

Environmental Impact Assessment Scoping Report

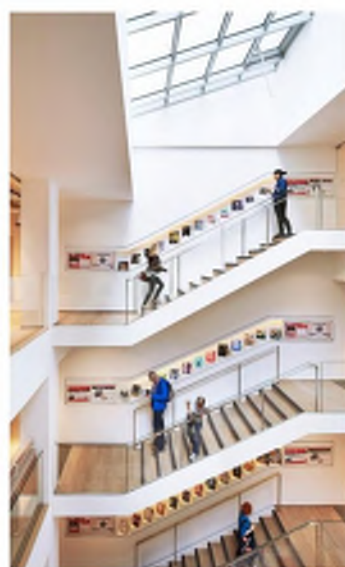
**Woburn and Bedford Court Croydon
Ivel Ltd**

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1. Introduction

1.1. Background

Ivel Ltd are looking to submit a Full Planning Application for the redevelopment, including demolition, and refurbishment of the Woburn & Bedford Court Site in London Borough of Croydon (National Grid Reference TQ 32400 66300).

Development of the Site provides the opportunity to reinvigorate the Site and introduce much needed residential and commercial development within the perimeters of the Croydon Opportunity Area identified in the London Plan¹. Further description of the development proposal is provided in Section 1.3.

The purpose of this Scoping Report is to provide the Local Planning Authority (LPA), London Borough of Croydon (LBC), with information regarding the need for an Environmental Impact Assessment (EIA) and the proposed scope and approach to completing this assessment. The report provides a description of the proposed development, the EIA process and discussion regarding the scope of proposed technical assessments to be completed as part of the EIA. Where environmental topics are not proposed to be included in the EIA, reasoned justification is given.

1.2. Site Context

1.2.1. Site Description and Environmental Setting

The Site is located in the Fairfield Ward of the London Borough of Croydon (LBC). The Site lies to the east of Wellesley Road (A212) south of St James' Road / Newgate Roundabout (A222), west of Tavistock Road and north of Woburn Road. The current Site occupies an area of approximately 2.5 acres, which is currently developed with a range of buildings primarily designated for residential purposes with ancillary lock up garages.

The Site currently comprises:

- 8 blocks of flats of ground floor to 3 or 4 storeys, providing 80 residential units;
- Parking provision (90 spaces) split between covered single-story garages (65) and open street side parking; and
- Limited amenity planting, including underutilised grassed areas and scattered trees, with no private gardens.

There are currently 2 vehicle access points to the Site, off Wellesley Road and Newgate on the Western boundary and to the East from Tavistock Road. There is no vehicle access from the south of the Site.

Situated in an area of opportunity within Croydon, the surrounding area has experienced substantial development and revitalization in recent years. This transformation has introduced comparable land uses to those envisioned for the development site, including residential, commercial, and retail spaces, along with integrated green landscaped areas. The Site is flanked by significant comparable developments, with Saffron Square and Interchange Croydon to the south and Island Croydon to the north of the Site.

The Site is in a state of disrepair, as the apartment blocks have reached the end of their economic viability. The Site is affected by vandalism, illegal dumping, and criminal activities, leading to a decline in its condition. This deterioration is adversely impacting the surrounding streetscape and the nearby Conservation Area. The Site location is identified in **Figure 1.1**, which also identifies the local context of the Site.

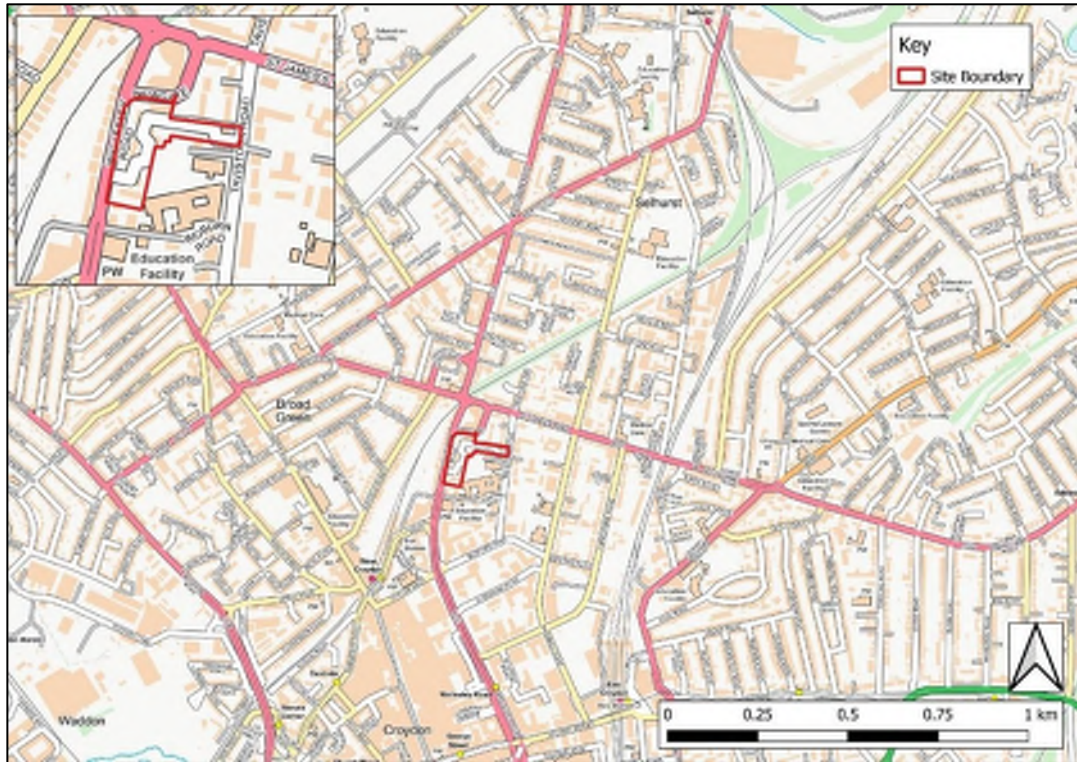


Figure 1.1 Site Location in Context of Wider Area

1.3. Proposed Development

Ivel Ltd are looking to submit a Full Planning Application for the development at The Woburn & Bedford Court site in Croydon, hereafter referred to as the 'Site' or the 'Proposed Development'. At this stage the proposals encompass:

“Demolition and phased redevelopment to provide four new buildings for residential within Use Class C3, with flexible space at lower levels within Buildings 1 and 2 for active uses within Use Classes E, F1 and/or Sui Generis, together with communal space, plant rooms, cycle and blue badge parking, refuse/recycling storage, a new landscaped square and public realm, play space, access and other works.”

The applicant owns the freehold on the existing site and over the last 18 months, has obtained a 50% stake in the residential leasehold interest. Of the remaining interests, 33% are leased by landlords, and the remaining 17% are owner-occupied. All owner-occupiers are fully informed about the redevelopment plans, and negotiations have been initiated by the applicant to acquire these remaining interests.

