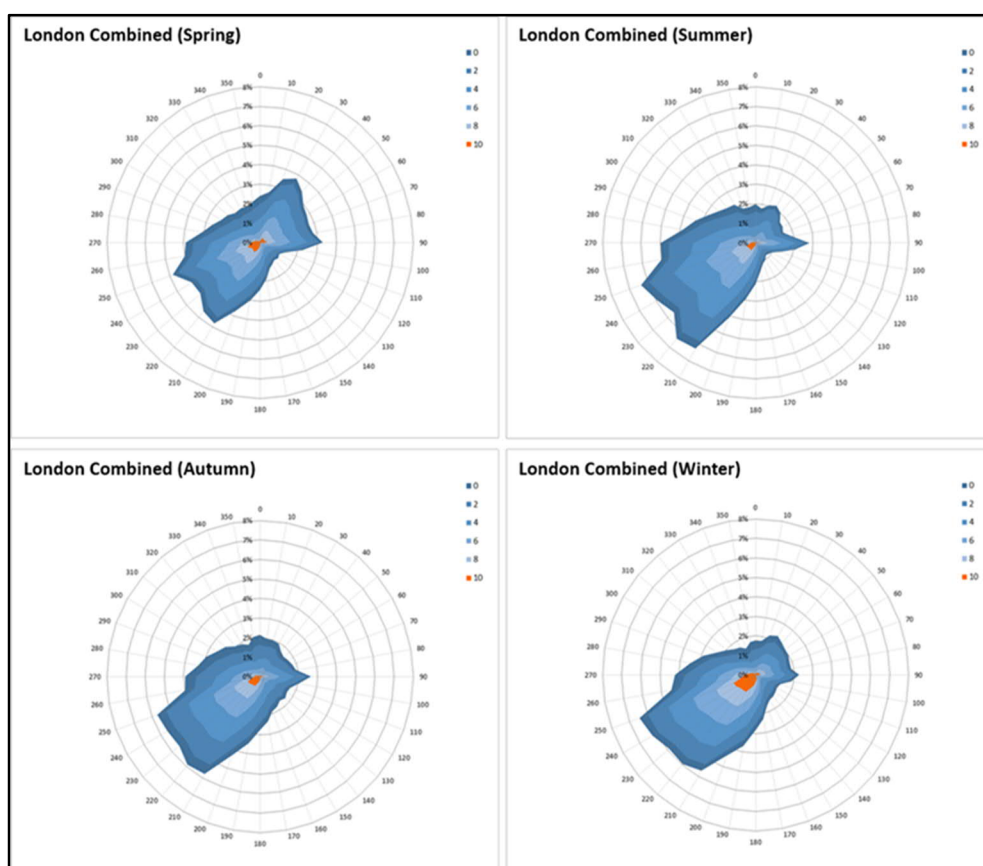
- 7.14.18 A Sustainable Drainage System (SuDS) will be produced in support of the outline planning application in order to reduce surface water run off to Greenfield rates in compliance to London Plan and increase the total surface area of soft landscaping, thus improving surface water quality and quantity once the Proposed Development is complete and operational.
- 7.14.19 A foul water and utilities assessment will be carried out to support the outline planning application. The permanent impact on off-site foul sewerage infrastructure is therefore expected to be negligible.
- 7.14.20 As the Site is in Flood Zone 1, the Flood Risk to the development is considered low. The Site is greater than one hectare and therefore, a Flood Risk Assessment will be carried out addressing the fluvial, surface water and ground water flood risk to ensure flood risk will not increase to and from the Proposed Development.

7.15 Wind Microclimate

Summary of the Existing Baseline

- 7.15.1 Prevailing winds at the Site are from the south-west, both in terms of frequency and magnitude throughout the year, but particularly in the winter season (Figure 7.15-1). There is a secondary peak in winds from the north-east particularly during spring, and these predominantly consist of cold winds. During the summer, winds are typically lighter. The wind roses below show this distribution for the last 30 years, combining meteorological data from Heathrow and City airports.

Figure 7.15-1 Seasonal Wind Roses for London Combined (in m/s)



Potential Impacts

- 7.15.2 Given the size and geometry of the Proposed Development, in addition to its location in relation to surrounding buildings and nearby areas of public realm, it is important to avoid undesirable wind speeds being generated at ground level. Undesirable wind speeds could make some spaces within and around the Proposed Development uncomfortable or unsafe for pedestrian use. The wind microclimate assessment will therefore quantify the potential changes to the local wind environment (both on-site and within the immediately surrounding area) in terms of sensitive pedestrian areas such as entrances, thoroughfares amenity and public open space and quantify these in relation to their 'usability' for a range of pedestrian activities defined by the well-known and established Lawson Comfort Criteria.
- 7.15.3 As referenced within *Section 3* of this EIA Scoping Report, the construction and occupation of the Proposed Development will be constructed in specific phases. Therefore, it is anticipated that conditions would gradually transition between those measured for the baseline and the complete and operational development.
- 7.15.4 On the basis of the information presented above, the assessment of the ground level wind microclimate arising from the Proposed Development has been **Scoped In** to the EIA. A wind tunnel-based methodology is proposed for the assessment.

Outline Scope of Assessment

Establishing the Baseline

- 7.15.5 The wind microclimate assessment will include modelling of the current Proposed Development Site conditions, in its existing form, in order to establish the existing wind conditions at the Site including both on and off-site locations within an appropriate range – Informed by the likely extent of the building's influence and local street patterns, and sensitive uses in proximity.
- 7.15.6 These measurements will then be compared with the Proposed Development configurations outlined below where applicable. Notably, due to the changes anticipated at several areas across the Proposed Development Site, it is conditions off-site (where uses remain the same) that are most comparable.

Impact Assessment Methodology

- 7.15.7 Scale models (likely scale of 1:300 or 1:400) will be built for the following scenarios:
- The buildings currently occupying the Site and the existing surrounding buildings/area (the baseline);
 - The complete Proposed Development massing (Maximum Parameter) occupying the Site and the existing surrounding buildings/area; and
 - The Proposed Development's massing (Maximum Parameter) occupying the Proposed Development Site, and the surrounding buildings/area including the massing of nearby relevant cumulative schemes.
- 7.15.8 Notably, as an outline planning application, specific areas are unlikely to have their use determined (i.e. entrances) in detail, and as such an appropriate range of reasonable conditions relative to the use of the Proposed Development Site and the Lawson Comfort Criteria as above will be targeted.
- 7.15.9 Wind tunnel testing would be initially undertaken without landscaping to represent a least-sheltered, worst-case. A 3D model of the maximum parameters of the building envelopes will be utilised due to the outline nature of the planning application. Further testing would be anticipated to be undertaken in Reserved Matters Applications (RMAs) as the detail of each phase comes forwards.
- 7.15.10 The maximum parameter models will be manufactured and tested in RWDI's boundary layer wind tunnel test facility. Mean and peak wind speeds will be measured around the base of the buildings forming the Proposed Development and other surrounding buildings, paths, roads, and areas of open spaces, for all wind directions. These results will be combined with long-term meteorological climate data for the London area.
- 7.15.11 The results of this analysis will then be benchmarked against the well-established Lawson Comfort Criteria (LDDC variant) to determine the suitability of the different areas both within and surrounding the Proposed Development Site for sitting, standing, entering a building, strolling, walking, or where conditions may be considered uncomfortable for all uses. The suitability of the conditions both within and surrounding the Proposed Development Site will be presented and discussed within the ES.
- 7.15.12 Strong winds are also quantified separately.
- 7.15.13 Through the determination of the suitability for use of the areas surrounding the Proposed Development Site (for scenarios 2 and 3 identified above), a direct comparison will then be made with the baseline / existing off-site conditions where applicable, and the effect to the surrounding areas will be assessed, with the significance of effects identified. Although it should be noted that the focus of discussions will be comparison of the measured conditions to the desired use of the Site. The results of these assessments will be presented within the ES Chapter.
- 7.15.14 Where applicable, potential rooftop terraces will be tested within the wind tunnel to determine the suitability of these areas for future residents of the Proposed Development. Although the assessment of these spaces will be completed for all seasons, the focus will be on the wind microclimate during the summer when these areas are more likely to be frequently used. Due to the parameter form of the building, balustrades are unlikely to be considered and therefore a worst-case established.

7.15.15 The focus of ground level locations where annual use is expected such as thoroughfares and entrances would be for the windiest season. For amenity spaces the focus will be on the wind microclimate during the summer when these areas are more likely to be frequently used.

Standards and Guidance

7.15.16 The assessment methodology will comply with the requirements of the LBB planning on tall buildings, and industry best-practises. In particular, the criteria used for the classification of pedestrian wind comfort and safety for the Site in accordance with the well-known and established LDDC version of the UK Industry Standard Lawson Comfort Criteria ¹⁴⁴.

7.15.17 The Barnet Local Plan Sustainable Design and Construction SPD has a relevant section on wind microclimate (and thermal conditions) which sets out generic design and construction principles, specific to large scale and tall buildings, where the requirements are that *“Developers should demonstrate that appropriate comfort levels can be achieved for all pedestrian public and communal outdoor spaces using the Lawson Criteria for Distress and Comfort as a guide to the appropriate level of amenity for the expected use of those areas.”* The LDDC Variant of the Lawson Comfort Criteria is quoted ¹⁴⁵.

7.15.18 In addition, reference will be made to the following:

- The NPPF and NPPG;
- The London Plan and the Draft London Plan; and
- Tall Buildings Historic England Advice Note 4.

Assessment Criteria

7.15.19 The Lawson Comfort thresholds are shown in below (Table 7.15-1). If the measured wind conditions exceed the threshold wind speed for more than 5% of the time (whether that is seasonally or annually), then they are unacceptable for the stated pedestrian activity and the expectation is that there may be complaints of nuisance or people will not use the area for its intended purpose.

Table 7.15-1 Lawson Comfort Criteria

Activities (Comfort Category for assessment)	Threshold	Description
Sitting	0-4 m/s	Light breezes desired for outdoor restaurants and seating areas where one can read a paper or comfortably sit for long periods
Standing	4-6 m/s	Gentle breezes acceptable for main building entrances, pick-up/drop-off points and bus stops in addition to wider areas where one may linger
Strolling	6-8 m/s	Moderate breezes that would be appropriate for window shopping and strolling along a city/town centre street, plaza or park
Walking	8-10 m/s	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	>10 m/s	Winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended

7.15.20 If strong winds are measured, then these will also be reported. The activities described above are those used by Lawson Comfort Criteria. The two further categories (walking and uncomfortable) are often associated with occasional strong winds (in excess of 15 or 20 m/s) and should be mitigated unless

¹⁴⁴ Lawson, T.V (2001), *Building Aerodynamics*. London, Imperial College Press p.130 - p.135.

¹⁴⁵ London Borough of Barnet (October 2016), *Local Plan Sustainable Design and Construction SPD, Section 2.5 p.13 – p.14* <https://www.barnet.gov.uk/sites/default/files/assets/citizenportal/documents/planningconservationandbuildingcontrol/PlanningPolicy/SPD/appendix2draftSustainableDesignandConstructionoct2016.pdf>

there are alternative routes, or they occur on less frequently used routes or in areas inaccessible to the general public.

- 7.15.21 Strong winds are reported for exceedances of 15m/s (to account for less able-bodied people or vulnerable users such as cyclists) or 20 m/s (for able bodied members of the population) for more an 0.022% of the year (or above approximately 2 hours).

Scope for Mitigation

- 7.15.22 Should mitigation measures be required to ensure that wind conditions are suitable for their intended use, the areas requiring mitigation will be identified and mitigation measures will be developed. Where necessary, mitigation measures could potentially be tested through additional rounds of wind tunnel studies.
- 7.15.23 Due to the outline nature of the application, and the wind environment being anticipated to change as detail of the scheme comes forward, further assessment should be conducted as part of subsequent RMAs. A mitigation strategy would ideally be developed on the detailed form of the scheme in response to specific target uses being determined.

8. Other Environmental Considerations

8.1.1 In addition to the EIA topics identified in the previous sections, further standalone documents will be submitted within the outline planning application which will inform, or be informed by the EIA, addressing further potential issues with the Proposed Development. These reports will include the following:

- Arboriculture Impact Assessment (AIA);
- Energy and Sustainability Statement;
- Flood Risk Assessment (FRA);
- Health Impact Assessment (HIA); and
- Operational Waste Management Strategy.

Arboriculture Impact Assessment

8.1.2 An AIA will be produced to ensure the Proposed Development is in line with the NPPF 2019, ensuring that it is sustainable and underlines the importance of green infrastructure, of which trees form an integral part. A tree survey was undertaken in July 2019 to identify the quality and benefits of the trees present within the Site and the spatial constraints associated with them. This is then used to produce a trees constraints plan showing the above and below ground constraints associated with the trees. See *Appendix C* for the tree survey report and tree constraints plan.

8.1.3 Upon design freeze of the Proposed Development, an AIA is then developed to identify the likely direct and indirect impacts of the Proposed Development upon design freeze, as well as any appropriate mitigation measures where necessary. A tree protection plan is prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected.

Energy and Sustainability Statement

8.1.4 An Energy Statement will be produced to meet London Plan Policy S12 and the GLA guidance on preparing energy statements. A reasonable baseline for energy consumption will be established, and the application of the Mayor's energy hierarchy, energy efficiency measures, and low and zero carbon technologies will be considered whilst also acknowledging constraints associated with the Site and project delivery. The Energy Statement will consider targets for CO₂ emissions reduction set by the Mayor.

8.1.5 In addition, a Sustainability Strategy will be developed based on consultation with the design team and the wider project team and using information from other documents produced for the planning application, including: Design and Access Statement, ES, Energy Statement, Transport Assessment, etc. In addition, the proposed college campus within the site will be registered for BREEAM assessments.

Flood Risk Assessment

8.1.6 According to online Environment Agency mapping the Proposed Development area is located entirely within Flood Zone 1 (low risk of flooding from fluvial/tidal sources). However, as the Site area is more than 1 ha within Flood Zone 1, the Proposed Development requires a Flood Risk Assessment (FRA) to be submitted in support of the outline planning application. A FRA will be prepared for the Proposed Development which meets the requirements of the NPPF and the LBB (in their role as Lead Local Flood Authority) and which considers, with respect to surface water runoff management, the specific needs of the Environment Agency, LBB and Thames Water Ltd.

Health Impact Assessment

8.1.7 Human health and well-being was introduced as a new topic of consideration under the 2017 EIA Regulations (as amended). As there is no best practice methodology for assessing health and well-being within an EIA that allows significance of effects to be determined, a Rapid Health Impact Assessment, which will be informed by consultations with the LBB Public Health Coordinator, will be submitted as part of the wider planning application to ensure that positive and beneficial effects on the Health and

Wellbeing of existing and future residents and employees are identified and mitigation and monitoring measures are proposed where relevant.

Operational Waste and Recycling Management Strategy

- 8.1.8 An Operational Waste and Recycling Management Strategy will be prepared which will outline the processes and systems for the sustainable management of the waste arisings once the Proposed Development is complete and operational. The Operational Waste and Recycling Management Strategy will be produced in line with national (England), regional (WLWA) and local (LBB) legislation, policy and guidelines.

9. Proposed Structure of the Environmental Statement

9.1.1 It is assumed that the ES will comprise the following set of documents.

Environmental Statement Volume I: Main Report

9.1.2 This will contain the full text of the EIA with the proposed chapter headings as follows:

- Chapter 1: Introduction;
- Chapter 2: Planning Policy and Context;
- Chapter 3: Existing Site and Surroundings;
- Chapter 4: Alternatives and Design Evolution;
- Chapter 5: The Proposed Development;
- Chapter 6: Demolition and Construction;
- Chapter 7: EIA Methodology;
- Chapter 8: Air Quality;
- Chapter 9: Archaeology;
- Chapter 10: Climate Change;
- Chapter 11: Daylight, Sunlight and Overshadowing;
- Chapter 12: Ground Conditions and Contamination;
- Chapter 13: Noise and Vibration;
- Chapter 14: Socio-economics;
- Chapter 15: Traffic and Transport;
- Chapter 16: Wind Microclimate;
- Chapter 17: Effect Interactions;
- Chapter 18: Summary of Mitigation; and
- Chapter 19: Residual Effects and Conclusions.

9.1.3 It is assumed at this stage, the following topics would be **Scoped Out** of the EIA: Ecology and Biodiversity, Telecommunications (Electronic Interference), Waste and Recycling and Water Environment. However, this will be confirmed upon receipt of the EIA Scoping Opinion from the LBB. Additional planning documents will be prepared in support of the ES, including: Ecological Appraisal, Telecommunications Network Impact Assessment, Operational Waste and Recycling Management Strategy, Flood Risk Assessment, Drainage Strategy and Foul Drainage and Utilities Report.

Environmental Statement Volume II: Townscape, Visual Impact and Built Heritage Assessment

9.1.4 The Townscape, Visual Impact, Built Heritage Assessment (TVBHIA) will form Volume II of the ES to allow for easier cross-referencing of Accurate Visual Representations (AVRs) within the assessment.

Environmental Statement Volume III: Technical Appendices

9.1.5 The Technical Appendices will provide supplementary details of the environmental studies conducted during the EIA, including relevant data tables, figures, modelling results and photographs.

Environmental Statement Non-Technical Summary

9.1.6 The Non-Technical Summary (NTS) document will provide a concise summary of the ES, which will include information regarding the Proposed Development, alternative designs that were considered, likely environmental effects and mitigation measures.

Planning Application Documents

9.1.7 In addition to the ES, the planning application will be supported by various documents, subject to agreement with the LBB, including:

- Application Drawings (Site location plan(s), existing and proposed floor plans/ sections/ elevations, Illustrative masterplan, Illustrative Visualisations, parameter plans);
- Affordable Housing Statement;
- CIL Questions;
- Contamination Assessment Phase 1;
- Cover Letter;
- Design Guidelines;
- Design and Access Statement;
- Energy Statement and Sustainability Assessment;
- Flood Risk Assessment and Sustainable Urban Drainage System Strategy;
- Foul Sewerage and Utilities Statement;
- Landscaping Strategy;
- Ownership Certificates;
- Planning Statement;
- Operational Waste Management Plan;
- Statement of Community Involvement;
- Sustainability Statement;
- Transport Assessment (Incl. Travel Plan); and
- Tree Survey and Arboriculture Impact Assessment.

10. Summary and Conclusions

10.1 Conclusion

- 10.1.1 This Report requests an EIA Scoping Opinion from the LBB pursuant to Regulation 15 of the EIA Regulations. This EIA Scoping Report suggests a comprehensive scope of work based on previous experience of the assembled team of specialists and existing knowledge of the Site.
- 10.1.2 LBB and consultees are invited to consider the contents of this EIA Scoping Report and comment as to whether the scope and methodology proposed is acceptable within the five-week period prescribed by the EIA Regulations.

10.2 Summary of Environmental Topics

- 10.2.1 For clarity, Table 10.2-1 presents a summary of which environmental topics are to be **Scoped In** and **Scoped Out** of the EIA and provides brief justification for those topics which are **Scoped Out** of the EIA.