The residential aspect of the current proposals comprises of 445 residential units arranged over four buildings:

- Block 1 – 26 storeys (G+25);
- Block 2 – 32 storeys (G+31);
- Block 3 – 13 storeys (G+12);
- Block 4 – 5 storeys.

The ground floor and basement areas will also incorporate the provision of commercial, community and retail space within the design.

1.4. Planning History

A scoping report was previously presented to the council in 2019 under the reference 19/03746/ENVS. There has been thorough pre-application engagement with the council and other stakeholders resulting in a revised scheme and revised scoping opinion sought from the council.

1.5. Proposed Massing and Typical Floor Plans

The following indicative drawings represent the current proposed massing and typical floor plans.

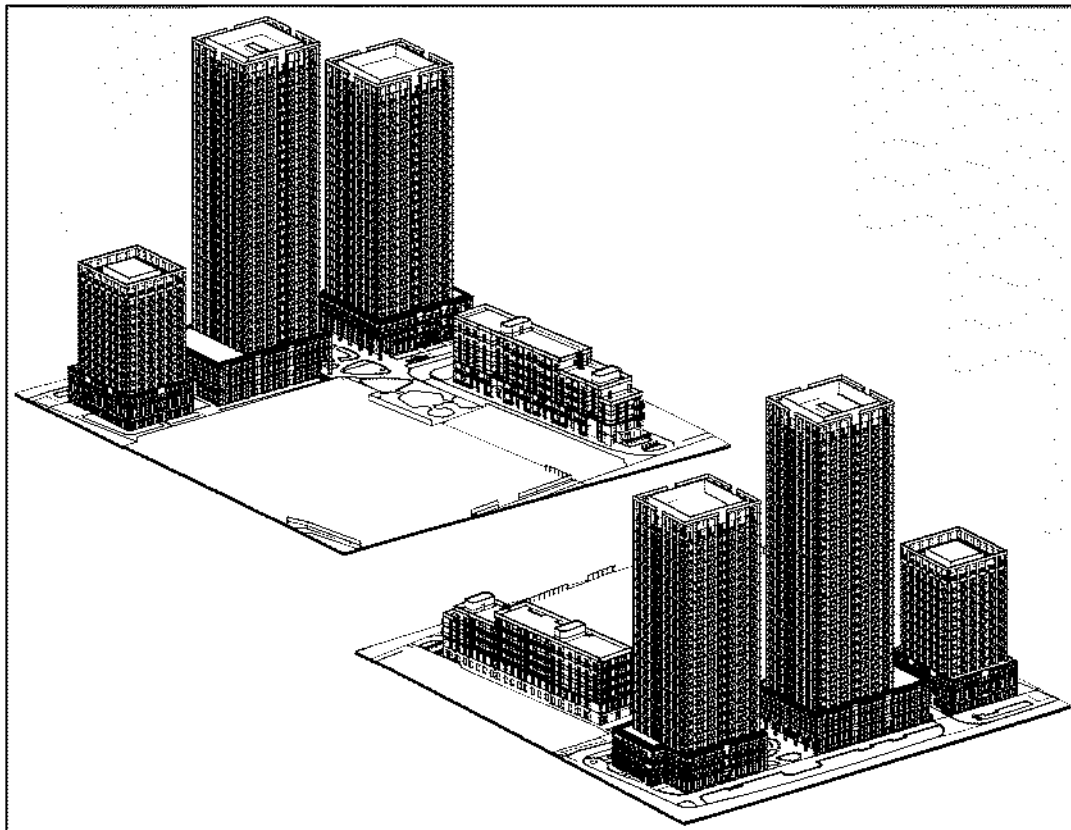


Figure 1.2 Proposed Massing (Drawing Reference 11555-EPR-00-XX-DR-A-09-0100)



Figure 1.3 Indicative Ground Floor Layout of Woburn and Bedford Court (Drawing Reference - 11555-EPR-00-01-DR-A-02-0101)



Figure 1.4 *Indicative Sixth Floor Plan for the Proposed Development (Drawing ref. 11555-EPR-00-06-DR-A-02-0106)*



Figure 1.5 Indicative Roof Layout of Proposed Development (Drawing ref. 11555-EPR-00-RF-DR-A-02-0133)

1.6. Project Rationale

The Croydon Housing Strategy² has identified the borough as the 24th most deprived of 33 London boroughs for indoor living environment, highlighting the need for functional affordable housing. The strategy sets out its ambitions to address its aging social housing stock by pledging to facilitate the supply of new affordable and shared ownership housing. The Strategic Housing Market Assessment Update³ identifies the housing requirements for the borough until 2029, encompassing affordable rental residences, affordable ownership housing, and market (private) housing.

The need for the re-development of sites like Woburn and Bedford Court is highlighted in the London Plan, identifying the site as lying within the boundaries of the Croydon Area of Opportunity.

The buildings which make up the existing site have reached the end of their economic life and are non-compliant with current standards. The rationale for the redevelopment of the Site is dictated by the poor design of the existing buildings which are not suitable for economically viable refurbishment.

1.7. The Need for EIA

In determining the need for an EIA of a proposed development, there are three main aspects for consideration. These are:

- The type of development; is it of a type referenced in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) as either:
 - a Schedule 1 development; or,
 - of sufficient scale to fall within the specified thresholds of development identified in Schedule 2;
- The location of the site: is the development within, adjacent or in close proximity to a particularly sensitive location; and/or,
- The nature of the development: is the development of a type that is likely to give rise to significant environmental effects.

The Proposed Development, as outlined in Section 1.3, exceeds the dwelling (>150 dwellings) threshold criteria for urban development projects (Development type 10b) concluding that the proposals constitute an EIA development.

2. The Environmental Impact Assessment Process

2.1. Overview

EIA is defined by the Institute of Environmental Management and Assessment (IEMA) as *'an assessment process applied to both new development proposals and changes or extensions to existing developments that are likely to have significant effects on the environment'*⁴. EIA has two main purposes, firstly to inform decision-makers of the environmental consequences of a proposed action/development and, secondly, to improve the environmental and sustainable credentials of a development through feedback into the design process and application of appropriate enhancement and mitigation measures. In essence, the EIA process should not only inform the decision-making for the project but also comprise a design tool that is integral to the design of a project.

The EIA process enables the effects resulting from the development upon a range of environmental aspects to be appraised, including those on natural resources such as air, water, soil, those on the natural environment including habitats and species, and those on the surrounding communities including visual effects and impacts on the local population. The effects are considered across the entire lifecycle of a project, including demolition, construction and operation through to the decommissioning of the development at the end of its 'life'.

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) require the EIA to be reported through an Environmental Statement (ES), which should accompany an application for planning permission for projects constituting an EIA development. The ES provides the LPA with the information regarding the potential environmental effects of a development so that they can be taken fully into account in the decision-making process.

2.2. Scoping

Scoping, whilst not a mandatory stage in the EIA process in the UK under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended), provides an essential first step in the EIA process in which the impacts of a project can be 'filtered'. Potentially significant effects are identified for further consideration whilst those of an insignificant nature can be removed from the scope of the assessment, allowing resources and time in the EIA to be focussed on key aspects of the EIA. These are reported through the Scoping Report.

The Scoping process provides the opportunity for early communication in the development process between the developer, their design team and consultants, the local planning authority and statutory consultees. By providing a Scoping Report to the LPA, and subsequent consultees, there is the opportunity for any areas of concern not already highlighted in the report to be raised, thereby influencing the EIA process and subsequent preparation of the ES.

2.3. Environmental Impact Assessment Approach

The baseline environment, as is expected to prevail in the absence of the development, will be defined in the ES within each of the technical chapters based on information gathered through desk-based studies and, where appropriate, field survey work.

2.3.1. Impact Identification

The environmental impacts of the Proposed Development, predicted from the demolition, construction and operation phases of the development, will be assessed against the baseline conditions presented. Although the design life of the residential development will be approximately 100 years, considering the ongoing demand for housing and trend for adaption of buildings to meet ongoing need a decommissioning phase for the development is not envisaged, and is therefore not considered further in this Scoping Report.

The characterisation of impacts will vary between technical chapters, according to respective best practice guidance. However, the following, where applicable, should be adhered to:

- Impacts should be quantified where possible, in terms that are readily understandable;
- Characteristics of an impact should be described, identifying the extent, magnitude, duration, frequency, reversibility, nature (direct or indirect), and probability of an impact;
- Changes over time should be considered, *i.e.*, where characteristics may change as a project develops/matures;
- Justification should be provided where judgements or estimates are made;
- Predictions should include a reasonable 'worst-case' approach;
- Qualitative terms referring to quantitative scales should be defined, *e.g.*, long-term/short-term, high/medium/low magnitude;
- Consideration should be given to the implications of reasonably foreseeable accidents or non-routine operations; and,
- Consideration of potential indirect effects.

2.3.2. Determining Significance

The evaluation of significance is often subjective, with best practice guidelines provided by IEMA identifying that 'there is often not a single, definitive, correct answer as to whether an impact is significant or not. Significance is influenced by the values of the individual, how the changes to the environment affect them and whether they have a stake in the project or not'. As a result, significance of environmental impacts will be determined through the application of professional judgement and relevant topic specific guidance where it is available. Generally, the nature of effects on sensitive receptors will be determined using the following:

- Extent;
- Magnitude;
- Duration;
- Frequency;

- Reversibility; and,
- Nature (direct or indirect).

However, it is important to provide consistency across each of the EIA chapters to ensure the impact assessment in one technical discipline is proportionate to that assessed within another. As a result, a general approach to assigning the level of sensitivity (Table 2.1), magnitude (Table 2.2) and significance (Table 2.3) is provided, which will be considered and referred to in each of the individual assessments or, where an alternative approach is recommended, terminology will be kept consistent with that identified. This adopts the same method outlined in IEMA’s best practice guidance.

Table 2.1 Sensitivity Criteria

Sensitivity	Description
Very High	Receptors of high environmental value or rarity, that have little or no capacity for change without fundamentally altering its nature or character, or are of international value.
High	Receptors of high environmental value or rarity, that have a low capacity for change without fundamentally altering its nature or character, or are of national value.
Medium	Receptors of environmental value or rarity, that have a moderate capacity for change without fundamentally altering its nature or character, or are of County/Borough importance.
Low	Receptors of low environmental value or rarity, that are tolerant of change without fundamental alteration to its nature or character, or are of local or site value.
Negligible	Receptors of little or no environmental value or rarity, that are tolerant of change or resistant to it.

Table 2.2 Magnitude Criteria

Magnitude	Description
High	Key elements or features of a receptor are lost or extensively altered from the baseline conditions such that there will be a fundamental shift from the baseline post-development.
Medium	One or more key elements or features of a receptor are lost or altered from the baseline conditions such that there will be a material change from the baseline post-development.
Low	Detectable changes to elements or features of a receptor occur from the baseline conditions but there is no material change from the baseline post-development with conditions remaining similar or with a slight change.

Magnitude	Description
Negligible	Changes to elements or features of a receptor occur from the baseline conditions but are not clearly discernible resulting in no obvious change from the baseline post-development.

Table 2.3 Significance Criteria

		Nature of Receptor: Value, Scale and Sensitivity				
		<i>Very High</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Negligible</i>
Nature of effect: Magnitude, Probability, Reversibility including duration and frequency	<i>High</i>	Major	Major	Moderate	Moderate	Minor
	<i>Medium</i>	Major	Moderate	Moderate	Minor	Negligible
	<i>Low</i>	Moderate	Moderate	Minor	Negligible	Negligible
	<i>Negligible</i>	Minor	Minor	Negligible	Negligible	Negligible

The level of significance set out in Table 2.3 is defined as:

- **Major** – these effects are likely to be important considerations at a regional or borough scale but, if adverse, are potential concerns to the project depending upon the relative importance attached to the issue during the decision-making process;
- **Moderate** – these effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource;
- **Minor** – these effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in the detailed design of the project;
- **Negligible** – effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

The level of significance will determine whether the implementation of mitigation measures, designed to eliminate significant effects or reduce their significance, are required with the focus given to major and moderate effects. The mitigation of effects will be achieved through design modification, implementation of specific working practices or proposing alternative methods or features for inclusion. Where proposed, the effectiveness will be considered and the residual impact, if the measure was to be included, determined.

2.4. Assessment of Cumulative Effects

Cumulative effects are defined by the European Commission as ‘impacts that result from incremental changes cause by past, present or reasonably foreseeable actions together with the project’⁵.

There are two types of cumulative effects that can occur as a result of development activity, which are described below and illustrated in Figure 2.1:

- Intra-project cumulative effects – this considers effects that arise as a result of the relationship between different aspects of the environment, for example the impact on flora as a result of changes in the water quality of a watercourse;
- Inter-project cumulative effects – this considers effects that arise as a result of the combination of impacts associated with the proposed development and other off-site developments. These can arise as a result of either two similar impacts combining to generate a greater impact or the interaction of different impacts to generate a separate impact itself.