Table 10.2-1 Summary of Scoping Conclusions

Environmental Topic	Scoped In (✓) or Out (✗)		Comments
	Demolition and Construction	Complete and Operational	
Air Quality	✓	✓	<p>The demolition and construction assessment will include an assessment of construction dust. This will assess the potential sources and effects, along with a risk assessment identifying those receptors most likely to be at risk. Demolition and construction related plant emissions will not be modelled, as these are anticipated to represent a small source of emissions relative to ambient local conditions. Modelling of road traffic associated with the demolition and construction works will also not be necessary, although the numbers will be considered in the context of the guidance published by EPUK/IAQM. If the thresholds are exceeded, a quantitative assessment will be undertaken.</p> <p>Advanced air dispersion modelling will be used to assess air quality for the operational phase of the Proposed Development. This will include relevant cumulative schemes. The operational assessment will also include a consideration of the suitability of the Site for the Proposed Development uses (including residential and commercial) in air quality terms and an air quality neutral assessment.</p>
Archaeology	✓	✓	<p>Given the scale and nature of 19th-20th century developments, it is likely that any previously unrecorded archaeological remains pre-dating the 19th would have been truncated. The late post-medieval and modern remains are not considered to be of archaeological or historical interest. Therefore, any surviving archaeological deposits that may be present within the Site would be of low value. However, due to the Sites close proximity to Roman road of Watling Street and the possibility that related remains may survive within the Site it is recommended that archaeology be Scoped In to the EIA.</p>
Climate Change	✓	✓	<p>The assessment of GHG emissions from the Proposed Development and the resilience of the Proposed Development to climate change have been scoped into the EIA. In-Combination Climate Change Impact Assessment (ICCI) has been scoped out on the basis that any identified impact will be addressed in other relevant planning documents, including the Flood Risk Assessment and Drainage Strategy.</p>
Daylight	✓	✓	<p>A qualitative assessment will be undertaken to assess daylight, sunlight and overshadowing effects of the Proposed Development during construction.</p> <p>The operational assessment will include a quantitative assessment of daylight, sunlight and overshadowing effects of the Proposed Development.</p>
Ecology	✗	✗	<p>A Preliminary Ecological Appraisal (PEA) of the Site was undertaken in July 2019, comprising an extended Phase 1 habitat survey. The Site predominantly comprised buildings and hardstanding surfaces, vegetation included an area of amenity grassland with scattered parkland trees, several introduced shrub and ephemeral/short perennial areas and a hedgerow with trees in the eastern boundary. There are no protected or notable habitats within the Site. Furthermore, no bats were recorded emerging from the building 1 or building 2, and very limited bat activity was recorded around the building, which was confirmed through an additional bat emergence survey. Building 1 has the potential to support nesting birds, however no nests were observed during the survey. It is anticipated that both construction and operational impacts</p>

Environmental Topic	Scoped In (✓) or Out (✗)		Comments
	Demolition and Construction	Complete and Operational	
			will not result in any significant adverse effects on the ecology of the Site. Based on the above, it is appropriate to scope out an ecology assessment within the EIA.
Ground Conditions and Contamination	✓	✓	An assessment of the potential effects of ground conditions and potential contamination of the Site on construction workers, surface and groundwater and future on-site users will be undertaken during the construction phase and once the Proposed Development is complete and operational, as appropriate.
Major Accidents and Disasters	✗	✗	The Site is not located in an area which is anticipated to be at risk of foreseeable major disasters or accidents. Therefore, no significant effects are considered likely.
Noise and Vibration	✓	✓	<p>During demolition and construction, an assessment of potential effects due to noise and vibration on nearby sensitive receptors will be carried out. In addition, an assessment on changes in road traffic flows will be undertaken.</p> <p>Once the Proposed Development is complete and operational, the assessment will focus on noise generating activities in the Proposed Development (e.g. from servicing and commercial uses). The operation of the Proposed Development has the potential to significantly impact upon traffic flows on the local highway network around the Site, where resultant noise from this activity will be included within the assessment.</p>
Socio-economics and Health	✓	✓	<p>The assessment of the effects of the Proposed Development during the demolition and construction phase, as well as the operational phase of the development will cover employment, employment displacement, housing and affordable housing, provision of additional commercial floorspace, local expenditure from new residents at the scheme.</p> <p>A separate Rapid Health Impact Assessment will be submitted in support of the planning application, which will cover impacts arising from the Proposed Development on social infrastructure in the area which could be used by future residents, including primary and secondary education, primary health care facilities, open space and child play space.</p>
Telecommunications	✗	✗	The potential impacts on telecommunication services associated with the Proposed Development are limited to DTT and satellite TV reception. However, these could readily be mitigated by means standard measures. Therefore, on this basis and combined with the orientation and scale of the Proposed Development in terms of sensitive receptors, it is unlikely the Proposed Development would result in any significant adverse broadcast or telecommunication interference effects, and thus is scoped out of the EIA. A separate report is to be submitted with the planning application which will set out the potential impacts any effects upon local telecommunications networks (including critical infrastructure and radio networks owned by TfL and Network Rail), as required in the NPPF, existing London Plan and the Draft New London Plan. This will inform the requirement for any mitigation that may be required
Traffic and Transport	✓	✓	The construction assessment will focus on the potential effects from the construction of the Proposed Development on the operational capacity of road junctions, highway safety, severance, fear and intimidation, and journey times for pedestrians and cyclists. A detailed traffic study was carried out in June 2019 to calculate the baseline trip generation for the Site. The Site currently provides 470 car parking spaces, as such generates a significant amount of trips due to its commercial nature,

Environmental Topic	Scoped In (✓) or Out (✗)		Comments
	Demolition and Construction	Complete and Operational	
			<p>with a significant proportion being HDVs. As the Proposed Development is to provide 122 car parking spaces, it is expected that there will be an overall reduction in trip generation.</p> <p>Therefore, an initial assessment of the traffic generation associated with the Proposed Development has been carried out using the TRICS database. This assessment has shown that the net change in traffic generation when comparing the existing use of the Site and the operational Proposed Development will result in a net reduction in daily vehicle trips on the local highway network and reduction in goods vehicles trips. Therefore, it is considered that there are no likely significant effects from the operation of the Proposed Development on the operational capacity of the local highway network, and it is proposed that this assessment can be scoped out of the EIA. This will be set out in detail in the Transport Assessment to be submitted with the application for the Proposed Development.</p> <p>The assessment of potential effects from the operation of the Proposed Development on highway safety; public transport capacity; pedestrian and cycle infrastructure capacity, journey time and level of crowding; severance, fear and intimidation, and journey times for pedestrians and cyclists have been scoped in to the EIA.</p>
Townscape, Visual Impact and Built Heritage Assessment (TVBHIA)	✓	✓	The potential construction effects on heritage, townscape and visual amenity will be considered qualitatively. Assessment of the completed Proposed Development on townscape character areas, views and the setting of heritage assets will be based on a set of representative viewpoints to be agreed with the LBB.
Waste and Recycling	✗	✗	It is considered that there are no likely significant effects from the Proposed Development on the local waste infrastructure, as there is sufficient capacity within the existing infrastructure to accommodate waste from the construction and operational phases of the Proposed Development. An Operational Waste and Recycling Management Strategy will be submitted in support of the planning application, with a Construction Resource Management Plan to be agreed upon by a suitably worded planning condition.
Water Environment	✗	✗	It is considered that there are no likely significant effects on the water environment as a result of the Proposed Development, with appropriate mitigation specified within the Flood Risk Assessment, Sustainable Urban Drainage System (SuDS) and Foul Water and Utilities Assessment. which will be prepared to support the planning application for the Proposed Development. Risk of contamination of any surface water and groundwater bodies as a result of the Proposed Development will be considered as part of the Ground Conditions and Contamination Chapter of the ES.
Wind Microclimate	✓	✓	A qualitative assessment will be undertaken to assess the wind microclimate effects during construction of the Proposed Development. The operational assessment will include wind tunnel testing of the Proposed Development.

Appendix A Cumulative Schemes

Table A-1. Cumulative Schemes to be included within the ES

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of December 2019
1	"Co-op Site" 1 - 13 Cricklewood Lane London NW2 1ET	18/6353/FUL	Residential-led redevelopment of the site to include demolition of existing buildings and erection of three blocks ranging from 6 to 9 storeys with flexible retail (Class A1-A4 & D1) at ground and basement level and 145 residential units (Class C3) on upper floors, with associated parking, servicing arrangements, amenity space, public realm improvements and all necessary ancillary and enabling works (AMENDED DESCRIPTION - AMENDMENTS COMPRISE REDUCTION IN HEIGHT FROM 15 TO 9 STOREYS AND REDUCTION IN UNITS FROM 187 TO 145).	Submitted: 07.11.18. Pending consideration.
2	Brent Cross Cricklewood Regeneration Area	C/17559/08	Comprehensive mixed use redevelopment of the Brent Cross Cricklewood regeneration area comprising residential (Use Class C2, C3 and student / special needs / sheltered housing), a full range of town centre uses including Use Classes A1-A5, offices, industrial and other business uses within Use Classes B1-B8, leisure uses, rail based freight facilities, waste handling facility and treatment technology, petrol filling station, hotel and conference facilities, community, health and education facilities, private hospital, open space and public realm, landscaping and recreation facilities, new rail and bus stations, vehicular and pedestrian bridges, underground and multi-storey parking, works to the River Brent and Clitterhouse Stream and associated infrastructure, demolition and alterations of existing building structures, electricity generation stations, relocated electricity substation, free standing or building mounted wind turbines, alterations to existing railway including Cricklewood railway track and station and Brent Cross London Underground station, creation of new strategic accesses and internal road layout, at grade or underground conveyor from waste handling facility to combined heat and power plant, infrastructure and associated facilities together with any required temporary works or structures and associated utilities / services required by the development (OUTLINE APPLICATION).	Consented: 28.10.2010.

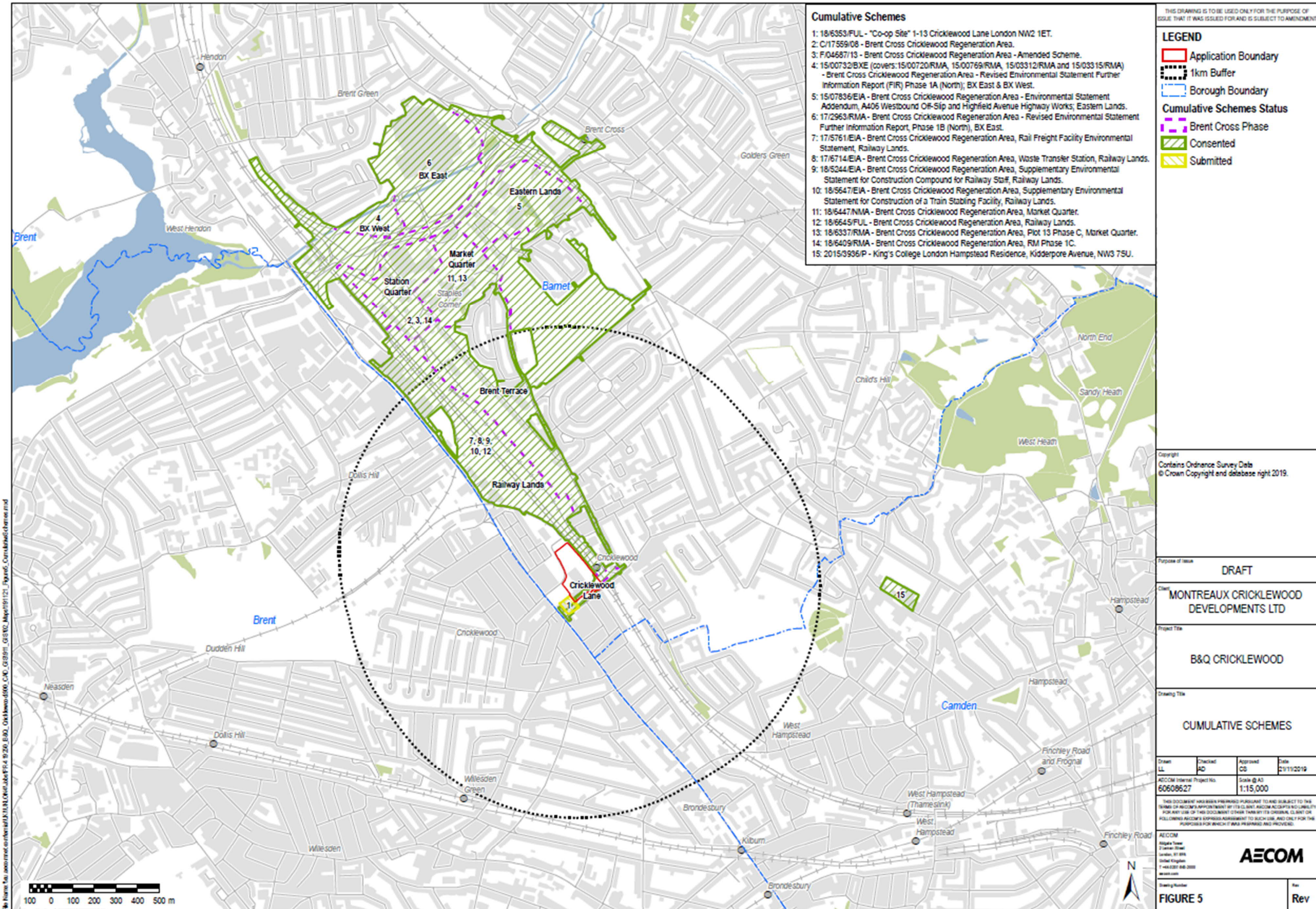
Figure Ref.	Name/Address	Planning Application Number	Description	Status as of December 2019
3	Brent Cross Cricklewood Regeneration Area – Amended Scheme	F/04687/13	Section 73 Planning application to develop land without complying with the conditions attached to Planning Permission Ref C/17559/08, granted on 28 October 2010 ('the 2010 Permission'), for development as described below: Comprehensive mixed use redevelopment of the Brent Cross Cricklewood Regeneration Area comprising residential uses (Use Class C2, C3 and student/special needs/sheltered housing), a full range of town centre uses including Use Classes A1 - A5, offices, industrial and other business uses within Use Classes B1 - B8, leisure uses, rail based freight facilities, waste handling facility and treatment technology, petrol filling station, hotel and conference facilities, community, health and education facilities, private hospital, open space and public realm, landscaping and recreation facilities, new rail and bus stations, vehicular and pedestrian bridges, underground and multi-storey parking, works to the River Brent and Clitterhouse Stream and associated infrastructure, demolition and alterations of existing building structures, CHP/CCHP, relocated electricity substation, free standing or building mounted wind turbines, alterations to existing railway including Cricklewood railway track and station and Brent Cross London Underground station, creation of new strategic accesses and internal road layout, at grade or underground conveyor from waste handling facility to CHP/CCHP, infrastructure and associated facilities together with any required temporary works or structures and associated utilities/services required by the Development (Outline Application). The application is accompanied by an Environmental Statement. Brent Cross Cricklewood Regeneration Area.	Consented: 23.07.14
4	Brent Cross Cricklewood Regeneration Area – Revised Environmental Statement Further Information Report (FIR): Phase 1A (North)	15/00732/BXE (covers: 15/00720/RMA, 15/00769/RMA, 15/03312/RMA and 15/03315/RMA)	15/00732/BXE Environmental Statement - Further Information Report and Addendums for Phase 1A (North) of Brent Cross Cricklewood Regeneration Pertaining to application F04687/13	Consented: 23.07.2014
5	Brent Cross Cricklewood Regeneration Area – Environmental Statement Addendum: A406 Westbound Off-Slip and Highfield Avenue Highway Works	15/07836/EIA	Application for highway works and associated development works at A406 Westbound off-slip and adjacent land, and 111 Highfield Avenue NW11 associated with the comprehensive mixed use redevelopment of the Brent Cross Cricklewood Regeneration Area. This Application is accompanied by an Environmental Statement. A406 Westbound Off Slip And Land Formally Known As 17 And 35 (odd) Brentmead Place And Land Associated With 111 Highfield Avenue, London NW11	Consented: 26.05.2016
6	Brent Cross Cricklewood Regeneration Area – Revised Environmental	17/2963/RMA	Reserved Matters Application for Phase 1B (North) of the Brent Cross Cricklewood Regeneration scheme relating to Layout, Scale, Appearance, Access and Landscaping submitted pursuant to Conditions 1.2.2.A and 2.1 and for the part discharge of Condition 13.1 attached to Planning Permission ref no. F/04687/13 for the comprehensive mixed-use redevelopment of the Brent Cross Cricklewood Regeneration Area. The proposal comprises retail led mixed use development which	Consented: 31.10.207

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of December 2019
	Statement Further Information Report: Phase 1B (North)		includes a replacement Brent Cross Bus Station, 52 residential units, new hotel, new energy centre, Eastern and Western Brent Riverside Park (including a Nature Park) and improvements to Sturgess Park. Application is accompanied by an Environmental Statement Further Information Report.	
7	Brent Cross Cricklewood Regeneration Area – Rail Freight Facility Environmental Statement	17/5761/EIA	Use of railway land for the transportation of aggregates and non-putrescible waste (construction) by rail including dismantling and removal of lighting tower; levelling of site and provision of landscape bund; 2no. open stockpile areas each containing 10 storage bins and 2no. partially enclosed stockpile areas each containing 10 storage bins; acoustic and perimeter fencing; CCTV, security hut, welfare hut, a weighbridge, 2 no. wheel wash facilities, dust suppression system, drainage, parking for HGVs and cars, traverser road, replacement rail track sidings, continued use of existing building for staff and welfare facilities; and other infrastructure and ancillary works including alterations to the existing access to Edgware Road and provision of new landscaping. (Part Retrospective) ADDITIONAL INFORMATION RE-CONSULTATION 400 Cricklewood Railway Yard, Land At Rear Of 400 Edgware Road Edgware Road Cricklewood NW2 6ND London NW2 6ND	Consented: 06.07.2018
8	Brent Cross Cricklewood Regeneration Area – Waste Transfer Station	17/6714/EIA	Demolition of the existing building and erection of a new building for use as a waste transfer station for reception, bulking and onward transportation of municipal waste, food waste, dry mixed recycling, bulky waste, street sweeping and street cleansing wastes. Provision of waste reception, storage bays, loading facilities, fencing and temporary acoustic fencing, CCTV, office and welfare facilities, weighbridges, dust and odour suppression systems, exhaust stack, drainage, plant room, parking for staff and visitors, and temporary retaining wall. Application includes works to the A5 Edgware Road/ Geron Way junction including signalisation, and other associated infrastructure and ancillary works. AMENDED DESCRIPTION	Consented: 30.10.2018
9	Brent Cross Cricklewood Regeneration Area – Supplementary Environmental Statement for Construction Compound for Railway Staff	18/5244/EIA	The construction of a compound for use by railway staff and train drivers, including the erection of a two storey office and welfare block with associated yards, site levelling, external lighting, fencing, gates, fuel tank firewall, and landscaping; construction of new service and access road with bollards and footways; vehicular parking; storage facilities; installation of underground attenuation tanks; the relocation of railway related plant and equipment including fuel tanks, sand silos, retention of plant associated with a carriage washing facility, waste bins, and compactor; and the temporary use of land for construction compounds, comprising site offices, material storage, and car parking. This application is accompanied by an Environmental Statement. Cricklewood Sidings Land Rear Of Brent Terrace (South) Brent Terrace Cricklewood London NW2 1BX	Consented: 14.12.2018

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of December 2019
10	Brent Cross Cricklewood Regeneration Area – Supplementary Environmental Statement for Construction of a Train Stabling Facility	18/5647/EIA	The construction of a train stabling facility involving the installation of railway tracks, vehicle barriers and bollards and a buffer stop; construction of pedestrian and drivers walkways; erection of pedestrian access gates, vehicle restraint barriers, overhead line equipment, noise barriers, and lighting columns; provision of single storey modular buildings, parking spaces, and construction compounds; and the realignment of existing Midland Main Line railway tracks to serve the new Train Station. This application is accompanied by an Environmental Statement. Land Rear Of Brent Terrace (South) Cricklewood London NW2 1BX	Consented: 14.12.2018
11	Brent Cross Cricklewood Regeneration Area -	18/6447/NMA	S96a application for non-material amendments to S73 planning permission F/04687/13 dated 23 July 2014 for the redevelopment of the Brent Cross Cricklewood Regeneration Scheme to facilitate changes to the distribution of floor area and land use between Station Quarter and the Market Quarter Development Zones and between Market Quarter 1 and Market Quarter 2 Building Zones. The following changes are proposed. Variations to the wording of condition 36.1 (Zonal Floorspace Schedule). The insertion of new glossary term for: Floorspace Thresholds for Building Zones Schedule and the amendment to the glossary term Zonal Floorspace Threshold.	Consented: 22.02.2019
12	Brent Cross Cricklewood Regeneration Area -	18/6645/FUL	Construction of highways infrastructure and associated public realm comprising High Street South (East Works), Claremont Park Road (Part 1), Claremont Avenue (south of High Street South (East Works) and Claremont Road Junction North, required in association with Phase 1 (South) of the consented redevelopment of the Brent Cross Cricklewood regeneration area (Ref: F/04687/13). Proposal includes including enabling works and other works incidental to the highways and public realm development	Consented: 18.03.2019
13	Brent Cross Cricklewood Regeneration Area – Plot 13 Phase 1C	18/6337/RMA	Reserved Matters Application in respect of Plot 13 of Phase 1C pursuant to Condition 1.3(i), 2.1 and 1.7 of planning permission F/04687/13 (dated 23rd July 2014) for the comprehensive mixed use redevelopment of the Brent Cross Cricklewood Area. The application seeks approval of details relating to layout, scale, appearance, access and landscaping for the residential led mixed use development of Plot 13, comprising 348 residential units, flexible retail (Use Classes A1/A3), cinema (Use Class D2) and a community facility (Use Class D1), basement car parking, cycle parking, refuse storage and plant to be provided within two buildings (six blocks) with heights ranging from 7+1 to 16 storeys arranged around a private courtyard, together with a north-south publicly accessible tertiary street for the provision of access. Application is accompanied by an Environmental Statement of Compliance.	Consented: 28.03.2019

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of December 2019
14	Brent Cross Cricklewood Regeneration Area - RM Phase 1C	18/6409/RMA	Reserved Matters Application in respect of Plot 11 of Phase 1C pursuant to Conditions 1.3(i), 2.1 and 1.7 of planning permission F/04687/13 (dated 23rd July 2014) for the comprehensive mixed use redevelopment of the Brent Cross Cricklewood Area. The application seeks approval of details relating to layout, scale, appearance, access and landscaping for a residential-led mixed use development of Plot 11, comprising 352 residential units, flexible retail (Use Classes A1/A3), provision for a ground floor Neighbourhood Police Unit (Sui Generis), basement and undercroft car parking, cycle parking, refuse storage and plant to be provided within two buildings with heights ranging from 8 to 13 storeys arranged around a private courtyard, together with an east-west publicly accessible route between the two buildings. Application is accompanied by an Environmental Statement of Compliance.	Consented: 11.04.19
15	King's College London Hampstead Residence, Kidderpore Avenue, NW3 7SU	2015/3936/P	Development of the site to provide 156 residential units involving demolition of Queen Mothers Hall, Lord Cameron and Rosalind Franklin buildings and replacement with flats in three 4 and 5 storey buildings, seven houses to the northern boundary, a single townhouse to the north western boundary and three houses between The Chapel and Queen Mothers Hall; relocation and refurbishment of the Summerhouse; alterations and extensions to retained buildings, including listed buildings; excavation of 2-storey basement to the western part of the site and a 1-storey basement to the replacement buildings for Lord Cameron and Rosalind Franklin, lower the level of lower ground floor of Bay House; provision of 97 car parking spaces, associated cycle parking, refuse/recycling facilities, plant equipment and landscaping works including tree removal across the site.	Consented (Subject to a S106 Legal Agreement): 06.04.2016

Figure A-1 Location of Cumulative Schemes



Preliminary Ecological Appraisal

B&Q Cricklewood

Montreaux Cricklewood Developments Ltd

July 2019

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1. Introduction

AECOM Infrastructure and Environment Ltd (hereafter 'AECOM') was commissioned by Montreaux Cricklewood Developments Ltd (hereafter referred to as the Applicant) to carry out an extended Phase 1 Habitat Survey of the B&Q store and its associated landscaping, at Cricklewood Lane, London, NW2 1ES (hereafter referred to as the 'Site'). The Site is situated within the London Borough of Barnet (LBB). The approximate central grid reference for the Site is TQ 23857 185892 and the boundary of the Site is shown on Figure 1. The results of the Phase 1 Habitat Survey are discussed within this Preliminary Ecological Appraisal (PEA).