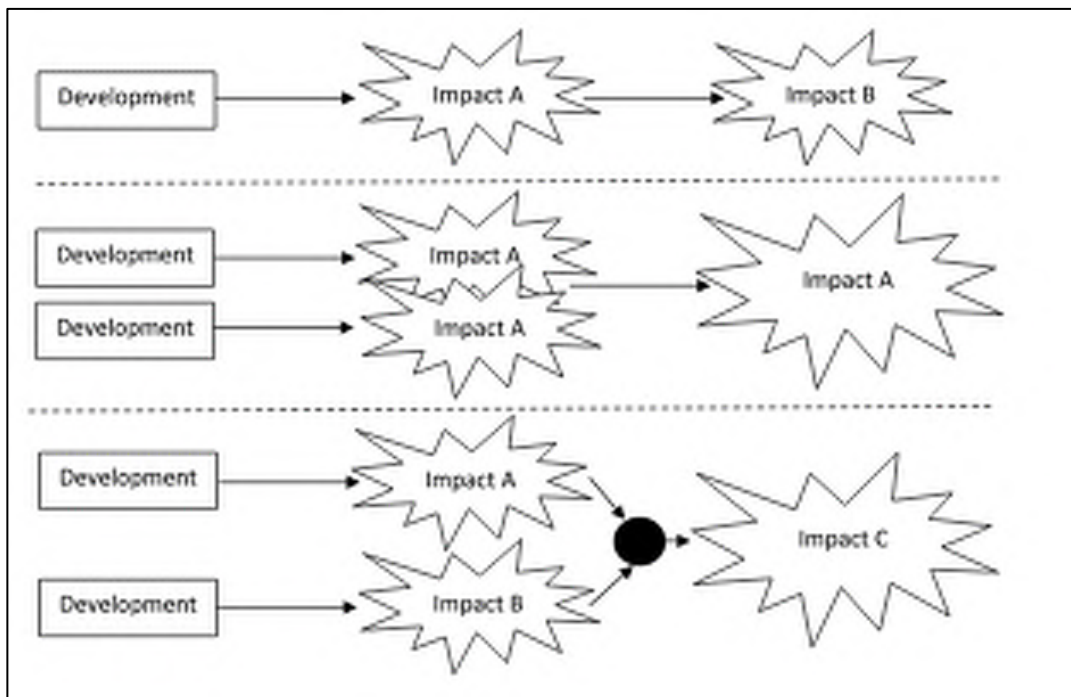


Figure 2.1 Impact Interactions (from: European Commission, 1999⁶)

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) provide a definition of what constitutes a cumulative effect, with Schedule 4 on information for inclusion in the ES identifying in 5(e): ‘the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources’.

Therefore, to identify appropriate developments to be considered for inter-project cumulative effects, the following criteria have been set:

- Committed development, where construction is under way or not yet commenced; and,
- Planning developments where an application has been submitted and is awaiting consent, or are identified in relevant local plans.

Schemes within 1 km of the Proposed Development will be considered for the cumulative assessment in the EIA, which is a suitable area over which schemes have the potential to interact cumulative. However, individual assessments will consider the potential requirement for different areas of consideration of cumulative assessment and will report on the area over which cumulative effects are considered.

2.5. Assessment of Alternatives

The EIA will consider the environmental effects of the Proposed Development and the implications of potential alternatives considered by the developer. This will include consideration of the following scenarios:

- ‘Do Nothing’ – the consequences of no development being brought forward;
- ‘Alternative Design’ – the consequences of a development on the site being brought forward with different design parameters;
- ‘Alternative Sites’ – the consequences of the development being brought forward on a different site within the Borough; and,
- ‘Alternative Use’ – the consequences of an alternative development type being brought forward on the site.

Justification of the design choices made in the development of the proposals will be provided to indicate the main reasons for the choices made with regards to the location, development type and design brought forward for the planning application.

2.6. Proposed Structure of the Environmental Statement

The proposed structure of the ES is set out below and takes into consideration the requirements of the EIA Regulations and best practice guidance.

Volume 1 – Non-Technical Summary

The Non-Technical Summary will provide an overview of the key information contained within the ES and supporting information in a format that is designed to be accessible to and understandable by anyone with an interest in the proposed development. As a result, the Non-Technical Summary is required to be concise, transparent and in an appropriate language that avoids the need for specialist understanding.

Volume 2 – Environmental Statement

The ES will present the findings of the EIA, reported in accordance with the EIA Regulations and relevant best practice guidelines. The likely structure of the ES will be as identified in Table 2.4 below.

Table 2.4 Likely ES Structure

Chapter	Likely Content
Introduction	Applicant Details; Development Rationale; Terminology; EIA Project Team
EIA Methodology	Policy Context; Scope; EIA Process; Consultation; Structure of Technical Chapters
Proposed Development	Site Location and Description; Description of Development; Construction and Phasing
Consideration of Alternatives	No Development; Alternate Sites; Design Development
Technical Chapters	Air Quality; Noise and Vibration; Townscape and Heritage; Visual Impact Assessment; Socio-Economics; Climate Change and Resilience/Energy & Greenhouse Gas; Daylight, Sunlight & Overshadowing; Wind Microclimate
Cumulative Effects	Summary of the assessment of cumulative effects for each technical topic.
Summary of Residual Effects	A compilation of the residual effects of each of the technical chapters following inclusion of mitigation measures and cumulative effects.

Volume 3 – Technical Appendices

Where required, the detail of any technical assessments supporting the EIA reported in the technical chapters of the ES will be included in the Technical Appendices section.

3. Environmental Aspects for Assessment

The following section provides commentary on environmental topics considered sensitive to the Proposed Development and where perceived significant environmental effects may result.

3.1. Air Quality

3.1.1. Introduction & Key Issues

An air quality assessment will be undertaken by Hilson Moran Partnership for the Proposed Development at Woburn and Bedford Court, Croydon. The assessment will evaluate the potential air quality impacts and subsequent effects arising from the construction and operation of the Proposed Development.

Although not a potential effect associated with the Proposed Development itself, consideration will also be given to the suitability of the Site for residential development through assessment of baseline air quality concentrations.

The results of the assessments will be presented in an ES chapter with supporting figures. All technical outputs and analysis would be appended to the ES.

At this stage a site-specific air quality monitoring survey is not proposed, baseline air quality concentrations will be established through a review of existing air quality monitoring data provided by the Local Planning Authority, Defra, the London Air Quality Network (LAQN) and the London Atmospheric Emissions Inventory (LAEI). Furthermore, a detailed air quality assessment using the ADMS-Urban dispersion model will be undertaken to predict air quality concentrations for Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}) at sensitive receptor locations without and with the Proposed Development operational.

3.1.2. Baseline

3.1.2.1. Current Baseline

The UK Air Quality Standards are set out in Table 3.1 below.

Table 3.1 UK Air Quality Standards

Pollutant	Concentration	Measured as
NO ₂	200 µg/m ³	1-hour mean, not to be exceeded more than 18 times a year (99.79 %ile)
	40 µg/m ³	Annual Mean
PM ₁₀	50 µg/m ³	24-hour mean, not to be exceeded more than 35 times a year (90.41 %ile)
	40 µg/m ³	Annual Mean
PM _{2.5}	20 µg/m ³	Annual Mean
	10 µg/m ³	Annual Mean to be met by 2040

An AQMA encompassing the whole borough has been in place since April 2003.

LBC operates four continuous air quality monitors which routinely monitor NO₂, PM₁₀ and PM_{2.5} concentrations within the borough. In addition to this a network of over 30 diffusion tubes record NO₂ levels across the borough.

A summary of air quality monitoring sites which are considered representative of the Site are detailed in Tables 3.2 and 3.3 and illustrated in **Figure 3.1**.

It should be noted that monitoring data collected during 2020 is unlikely to be representative of current air quality conditions due to the impact of COVID-19.

Table 3.2 LBC Air Quality Monitoring Sites

Site	X, Y	Type	Annual Mean (µg/m ³)						
			2016	2017	2018	2019	2020	2021	2022
CR9	532568 165599	Roadside (Automatic)	56	46	41	44	-	-	-
CY43	533170 166470	Roadside	45.86	41.12	39.86	35.34	26.19	27.44	23.38
CY58	532383 165981	Roadside	63.62	65.83	67.82	61.32	46.85	59.32	56.46
CY59	532553 165384	Roadside	56.38	46.95	49.82	45.32	34.26	44.18	35.61
CY98a	532583 165637	Roadside	55.84	49.10	50.80	46.27	38.42	41.37	40.39
CY113	531964 166245	Roadside	-	-	-	48.21	43.84	50.03	45.40

*Bold indicates exceedances of the relevant AQS objectives.

LBC monitoring data for NO₂ indicates exceedances of the AQS objective at 3 DT monitoring locations within 1km of the Site in 2022, as these sites are roadside locations, NO₂ levels at these locations are expected to be elevated. The remaining two NO₂ DT locations within 1km show compliance with the AQS objective in 2022.

Background concentrations at the Site have been identified using Defra’s background maps.

The Defra background concentrations for NO₂, PM₁₀ and PM_{2.5} for the 1x1km grid square in which the Proposed Development is located are presented in Table 3.3 below. The Defra background concentrations for NO₂, PM₁₀ and PM_{2.5} are well below relevant AQS objectives (40 µg/m³ for NO₂ and PM₁₀, and 20 µg/m³ for PM_{2.5}).

Table 3.3 Defra background conditions

XY	Pollutant	2022	2023	2024	2025	2026	2027	2028	2029	2030
532500, 165500	NO ₂	22.5	21.7	20.9	20.1	19.7	19.3	18.9	18.5	18.1
	PM ₁₀	17.6	17.4	17.2	17.0	17.0	17.0	17.0	17.0	17.0
	PM _{2.5}	11.7	11.5	11.4	11.2	11.2	11.2	11.2	11.2	11.2

Baseline air quality conditions at the Proposed Development will be projected through dispersion modelling of road traffic along the roads in the vicinity of the Site. The model will use traffic data supplied by the Project Transport Consultants (Markides) which will be verified against local roadside monitoring data, to ensure a robust baseline model.

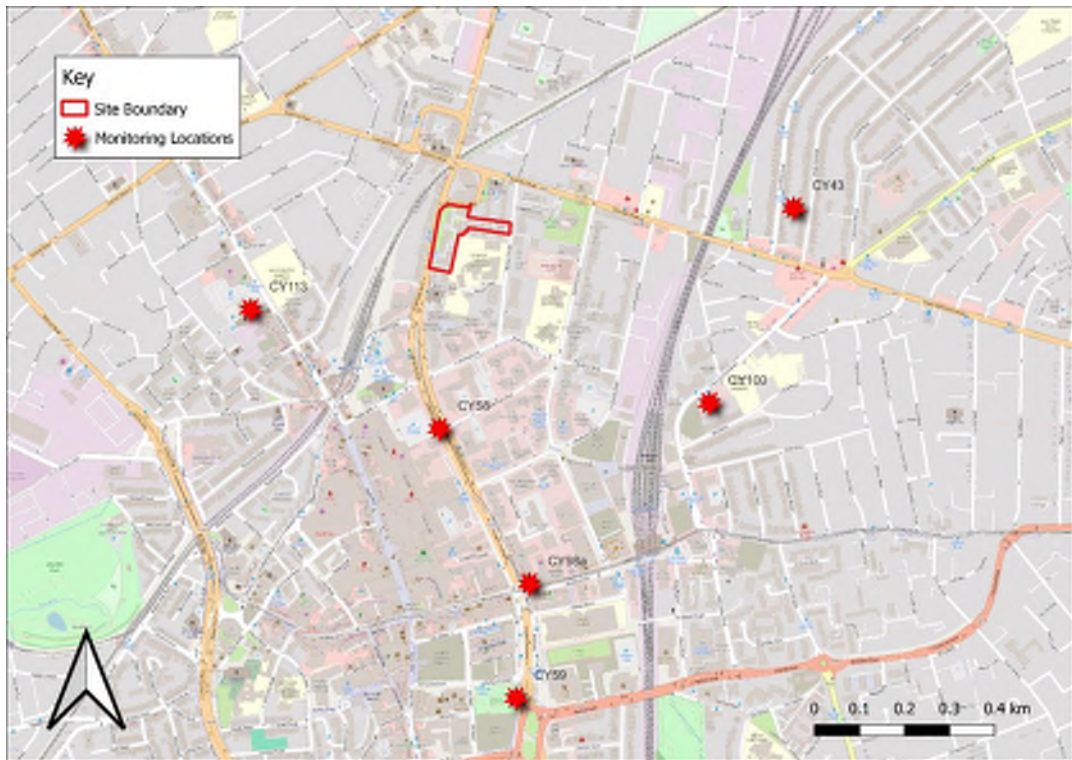


Figure 3.1 LBC Monitoring Locations (Contains OpenStreet Map © Crown copyright database right 2023)

3.1.2.2. Sensitive Receptors

Road traffic emissions from traffic generated from the Proposed Development and emissions from any onsite combustion sources (such as back up diesel generators) may impact on existing and proposed sensitive receptor locations. The provision of heating and hot water is expected to be through all-electric sources; therefore, no combustion plant emissions are expected from this provision and an assessment of this source has been scoped out.

Receptors in the vicinity of the Site range from low (indicative examples include public footpaths, playing fields and parks), medium (offices and shops) and high sensitivity (residential dwellings and schools).

Receptor locations will be selected where the greatest impact from the Proposed Development may be felt from development generated traffic. It is noted that there are highly sensitive receptors in the locale, including residential dwellings and St Marys Catholic High School bordering the site to the east.

There are no statutory ecologically designated sites in proximity to the Proposed Development or within 200m of any roads likely to be utilised by development generated road traffic. Furthermore, all ecologically designated sites fall outside of the area of influence for construction impacts as they are not located within 50m of the Site, or within 500m of the likely construction route. Therefore, consideration of these receptors can be scoped out as they are not likely to experience significant effects as a result of the Proposed Development.