Montreaux Cricklewood Developments Ltd is seeking to redevelop the Site and this is expected to form a large-scale mixed-use residential-led scheme, including between 1,100 to 1,400 residential units, spread across 4 Blocks (A – D) which range in height from 5 to 28 storeys. The scheme will also incorporate up to approximately 5,000m² of commercial floorspace (flexible use classes B1, D1 and D2), as well as associated public, private and semi-private open realm, including enhancement of Cricklewood Green. When combined, the above scheme is hereafter referred to as the 'Proposed Development'.

The residential unit mix has the potential to comprise C3 units (private and/or affordable) and Build to Rent (BTR). A phased delivery approach is expected for the Proposed Development.

1.1 Purpose of the Report

This PEA was commissioned to identify whether there are known or potential ecological receptors (nature conservation designations, and protected and notable habitats and species including any scheduled invasive non-native species) that may constrain or influence the design and implementation of the Proposed Development. The approach applied when undertaking this PEA accords with the Guidelines for Preliminary Ecological Appraisal published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018). This PEA also addresses relevant wildlife legislation and planning policy as summarized in Section 2: Wildlife Legislation and Planning Policy, and is consistent with the requirements of British Standard 42020:2013 Biodiversity: Code of Practice for Planning and Development.

In order to deliver this PEA, an extended Phase 1 Habitat Survey was undertaken on 2nd July 2019 by a pair of Suitably Qualified Ecologists (SQE) to identify ecological features within the Site and the wider potential zone of influence, combined with a desk study for the Site and surrounding area. The potential zone of influence was defined with reference to the project description provided by the Applicant as shown on Figure 1, Appendix A. Additional details are provided in Section 3: Methods.

The purpose of this PEA is to provide a high level appraisal of the ecological risks and opportunities associated with the Site to inform a planning application by:

- Identifying and categorising all habitats present within the Site and any areas immediately outside of the Site where there may be potential for direct or indirect effects (the zone of influence);
- Carrying out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora and likewise for any invasive non-native species;
- Providing advice on any potential ecological constraints and opportunities in the zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation; and
- Providing a map showing the location of the identified ecological receptors of relevance.

This PEA also identifies the scope of further ecological work (where necessary) that would be required to support a planning application. High-level recommendations are made on potential options for the avoidance, mitigation or compensation of the potential impacts of the Proposed Development (where known) on the identified ecological receptors, and of potential enhancements to the biodiversity and ecosystem services of the Site.

2. Wildlife Legislation and Planning Policy

2.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the Proposed Development:

- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006; and
- The Conservation of Habitats & Species Regulations 2017

The above legislation has been considered when planning and undertaking this PEA using the methods described in Section 3, when identifying potential constraints to the Proposed Development, and when making recommendations for further surveys, design options and mitigation, as discussed in Section 5. Compliance with legislation may require the attainment of relevant protected species licences prior to the implementation of the Proposed Development.

Further information on the requirements of the above legislation is provided as Appendix B.

2.2 National Planning Policy

The National Planning Policy Framework (NPPF) was originally published on 27th March 2012 and detailed the Government's planning policies for England and how these are expected to be applied. The NPPF was then revised on 19th February 2019.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

The NPPF specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

Further information on the relevant parts of the NPPF is provided as Appendix B.

2.3 Regional Planning Policy

Relevant regional planning policies for the Site are detailed in the following documents:

- The Mayor's Biodiversity Strategy (2002);
- The London Plan –Spatial Development Strategy for Greater London (2016);
- The London Plan –Spatial Development Strategy for Greater London – Consolidated Suggested Changes (2019)
- London Biodiversity Action Plan (Greenspace Information for Greater London, 2007)

Table 2:1 provides a summary of the relevant regional planning policies. For a precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 5.

Table 2:1 Summary of Regional Planning Policy

Document	Planning Policy	Purpose
London Environment Strategy (2018)	Policy 5.1.1	Protect, enhance and increase green areas in the city, to provide green infrastructure services and benefits that London needs now and in the future.
	Policy 5.1.2	Protect, conserve, and enhance the landscape and cultural value of London's green infrastructure.
	Policy 5.2.1	Protect a core network of nature conservation sites and ensure a net gain in biodiversity.
	Policy 5.3.1	Address underinvestment, and improve the management of London's green infrastructure, by developing new business models and improving the awareness of the benefits of London's green infrastructure.
The Mayor's Biodiversity Strategy (2002)	Chapter 4: Policies and Proposals	Giving priority to the "protection of biodiversity, positive measures to encourage biodiversity action, promoting the management, enhancement and creation of valuable green space, incorporating biodiversity into new development, and access to nature and environmental education".
	Policy 1	Protection, management and enhancement of London's biodiversity. This will be implemented through a no net loss of important wildlife habitat, and a net gain in habitat through enhancement and habitat creation.
	Policy 5	Ensure that opportunities are taken to green the built environment within development proposals.
The London Plan – Spatial Development Strategy for Greater London (2016)	Policy 2.18 Green Infrastructure	Protection, promotion, expansion and management of the extent and quality of London's network of green infrastructure.
	Policy 5.3 Sustainable Design and Construction	Promotion and protection of biodiversity and green infrastructure, for example through the provision of green roofs.
	Policy 5.10 Urban Greening	Integration of green infrastructure, which could include tree planting; green roofs and walls; and soft landscaping.
	Policy 5.11 Green Roofs and Development Site	Incorporation of roof, wall and site planting, especially green roofs and walls where feasible.
	Policy 7.19 Biodiversity and Access to Nature	Ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy. This means planning for nature from the beginning of the development process and taking opportunities for the positive gains for nature through the layout, design and materials of development proposals and appropriate biodiversity actions plans.
The London Plan – Spatial Development Strategy for Greater London – Consolidated Suggested Changes (2019)	Policy GG2: Making best use of land	Protect and enhance London's open spaces, including the Green Belt, Metropolitan Open Land, designated nature conservation sites and local spaces, and promote the creation of new green infrastructure and urban greening, including aiming to secure net biodiversity gains where possible.
	Policy D7: Public Realm	Incorporate green infrastructure into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, moderate surface and air temperature manage heat and increase biodiversity
London Biodiversity Action Plan (Greenspace Information for Greater London, 2007)	Protected Species	Habitats and species that are of importance for biodiversity in London. Priority habitats of relevance to the Site are "Parks and urban green spaces", which support biodiversity and provide contact with nature. Measures to conserve and enhance biodiversity in London are contained within a document entitled Design of Biodiversity in London, which includes recommendations such as the inclusion of green and brown roofs within new developments.

2.4 Local Planning Policy

Relevant local planning policies for the Proposed Development within the Site are detailed in the following documents:

- Barnet’s Local Plan Core Strategy – CS7: Enhancing and protecting Barnet’s open spaces (September 2012)
- Barnet Unitary Development Plan. Chapter 12 (2006)
- Barnet’s Local Plan (Development Management Policies) (September 2012)
- Green Infrastructure Supplementary Planning Document (October 2017)

Table 2:2 provides a summary of relevant local planning policies. For the precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological impacts and opportunities identified by the desk study and field surveys; and, when assessing requirements for further surveys described in Section 5.

Table 2:2: Summary of Local Planning Policy

Document	Policy	Purpose
Barnet Local Plan Core Strategy (September 2012)	CS7: Enhancing and protecting Barnet’s open spaces	Maintaining and improving the greening of the environment through the protection of greenspace, trees, hedgerows and watercourses enabling green corridors to link Barnet’s rural, urban fringe and urban green spaces. As well as working with stakeholders to improve protection and enhancement of biodiversity in the area.
Barnet Unitary Development Plan. Chapter 12 (2006)	Policy C3 – Urban Design – Amenity Policy C4 – Sustainable Design	The Brent Reservoir is a Site of Special Scientific Interest (SSSI) and is located at less than 2km of the site. Any development will be required to respect a buffer zone and protect this area of nature conservation interest. In such areas also include proposals that contribute to extending and protecting the area’s biodiversity. About the Sustainable Design Policy, the council will seek to ensure follow the highest standards of environmental design to enhance the biodiversity of the area. As guarantee an adequate safety buffer zone and an appropriate legally protection of the species.
Barnet Local Plan (Development Management Policies) (September 2012)	Policy DM01: (parts g, j & k) Protecting Barnet’s character and amenity	This policy requires development proposals to retain existing wildlife habitat, including trees and hedges and provide an appropriate level of new habitat including tree and shrub planting. Proposals should adequately protect existing trees and their root systems.
Green Infrastructure Supplementary Planning Document (October 2017)	Barnet Tree Policy 2017	The Tree Policy has been produced to ensure that there is a consistent approach to the management of trees in the Borough. Wherever possible, existing trees should be retained as part of any new development proposals. In accordance with the London Plan, any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location

3. Methods

3.1 Desk study

A desk study was carried out to identify nature conservation designations, and protected and notable habitats and species potentially relevant to the Site and subsequent Proposed Development.

A stratified approach was taken when defining the desk study area, based on the likely zone of influence of the Proposed Development on different ecological receptors, and an understanding of the maximum distances typically considered by statutory consultees. Accordingly, due to the densely urban nature of the Site and its surrounds, the desk study identified any international nature conservation designations within 5km of the Site; other statutory nature conservation designations within 2km of the Site; and local non-statutory nature conservation designations, and protected and notable habitats and species within 1km of the Site.

The desk study was carried out using the data sources detailed in Table 3:1. Protected and notable habitats and species include those listed under Schedules 1, 5 and 8 of the WCA; Schedules 2 and 5 of the Habitats Regulations; species and habitats of principal importance for nature conservation in England listed under section 41 (s41) of the NERC Act; and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans. Records of invasive non-native controlled species were also collated; such species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and species of EU concern listed in the EU Invasive Alien Species Regulation 2014.

Table 3:1: Desk Study Data Sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website	July 2019	International statutory sites within 5km National statutory sites within 2 km Ancient woodlands and notable habitats within 1 km
Greenspace Information for Greater London (GiGL) Data Search	July 2019	Non-statutory designations within 1 km Protected and notable species records within 1 km (records for the last 10 years only)
Ordnance Survey 1:25,000 Pathfinder maps and aerial photography	July 2019	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints

3.2 Field Survey

The field survey comprised a Phase 1 Habitat Survey and an appraisal of the potential suitability of the habitats present at the Site to support protected and notable species and invasive non-native species. An external inspection of trees and buildings within the Site to assess their suitability to support roosting bats and nesting birds was also undertaken.

3.2.1 Phase 1 Habitat Survey

A Phase 1 Habitat Survey was undertaken in accordance with the standard survey method (Joint Nature Conservation Committee, 2010). A Phase 1 Habitat Survey is a standard method of environmental audit. It involved categorising different habitat types and habitat features within a survey area. The information gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of a planning application. The standard Phase 1 Habitat Survey method can be “extended” to record target notes on protected, notable and invasive species.

The survey was undertaken on the 2nd July 2019 by two suitably qualified AECOM ecologists who recorded and mapped all habitat types present within the survey area, along with any associated relevant ecological receptors observed. The survey area encompassed all safely accessible parts of the Site and adjacent habitats, where access permission had been granted in advance of the survey, or this land was visible from within the Site boundary or from public rights of way, or other publicly accessible areas.

Where relevant ecological receptors were present, target notes were recorded and the position of these shown on the Phase 1 Habitat map (Figure 1). Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area as this is not required for the purposes of Phase 1 Habitat Survey.

3.2.2 Appraisal of Potential Suitability of Habitats to Support Protected and Notable Species and Invasive Non-native Species

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals (as defined in Section 3.1). Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered, but no detailed surveys were carried out for any particular species, with the exception of bats, for which the method is detailed in Section 3.2.3.

A note was made of visible instances of invasive non-native plant and animal species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), including Japanese knotweed (*Reynoutria japonica*), and the EU IAS Regulation 2014. Locations of any such invasive non-native plant or animal species were recorded if found and indicated on the Phase 1 Habitat plan (Figure 1).

Section 5 of this report identifies further requirements for species survey based on the results of the Phase 1 Habitat Survey. These surveys should be completed prior to determination of a planning application as the results are likely to be of material consideration.

3.2.3 Bat Roosting Suitability Assessment

An external assessment of all of the buildings present on Site was also conducted on 2nd July 2019 in line with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*¹. All potential access/egress points and potential roost features (PRFs) (e.g. cracks, crevices, roof voids, basements) were identified and recorded along with any evidence, which may have indicated the location of roosts, such as:

- Stains around entrance holes (resulting from the deposition of oil secretions in bat fur);
- Scratch marks around entrance holes (resulting from bat claw holds);
- Bat droppings;
- Feeding remains; and
- Odours or noise characteristic of bats.

On the basis of the external survey, the overall suitability of the structures supporting roosting bats was then classified using a scale of negligible, low, moderate, high or confirmed (see Table 3:2 for a definition of the categories of risk). This assessment was based on both the intrinsic suitability of the feature to support roosting bats and other evidence giving an indication of the likelihood of use (e.g. presence of droppings, lack of cobwebs, or exposure to elements).

Table 3:2: Criteria used to Describe Bat Roost Suitability

Habitat Suitability / Level of Risk	Type of Roost		
	Summer or Transitional Roost used by Non-breeding Bats	Maternity Roost	Hibernation Roost
Confirmed	Presence of bats or evidence of bats. Confirmation of roost status may require further survey.		
High	Feature with multiple roosting opportunities for one or more species of bat. With good connectivity to high quality foraging habitat	Feature with multiple roosting opportunities for breeding bats (size, temperature). With proximity and connectivity to high quality foraging habitat.	Large site that offers cool stable conditions with multiple roosting opportunities. With proximity and connectivity to high quality foraging habitat
Moderate	Feature with some roosting opportunities. With connectivity to moderate or	Feature providing some roosting opportunities. With some connectivity and proximity to	Medium sized feature with some roosting opportunities. With some connectivity and proximity to

¹ Collins, J. (editor) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition.). The Bat Conservation Trust. London.

Type of Roost

Habitat Suitability / Level of Risk	Summer or Transitional Roost used by Non-breeding Bats	Maternity Roost	Hibernation Roost
	high quality foraging habitat.	moderate or high quality foraging habitat.	moderate or high quality foraging habitat.
Low	Feature with a limited number of roosting opportunities. With poor connectivity to foraging habitat.	Feature with a limited number of roosting opportunities for breeding bats. With low proximity and connectivity to low or moderate quality foraging habitat.	Small sized feature or feature which may be subject to disturbance or environmental variations, with a limited number of roosting opportunities. With poor connectivity to foraging habitat.
Negligible	Feature with no or very limited roosting opportunities for bats or where the feature is isolated from foraging habitat.	Feature with no suitable roosting opportunities for breeding bats.	Feature with no suitable roosting opportunities for hibernating bats.

3.2.4 Nesting Bird Assessment

Trees and shrubs within the boundary of the Site were assessed at ground level using binoculars where necessary to inspect trees and vegetation. All features with the potential to support nesting birds (e.g. dense vegetation, perches, cavities and platforms) were identified and recorded along with any evidence of former nest sites as can be observed at the time of year the survey was undertaken.

3.2.5 Lifespan of PEA

If construction has not started on the Site within 12 months of the completion of the Phase 1 Habitat Survey, it is recommended to review this PEA including the data search and provide a revised up-to-date baseline. The data in the desk study itself is valid for 12 months. This follows guidance from the Chartered Institute of Ecology and Environment Management (CIEEM, 2019²).

3.3 Desk Study and Field Survey Limitations

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Proposed Development.

The recording of invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act and listed as species of EU concern (EU Invasive Alien Species Regulation, 2014) can be constrained by the time of year that the survey was undertaken. Most such species are not visible or cannot be reliably mapped outside the growing season (May to September), and some species are only apparent during certain months. Populations of annual plant species may fluctuate markedly between years dependent on the growing conditions present in any given season.

Where habitat boundaries coincide with physical boundaries recorded on OS maps the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are given they are approximate and should be verified by measurement on Site where required for design or construction. While indicative locations of trees are recorded this does not replace requirements for detailed specialist arboriculture survey to *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction* British Standards (2012).

The roof of the B&Q store and the main service yard to the rear of the building was not accessed during the Site survey due to health and safety considerations. There remains potential for the roof to support protected species

² CIEEM, 2019. Advice Note on the Lifespan of Ecological Reports and Surveys. April 2019.

including bats and nesting birds and are considered in Section 5. The service yard was comprised of hardstanding with no ecological value.

No buildings were surveyed internally during the Site survey either due to access constraints (Building 2) and as Building 1 is an occupied commercial premises which could be inspected externally to satisfy the requirements of a PEA visit (Figure 1).

4. Results

In this section of the report, the results of the desk study and Phase 1 Habitat Survey are presented.

4.1 Desk Study

4.1.1 Nature Conservation Designations

4.1.1.1 Sites Statutorily Designated for their Biodiversity Value

There were no sites of international statutory nature conservation designation within 5km. Two sites of national statutory nature conservation designation were identified within 2km of the Proposed Development, the closest of which is Westbere Copse Local Nature Reserve located 800m south of the Site. Table 4:1 details the statutory nature conservation designations identified by the desk study based on the method given in Section 3.1 of this PEA. The designations are listed in descending order, with those closest to the Site listed first.

Table 4:1 Sites with statutory designations for nature conservation within 2km of the Site

Site Name	Designation	Reason(s) for Designation	Relationship to the Site
Westbere Copse	Local Nature Reserve (LNR)	These sites provide a range of wildlife habitats. Westbere Copse is an 8 hectare Local Nature Reserve and Site of Borough Importance for Nature Conservation, Grade 1, in West Hampstead in the London Borough of Camden. It is located next to the railway. The site is used as a nature reserve.	0.8 km to the south-eastern of the Site. The two locations have connectivity via green corridors.
Brent Reservoir	Site of Special Scientific Interest (SSSI)	This extensive area is of the interest for breeding wetland birds, a significant number of nesting great crested grebe (<i>Podiceps cristatus</i>), gadwall (<i>Mareca strepera</i>), shoveler (<i>Anas clypeata</i>), common pochard (<i>Aythya ferina</i>), tufted duck (<i>Aythya fuligula</i>) and common tern (<i>Sterna hirundo</i>). It is unusually shallow in depth and sloping banks have supported a particularly interesting habitat for breeding wetland birds and waterfowl.	1.9 km to the north of the Site, the two locations do not have connectivity via green corridors.

4.1.1.2 Sites Non-statutorily Designated for their Biodiversity Value

A total of eight sites with non-statutory designations for nature conservation were identified in the desk study within 1km of the Site, the closest of which is the Dell Doorstep Green (0.6km to the south of the Site) which is designated as a Site of Local Importance for Nature Conservation (SLINC). SINC's are recognised by the Greater London Authority and London Borough councils as important wildlife sites. There are three tiers of such sites:

- Sites of Metropolitan Importance (SMINC);
- Sites of Borough Importance (borough grade I and borough grade II) (SBINC); and
- Sites of Local Importance (SLINC).

Table 4:2 details the non-statutory nature conservation designations identified by the desk study based in the method given in Section 3.1 of this report. The designations are listed in descending order, with those closest to the Site listed first.

Table 4:2 Sites with non-statutory designations for nature conservation within 1km of the Site (listed in order of increasing distance from the Site)

Site name and designation	Approx. distance from site	Description
The Dell Doorstep Green Local (SLINC)	0.6km south	A sheltered and public open space nestled behind back gardens. It has been newly refurbished with seating, paths, saplings and a children's play area.
Dudding Hill Loop between Cricklewood and Harlesden Borough Grade I (SBINC)	0.8km west	It is an important ecological link with species of oaks (<i>Quercus</i> species), ivy (<i>Hedera helix</i>), elder (<i>Sambucus nigra</i>) and wild roses (<i>Rosa</i> spp.). The southernmost section of the site comprises a broad steep cutting through Craven Park. These are largely tree and scrub-covered with limited grassland, very appropriate for birds such as wren (<i>Troglodytes</i>) and blackbird (<i>Turdus merula</i>).
Hampstead Cemetery Borough Grade I (SBINC)	1km east	The site has a large number of mature trees particularly ash (<i>Fraxinus excelsior</i>), pedunculate oak (<i>Quercus robur</i>), yew (<i>Taxus baccata</i>), sycamore (<i>Acer pseudoplatanus</i>), Norway maple (<i>Acer platanoides</i>) and silver birch (<i>Betula pendula</i>) among others. There is woodland in the north of the eastern half of the cemetery which is dominated by field maple (<i>Acer campestre</i>) with elder, yew and hawthorn (<i>Crataegus monogyna</i>) and a ground flora of ivy.
Gondar Gardens Covered Reservoir Borough Grade II (SBINC)	1.1km south - east	This undisturbed covered reservoir is vegetated mostly with neutral grassland dominated by false oat-grass (<i>Arrhenatherum elatius</i>), with a moderate diversity of common wild flowers. Spiked sedge (<i>Carex spicata</i>), which is uncommon in Camden, is present in reasonable quantity.
Clitterhouse Playing Fields Local (SLINC)	1.2km north	The hedgerows around the perimeter are relics of the farmland era. They contain an interesting mixture of typical ancient hedgerow species such as crab apple (<i>Malus sylvestris</i>) and Midland (<i>Crataegus laevigata</i>) and common hawthorns. There are also some fine old oak and ash trees.
Gladstone Park Borough Grade II (SBINC)	1.5km west	There is a pond in the area, its margins are planted with a wide variety of vegetation including abundant pickerel weed (<i>Pontederia cordata</i>) (a non-native species), galingale (<i>Cyperus longus</i>), lesser reedmace (<i>Typha angustifolia</i>) and reed canary-grass (<i>Phalaris arundinacea</i>). There are many fine trees in the rest of the park; these include pedunculate oaks and London planes (<i>Platanus x acerifolia</i>). There are areas with an interesting grassland flora including common stork's-bill (<i>Erodium cicutarium</i>), meadow buttercup (<i>Ranunculus acris</i>) and an agrimony (<i>Agrimonia</i> species).
West Hampstead Railsides (The Jane Evans Nature Reserve), Medley Orchard and Westbere Copse (LNR). Borough Grade I (SBINC)	1.7km south - east	This site is composed of a number of sections of railsides that are a complex of habitats with extensive areas dominated by secondary woodland and scrub. Trees include sycamore, grey poplar (<i>Populus x canescens</i>), wild cherry (<i>Prunus avium</i>), ash and horse chestnut (<i>Aesculus hippocastanum</i>). Scrub species include elder, dogwood (<i>Cornus sanguinea</i>), bramble (<i>Rubus fruticosus</i> aggregate), hawthorn and English elm (<i>Ulmus procera</i>).
Metropolitan line between Kilburn and Neasden Borough Grade I (SBINC)	2.3km south - west	The linesides through this section are divided into two. To the west of Dudden Hill Lane can be found species as: great willowherb (<i>Epilobium hirsutum</i>), an ox-tongue (<i>Picris</i> species), spear thistle (<i>Cirsium vulgare</i>), common knapweed (<i>Centaurea nigra</i>), common toadflax (<i>Linaria vulgaris</i>), Canadian goldenrod (<i>Solidago canadensis</i>), Spanish broom (<i>Spartium junceum</i>) and goat's-rue (<i>Galega officinalis</i>). The rest of the site to the east of Dudden Hill Lane consists of narrower embankments, and some of the mature trees are in adjacent back gardens.

4.1.2 Protected and Notable Habitats

There were no protected or notable habitats at the Site of the Proposed Development.

4.1.3 Protected and Notable Species

Table 4.3 provides a summary of potentially relevant species identified through a combination of desk study and field survey. The table summarizes the conservation status of each species recorded in the last 10 years and provides comment on the likelihood of presence.

Where species are identified in Table 4:3 as likely or possible, they may represent legal constraints or may be material to determination of a planning application. Any further surveys that might be required to determine presence or probable absence would be identified in Section 5 of this report.

Table 4:3: Protected and notable species relevant or potentially relevant to the Proposed Development

Species	Legally Protected Species?	Species of Principal Importance?	Other Notable Species?	Present on Site?	Present / Potentially Present in Wider Zone of Influence?	Supporting Comments
Mammals (including bats)						
Pipistrelle Bat species (<i>Pipistrellus</i>)	✓	✓	✓	-	✓	Most recent record is 1013m south-east of the Site in 2010.
Birds						
Swift (<i>Apus apus</i>)	-	-	✓	-	✓	Nearest record is 278m south-east of the Site in 2004 and most recent record is 969 West of the site in 2014.
Stock Dove (<i>Columba oenas</i>)	-	-	✓	-	✓	Nearest record is 897m east of the Site in 2014.
Kestrel (<i>Falco tinnunculus</i>)	-	-	✓	-	✓	Nearest record is 569m south-east of the Site in 2014.
Herring Gull (<i>Larus argentatus</i>)	-	✓	✓	-	✓	Nearest record is 701m south-east of the Site in 2009.
Grey Wagtail (<i>Motacilla cinerea</i>)	-	-	✓	-	✓	Nearest record is 278m south-east of the Site in 2015.
House Sparrow (<i>Passer domesticus</i>)	-	✓	✓	-	✓	Nearest record is 897m east of the site in 2014.
Wood Warbler (<i>Phylloscopus sibilatrix</i>)	-	✓	✓	-	✓	Most recent record is 897m east of the site in 2012.
Dunnock (<i>Prunella modularis</i>)	-	✓	✓	-	✓	Most recent record is 701m south-east of the Site in 2010.
Firecrest (<i>Regulus ignicapilla</i>)	-	-	✓	-	✓	Nearest record is 897m east of the Site in 2010.
Goldcrest (<i>Regulus regulus</i>)	-	-	✓	-	✓	Most recent record is 772m south-east of the Site in 2009.
Tawny Owl (<i>Strix aluco</i>)	-	-	✓	-	✓	Most recent record is 970m east of the Site in 2017.

Species	Legally Protected Species?	Species of Principal Importance?	Other Notable Species?	Present on Site?	Present / Potentially Present in Wider Zone of Influence?	Supporting Comments
Starling (<i>Sturnus vulgaris</i>)	-	✓	✓	-	✓	Nearest record is 701m south-east of the Site in 2010 and most recent record is 897 east of the site in 2014.
Redwing (<i>Turdus iliacus</i>)	-	-	✓	-	✓	Most recent record is 897m east of the Site in 2014.
Song Thrush (<i>Turdus philomelos</i>)	-	✓	✓	-	✓	Most recent record is 772m south-east of the Site in 2009.
Mistle Thrush (<i>Turdus viscivorus</i>)	-	-	✓	-	✓	Most recent record is 701m south-east of the Site in 2010.
Invertebrates (Beetles)						
Stag Beetle (<i>Lucanus cervus</i>)	✓	✓	✓	-	✓	Nearest record is 167m south of the Site in 2016.
Higher Plants (Flowering plants)						
Large-leaved Lime (<i>Tilia platyphyllos</i>)	-	-	✓	-	✓	Nearest record is 946m west of the Site in 2005.
Mistletoe (<i>Viscum album</i>)	-	-	✓	-	✓	Nearest record is 701m south east of the Site in 2012.

Key to symbols: ✓ = yes, x = no, ? = possibly, see Supporting Comments for further rationale.

Species present on site are those for which recent direct observation or field signs confirmed presence. Species which are possibly present are those for which there is potentially suitable habitat based on the results of the Phase 1 Habitat Survey, or this combined with desk study records.

Legally protected species are those listed under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); and, Schedules 2 and 4 of The Conservation of Habitat & Species Regulations 2010 (as amended).

Species of Principal Importance as those listed under Section 41 of the NERC Act. Planning Authorities have a legal duty under Section 40 of the same Act to consider such species when determining planning applications.

Other notable species include native species of conservation concern listed in the LBAP (except species that are also of Principal Importance), those that are Nationally Rare, Scarce or Red Data List, and non-native controlled weed species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

4.2 Phase 1 Habitat Survey

The Site is situated centrally within an urban area and is located adjacent to a principle Network Rail line. The Site is separated from the railway by a wire mesh fence and a hedgerow with trees running the length of the Site's eastern boundary. Immediately surrounding the Site is the densely-populated commercial and residential properties of Cricklewood.

4.2.1 Phase 1 Habitat Types

The majority of surface cover at the Site comprised buildings and hardstanding in the form of the commercial premises operated by B&Q, Poundstretcher and Tile Depot (hereafter referred to as Building 1), and their associated car park, and service yards. Much of the vegetation at the Site was in the form of amenity grassland with scattered parkland trees to the south east boundary, several introduced shrub landscaping areas and a mature hedgerow with trees which formed part of the Site's eastern boundary.

The habitats recorded, their extent and distribution, are shown in Table 4:4 and Figure 1 in Appendix A. The areas are approximate only. The associated target notes are provided in Appendix C, illustrative plates are provided as appropriate in Appendix D.

Table 4:4: Habitats present, in descending order based on approximate spatial area occupied

Habitat	Brief description	Area (m ²)	% of Site area
Hardstanding	Any area of concrete, brick, tarmac or substrate made of inorganic material.	16,151	57
Buildings	Any structure built of concrete, brick, wood within the Site boundary.	8,573	30
Amenity Grassland	Short grassland typically used as landscaping, usually dominated by a single species of grass and mowed frequently	1,837	6
Introduced Shrub	Area of planting dominated by non-native plants.	195	1
Ephemeral/Short Perennial	Usually in the form of single, small plants lining the car park growing between cracks and walls.	93	<1
Scattered Trees	Individual trees that exist within the Site boundary.	~15 Individuals	
Species-poor Hedgerow with Trees	An intact, linear hedgerow with trees which has 4 or fewer mature species (hawthorn, guelder rose, bramble).	100m	
Un-surveyed	Area of the site not subject to detailed survey but considered to be hardstanding with no ecological value.	1,458	5

The habitats are described in greater detail below.

Buildings

Building 1 (Plate 1), situated in the centre of the Site, was mostly of concrete block and brick construction with some areas featuring plastics, glass, metals and other materials typical of urban construction design. The vast majority of the roof of Building 1 was flat and featured plant and communications equipment. The perimeter of the roof is pitched and has a mixture of tiles, glass, metal, plastics and wood soffit boxes. The brickwork of Building 1 was in good condition with no obvious damage to the structure or window fittings, no significant cracks or gaps apart from those highlighted in Table 4:5. The roof was not inspected in full due to health and safety constraints, however the view from the ground revealed some roof tiles were missing and gaps, cracks and crevices appear in several locations on the soffit boxing as listed in Table 4:5 (Figure 1). No internal inspection of this building was undertaken.

Building 2 (Plate 2), situated in the south eastern area of the Site is a flat roofed structure of all metal design. It appeared to be in excellent condition with all doors, gaps and vents sealed with mesh. This building has negligible ecological value. An internal inspection was not undertaken during the survey.

Hardstanding

Hardstanding was present as the largest habitat type, in the form of a car park (Plate 3) and associated access roads, a service yard and pedestrian access paths. The service yard to the west of the Site (TN3) contains some ephemeral and ruderal plant species which had sparsely colonised cracks and gaps in the pavement and brickwork. These species are described in more detail below.

Amenity Grassland

An area of amenity grassland was present at the south eastern area of the Site (Plate 5). The grassland sward length was 10cm and was not dominated by any particular species. Grass species found in the area included perennial rye grass (*Lolium perenne*), red fescue (*Festuca rubra*), wall barley (*Hordeum murinum*) and creeping bent (*Agrostis stolonifera*). The area contained a floral diversity typical of neutral poor semi-improved grassland and featured species including wild strawberry (*Fragaria vesca*), yarrow (*Achillea millefolium*), common mallow (*Malva sylvestris*), lesser trefoil (*Trifolium dubium*), dovesfoot cranesbill (*Geranium molle*), a dandelion

(*Taraxacum* species aggregate), white clover (*Trifolium repens*) and ribwort plantain (*Plantago lanceolata*). This habitat has low ecological value due to the regular mowing activity, and a lack of floral diversity.

Scattered Trees

There are approximately 49 trees of varying height between 8m and 16m found throughout the Site (Figure 1) featuring a mixture of native and introduced species such as wild cherry (*Prunus avium*), London plane (*Platanus × acerifolia*), Norway maple (*Acer platanoides*), sycamore (*Acer pseudoplatanus*), alders (species of *Alnus*) and lime (a species of *Tilia*). Every tree observed at the Site was in good condition and lacked signs of disease, had no broken branches or cavities suitable for roosting bats. The trees have moderate ecological value and provide foraging and nesting opportunities to invertebrates and bird species. See AECOM Tree Survey report for more details.

Ephemeral/ Short Perennial

A service yard comprising an area of hardstanding to the west of the Site (TN3, Plate 4) was populated with ephemeral/short perennial vegetation including willowherb (a species of *Epilobium*), dandelion, wood avens (*Geum urbanum*), chickweed (*Stellaria media*), yellow fumitory (*Corydalis flavula*) fat hen (*Chenopodium album*) and buddleia (*Buddleia davidii*). The area contained debris such as wooden pallets and a metal shipping container associated with the operations of the store. This habitat was of negligible ecological value.

Introduced Shrub

Planters were located in the centre of the Site and contained a mixture of ornamental plant species including hibiscus (a species of *Hibiscus*) and lavender (a species of *Lavandula*) were present (TN2, Plate 7). Additional areas of ornamental planting occurred in the north west part of the Site as part of soft landscaping (TN4, Plate 8) featuring several mature tree species including lime and alder, immature trees including sycamore and stands of laurel (*Laurus* spp) and buddleia.

Species Poor Hedgerow with Trees

A hedgerow (H1, Plate 6) was present along the north eastern boundary of the Site between the car park and perimeter fence that contains a series of mature London plane trees that were approximately 18m in height. The hedgerow itself is dominated by common hawthorn (*Crataegus monogyna*) and also features immature sycamore, ash (*Fraxinus excelsior*) and holm oak (*Quercus ilex*) as well as occasional guelder rose (*Viburnum opulus*) and bramble.

4.2.2 Invasive Non-Native Plant Species

Virginia creeper (*Parthenocissus quinquefolia*) is present within the Site boundary (TN5, Plate 10). This species is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such, it is an offence to allow this species to escape into the wild or onto adjoining properties.

Buddleia, which is a species listed by the London Invasive Species Initiative as Category 3, was recorded within the Site boundary; present as introduced shrub to the north of the Site by the perimeter fence and growing opportunistically as ephemeral/short perennial vegetation within the service yard area (TN3). A Category 3 species is “a Species of high impact or concern, which are widespread in London and require concerted, coordinated and extensive action to control/eradicate”. Buddleia poses a risk to buildings by seed germinating in cracks and crevices in masonry with subsequent damage caused by the plant growing..

Holm oak is also present within the Site, within the hedgerow. It is listed by the London Invasive Species Initiative as Category 5.

Tree-of-heaven was recorded as mature trees outside of the Site, to the south of the Site. This species readily propagates itself through seed and suckers and suppresses local plant growth

4.2.3 Bats

GiGL returned a record of bat species within 1 km of the Site (Table 4:3).

All buildings present within the Site boundary were inspected externally for bat roosting potential as described in Section 3.2. Only Building 1 was noted to contain features which are assessed to have low potential to support

roosting bats. These findings are detailed in Table 4:5 below. Photographs of identified features (BRP 1 to 9) are included in Appendix D (Plates 14 to 22).

Building 1 (Plate 1) had low bat roosting suitability as it has several features including gaps in the soffit box and between the soffit box and barge board (noted in Table 4:5). An external inspection found that the roof void was suitable for roosting bats due to low disturbance, likely had appropriate thermal conditions (as observed through holes and gaps noted in Table 4.5 and opportunity to tuck into crevices afforded by the roof timbers and lining. Further bat surveys have been recommended and details for them are shown in Section 5 of this report.

Building 2 (Plate 2) had negligible bat roosting suitability due to the nature of its metal construction with no gaps or crevices that may allow access and egress for bats. The design of the building would afford no internal opportunities for roosting bats and would not provide them with appropriate thermal conditions.

All trees within the Site had negligible suitability for bats due to an absence of potential roost features such as woodpecker holes, cracks, fissures or lifted bark which prevents bat species from using the trees to roost. The surrounding habitat presents limited foraging opportunity for bats, and the presence of night-time lighting further renders the area unsuitable for bats.

Table 4:5 Building inspection results for bat roosting suitability

Building	Feature Reference	Type of feature	Location of feature	Suitability to support roosting bats	Further survey required?	Appendix D Photo Reference
Building 1	BRP 1	Large gaps in roof of annexed structure	South west corner of Building 1	Low	Yes	BRP 1
Building 1	BRP 2	Gap between pipe and bricks	South east corner of Building 1	Low	Yes	BRP 2
Building 1	BRP 3	Broken tile	South west corner of pitched roof above B&Q entrance	Low	Yes	BRP 3
Building 1	BRP 4	Gaps in plywood	Ceiling above entrance to Tile Depot	Low	Yes	BRP 4
Building 1	BRP 5	Large 20cm hole in ceiling	Ceiling of overhanging roof at north east corner of Building 1	Low	Yes	BRP 5
Building 1	BRP 6	Crack and possible lifted tiles	Pitched roof on north face of Building 1	Low	Yes	BRP 6
Building 1	BRP 7	Gaps between bricks and ventilation opening	North eastern face of Building 1 within service yard (TN3) area.	Low	Yes	BRP 7
Building 1	BRP 8	Gap at edge of soffit box	Soffit box on north eastern face of Building 1 within service yard (TN3) area.	Low	Yes	BRP 8
Building 1	BRP 9	Gap between soffit box and drain pipe	Southern face of building within service yard (TN3) area.	Low	Yes	BRP 9

4.2.4 Nesting Birds

GiGL returned records of a number of bird species that were recorded from the search area within the last 10 years and could potentially be present within the Site (Table 4:3). The trees marked on Figure 1 and the hedgerow at the eastern edge of the Site had moderate suitability to support nesting birds. Building 1 contained

several features where birds had gained access and are likely roosting inside the roof structure due to the build-up of droppings and feathers inside the cavities (TN6, Plates 11 to 13). Feral pigeon (*Columba livia domestica*) was present in a large flock on the southern boundary of the Site throughout the survey. Signage and the large presence of droppings suggest pigeon are constantly present within the Site boundary.

4.2.5 Other Protected Species

The Site was not suitable to support any other protected and/or notable species, such as great crested newt (*Triturus cristatus*), badger (*Meles meles*) or reptiles. The desk study returned no records for great crested newt within the last 10 years, and no suitable habitat (small waterbodies) exists within 250m of the Site. The desk study also returned no records for badger or reptiles within the last 10 years; no habitats suitable to support badger setts (tall grassland, woodland) or reptile foraging, basking and hibernation (grassland) were identified within or adjoining the Site.

Some evidence of mammal digging, likely rabbit (*Oryctolagus cuniculus*), was found within an area (TN1, Plate 9) of soft landscaping at the southern end of the hedgerow (H1). There was no other evidence for this species at the Site and are therefore rabbit not considered further in this report.

5. Identification of Ecological Constraints and Recommendations

5.1 Approach to the Identification of Ecological Constraints

Relevant ecological receptors that may represent constraints to the Proposed Development, or that provide opportunities to deliver ecological enhancement in accordance with planning policy, are identified in Section 4 of this report.

The NPPF and local planning policy (summarised in Section 2 of this PEA) specify requirements for the protection of features of importance for biodiversity. Planning policy is a material consideration when determining planning applications.

Compliance with planning policy requires that the Proposed Development considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological receptors:

1. Avoid features where possible;
2. Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
3. Compensate for significant residual impacts, e.g. by providing suitable habitats elsewhere (whether in the control of the client or otherwise legally enforceable through planning condition or Section 106 agreement).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation should be provided prior to planning determination, including sufficient detail to show that these measures are feasible and would be provided.

In pursuance of the objective within the NPPF of providing net gains in biodiversity where possible, consideration should be given to the scope for enhancement as part of the proposed development. This should represent biodiversity gain over and above that achieved through mitigation and compensation. Enhancement could be achieved on and/or off the Site.

The likelihood of the relevant ecological receptors constraining the Proposed Development has been assessed with reference to the scale described in Table 5:1. The higher the importance of the ecological receptor for the conservation of biodiversity at national and local scales, the more likely it is to be a material consideration during determination of the planning application for the Proposed Development.

Opportunities for ecological enhancement are not scaled in Table 5:1, but are identified in the accompanying appraisal (Section 6 of this report). There may be scope for ecological enhancement where existing habitat features could be improved or enhanced within the Proposed Development as designed, or with only minor amendment to the design of the Proposed Development. Ecological enhancement may not be possible where there is little scope to accommodate enhancement within the proposed development, e.g. due to a lack of utilisable space, or where land is required for essential mitigation. Consideration could be given to enhancing biodiversity in the vicinity of the Site.

Table 5:1 Scale of Constraint to Development

Likelihood	Definition
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (e.g. statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.
Medium	An actual or potential constraint that is covered by national or local planning policy and, depending on the level of the potential impact as a result of the proposed development, may be a material consideration in determining the planning application. Further survey may be required (as detailed in this report) to support a planning application.
Low	Unlikely to be a constraint to development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (e.g. generic requirements for the management of nesting bird risks).

5.2 Constraints and Requirements for Further Survey: Designations

No sites, statutorily or non-statutorily designated for their nature conservation value, pose potential constraints to the Proposed Development. This is due to the distance of any such sites to the Proposed Development, the nearest being at 800m to the south west of the Site at Westbere Copse LNR. Currently a mainline railway separates the two locations which will itself cause regular disturbance to Westbere Copse LNR. It is therefore concluded that no effects on any designated sites are anticipated from the Proposed Development.

5.3 Constraints and Requirements for Further Survey: Habitats

There are no notable or particularly diverse habitats present within or immediately adjacent to the Site that potentially represent a constraint on development of the Site. The habitats present are common with limited species diversity and therefore do not require further survey.

5.4 Constraints and Requirements for Further Survey: Species

5.4.1 Invasive non-native species (INNS)

Virginia creeper (*Parthenocissus quinquefolia*) is present within the Site boundary (TN5, Plate 10). This species is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such, it is offence to allow this species to escape into the wild.

Buddleia was present as introduced shrub to the north of the Site by the perimeter fence and growing opportunistically as ephemeral/short perennial vegetation within the service yard area (TN3). Buddleia poses a risk to building by seed germinating in cracks and crevices in masonry.

Holm oak is present within the eastern hedgerow.

The London Invasive Species Initiative (LISI) lists buddleia as species which is considered detrimental to biodiversity and categorises its risk at level 3. Holm oak is listed as risk level 5:

- **LISI 3:** Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate. These species are currently causing large scale impacts across London and LISI supports area or catchment wide partnership working to ensure their management.
- **LISI 5:** Species for which insufficient data or evidence was available from those present to be able to prioritise.

It is recommended that an Invasive Species Management Plan is put in place to eradicate and control the spread of these species.

Tree-of-heaven is present as mature trees at the south of the Site, outside the site boundary. As tree-of-heaven spreads by suckers, could emerge in the Site. It would be advisable to remove tree-of-heaven, if possible. The plant can interfere with built structures, e.g. underground structures and paving. If removed, it should be included in the invasive non-native management plan for the Site.