3.1.2.3. Potential Impacts & Effects

Construction Phase

Potential air quality impacts that will be considered in relation to the construction phase of the Proposed Development include:

- Impacts on dust soiling and PM₁₀ emissions during the demolition and construction of the proposed development on existing sensitive receptors in the local area; and,
- Impacts of NO₂, PM₁₀ and PM_{2.5} emissions from vehicles associated with the demolition and construction of the proposed development at existing sensitive receptors in the local area.

Operational Phase

Potential air quality impacts that will be considered in relation to the operational phase of the Proposed Development include:

- Impacts of NO₂, PM₁₀ and PM_{2.5} emissions from vehicles generated by the proposed development once operational, at existing sensitive receptors in the local area;
- The suitability of the site for its proposed use with respect to air quality conditions for future users and residents;
- The potential for the proposed development and existing and Cumulative Schemes to cumulatively impact air quality at sensitive receptors during the demolition, construction and operation of the proposed development; and,
- An Air Quality Neutral and Positive Statement will be provided following guidance from the GLA.

3.1.3. Assessment Methodology

It is proposed that air pollutant concentrations in the area will be assessed to establish current baseline levels in the area of the Site, allowing for the identification of relevant sensitive receptors and determine any impacts associated with the Proposed Development during both the operational and construction phases. It is therefore Proposed that the following scope of works will be carried out:

- Consultation with the LBC Environmental Health Officer (EHO) to agree the scope of assessment and confirm the assessment methodology;
- Qualitative assessment of dust and particulate impacts during the construction stage in accordance with the Institute of Air Quality Management (IAQM) guidance to determine the likely impacts on sensitive receptors, including dust soiling, human health;
- The need to conduct detailed modelling for construction and operational traffic emissions will be determined using the criteria set out in the Environmental Protection UK (EPUK) and IAQM guidance. Where these criteria are not met, an assessment of traffic emissions will be scoped out. However, where the criteria are exceeded detailed modelling using ADMS-Urban will be undertaken to predict changes in concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) at identified representative receptor locations. The following scenarios are likely to be included:
 - i) Current Baseline year;
 - ii) Opening year without the Proposed Development (i.e., Future Baseline) but including committed developments;
 - iii) Opening year with construction traffic and committed developments; and,
 - iv) Opening year with the Proposed Development and committed developments.
- EPUK and IAQM guidance provides criteria to determine the need to proceed to a detailed assessment of any onsite combustion plant emissions, in particular any back up diesel generators. Where these criteria are not met, an assessment of any onsite combustion plant will be scoped out. Where the criteria are exceeded, a quantitative assessment using ADMS-Urban will be undertaken to predict changes in concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) at identified representative receptors;
- A quantitative assessment of the likely exposure of future site occupants to poor air quality will be carried out at proposed onsite sensitive receptor locations, using the ADMS-Urban dispersion model; and,
- An Air Quality Neutral and Positive Statement will be produced, in accordance with GLA guidance.

An assessment of the likely significant cumulative effects on the environment with respect to air quality with the identified committed developments would be undertaken for the construction and operational phases, with traffic data for the assessment incorporating an uplift for cumulative schemes in the area.

3.1.4. Potential Mitigation

No embedded mitigation has been taken consideration. However, during the construction phase, the focus will be on mitigation measures to be included in a Construction Environmental Management Plan (CEMP), based on the level of risk assessed in line with the IAQM guidance.

Following the completion of the assessment, where appropriate mitigation to protect existing and future users of the Proposed Development will be proposed.

3.1.5. Summary

The items to be scoped in and out of Air Quality Assessment are summarised in Table 3.4.

Table 3.4 Items to be scoped in/out

Issue	Scoping		Explanation
	In	Out	
Construction Phase Assessment	In		To consider temporary effects from dust and emissions on existing sensitive receptors within and surrounding the Application Site as a result of demolition and construction works.
Construction Traffic Assessment	In		To consider temporary effects on local air quality arising from changes in traffic entering the Proposed Development during construction works.
Operational Road Traffic	In		To consider the change in local air quality concentrations as a result of development generated road traffic at existing and proposed receptors.
Combustion Plant (Back Up Generators)	In		To consider the change of local air quality concentrations as a result of the operation of any onsite combustion at existing and proposed receptors, in particular any back up diesel generators.
Combustion Plant (for provision of heating and hot water).		Out	The provision of heating and hot water is proposed to be through an all-electric solution; therefore no emissions are anticipated from this source. As such, we proposed to scope out an assessment of this source.

3.2. Acoustics

3.2.1. Introduction & Key Issues

A Noise & Vibration Chapter will be presented in the Environmental Impact Assessment for the Proposed Development at Woburn & Bedford Court, Croydon. Due to the Site's proximity to noise sensitive receptors (residential and St Mary's School) and dominant noise sources, we propose that the Chapter includes the assessment of effects from the prevailing noise conditions upon the Proposed Development; the effects associated with the demolition and construction stage on existing receptors; the effects of the operational development and cumulative impacts.

Conversely, baseline assessments indicate that the Site and surrounding areas already experience relatively high levels of road traffic movement. The quantity of additional

road traffic movements introduced as part of the completed development are therefore not expected to give rise to adverse noise impacts. For this reason, it is proposed to scope assessment of operational road traffic noise out of the Chapter.

Additionally, ground borne vibration has not been identified as a material issue on the Site and as such, we propose that the site suitability assessment will not consider effects of vibration on the completed development.

3.2.2. Baseline

A comprehensive noise survey was conducted by Hilson Moran (HM) in March 2023 to inform early-stage design assessments of the Proposed Development. The long-term monitoring locations were chosen to establish prevailing noise levels from major road links in the area incident on the future building facades and quantify baseline noise levels at nearest noise sensitive receptors. Long-term noise monitoring was supplemented with attended noise measurements to establish variation in noise level throughout the Site and noise from specific sources (e.g., activities from St Mary’s school). Noise monitoring locations are presented in **Figure 3.2** below and results are summarised in Table 3.5

The baseline noise monitoring results have subsequently been used to calibrate a three-dimensional computer model using software package CadnaA to calculate and illustrate the variation of baseline noise levels across the Site and surrounding areas.

The baseline assessment indicates that the dominant noise source is road traffic associated with the A212, Newgate and Tavistock Road. The highest noise levels are experienced in areas of the Site extending closest and having clearest line of sight to the A212 and Newgate, which experience high volumes of road traffic during day and night periods and exceed the WHO limits for road traffic noise.