5.4.2 Bats

Building 1 had features which indicate low suitability to support bats as listed in Table 4:4 (Appendix D – Plates 14 to 22). As this building is due to be demolished, an emergence or re-entry survey is recommended in order to assess the presence of any bat species that may be roosting within its envelope. Given that the presence of protected species are a material consideration, it is noted that in order to avoid delays and minimise the risk of challenges it is recommended that where possible the surveys required are programmed to be undertaken prior to the submission of the planning application. This survey would be needed to be carried out by a team of surveyors, led by a licensed bat surveyor, (covering all relevant features, and would require a dusk visit, to determine if bats are using the relevant features. It is possible that this recommendation could be increased to allow further visits if bats are recorded roosting in the buildings. We recommend the bat emergence survey takes place no later than the end of September in order to comply with best practice guidelines (Collins, 2016) for this species.

It is recommended that the survey work detailed in this report is current for 12 months from date of issue. If works are to commence outside of this time period, it is recommended that the bat survey work is updated accordingly.

5.4.3 Nesting Birds

Externally, Building 1 (TN6 Plates 11 to 13) has the potential to support nests for bird species including house sparrow (*Passer domesticus*), swift (*Apus apus*) and feral pigeon (*Columba livia domestica*)

There is potential that nesting birds may be utilising the trees and hedgerow present throughout the Site although no nests were observed during the survey. Therefore, it is recommended that a nesting bird check is carried out by a suitably experienced ecologist before any vegetation clearance, is undertaken during the core bird nesting season (March to August inclusive).

If vegetation clearance will have to take place during the nesting bird season an ecologist will be required to confirm the absence of active bird nests immediately prior to works commencing. If a nest is discovered, clearance or other construction works should be stopped immediately within an exclusion zone, generally within 10 metres of the nest, although exclusion zones are species specific and an ecologist should be consulted. The exclusion zone will be marked with bamboo sticks topped with coloured duct tape to make it easy to identify. The nest will subsequently be monitored, typically on a weekly basis, by a suitably qualified person. Once it is confirmed that all birds have fledged and ceased to return to the nest, and that no other nests are in use within the exclusion zone, the vegetation clearance can be continued.

6. Opportunities for Ecological Enhancement

The London Plan and London Borough of Barnet's Local Plan and Development Framework contain statements and policies relating to the enhancement and creation of biodiversity opportunities in the Borough and for the promotion of sustainable design, air and water quality. The London Borough of Barnet also has responsibilities relating to the NERC Act 2006 and the NPPF which require efforts to improve biodiversity and green infrastructure. As such, the following recommendations are made with regards to facilitating this enhancement:

6.1 Landscaping

There is an opportunity within the landscaping plans to include native and near-native species for the benefit of wildlife. Scheme appropriate native tree species could include rowan, birch, beech, wild cherry or willow. These trees would provide food and flowers for insects, birds and mammals. In addition, the installation of insect habitats such as an urban insect box, urban bee nester, and bee-pot (concrete planter and bee hotel) (see <https://www.wildcareshop.com/wildlife-nestboxes/insect-habitat.html>) and installation of house sparrow terraces (See <https://www.nhbs.com/house-sparrow-terrace-fsc-nest-box>), where appropriate, can enhance ecology at the Site and provide net gains for biodiversity.

Consideration should also be given to use the available lighting technology to minimise impacts on bats, i.e. use of traditional low pressure sodium lamps (as opposed to high pressure sodium, mercury, and white SON). These have the least impact on bats (as well as insects and other invertebrates) as they emit no UV light (which attracts invertebrates). LED lighting also emits little UV light, and these lamps can be programmed to switch off, or dim at certain times. Additionally:

- The lights to be made directional with light spillage avoided. Hoods / cowls can be used to direct light below the horizontal plane (ideally at an angle less than 70 degree);
- Lights designed to be as low to the ground as possible (specifically not above 8m); and
- Lights to be switched off at night (particularly during the months of April to October, inclusive when bats are active), or at least, motion activated.

6.2 Biodiverse Green Roof

Extensive biodiverse green roofs are those which are created primarily for biodiversity purposes. A commercial seed mix, blanket system or plug planting scheme will provide species of native (and some non-native) flowering plants, grasses, sedges and sedum will provide a nectar and pollen rich habitat, providing foraging opportunities to a wide range of urban birds, butterflies, bees, other invertebrates and bat species. An opportunity present here is to choose species mix such as a Bauder Wildflower Blanket XF118 or similar, that can also mitigate city pollutants, such as CO₂ emissions, is to be installed by a professional supplier such as Bauder, ANS, or Lindum.

They are based on shallow substrate depths (average depth 80 -120mm) and have low maintenance requirements. Substrate depths will ideally be varied across the roof deck to promote a diversity of both shallow and deep rooted plants and ones which are more and less drought tolerant. Undulating substrate depths also create differing habitats for a greater range of invertebrate species. Pebbles, boulders, gravels, sands, branches and logs may also be incorporated into an extensive green roof to offer suitable habitats and can aim to recreate the habitat that was lost when the building was erected, or even enhance it.

6.3 Living Walls

If appropriate to the architectural design, as an addition, a green wall or walls can be installed on or immediately in front of external walls of the Proposed Development. Living walls function and have a similar purpose to a green roof system³.

Living walls, such as a trellis system, act as a suitable alternative to hedging in areas where space is limited⁴. They can be fitted onto building walls and external features. The large vertical faces of the Proposed Development provide a suitable surface for a living wall. Green features not only enhance local biodiversity but potentially reduce the urban heat island effect, remove air pollutants, help achieve a better carbon balance and

³ Scotscape 'living' walls <https://www.scotscape.net/living-walls/>

⁴ Greater London Authority (undated). Living walls <https://www.london.gov.uk/sites/default/files/living-roofs.pdf>

create an aesthetically pleasing feature for customers and staff with well documented benefits to health and wellbeing.

7. Summary

Based on the findings of the Phase 1 Habitat Survey and desktop study, it can be concluded that there are some ecological constraints present at the Site, including the potential for protected species including bats and breeding birds. These species could be impacted by the Proposed Development.

The constraints outlined here will need to be reassessed if there is a significant change to the type or scale of development proposed as set out in Section 1, or if there are any significant changes in the use or management of the land that would affect the habitats and species. If a planning application is submitted 12 months or more after this PEA, it is advisable to review and update the survey data.

See also the summaries provided as Table 7:1 and Table 7:2 below.

Table 7:1 Summary Appraisal of Features of Ecological Constraints and Recommended Further Action

Receptor	Scale of Constraint	Further Requirements, Including Potential Mitigation Requirements	Driver	When is Action Likely to be Required?		
				To Inform Design	Before Planning Determination	Pre-construction Onwards
Bats	High	A single dusk emergence survey required to assess if Building 1 has suitability for roosting bats. Further surveys may be required beyond this if bat roost presence is confirmed.	Legislation	✓	✓	✓
Nesting Birds	Moderate	During the core nesting bird season (March-August inclusive) the trees and scrub that are being removed should be checked immediately prior to their removal by a suitably experienced ecologist. If further vegetation clearance of trees or scrub needs to be carried out during the bird nesting season, this vegetation should also be checked for nesting birds by a suitably experienced ecologist. If a nest is found during vegetation clearance the appropriate mitigation measures will be implemented.	Legislation			✓
INNS – Virginia Creeper (<i>Parthenocissus quinquefolia</i>)	Moderate	This species should be controlled to prevent its spread into neighbouring properties following an Invasive Non-native Species Management Plan	Legislation			✓

Table 7:2 Requirements for Further Survey

Survey	Season	Method	Why required?	When is Action Likely to be Required?		
				To Inform Design	Before Planning Application	Pre-construction onwards
Bats	May-September	Collins (2016)	To confirm presence/absence of bat roosts on Site and to inform mitigation requirements.	✓	✓	
Nesting Birds	March to August	Precautionary Working Method	To identify presence/absence on site to inform mitigation requirements.	✓	✓	✓

Section 6 identified opportunities for enhancement that would provide biodiversity net gains accordingly to the NPPF, London and the London Borough of Barnet’s Local Plans and Development Framework, that contain statements and policies relating to the enhancement and creation of biodiversity opportunities in the Borough and for the promotion of sustainable design, air and water quality. These comprise:

- landscaping strategy to include native and near-native plant species for the benefit of wildlife;
- installation of insect habitats;
- creation of extensive biodiverse green roofs. Pebbles, boulders, gravels, sands, branches and logs may also be incorporated into an extensive green roof to offer suitable habitats; and
- installation of living walls on external walls of the Proposed Development, if appropriate to the architectural design.

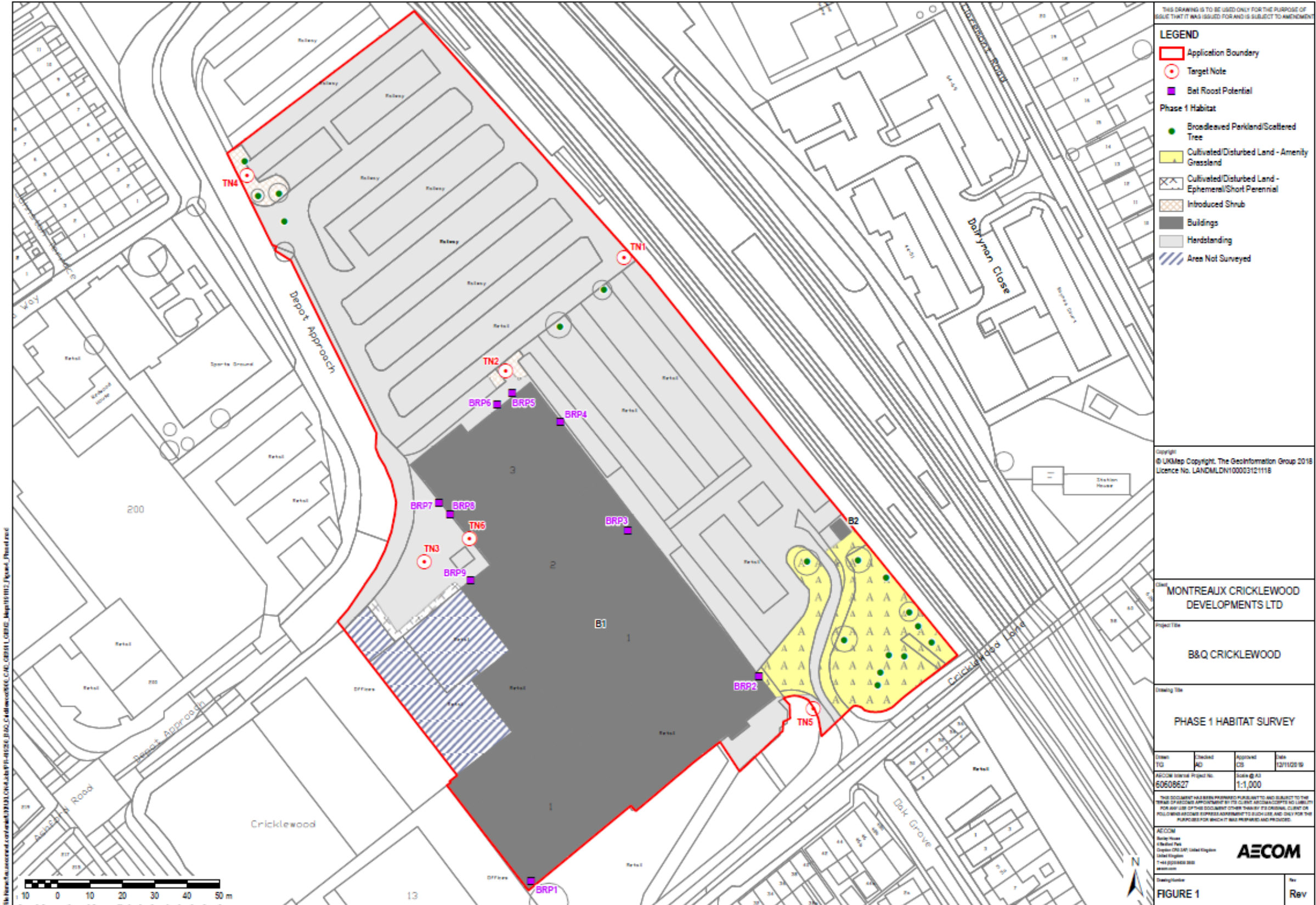
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Appendix A Phase 1 Habitat Map

Figure 1: Phase 1 Habitat Survey Map overleaf



Appendix B Legislation and Planning Policy

The Wildlife and Countryside Act, 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
- The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive')

The main relevant provisions of the Act are: allowance for the protection of the most important habitats and species by designating SSSI's, a level of protection to all nesting wild birds and specific bird species under Schedule 1.

The Countryside and Rights of Way (CroW) Act, 2000

Part III of this Act deals specifically with wildlife protection and nature conservation in England and Wales. The CroW Act strengthened the safeguards afforded to SSSIs.

Conservation of Habitats & Species Regulations, 2017

The original Regulations transposed the EU Directive on Natural Habitats, and Wild Fauna and Flora 9/43/EEC) into domestic legislation. The regulations were consolidated in 2017 to include;

- Amendments in 2007 and 2009 that addressed a number of gaps and inconsistencies in the original legislation and provided a greater legal certainty and clarity in a number of areas;
- Amendments in April 2010 that brought up to date to consolidate changes made since 1994. The Regulations afford a high level of protection to a variety of species that are considered important at a European scale. The Regulations identify European Protected Species and various habitats of importance within the European Union, with important Sites for these habitats/species or both being designated as special Areas of Conservation (SAC). Any Proposed Development that may have a significant effect on a SAC or Special Protection Area (SPA) should be assessed in relation to the Site's 'conservation objectives', i.e. the reasons for which the Site is designated.
- Amendments in 2012 to place new duties on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. They were also amended to ensure certain provision of the Habitats Directive and the Birds Directive were transposed clearly and Section 15 was amended to make clear that Local Nature Reserves can be designated for re-establishing bird habitat.

The new Regulations simplified the species protection regime to better reflect the Habitats Directive, providing a clear legal basis for surveillance and monitoring of European Protected Species (EPS). The Regulations also amended the WCA, updating Schedules 5 and 8 to consider provisions made by the Habitat Regulations 1994 in relation to the protection of EPS. They also offered further clarification to Part 4 of Section 9 considering "reckless" offences on wild animals, which was previously amended by the CROW Act 2000.

Natural Environment and Rural Communities (NERC) Act, 2006

Section 41 of the NERC Act requires the listing of habitats and species that are considered to be of Principal Importance for the conservation of biodiversity in England, including habitats and species in England that have been identified as priorities within the UK Biodiversity Action Plan (UKBAP).

The NERC Act requires that the section 41 list be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

The EU Invasive Alien Species Regulations 2014

The EU Invasive Alien Species Regulations sets out to address the problems concerned with invasive alien species (IASs) in order to protect native biodiversity and ecosystem services and minimize and mitigate the human health and/or economic impacts that IASs can have. It sets out rules to prevent and manage the introduction and spread of IASs in the EU through prevention, early detection and rapid eradication, and management.

National Planning Policy Framework

The NPPF came into being in March 2012, relevant sections are as follows:

Section 11 of the NPPF relates specifically to “Conserving and Enhancing the Natural Environment”. Paragraph 109 states that “*The planning system should contribute and enhance the natural and local environment by:*

- *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *Recognising the wider benefits of ecosystem services;*
- *Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
- *Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”*

Paragraph 113 states that “*Local Planning Authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks*”. Referenced here is ODPM Circular 06/2005, which provides further guidance re the hierarchical approach and the Circular remains extant in its entirety within the NPPF.

Paragraph 118 states that “*When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*

- *if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*
- *proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *opportunities to incorporate biodiversity in and around developments should be encouraged;*
- *planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and*
- *the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”*

Paragraph 119 states *“The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directive is being considered,*

Appendix C Target Notes

TN1: Area of bare ground at the end of the hedgerow that has signs of small mammal digging (Plate 9), likely to be rabbit.

TN2: A pair of ornamental planters (Plate 7) containing a mixture of ornamental plant species including hibiscus (*Hibiscus sp*) and lavender (*Lavandula sp*).

TN3: A service yard comprising an area of hardstanding (Plate 4) to the west of the Site was populated with ephemeral/short perennial vegetation including a willowherb (*Epilobium sp*), dandelion, wood avens (*Geum urbanum*), chickweed (*Stellaria media*), yellow fumitory (*Corydalis flavula*) fat hen (*Chenopodium album*) and buddleia (*Buddleia davedii*). The area contained debris such as wooden pallets and a metal shipping container associated with the operations of the store. This habitat was of negligible ecological value.

TN4: Additional areas of ornamental planting (Plate 8) occurred in the north west part of the Site as part of soft landscaping featuring several mature tree species including lime (*Tilia sp*) and alder (*Alnus sp*), immature trees including sycamore and stands of laurel (*Laurus sp*) and buddleia.

TN5: A concrete and wooden wall dominated by Virginia creeper (*Parthenocissus quinquefolia*) (Plate 10) which is an invasive non-native species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Also present is an immature stand of tree-of-heaven.

TN6: A series of cavities (Plates 11,12 and 13) in the soffit box underneath the roof structure exposes the internal roof structure and piping which have evidence of bird roosting including droppings and shed, downy feathers.

Appendix D Photographs



Plate 1 Building 1 (Southern elevation)



Plate 2 Building 2 (Eastern elevation)



Plate 3 Hardstanding Car Park



Plate 4 Service Yard (TN3) Area with ephemeral vegetation



Plate 5 Amenity grassland with scattered parkland trees



Plate 6 Hedgerow with trees (H1)



Plate 7 Ornamental Planter (TN2)



Plate 8 Areas of soft landscaping to north of Site



Plate 9 TN1 - Bare ground with potential rabbit digging



Plate 101 TN5 Wall with Virginia Creeper (INNS) present



Plate 11 TN6 Cavity with visible bird droppings and feathers inside



Plate 12 TN6: Substantial gaps in underside of roof allowing bird access



Plate 13 TN6: Substantial gaps in underside of roof allowing bird and bat access



Plate 14. BRP1



Plate 15. BRP2



Plate 16. BRP3



Plate 17. BRP4



Plate 18. BRP5



Plate 19. BRP6



Plate 20. BRP7



Plate 21. BRP8



Plate 22. BRP9

B&Q Cricklewood

Tree Survey Report

Montreaux Cricklewood Developments Ltd

July 2019

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Appendix A	Tree Constraints Plan
Appendix B	Tree Survey Schedule
Appendix C	Site Boundary
Appendix D	Site Photography
Appendix E	Statutory Designations

1. Introduction

1.1 Background

AECOM has been instructed by Montreaux Cricklewood Developments Ltd (the Client) to carry out a Tree Survey to BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837); to identify and classify trees with the potential to be affected by development works within or immediately adjacent to Cricklewood railway station (postcode NW2 1ES, National Grid Reference TQ 23857, 85892 (hereafter referred to as ‘the Site’) in support of the outline planning application. This report identifies preliminary information in relation to the nature and level of constraints posed by existing trees on Site and is intended to inform the development of any design proposals and working methodologies to ensure that the potential impacts on significant trees are fully considered.

1.2 Trees and the Planning Process

The National Planning Policy Framework (NPPF) 2019 seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaptation. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally, it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.

Local Planning Authorities (LPA) in the UK have a statutory duty to consider both the protection and planting of trees when considering planning applications. The potential impact of development on all trees (including those not protected by a Tree Preservation Order or other statutory designation) is therefore a material consideration.

‘BS5837:2012 Trees in relation to design demolition and construction – Recommendations (BS5837)’ provides a framework which sets out how trees should be considered in this context and also explicitly applies to development where planning consent is not required.

BS5837 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This is then used to produce a Tree Constraints Plan showing the above and below ground constraints associated with trees. This drawing is used to inform the design process and to allow the retention of good quality trees where appropriate.

An Arboricultural Impact Assessment is then developed to identify the likely direct and indirect impacts of the Proposed Development, and a Tree Protection Plan is prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected. An Arboricultural Method Statement is often required as a condition of planning consent to detail how sensitive operations are to be achieved in close proximity to retained trees. These elements are the minimum normally required for a planning application and are intended to ensure both a sustainable and harmonious relationship between trees and new development.

1.2.1 Local Policy Context

LPA’s have a statutory duty to consider the protection and planting of trees when granting permission for developments. The London Borough of Barnet’s (LBB) Development Management Policies¹ outline the Council’s strategy for tree protection, retention and planting in relation to developments.

Section 2.10.3 states “*The council will seek to retain existing wildlife habitats such as trees, shrubs, ponds and hedges wherever possible. Where trees are located on or adjacent to a site the council will require the submission of a tree survey with planning applications indicating the location, species, size and condition of trees. Trees should be retained wherever possible and any removal will need to be justified in the survey. Where removal of trees and other habitat can be justified appropriate replacement should consider both habitat creation and amenity value.*”

¹<https://www.barnet.gov.uk/sites/default/files/assets/citizenportal/documents/planningconservationandbuildingcontrol/PlanningPolicy/LocalPlan/DPD/Barnet27sLocalPlanDevelopmentManagementPoliciesplanning.pdf>

Section 2.10.4 outlines the importance of tree protection stating: *“During building operations we will expect that adequate precautions will be taken to ensure that existing trees and other landscape features are not damaged.”*

The importance of tree retention is further emphasised by mitigation planting in Policy DM01 K. *“Trees should be safeguarded. When protected trees are to be felled the council will require replanting with suitable size and species of tree where appropriate.”*

The above policies outline the importance of considering trees throughout the stages of development for both retention and protection of the trees on Site.

1.3 Methodology

The tree survey has been based on the topographical survey plan provided (ref: B&Q plc 25642 by MK Surveys.)

A number of trees were not included on the topographical survey plan and have been plotted indicatively with reference to site features and publicly available aerial photography. Such trees have been marked with an ‘*’ on the Tree Survey Schedule included as Appendix B. As such all positions for these trees must be considered to be indicative only and the relative distances of features must be measured out on Site as required.

The survey was otherwise conducted in accordance with the requirements of BS5837.

The initial fieldwork was undertaken on 11th July 2019, during which dimensional data and observational information were collected. A diameter tape measure was used to measure stem diameters where feasible.

The fieldwork informing this report has comprised a preliminary, non-intrusive, visual survey undertaken from ground level with the specific intention of evaluating the quality and benefits of trees on Site.

Where further inspection is deemed appropriate to ascertain the condition of the tree or other arboreal features, this has been identified within the preliminary management recommendations. Average dimensions or dimensional ranges have occasionally been used, where appropriate, to best describe features.

The Root Protection Area (RPA) is the notional extent of what is considered to be the key rooting area for tree health and function. This is generally depicted as a circle but can be amended to a polygon with an equivalent area in accordance with Section 4.6.2 of BS5837 where the RPA is likely to have developed asymmetrically. The RPA of all surveyed trees is depicted as a circle and no RPAs have been amended.

A Tree Constraints Plan showing the position of trees and the spatial constraints associated with them is included as Appendix A of this report, which corresponds with the Tree Survey Schedule presented in Appendix B.

The tree categorisation process recommended by BS5837:2012 is summarised in the table below and corresponds with the tree canopy outline shown on the Tree Constraints Plan (Appendix A) and the information in the Tree Survey Schedule (Appendix B).

Table 1: BS5837:2012 Tree Categorisation process

Category	Definition
A	High quality, minimum of 40+ years remaining contribution
B	Moderate quality, minimum of 20+ years remaining contribution
C	Low quality, minimum of 10+ years remaining contribution
U	Unsuitable for retention, <10 years remaining contribution
1	Arboricultural value
2	Landscape value
3	Conservation or cultural value

2. General Arboricultural Principles

2.1 General Principles

Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any Proposed Development with the potential to impact on trees must take into consideration the value of trees on Site; the impact of any proposed activity along with any potential future conflicts on the Site. Suitable measures to safeguard retained trees or mitigate the loss of trees (to be removed) will need to be fully considered and may be subject to a condition of planning consent.

Tree branches and roots frequently grow across Site boundaries and off-site trees can pose a significant constraint, and should be carefully considered when assessing the developable space within a Site.

2.2 Below Ground Constraints

Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.

Roots can be damaged by physical severance or wounding (e.g. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/or instability. Raising the soil level can bury tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/water levels can also have significant long term impacts for tree health.

The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

The Root Protection Area (RPA) is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1000mm of soil; however, roots may develop at deeper levels where conditions allow.

RPAs are calculated as per BS5837: 2012 Annex C, D and Section 4.6 in the BS 5837 2012 Document.

The RPA of the existing tree stock is an important material consideration when considering Site constraints and planning development activities. The RPA of significant trees on Site is shown on the Tree Constraints Plan (Appendix A).

The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable, it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

Further steps to improve or increase the useable rooting area available to the tree may also be required.

2.3 Soils

On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. Soils must be carefully assessed, and any foundations must be installed following the recommendations of National House Building Council (NHBC) Standards Chapter 4.2: *Building Near Trees (2018)* to avoid potential future damage. Where trees which predate existing structures are to be removed, this can result in heave as the soils are re-wet.

The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. Specific advice in relation to this issue is beyond the scope of this report.

2.4 Above Ground Constraints

Tree stems and branches can restrict available space on Site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay, with significant long term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/branches (or roots) come into physical contact with structures and this must also be taken into consideration.

2.5 Trees and Risk in the Context of Development

Tree owners/managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate.

AECOM can provide surveys and advice in relation to tree risk management if required. Further guidance is available from the National Tree Safety Group².

The tree survey carried out as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on Site. However, when obvious issues have been identified recommendations have been included in the Tree Survey Schedule.

The Construction (Design and Management) Regulations (2015) states that developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition the Health and Safety Executive (HSE) could seek to prosecute those responsible along with the potential for further Civil claims for damages.

2.6 Trees and Wildlife

Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the Conservation of Habitats and Species Regulations (2017), in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/hedge works take place outside of the typical bird nesting season of March to September. The advice of a suitably qualified Ecologist is recommended in relation to any potential impacts on protected species.

2.7 Tree Works

Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general, the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

² National Tree Safety Group (NTSG),2011. Common sense risk management of trees. Forestry Commission.

3. Field Work Observations

3.1 The Site

The Site boundary is shown on the Tree Constraints Plan included within Appendix A (ref: 60608627-ACM-26-XX-DR-AB-00000) of this report.

The Proposed Development is located in the London Borough of Barnet (LBB), adjacent to Cricklewood railway station. The Site is bound by Kara Way and Champion Terrace to the north, national railway lines and Cricklewood railway station to the east, Cricklewood Lane to the south and Cricklewood Broadway (A5) to the west. The indicative red line boundary is presented in Appendix A.

The Site is currently occupied by a range of retail outlets, including a large B&Q DIY Store, Pound Stretcher and Tile Depot. These large warehouse buildings are situated in the south-western aspect of the Site. The northern and eastern aspects of the Site mainly consist of car parking associated with the above retail outlets, as well as soft landscaping adjacent to the railway lines, and the southern entrance to the Site. Additional retail properties are situated adjacent to the south-western boundary, including a large Co-Op supermarket, as well as numerous local business such as pharmacies, food take-aways, international supermarkets, barbers and other general stores. Towards the north-eastern boundary of the Site, a Travel Lodge, Cricklewood Timber and Building Supplies, Beacon Bingo, Jewson building materials supplier and a Tesco Direct Click and Collect. Residential properties are situated on the eastern boundary of the railway lines, southern boundary of Cricklewood Lane, western boundary of Cricklewood Broadway and to the north of the Travelodge, all within approximately 150m of the Site boundary. AECOM checked the Geology of Britain viewer³ on 9th July 2019 with no record of superficial deposits and the Bedrock of the Site found to be comprised of London clay.

3.2 The Trees

The trees on Site are predominantly semi-mature and in a fair condition. Species present include Norway maple (*Acer pseudoplatanus*), common alder (*Alnus glutinosa*), wild cherry (*Prunus avium*), common lime (*Tilia x europaea*), tree of heaven (*Ailanthus altissima*), magnolia (*Magnolia sp.*), sycamore (*Acer pseudoplatanus*), London plane (*Platanus x acerifolia*), ornamental pear (*Pyrus chanticleer*) and hawthorn (*Crataegus monogyna*).

The trees surrounding the southern entrance to the Site contribute moderately to the formal landscape of the retail park, supporting and enhancing the greenspace provision for the Site. This is most notable where the trees form a small avenue feature and copse, with an overall moderate amenity value. These trees have a collective moderate value however, numerous individuals have impaired condition which reduces their individual contribution.

At the northwest entrance to the Site are a mixed planting of lime and alder with self-sown sycamore. Their collective value is moderate, supporting green infrastructure provision to the Site entrance and breaking up the built up visual aspect of the car park as seen from the surrounding public footpaths.

Centrally west of the Site are three ornamental pear plantings on public land of moderate quality, providing good amenity value.

To the east, the trees line the railway north to south, forming a good screen and supporting the 'green corridor', extents of vegetation which bridge habitats, allowing for the movement of fauna and flora that would otherwise be split by human activity. This is notable for a row of early mature London planes with an understory of hawthorn, with a high future potential and good contribution to habitat and screening for the Site. These trees represent the most important specimens on Site.

Site photography can be found at Appendix D located to the rear of this report.

³ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

3.3 Statutory and Non Statutory Designations

3.3.1 Statutory Designations

AECOM checked Barnet Council's website⁴ which identified a Conservation Area immediately adjacent to the Site to the northwest, details of which are included in Appendix E.

AECOM contacted Barnet Council on 12th July 2019 by email and there were no Tree Preservation Orders identified which could affect trees within or immediately adjacent to the Site.

A felling licence may be required by the Forestry Commission to fell more than 5m³ in any calendar quarter (subject to relevant exceptions including trees in gardens, designated public open spaces or churchyards).

Full planning consent is an exemption from the need to apply for consent for works to trees protected by a Tree Preservation Order, the need to give notice of the intention to undertake works within a Conservation Area and the need to apply for a Felling Licence with the Forestry Commission (to fell more than 5m³ per calendar quarter). Prior to any tree works the status of trees to be removed or pruned must be verified with the LPA and the Forestry Commission as appropriate.

3.3.2 Non Statutory Designations

Following a review of Magic Map⁵ the Site includes no ancient semi natural woodland, replanted ancient woodland, Biodiversity Action Plan (BAP) Priority Habitats or other Non-Statutory designations.

⁴ <https://www.barnet.gov.uk/planning-and-building/conservation-and-heritage/conservation-areas>

⁵ <https://magic.defra.gov.uk/MagiCMap.aspx>

4. Tree Related Constraints and Opportunities

The Tree Constraints Plan (Appendix A) shows the area of constraints associated with the trees on Site. As identified within the drawing key, the green shaded area shows the extent of tree canopies, the canopy outline colour indicates the quality category of the tree and the dashed black line is indicative of the RPA, which is the nominal area of tree roots which are generally considered essential to tree health and function. Roots are likely to extend outside of this point but beyond the RPA extent tree roots are not considered a significant constraint.

The default position is generally that all new features and associated works be located outside of areas where trees are to be retained.

4.1 Tree Categorisations as per BS5837:2012

The trees on Site have been assigned to a quality category as per BS5837:2012, which relates to their arboricultural, landscape and cultural/conservation value.

Category C trees are shown by a grey canopy outline on the Tree Constraints Plan (Appendix A). This means they are of relatively low quality and would not normally be considered a significant constraint to future development. However, these trees may still provide some useful value and should be considered for retention where they do not pose a significant constraint to the Proposed Development.

Category B trees (blue canopy outline) are described as being of moderate quality and it is generally desirable to retain trees of this standard and incorporate them within the Proposed Development where ever feasible.

Category A trees (green canopy outline) are classified as being of high quality and trees of this nature should be retained and incorporated into the design of the Proposed Development due to the high level of benefits they provide.

Category U trees (red canopy outline) are trees with less than ten years of reasonable useful life expectancy or those in such poor condition that they should be removed, regardless of any development activity. Trees of this nature represent no constraint to development.

The table below summarises the number of trees in each category recorded within or adjacent to the Site.

Table 2 Summary of trees in each quality category.

Quality Category	A	B	C	U
Number of trees	0	22	27	0

4.2 Considerations

In planning terms lower quality trees can often be straightforwardly removed to facilitate development where their loss can be mitigated with replacement tree planting or where no replacement planting is necessary. This is likely to apply to Category C and Category U trees and hedgerows where there are no other constraints in place (e.g. ecological or heritage).

The default position must be that higher quality trees (Category A and B) be retained and protected however in some cases it may also be feasible to remove trees of this quality where there is no reasonable alternative and where the benefit of the development outweighs the impact of the loss of the tree/s. Should this be required pre application discussions with the LPA are recommended to manage the risk of refused consent.

If any of the trees are owned by third parties (such as T11, T12, T13, T20, T25, T33, T38, , ,T67, T68, T71 and G74) prior consent must be in place before any tree works are carried out and it is recommended that this is secured prior to the submission of any planning application.

While it is often feasible to install new hard surfacing on existing soft ground within a tree RPA this generally requires the use of raised surfaces supported by carefully located piles or the use of proprietary load bearing surfaces (such as CellWeb, ArborRaft or equivalent) installed on top of the existing unsurfaced ground level using 'no dig' techniques. New areas of hard surfacing or building footprints should not generally occupy more than 20% of the RPA of a retained tree, as set out in Section 7.4.2.3 of BS5837.

New services or the diversion or removal of existing services must be carefully considered. In general, all new services should be routed outside of the RPA of retained trees. Where this is unavoidable alternative methodologies such as the use of directional drilling or equivalent trenchless techniques can facilitate service installation beneath tree root systems (likely to be at least 1m+ dependent on ground conditions and tree species affected).

Shallow service runs may be installed using hand excavation where all significant tree roots can be retained and services be threaded beneath. Existing services can be winched out from a manhole/chamber located outside of an RPA and redundant pipework can be decommissioned using pipe bursting techniques to avoid excavation which could damage roots.

These operations typically require a detailed arboricultural method statement to set out in detail how they can be successfully achieved.

4.3 The Future Impact of Trees

The future impact of trees on Site must be considered in relation to any development proposals. Trees and groups to be retained must be afforded suitable space to ensure they remain viable in the long term. Trees which are currently not fully grown will increase in size and this must be considered in conjunction with the Proposed Development and future use of the Site.

The Tree Constraints Plan shows the notional area of shade produced by the individual trees on Site (based on their current height) and this should inform the development of the Site layout. The likely shade from tree groups must also be taken into account (and can be defined by an arc from tree stem positions from north west to due east equivalent to tree height). Due consideration must also be given to the likely future growth of the tree (which for younger trees is likely to involve a significant increase in the level of shade produced) and the advice of an arboriculturist should be obtained to inform this assessment. Key living areas and significant areas of open space should be positioned to avoid areas of shade associated with trees. This is likely to be most significant for the trees to the south and west of the Site (such as T11, T12, T13, T20, T25, T33 and T38, all of which are situated outside of the red line boundary).

Sycamore, maple and lime (such as trees T1, T2, T3, T5, G9, T11, T12, T21, T41, T49, T51, T53, T56, T58, T59, T60, T61, T63, T65, T66, T72, T73 and G74) are often associated with aphids which secrete a sticky liquid called 'honeydew'. This can be a nuisance for parked cars and potentially areas of hard surfacing and structures as the deposits can lead to the development of sooty moulds and staining. This can be easily cleaned with warm soapy water or equivalent and is likely to be less visible on darker surfaces, alternatively it is possible that the trees could be pruned back to manage overhanging canopies where this would not be overly onerous resulting in pressure for tree removal or where it would damage tree health or amenity. This potential future maintenance requirement should be considered in relation to the future use of the Site beneath the canopy of these trees where they are to be retained.

Deciduous trees (which includes all the trees surveyed) will drop leaves each autumn and this is likely to result in a maintenance requirement to manage leaves on hard surfaced footways and to clear gutters where tree canopies extend over or immediately adjacent to roofs. Leaf fall can be easily cleared as required from hard surfacing. Non slip surfacing can reduce the frequency that this is required. Measures such as Gutter Guards or equivalent can be used to reduce the potential for leaves to block guttering and these should be employed where trees overhang or grow in close proximity to structures.

4.4 Tree Protection

Trees to be retained in close proximity to areas of development activity, including areas for new surfacing, services, work site compounds and storage will need to be protected to ensure they are not damaged. This is generally achieved with the use of robust, immovable temporary tree protection fencing, to prevent access within the RPA or canopy spread of trees. Where access is unavoidable, alternative protection arrangements such as ground protection (sufficient to protect the structure of the soil from compaction), and /or access facilitation pruning (to ensure a reasonable clearance for operations is provided) may be required. The advice of an arboriculturist should be sought to inform this assessment.

4.5 Tree Planting

Where trees are to be removed due to a conflict with the design proposals, mitigation planting is likely to be required to ensure a continuity of tree cover for the Site and to address any negative impact on local amenity and landscape character. Consideration should be given to the reasonable provision of space for new tree planting to off-set any necessary tree loss.

Soil structure in areas for new planting will need to be maintained and may require protection during operation of the Proposed Development to ensure reasonable conditions for future tree growth are available.

New planting should consider the existing species mix present on site in relation to both arboricultural and ecological considerations. New planting also offers an opportunity to increase the species and age class diversity for a given area which can boost the resilience of the local tree stock in relation to pests, disease and climate change as well as providing a greater range of amenity and other benefits.

New trees should be planted in accordance with the guidance set out in BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations (BS8545) and with the minimum distances from new structures, services and surfacing set out in Table A.1 of BS5837. AECOMs arboriculturists can provide further advice in relation to this issue if required.

5. Summary and Conclusion

The survey area contains 49 trees and tree groups which are predominantly of low quality and in a fair condition, contributing moderately to the character of the site and local amenity.

The higher quality trees on Site form a spatial constraint to any potential development works.

Where it is not possible to completely avoid the area of constraint associated with significant trees it may be possible to utilise special measures to facilitate the works.

A key consideration for any development activity will be the protection of the surrounding trees including the structure of the soil in which they grow, including from indirect damage via the storage or discharge of materials and the movement and use of plant and machinery. The default position is that all RPA and canopies of retained trees be fenced off as exclusion zones with no access. Where this is not feasible limited access may be acceptable using fit for purpose ground protection or other protective measures in accordance with BS5837.

Outside of the canopy and RPA, development works are not likely to be significantly constrained by trees, however it is important not to significantly impact on ground water levels in proximity to trees and where this could be a potential impact specific arboricultural advice must be obtained.

Lower quality trees (Category C and U) are not likely to be significant constraint to development where they can be satisfactorily replaced with new tree planting (or where their loss will not have a significant impact - e.g. due to the retention of adjacent trees) and therefore some sections of lower quality tree cover may be feasible to remove from a planning perspective.

All moderate value trees should be afforded full protection where possible. If the potential removal of higher value trees (category B) is unavoidable this should be discussed in advance with local planning authority (The London Borough of Barnet) however the default position must be that trees of this quality are to be retained and protected where possible.

As the design progresses, it is recommended that the advice of an arboriculturist is sought to inform this process, particularly in relation to new features in close proximity to trees.

Draft layouts should be overlaid onto the Tree Constraints Plan to allow an assessment of the impact of the Proposed Development, including the identification of any trees which are to be removed.

An Arboricultural Impact Assessment is typically required to support a planning application and this allows the identification and assessment of the direct and indirect effects of the Proposed Development along with appropriate mitigation measures where necessary.

References

British Standards Institution (BSI), BS5837:2012. Trees in relation to design, demolition and construction – Recommendations. BSI

British Standards Institution (BSI), BS3998:2010. Tree work – Recommendations. BSI

British Standards Institution (BSI) BS8545: 2014 Trees: from the nursery to independence in the landscape - Recommendations

Department of Communities and Local Government (DCLG), 2012; National Planning Policy Framework (NPPF)

National House Building Council (NHBC) Standards, (2018). Chapter 4.2: Building Near Trees

National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

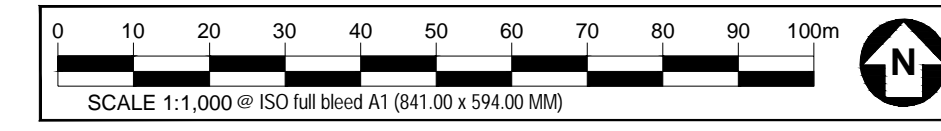
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London Borough of Barnet, 2012. Barnet's Local Plan (Development Management Policies), Development Plan Document. LBB.