Table 3.5: Environmental noise survey results

Position	Duration	dB L _{Aeq,T}	dB L _{A10,T}	dB L _{A90,T}	dB L _{AFmax,5min}
		Ave ¹	Ave ²	10 th %ile ³	15 th Highest ⁴
LT1	Daytime, 16 hours	68	68	47	94
	Night-time, 8 hours	66	69	39	83
LT2	Daytime, 16 hours	56	58	45	81
	Night-time, 8 hours	51	53	40	71
LT3	Daytime, 16 hours	68	66	44	92
	Night-time, 8 hours	64	66	39	81

Notes: ¹ Logarithmic average over the survey period; ² Arithmetic average over the survey period; ³ The 10th percentile L_{A90,5min} value is presented, which is considered representative of the typically lowest daytime / night-time background levels experienced; ⁴ 15th highest value taken over the survey period, considered representative of the highest noise level experienced excluding anomalies.

3.2.3. Potential Impacts

Potential adverse impacts to be assessed include:

- Temporary noise and vibration effects on existing Noise Sensitive Receptors (NSR) near to the Site as a result of demolition and construction works;
- Temporary noise effects arising from changes in traffic accessing the Site during the demolition and construction works;
- Noise generated from new proposed building services plant (if applicable) on existing and future NSRs on and surrounding the Site;
- Assess the suitability of the Site for residential development through assessment of existing noise levels affecting the Site.

A Site location plan showing an approximate site boundary relative to the dominant noise sources and identified noise sensitive receptors is presented in **Figure 3.2** below.



Figure 3.2 Site Location Plan of Site, NSRs and Survey Locations

3.2.4. Assessment Methodology and Consultation

A noise survey has been carried out in March 2023 by Hilson Moran in accordance with relevant guidance. Using the baseline noise survey data collected in March 2023, a three-dimensional acoustic model will be developed via the proprietary acoustic software CadnaA, to predict the different free-field noise levels at the noise sensitive receptors (NSRs). This will be used as a basis for future assessments.

Consultation with the Environmental Health Department at LBC will be undertaken to agree key NSRs, the survey protocol, assessment methodologies, assessment criteria and effects to be addressed in connection with the Proposed Development.

The following sections provide a brief description of the assessments that will be undertaken in production of the Chapter.

3.2.4.1. Construction Phase Assessment

Prediction and assessment of potential noise and vibration impacts from key demolition and construction activities on existing NSRs surrounding the Application Site in accordance with the assessment procedures set out in British Standards (BS) BS 5228-1:2009+A1:2014⁷ and BS 5228-2+A1:2014⁸ ‘Code of practice for noise and vibration control on construction and open sites’ Part 1 covering noise and Part 2 covering vibration.

3.2.4.2. Operational Phase Assessment

Building services scheme details are not likely to be sufficiently developed at planning to quantify the noise impacts (e.g., the type, number and configuration of plant will not be defined). As a result, maximum plant noise emission limits will be calculated and set based on surveyed background noise levels ($L_{A90,T}$) at the nearest NSRs, the guidance contained in BS 4142:2014⁹, and the requirements of EBC to which services plant should be selected as not to exceed during design development.

3.2.4.3. Site Suitability

Envelope including opaque façade and glazing performance requirements will be developed and set based on surveyed background noise levels ($L_{A90,T}$) at the Proposed Development façade. The guidance regarding Internal Ambient Noise Level (IANL) contained in BS 8233:2014 and WHO Guidelines and Approved Document O will be used as baseline requirements.

3.2.5. Potential Mitigation

In determining whether an issue should be scoped in or out of assessment, no built-in mitigation has been considered.

The assessments conducted as part of the noise chapter will highlight the need for and extent of mitigation measures required to reduce the anticipated effects of noise and vibration (demolition and construction only) described above. Mitigation measures will be initially focussed on containing noise and vibration impacts at source where practicable but may also include use of further mitigation measures.

3.2.6. Summary

The items to be scoped in and out of Noise and Vibration Assessment are summarised in Table 3.6.

Table 3.6 Issues to be scoped in and out of the Noise and Vibration Assessment

Issue	Scoping		Explanation
	In	Out	
Demolition/Construction Phase Assessment	In		To consider temporary noise and vibration effects on existing NSRs within and surrounding the Application Site as a result of demolition and

Issue	Scoping		Explanation
	In	Out	
			construction works. Focus is required on NSR 3, 4 and 5 from Figure 1:1, as these experience lowest prevailing noise levels.
Demolition/Construction Traffic Assessment	In		Although prevailing background noise measured in March 2023 is considered high, change in road traffic noise due to construction operation should be considered to be not perceptible and relevant for the noise impact assessment.
Environmental Noise	In		Suitability of the Application Site for residential and other noise-sensitive premises with regards to existing noise levels.
Operational Road Traffic		Out	Prevailing background noise measured in March 2023 is considered high. Changes in road traffic noise due to Proposed Development are not considered to be significant (likely imperceptible) and therefore an assessment is deemed unnecessary.
Operational Noise Emissions	In		To consider the control of noise generated from new building services plant forming a part of the operational Proposed Development on existing and future noise SRs on and surrounding the site.

3.3. Townscape and Visual

3.3.1. Introduction & Key Issues

The ES will identify the likely effects of the Proposed Development on townscape and visual receptors. The assessment will be undertaken by Montagu Evans LLP.

The townscape assessment will consider the Proposed Development within its urban context, including buildings, the relationships between them, the different types of urban open spaces, including green spaces and the relationship between buildings and open spaces. Any impact on landscape components is treated under the heading townscape (when in cities).

The visual assessment will consider the impact of the Proposed Development on visual receptors, which are always people. Usually, visual receptors are defined according to use e.g., residents, pedestrians, or road users, rather than landscape features. The visual assessment relates to how the amenity of people in the area affected by development will change (positive, negative, or neutral).

The ES Chapter will be informed and supported by a standalone Townscape and Visual Impact Assessment ('TVIA') (also prepared by Montagu Evans LLP) that will be appended to the ES and submitted as an independent report as part of the planning application. The standalone TVIA will contain the assessment of the Proposed Development and

townscape and visual effects against policy to assist the decision-maker in determining the application.

3.3.2. Baseline

The Site is located in LBC, and is comprised of a 1960s housing estate, comprising approximately 80 existing units and garages. It is currently in residential use, with properties constructed in 1964. It includes 8 residential buildings of apartments of between a single and 3 to 4-storeys. There are 90 vehicle spaces, split between single-storey garages and open side street parking.

Buildings across the Site are evenly spaced, with large areas of hardstanding and wide pathways, though it noted that there is limited amenity and planting, including underutilised grassed areas, scattered trees and communal gardens or relatively poor quality.

Overall, the Site is considered to be of poor townscape quality and is noted as coming to the end of its economic life.

Beyond the Site, the area is dominated by a mix of commercial and residential uses, including mid-late-19th century terraced properties lining the western side of Wellesley Road, ecclesiastical, civic uses associated with the expansion of Croydon during the 19th century, as well as more modern commercial development associated with the 20th century rebuilding of the town centre. The area surrounding the Site is active and one of an urban edge of town centre, with Wellesley Road cutting through the area on a north-south axis and standing as a principal vehicular route towards the town centre.