Appendix A Tree Constraints Plan

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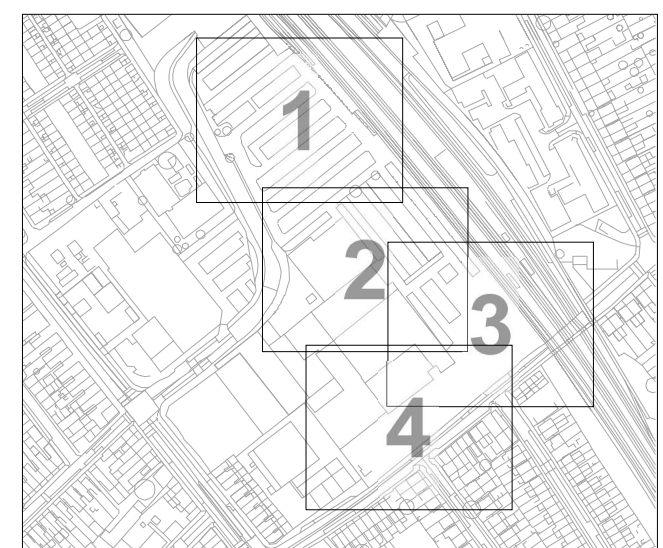
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GENERAL NOTES

1. TREE CATEGORIES AS DEFINED BY BS 5837:2012
2. TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY AND GPS CO-ORDINATES FROM ON SITE WALKOVER.
3. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT.
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KEY PLAN



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DRAWING STATUS

DRAFT

PROJECT NUMBER

60608627

SHEET TITLE

TREE CONSTRAINTS PLAN
 SHEET 00 - OVERVIEW

SHEET NUMBER

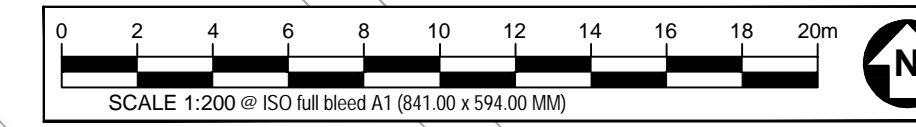
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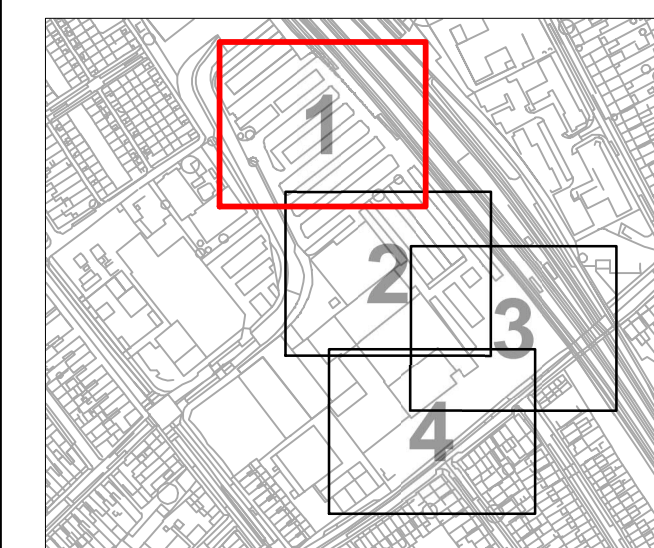
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TREE CONSTRAINTS PLAN
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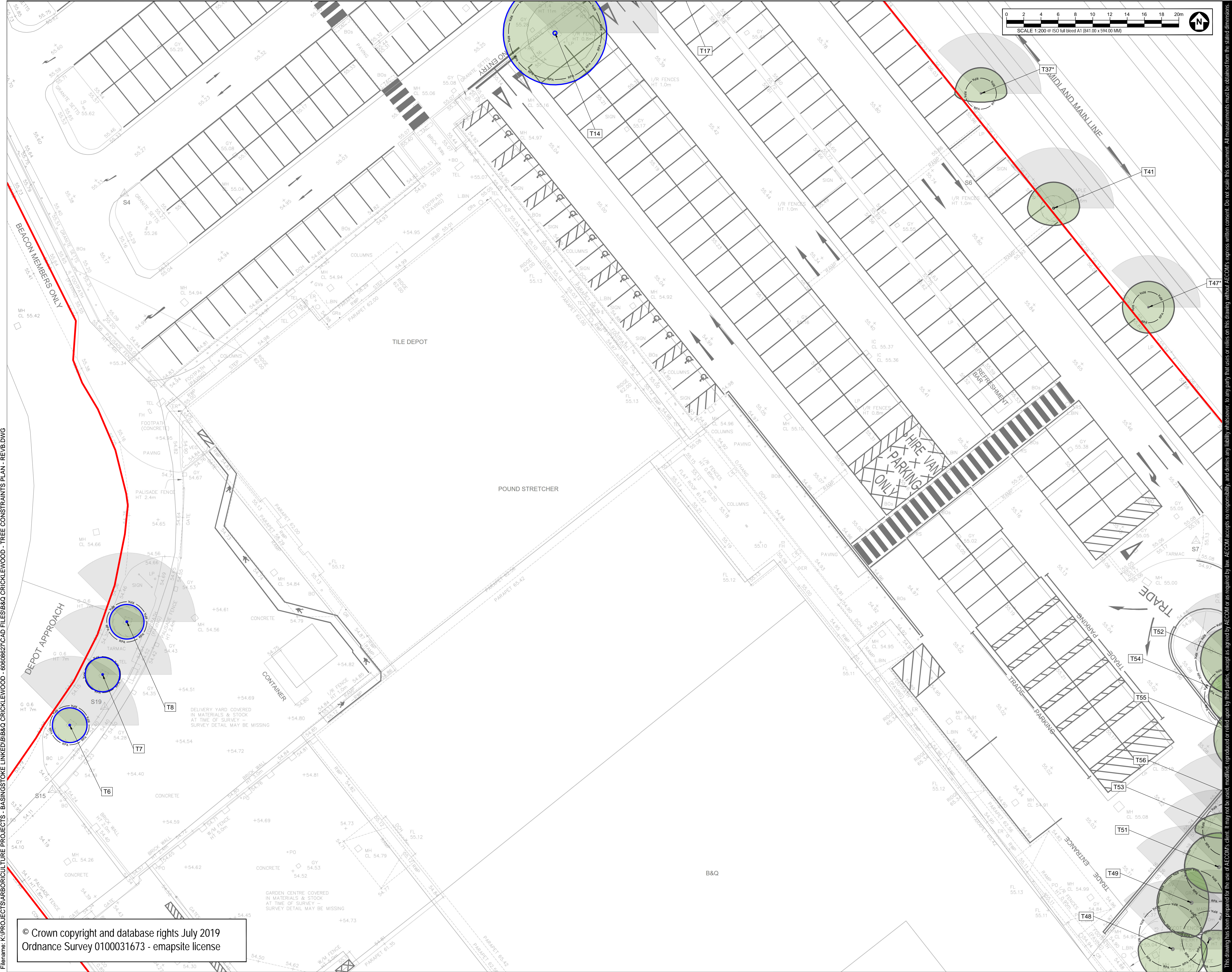
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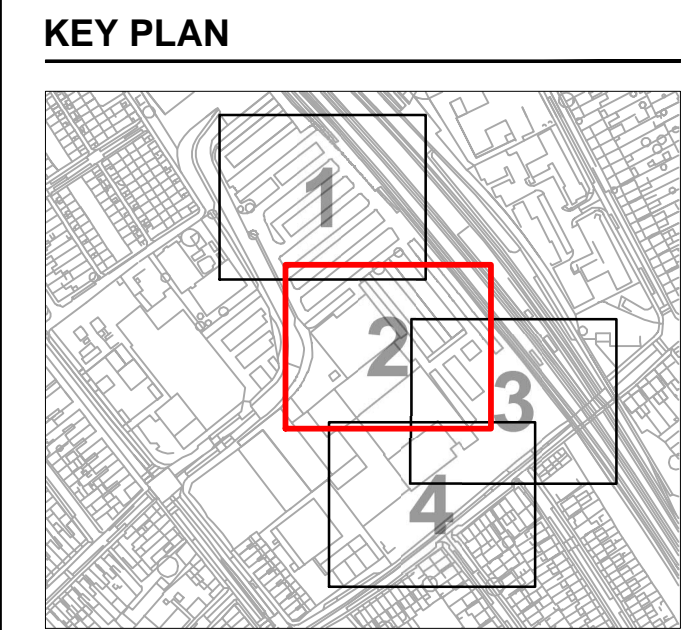
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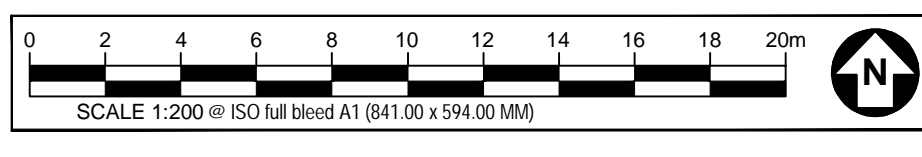
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TREE CONSTRAINTS PLAN
SHEET 02

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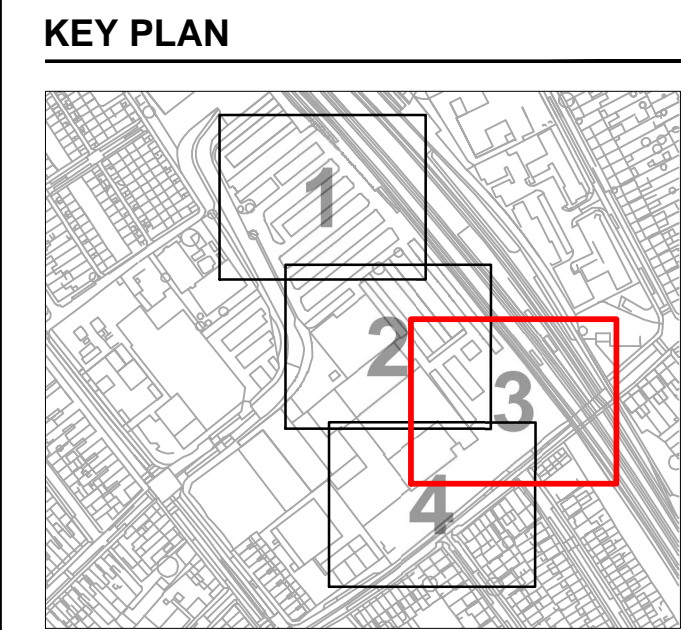


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SHEET 03

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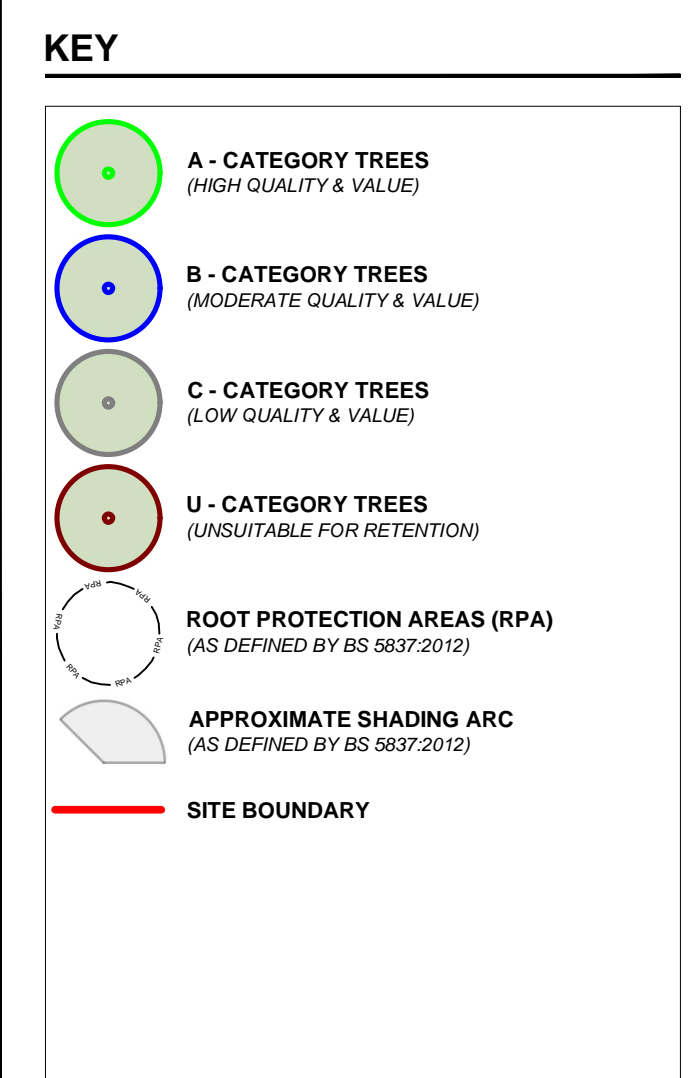
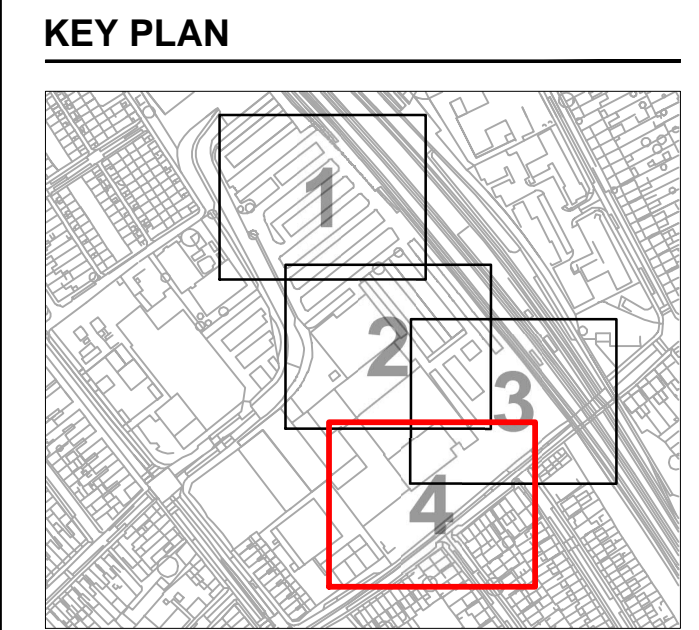
PROJECT
B&Q Cricklewood

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GENERAL NOTES

- TREE CATEGORIES AS DEFINED BY BS 5837:2012
- TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY AND GPS CO-ORDINATES FROM ON SITE WALKOVER
- PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT.
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- DRAWING REFERENCES:
B&Q Cricklewood - OS
Cricklewood Topographical



ISSUE/REVISION

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Appendix B Tree Survey Schedule

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T1	Sycamore (<i>Acer pseudoplatanus</i>)	6	150,100	0	2	2	2	3.0/S	1.8	Fair	EM	Fair	Self-sown bundle tree.		10+	C2
T2	Common Lime (<i>Tilia X europaea</i>)	10	240	4	4	4	4	2.0/NW	2	Fair	SM	Fair	Slight lean with self-righting growth.		10+	C2
T3	Norway Maple (<i>Acer platanoides</i>)	10	260	5	5	5	5	3.0/N	3	Good	EM	Good			20+	B2
T4	Common Alder (<i>Alnus glutinosa</i>)	11	550	5	5.5	3	3	0.5/W	2	Fair	M	Fair	Stem measured at 0.3m due to codominant limb. Upright form.		20+	B1
T5	Norway Maple (<i>Acer platanoides</i>)	5	180	2	2	2	2	2.0/W	2	Fair	Y	Fair	Leaf scorch of eastern canopy.		10+	C2
T6	Ornamental Pear (<i>Pyrus chanticleer</i>)	8	190	2	2	2	2	2.0/S	2	Good	EM	Good	Collectively of moderate value.		20+	B2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T7	Ornamental Pear (<i>Pyrus chanticleer</i>)	8	175	2	2	2	2	2.0/S	2	Fair	EM	Good	Collectively of moderate value.		20+	B2
T8	Ornamental Pear (<i>Pyrus chanticleer</i>)	8	195	2	2	2	2	1.8/S	2.5	Fair	EM	Good	Canopy vitality lower than expected. Collectively of moderate value.		20+	B2
G9	London plane x Sycamore (<i>Platanus acerifolia</i>), (<i>Acer pseudoplatanus</i>)	14	<400#	6	6	6	6	n/a	n/a	Good - Fair	SM-EM	Good - Fair	No access to base due to hawthorn hedge. Crown vitality looks normal. Moderate screening value.		20+	B1,2
G10	Hawthorn (<i>Crataegus monogyna</i>)	3	100	2	2	2	2	n/a	n/a	Good - Fair	Y-SM	Good - Fair	Managed hedgerow, forming understory to tree group.		10+	C2
T11	Sycamore (<i>Acer pseudoplatanus</i>)	9	300#	4	4	4	4	2.0/S	2	Good	M	Good	No access to base due to rough sleepers and waste. Viewed from footpath. Crown vitality looks normal. Self-sown tree. Previously crown raised.	Outside red line boundary.	10+	C1,2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T12	Sycamore (<i>Acer pseudoplatanus</i>)	10	400#	1	2	2	2	2.0/S	3	Good	M	Good	No access to base due to rough sleepers and waste. Viewed from footpath. Crown vitality looks normal. Self-sown tree. Previously pruned back from building interface.	Outside red line boundary.	10+	C1,2
T13*	Tree of Heaven (<i>Ailanthus altissima</i>)	15	500#	8	8	8	8	3.0/S	8	Good	M	Good	No access to base due to rough sleepers and waste. Viewed from footpath. Crown vitality looks normal.	Outside red line boundary.	20+	B1,2
T14*	London plane (<i>Platanus acerifolia</i>)	12	450	6	6	6	6	2.5/S	2	Good	EM	Good	Central canopy previously pruned back from street light.		20+	B1,2
G15	Tree of Heaven (<i>Ailanthus altissima</i>)	10	200#	4	0	0	0	n/a	n/a	Fair	SM	Fair	Self-sown group, likely suckered from maiden tree. Leaning over structure, likely due to light competition from neighbouring trees. No access to base due to rough sleepers and waste. Crown vitality looks normal.	Outside red line boundary.	10+	C2
T16*	Sycamore (<i>Acer pseudoplatanus</i>)	9	350#	1	1	1	1	1.0/S	0	Dead	SM	Dead	No access to base due to rough sleepers and waste. Viewed from footpath.	Fell and grind stump (< 1 month) Outside red line boundary.	<10	U1

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T17	London plane (<i>Platanus acerifolia</i>)	8	220	4	4	4	4	2.0/S	2	Good	SM	Fair	Heavily pruned back from street light. Central leader has been pruned back creating asymmetrical upper canopy.		10+	C1,2
T18*	Honey Locust (<i>Gleditsia triacanthos</i>)	5	95	3	3	3	3		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T19	London plane (<i>Platanus acerifolia</i>)	12	400	6	6	6	3		2	Good	M	Good	Previously crown raised with wound wood formation visible on pruning wounds. Good future potential.		20+	B1,2
T20*	Bird Cherry (<i>Prunus padus</i>)	9	350#	3	3	2	3	1.0/S	2	Good	EM	Good	No access to base due to rough sleepers and waste. Viewed from footpath.	Outside red line boundary.	20+	B2
T21*	Sycamore (<i>Acer pseudoplatanus</i>)	3	70	1	2	2	2	1.5/W	1.5	Good	Y	Good	Self-sown tree.		20+	C1
T22*	London plane (<i>Platanus acerifolia</i>)	12	430	6	6	6	4	2.0/NE	2	Good	M	Good	Previously crown raised above parking spaces. Good future potential.		20+	B1,2
T23*	Honey Locust (<i>Gleditsia triacanthos</i>)	7	115	3	3	3	3		2	Good	Y	Good	Previously crown raised. Good future potential.	Outside red line boundary.	10+	C1,2

Tree ID	Species		Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T24*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	100	3	3	3	3		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T25*	Bird Cherry (<i>Prunus padus</i>)		10	350,250,200#	4	4	4	4	2.0/S	2	Good	M	Good	No access to base due to rough sleepers and waste. Viewed from footpath.	Outside red line boundary.	20+	B2
T26*	Honey Locust (<i>Gleditsia triacanthos</i>)		5	80	2	2	2	2		2	Fair	Y	Fair	Superficial wounds to bark on main stem. Crown vitality lower than expected.	Outside red line boundary.	10+	C1,2
T27*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	120	3	3	3	3		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T28*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	85	2	2	2	2		2	Good	Y	Fair	Good future potential. Small wound to bark on main stem south	Outside red line boundary.	10+	C1,2
T29*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	120	3	3	3	3		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T30*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	90	2	2	2	2		2	Fair	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2

Tree ID	Species		Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T31*	Honey Locust (<i>Gleditsia triacanthos</i>)		7	100	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T32*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	105	3	3	3	3		2	Good	Y	Fair	Good future potential. Wounds to main stem with good wound wood formation.	Outside red line boundary.	10+	C1,2
T33*	Tree of Heaven (<i>Ailanthus altissima</i>)		12	440#	6	6	6	6	0.1/S	3	Good	EM	Good	Limited access to base due to rough sleepers and waste.	Outside red line boundary.	20+	B2
T34*	Honey Locust (<i>Gleditsia triacanthos</i>)		6	105	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T35*	Honey Locust (<i>Gleditsia triacanthos</i>)		7	110	2.5	2.5	2.5	2.5		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T36*	Honey Locust (<i>Gleditsia triacanthos</i>)		7	95	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T37*	Common Alder (<i>Alnus glutinosa</i>)		7	150#	3	1	3	3		3	Fair	SM	Fair	Third party tree, no access to base. Self-sown boundary tree.		10+	C1

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T38*	Silver Birch (<i>Betula pendula</i>)	12	200	3	3	3	3	1.0/N	1.5	Fair	EM	Fair	Contact damage to branch scaffold with wound wood formation present.	Outside red line boundary.	10+	C2
T39*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	90	2.5	2.5	2.5	2.5		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T40*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	115	3	3	3	3		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T41*	Sycamore (<i>Acer pseudoplatanus</i>)	7	11	3	2	3	3		3	Fair	Y	Fair	Self-sown boundary tree. Crown raised above carpark.		10+	C1
T42*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	85	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T43*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	95	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T44*	Honey Locust (<i>Gleditsia triacanthos</i>)	5	85	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T45*	Honey Locust (<i>Gleditsia triacanthos</i>)	7	100	2	2	2	2		2	Good	Y	Good	Good future potential.	Outside red line boundary.	10+	C1,2
T46*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	80	2	2	2	2		2	Good	Y	Fair	Good future potential. Previous poor pruning.	Outside red line boundary.	10+	C1,2
T47*	Common Alder (<i>Alnus glutinosa</i>)	6	150	3	3	3	3		2	Fair	SM	Fair	Third-party tree, overhanging boundary. Typical coppiced railway boundary tree.		10+	C1
T48	Wild Cherry (<i>Prunus avium</i>)	8	305	2	4	4	4	2.0/W	2	Poor	EM	Fair	Sparse canopy with minor dieback.	Remove dead wood (< 1 month)	10+	C2
T49	Norway Maple (<i>Acer platanoides</i>)	9	320	4	4	2	4	2.0/SW	2	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Asymmetrical canopy likely due to pruning. Multiple individual limb dieback within canopy. Minor deadwood throughout canopy over grass verge.	Remove dead wood (< 1 month)	10+	C2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T50*	Wild Cherry (<i>Prunus avium</i>)	8	270	1	4	6	1	2.0/S	2	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Asymmetrical canopy likely due to pruning. No ground disturbance with correct limb orientation. Lean to east likely due to suppression from neighbouring trees.		10+	C2
T51	Norway Maple (<i>Acer platanoides</i>)	9	330	4	3	5	4	3.5/SW	3	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Asymmetrical canopy likely due to pruning.		10+	C2
T52	Wild Cherry (<i>Prunus avium</i>)	8	380	4	4	2	4	2.0/S	3	Fair	M	Fair	Heavy crown lift with minor dieback within crown. Gumosis present on stem. Pruning wounds on stem with no visible wound wood formation.		10+	C2
T53	Norway Maple (<i>Acer platanoides</i>)	9	260	2	1	4	4	3.5/SW	5	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Asymmetrical canopy likely due to pruning.		10+	C2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T54	Wild Cherry (<i>Prunus avium</i>)	8	290	3	3	3	3	3.0/E	3	Fair	M	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation.		10+	C2
T55	Wild Cherry (<i>Prunus avium</i>)	7	240	4	4	4	4	3.0/W	3	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Tear out wound in canopy south, looks to be recent due to wound colour and lack of wound wood.		10+	C2
T56	Norway Maple (<i>Acer platanoides</i>)	10	285	4	3	2	3	4.0/W	7	Fair	EM	Fair	Heavy crown lift with pruning wounds showing minor wound wood formation. Lower canopy north with minor leaf scorch.		10+	C2
T57*	Honey Locust (<i>Gleditsia triacanthos</i>)	6	75	1.5	1.5	1.5	1.5		2	Good	Y	Good	Good future potential.		10+	C1,2
T58	Norway Maple (<i>Acer platanoides</i>)	12	235	0.5	2	3	4	2.0/SW	2	Poor	SM	Fair	Heavily suppressed. Central canopy dieback. Wound to central limb with wound wood present. Decay visible. Low end loading with upright form.	Remove dead wood (< 1 month)	10+	C2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T59	Norway Maple (<i>Acer platanoides</i>)	10	355	5	5	5	3	2.0/SW	3	Fair	EM	Fair	Wound to base with significant wound wood formation. Collectively of moderate value.		20+	B2
T60*	Norway Maple (<i>Acer platanoides</i>)	12	380	6	6	4	6	2.0/N	4	Fair	M	Good	Collectively of moderate value. Wound to base with wound wood almost occluding wound. Dieback within central canopy.	Remove dead wood (< 1 month)	20+	B2
T61*	Sycamore (<i>Acer pseudoplatanus</i>)	7	100,130#	2	0	2	2		5	Fair	Y	Fair	Third party tree, no access to base. Assessed from opposite bank due to hassle from public within area. Established on railway boundary.		10+	C2
T62	London plane (<i>Platanus acerifolia</i>)	16	620	7	7	6	3	2.0/S	7	Fair	M	Poor	Wound to western side of tree, from ground level to 7m. Wound wood formation present. Sounding test undertaken with wood density sounding normal around stem and on face of wound.		10+	C2
T63	Norway Maple (<i>Acer platanoides</i>)	11	355	3	4	3	5	3.0/W	4	Fair	EM	Fair	Previous poor pruning on main stem. No wound wood present. Pruning likely recent. Collectively of moderate value.		20+	B2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T64	London plane (<i>Platanus acerifolia</i>)	11	295	4	2	4	4	2.0/E	3.5	Good	SM	Fair	Asymmetrical canopy due to neighbouring tree south. Collective moderate value.		20+	B2
T65	Norway Maple (<i>Acer platanoides</i>)	9	280	4	4	4	1	2.0/N	2.5	Good	SM	Fair	Wound to base east circa 1m in length with significant wound wood formation. Collectively of moderate value.		20+	B2
T66	Sycamore (<i>Acer pseudoplatanus</i>)	12	200,220	4	1	4	4		3	Fair	SM	Fair	Third party tree, no access to base. Assessed from opposite bank due to hassle from public within area. Established on railway boundary.		10+	C2
T67	London plane (<i>Platanus acerifolia</i>)	14	300	3	5	6	5	5.0/N	2	Good	SM	Good	High screening value.		20+	B1,2
T68	London plane (<i>Platanus acerifolia</i>)	12	260	5	3	3	4	4.0/N	2	Good	SM	Good	High screening value.		20+	B1,2
T69	London plane (<i>Platanus acerifolia</i>)	9	335	6	5	2	6	3.0/W	2	Good	EM	Good	Collectively of moderate value. Good future potential.		20+	B1,2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Estimated Remaining Contribution	Category
T70	Magnolia (<i>Magnolia sp</i>)	3	70	1	1	1	1		1	Good	Y	Good	Newly planted.		10+	C1,2
T71	London plane (<i>Platanus acerifolia</i>)	14	385	8	6	7	5	6.0/S	2	Good	SM	Good	High screening value.		20+	B1,2
T72	Sycamore (<i>Acer pseudoplatanus</i>)	12	300	4	2	4	4	0.5/N	1	Fair	EM	Fair	Third party tree, no access to base. Assessed from opposite bank due to hassle from public within area. Established on railway boundary.		10+	C2
T73	Sycamore (<i>Acer pseudoplatanus</i>)	12	385	5	5	5	5	2.0/SW	4	Good	EM	Fair	Self-sown tree on boundary.		20+	B2
G74	Sycamore (<i>Acer pseudoplatanus</i>)	16	<500#	6	6	6	6	n/a	n/a	Good - Fair	SM-EM	Good - Fair	Third party trees. No access to bases. Stems obscured by ivy. Crown vitality looks normal. Good screen of railway.		20+	B2

B.1 Key to Abbreviations Used in the Survey

Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group.	
Species	Common name followed by botanical name shown in <i>italics</i>	
RPA	Root Protection Area (As defined by BS5837)	
Stem diameter	Diameter of main stem measured in millimeters at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837 Annexe C)	Av / Average: indicates an average representative measured dimension for the group or feature
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.	
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.	
#	Estimated dimensions	
*	Indicates estimated position of tree (not indicated on topographical survey).	
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation) A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue) C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).	
Life stage	<p>Young (Y): Newly planted tree 0-10 years.</p> <p>Semi-Mature (SM): Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size).</p> <p>Early Mature (EM): Tree in the second third of its normal life expectancy for the species (some potential for future growth in size)</p> <p>Mature (M): Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size).</p> <p>Over Mature (OM): Tree beyond the normal life expectancy for the species.</p> <p>Veteran (V): Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age.</p>	
Structural condition	<p>Good: No significant structural defects</p> <p>Fair: Structural defects which can be resolved via remedial works.</p> <p>Poor: Structural defects which cannot be resolved via remedial works.</p> <p>Dead: Dead.</p>	
Physiological condition	<p>Good: Normal vitality including leaf size, bud growth, density of crown and wound wood development.</p> <p>Fair: Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds.</p> <p>Poor: Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species.</p> <p>Dead: Dead</p> <p>Fair/Good = Indicates an intermediate condition</p> <p>Fair – Good = Indicates a range of conditions (e.g. within a group)</p>	
Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).	

Appendix C Site Boundary

Appendix D Site Photography



Figure 1 Site vehicle entrance showing moderate value avenue feature.



Figure 2 View west across southern entrance.



Figure 3 G9 showing understory of G10.



Figure 4 T17 and T14.



Figure 5 T62 showing significant wounding.



Figure 6 Northern Site entrance showing T5 and T4.



Figure 7 Moderate quality ornamental pears T6, T7 and T8.



Figure 8 T13 as the dominant feature in the southwest of the Site.

Appendix E Statutory Designations

Bat Survey Report

B&Q Cricklewood

Montreaux Cricklewood Developments Ltd

September 2019

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Appendix A Photos of Potential Roost Features

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Executive Summary

AECOM was commissioned by Montreaux Cricklewood Developments Ltd to carry out a bat emergence survey for Potential Roost Features identified on a building at the B&Q premises at Broadway Retail Park, Cricklewood Lane in the London Borough of Barnet.

An initial external inspection of the Site for bats was undertaken by two AECOM ecologists on 2nd July 2019 to inform a Preliminary Ecological Appraisal of the Site. The ecologists assessed one of the buildings (Building 1) as having 'low suitability' to support roosting bats, as potential access/egress features for bats were observed during the external inspection. No access/egress points for bats were found on any other of the buildings or trees within the Site.

In order to investigate whether bats are roosting within Building 1, one dusk emergence survey during May to September 2019 was recommended as a result of the PEA findings. The survey was carried out on Building 1 on 20th August 2019 under optimal weather conditions. Four surveyors were positioned within view of the elevations with PRFs.

No bats were recorded accessing or emerging from Building 1 and very limited bat activity was recorded around the building. It is therefore concluded that roosting bats are likely to be absent and no further survey work is recommended for Building 1. A Natural England European Protected Species Mitigation Licence will not be required.

Recommendations are provided in Section 6 as a precaution against any 'last minute' discoveries of bats during works.

1. Introduction

AECOM Infrastructure and Environment Ltd (hereafter referred to as 'AECOM') was commissioned by Montreaux Cricklewood Developments Ltd (hereafter referred to as the 'Applicant') to carry out an emergence bat survey on Potential Roost Features (PRF) identified on the B&Q store at Broadway Retail Park, Cricklewood Lane, London, NW2 1ES (hereafter referred to as the 'Site'). The results of the survey are discussed within this Bat Survey Report.

Montreaux Cricklewood Developments Ltd is seeking to redevelop the Site, which will be demolished for the construction of a large-scale mixed-use residential-led scheme (hereafter referred to as the 'Proposed Development'). A phased approach to delivery is expected for the Proposed Development.

1.1 Purpose of the Report

The purpose of the bat dusk emergence survey of Potential Roost Features (PRFs) identified within the Site was to determine the presence or likely absence of bats within the buildings on Site. The report summarises the results of the PRF survey and informs any requirement for further mitigation (i.e. if works need to be carried out under ecological supervision, or if a European Protected Species (EPS) Mitigation Licence is required for works to proceed).

This report will inform the submission of a planning application for the Proposed Development.

1.2 Location

The Site is situated centrally within an urban area within the London Borough of Barnet (LBB) and is located adjacent to a principle Network Rail line to the east. To the north and northwest of the Site is Depot Approach with Cricklewood Lane to the south and other developments and Cricklewood Broadway to the west. Immediately surrounding the Site is the densely-populated commercial and residential properties of Cricklewood. The approximate central grid reference for the Site is TQ 23857 185892.

The building identified with PRFs included commercial premises operated by B&Q, Poundstretcher and Tile Depot (hereafter referred to as Building 1), located to the west of their associated car park.

1.3 Previous surveys

A Preliminary Ecological Appraisal (PEA) of the Site¹, which included an external assessment for bats of all of the buildings and trees present on Site, was undertaken by two AECOM ecologists on 2nd July 2019. The external assessment of buildings and trees survey within the Site was conducted in line with the Bat Conservation Trust guidelines (2016)².

One of the conclusions in the report was that Building 1 had 'low suitability' for bats as it had several features including gaps in the soffit box, as well as between the soffit box and barge board. None of the other buildings or trees within the Site were considered suitable for bat roosts due to the absence of any PRFs. Details of the findings during the external assessment for bats can be found in the PEA report and photos of the features can be seen in Appendix A. The Phase 1 Habitat Map is also included within Appendix B in order to identify Building 1 (B1).

Following Bat Conservation Trust guidelines, buildings with 'low suitability' for roosting bats require a bat emergence survey between May and September to determine if bats are using the relevant features.

1.4 Quality assurance

AECOM ecologists involved with the surveys at the Site and authoring this report are members, at the appropriate level, of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct when undertaking ecological work.

¹ AECOM (2019). Preliminary Ecological Appraisal. Cricklewood.

² Collins, J. (editor) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. Bat Conservation Trust

This document is subject to a Technical Quality Review (TQR). It has been checked to confirm that it is complete and appropriate, and all comments have been addressed, maintaining high quality and giving detailed recommendations for next steps for the Applicant.

2. Legislation

All bat species and their roosts are legally protected in the UK under The Conservation of Habitats & Species Regulations 2017 (Habitats Regulations), which implements the EC Directive 92/43/EEC (the Habitats Directive). In addition, barbastelle (*Barbastella barbastellus*), lesser and greater horseshoe bats (*Rhinolophus hipposideros* and *R. ferrumequinum*) and Bechstein's bat (*Myotis bechsteinii*) are listed in Annex II of the Habitats Directive, which requires sites to be designated in member states for their protection. Bats and their roosts are also protected under the Wildlife and Countryside Act 1981 (as amended) (WCA).

Taken together, the Habitats Regulations and the WCA make it illegal to:

- Deliberately capture or intentionally take a bat;
- Deliberately or intentionally kill or injure a bat;
- Be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; and
- Deliberately disturb bats, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

A bat roost is defined as any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected regardless of whether or not the bats are present at a specific point in time.

Given the above legislation, the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required, there is still a legal responsibility placed on the Applicant to ensure that a Natural England licence is obtained to cover any works that have the potential to result in an offence under the above legislation.

Bats are a national priority species and London and Southwark Biodiversity Action Plan (BAP) species.

3. Methods

3.1 Bat Emergence Survey

A team of four suitably experienced AECOM ecologists undertook a dusk emergence survey of Building 1 located within the Site in Cricklewood on the 20th August 2019. The survey was conducted in line with the Bat Conservation Trust guidelines (2016)². Surveyors were positioned with a view of the elevations where PRF were identified in the previous external assessment for bats.

The aim of the survey was to identify bats leaving from any roost that may be present on the building. The dusk emergence survey covered a period from approximately 15 minutes before sunset to 1.5 hours after sunset.

The survey was undertaken using Pettersson echolocation detectors and Edirol digital recorders to help record and determine activity around the building and identify which species were present.

The time, location, number, species (where possible) and direction of flight were recorded for each bat pass (a discrete burst of bat echolocation heard or bat activity seen) encountered during the survey. The echolocation calls were analysed using Bat Sound and Wavesurfer analysis software to verify bat calls, where required, and to help with species identification.

3.2 Survey Limitations

No limitations were found during the survey. August is an optimal month for carrying out emergence bat surveys and the weather conditions were favourable during the survey.

Although not a technical limitation, safety issues occurred on the Site during the bat survey. Despite having a security guard on site, one of the surveyors was assaulted at approximately 21:00 by a group of undesirable teenagers. The surveyor was not injured, and the assailants later apologised. The survey was not affected by the incident.

4. Emergence Survey Results

The survey was undertaken as planned by AECOM ecologists on 20th August 2019. Surveyors had a good view of the PRFs to support roosting bats.

The survey was undertaken during favourable weather conditions, as summarised in Table 1.

Table 1. Survey Date and Weather Conditions

Survey date	Sunset	Survey Start / End Times	Temperature (°C)	Wind Speed (Beaufort Scale)	Weather Conditions
20/08/2019 (dusk)	20:11	Start: 19:56 End: 21:41	Start: 19 End: 18	Start: 2 End: 1	No precipitation Cloud cover (oktas): 2 Clear, dry, mild

No bats were recorded emerging from any features found on Building 1 during the survey. Two surveyors recorded common pipistrelle (*Pipistrellus pipistrellus*) passing/commuting close to Building 1 at around the same time and these passes may have been the same bat.

Table 2. Summary of passes

Surveyor	Location of surveyor	Time	Bat specie	Number of passes
1	Depot Approach (west of the Site)	21:07	Common pipistrelle	1
1	Depot Approach (west of the Site)	21:30	Common pipistrelle	1
2	Cricklewood Lane (east of the Site)	21:23	Common pipistrelle	1
2	Cricklewood Lane (east of the Site)	21:30	Common pipistrelle	1

5. Discussion and Recommendations

Bats are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended).

The initial bat external assessment for bat roost suitability 2nd July 2019 and subsequent dusk emergence on 20th August 2019 did not record bats or signs of bats roosting on Building 1. Due to the low level of bat activity and no records of bats emerging from Building 1, it is concluded that roosting bats are likely to be absent from the Site and no further survey work is recommended for Building 1. A Natural England EPS Mitigation Licence will not be required.

Recommendations are provided below as a precaution against any 'last minute' discoveries of bats during works:

- An inspection of the PRF identified should be carried out prior to the commencement of works at Building 1 by an experienced bat ecologist to provide due diligence against any 'last minute' discoveries of roosting bats. Bats are dynamic and could use the building as a roost at any moment.;
- Toolbox talks should be given as part of site inductions, immediately prior to demolition and immediately prior to construction for all site staff to make them aware that the building has low potential to support roosting bats; and
- In the unlikely event that a bat or signs of bats are found during works, works should cease immediately and a suitably qualified ecologist contacted for advice. It is likely that a Natural England EPS Mitigation Licence would be required for works to continue.

As long as this mitigation is implemented, it is unlikely that any roosting bats will be harmed or injured during the work stage of the Proposed Development.

Consideration should also be given to minimising the impacts of artificial lighting on bats, using the available technology (i.e. use of traditional low pressure sodium lamps as opposed to high pressure sodium, mercury, and white SON). These have the least impact on bats (as well as insects and other invertebrates) as they emit no UV light (which attracts invertebrates). LED lighting also emits little UV light, and these lamps can be programmed to switch off, or dim at certain times. Additionally, lights should be:

- Made directional with light spillage avoided. Hoods / cowls can be used to direct light below the horizontal plane (ideally at an angle less than 70 degree);
- Designed to be as low to the ground as possible (specifically not above 8m); and
- Switched off at night (particularly during the months of April to October inclusive when bats are active), or at least, motion activated, if possible.

The survey work detailed in this report is relevant for 12 months. If development works are conducted outside of this time period, it is recommended that the bat surveys are updated accordingly to confirm the continued likely absence of bats. In this event, it is recommended that a suitably qualified ecologist is consulted for advice regarding the scope of future survey work.

6. Conclusions

An emergence bat survey was carried out on Building 1 on 20th August by four suitably qualified ecologists. No bats were recorded emerging from the building, although low bat activity was recorded around the building. It is therefore concluded that roosting bats are likely to be absent and no further survey work is recommended for the building surveyed. A Natural England European Protected Species Mitigation Licence will not be required.

Recommendations are provided above in Section 5 against any potential discovery of bats during works and for the lighting scheme to be used within the Site.

The survey work detailed in this report is relevant for 12 months. If development works are conducted outside of this time period, it is recommended that a suitably qualified ecologist is consulted for advice.

Appendix A Photos of Potential Roost Features



Photograph 1 Building 1 (Southern elevation)



Photograph 2 BRP 1



Photograph 3 BRP 2



Photograph 4 BRP 3



Photograph 5 BRP 4



Photograph 6 BRP 5



Photograph 7 BRP 6



Photograph 8 BRP 7



Photograph 9 BRP 8



Photograph 10 BRP 9

Appendix B Phase 1 Habitat Map

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Planning application boundary line
- Cricklewood green boundary line
- Broadleaved parkland/scattered tree
- Target note
- Bat roost potential
- Buildings
- Cultivated/disturbed land - amenity grassland
- Cultivated/disturbed land - ephemeral/short perennial
- Hardstanding
- Introduced shrub
- Other tall herb and fern - ruderal
- Area not surveyed

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Client
MONTREAUX DEVELOPMENTS LTD.

Project Title
B&Q CRICKLEWOOD

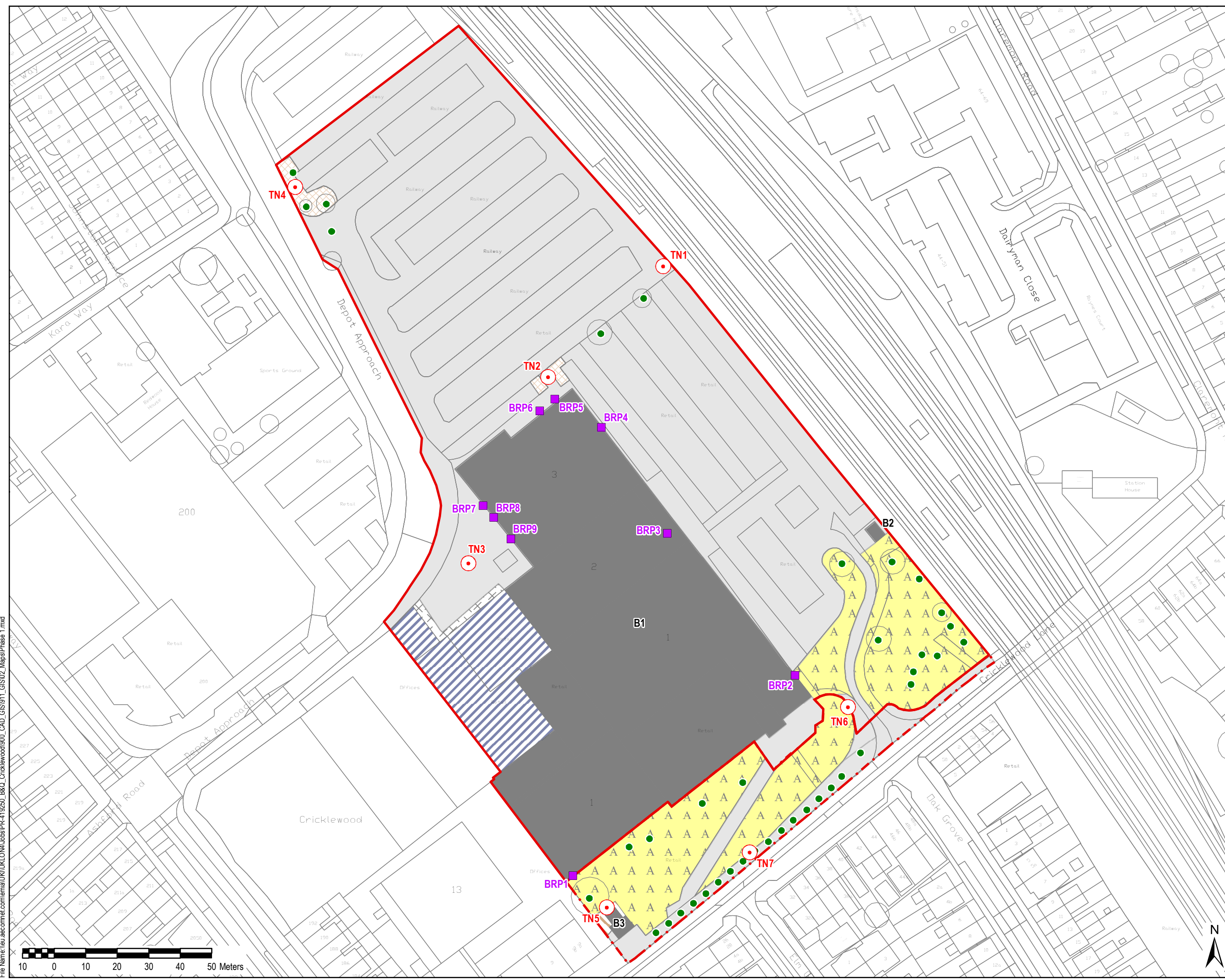
Drawing Title
PHASE 1 HABITAT SURVEY

Drawn SM	Checked CS	Approved JM	Date 01/08/2019
AECOM Internal Project No. 60608627		Scale @ A3 1:1,100	

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