There is an appreciation/ awareness of tall building development beyond the boundaries of the Site, namely Saffron Tower to the south, and The Island to the north. To the south, there is a clear change in townscape character beyond the Locally Listed Church of St Mary, with a shift to larger format, commercial developments associated with the activities of Croydon Town Centre.

Townscape receptors within a 1km of the Site boundary have been identified and will be assessed. The identification of townscape receptors has been formed based on Site observations, a manual desk-based review of Ordnance Survey Maps, characterisation studies, the location of built heritage receptors, prevailing building locations and heights, the topography of the area and townscape features, and an understanding of the scale, height and mass of the Proposed Development. To inform the Study Area and Baseline assessment, a Zone of Theoretical Visibility (ZTV) has been produced, illustrating potential visibility of the Proposed Development from the surrounding locality. The ZTV provides a visual representation of potential visibility of the Proposed Development at 1.6m from the ground. It has been produced by Cityscape Digital using Environmental Agency's LiDAR DSM & DTM Data (100cm & 200cm) with trees included in the Viewshed calculation. The ZTV is reproduced at **Appendix A**.

Townscape Character Areas are identified in the Townscape Character Area Plan produced at **Appendix D**. A total of 8 Townscape Character Areas are identified. Based on a baseline study of their prevailing townscape character, as well as numerous Site surveys

and an understanding of the surrounding locality, the following Townscape Character Areas will be scoped into the full assessment within this Chapter of the ES.

- TCA1: West/North Croydon Mixed;
- TCA 2: Croydon Town Centre; and,
- TCA 3: East Croydon Residential.

It is considered that those scoped out townscape receptors (those not identified above) include receptors whose value will not be materially altered to a significant effect by the Proposed Development, for instance due to occlusion through orientation of streets and spaces and by reason of interposing development. This is based on professional judgement.

The Site falls within TCA1: West/ North Croydon Mixed. At present, it is not considered to contribute to the townscape quality of the area and is considered to represent a detracting feature of limited to no quality.

The study area for the visual assessment has been centred on the Site, and has been limited to locations from which the Site can be seen, of from which the new buildings on the Site have the potential to result in significant visual impact (in EIA terms) at the heights proposed. Viewpoint selection has also been informed by on-site surveys, the location of built heritage assets, areas of open and/or green space, key routes through the townscape, pre-application consultation with Croydon Council, as well as the production of the ZTV, reproduced at **Appendix C**. Representative viewpoints of the assessment of visual effects include:

- 1) Addington Hills of Croydon Metropolitan Centre;
- 2) Biggin Hill of Croydon Metropolitan Centre;
- 3) Norwood Grove of Croydon Metropolitan Centre;
- 4) Pollards Hill of Croydon Metropolitan Centre;
- 5) Purley Way Playing Field of Croydon Metropolitan Centre;
- 6) Ross Road of Ikea Towers;
- 7) Roman Way looking east towards Croydon Metropolitan Centre;
- 8) Stanton Road looking southeast to Site;
- 9) Whitehorse Road looking south to Site;
- 10) Newgate (Southeast Corner) Looking South Towards the Site;
- 11) Junction of St James's Road and Tavistock Road looking southwest to Site;
- 12) Junction of Tavistock Road and Woburn Road looking north-west to Site;
- 13) Tavistock Road (opposite The Elms) looking north-west towards Site;
- 14) Windmill Bridge looking west to Site;
- 15) Wellesley Road (west pavement) to the north of junction with Station Road looking north towards Site;

- 16) Wellesley Road (west pavement) outside 57/59 Wellesley Road looking north towards Site;
- 17) Wellesley Road (west pavement) outside 91 Wellesley Road looking south towards Site; and,
- 18) St James's Road (north pavement) outside of St James' Church looking west to Site.

The identified viewpoint locations are presented on the Viewpoint Location Plan produced at **Appendix C**. The views have been discussed and agreed with officers at the Local Planning Authority as part of the pre-application process. The Viewpoint Location Plan has also had regard to the relevant planning policy documents, as well as strategic viewpoint identified within the Croydon Local Plan, identified as 'Croydon Panoramas' and 'Local Designated Views'. During continued consultation with key stakeholders, we will consider whether additional viewpoints are required. The selection will be reasonable and proportionate to the scope of the assessment and likely impact.

3.3.3. Potential Impacts

Demolition and Construction

Demolition and Construction effects are likely to vary according to their temporary nature and some operations may have more perceptible effects than others. The assessment will be based on a worse-case scenario when construction activities are at their peak (such as when the Proposed Development is at its tallest point, and when construction activity such as traffic and cranes is more intense). The effects are likely to vary according to the distance between the receptors and the Site, and those receptors located close to the Site more exposed to a higher visibility of machinery and infrastructure as well as non-visual effects such as noise, and likely to experience a larger effect than those located at a greater distance. These effects are likely to be adverse, but short-medium term, temporary and not significant in the meaning intended within EIA.

Completed Development

The assessment will consider the following impacts and associated likely effect of the Completed Proposed Development:

- Visibility of the Proposed Development in local views and the effects on the amenity of the viewer and the character of the local townscape; and
- Visibility of the Proposed Development and associated change in the townscape and spatial character and quality within the study area.

Visual and townscape receptors situated within the Site's immediate vicinity (within a 250m radius), are considered to have a higher sensitivity and lower susceptibility to change, owing to their existing baseline character, location relative to the Site and potentially effects arising from the Proposed Development. It is anticipated that the likely effects arising on these receptors will range from a negligible-moderate/major effect (beneficial, neutral, or adverse). Visual and townscape receptors over a 250m distance and beyond the confines of the immediate urban context are likely to experience a lesser effect, owing to an increased distance from the Site, interposing development and the nature and scale of the Proposed Development.

3.3.4. Assessment Methodology

The assessment will accord with best practice guidance, including the *Guidelines for Landscape and Visual Impact Assessment Third Edition (2013)*.

3.3.4.1. Construction Phase Assessment

The assessment of demolition and construction works will be based on the typical impacts and effects associated with a development of the proposed nature and scale taken in conjunction with the particular site and its sensitivities. The visual character and effects of the process would alter at different times of day and throughout the different phases of demolition and construction work, and so it is not possible to accurately represent the process in the verified views. Additionally, none of the effects resulting from the process, apart from those associated with the completed Proposed Development, would continue beyond the construction process, and so it is considered appropriate for the townscape and visual assessments to consider the effects of the completed Proposed Development in greater detail than those of demolition and construction, because those effects will be permanent and long-term. Accordingly, a qualitative assessment will be undertaken based on professional judgement and experience.

3.3.4.2. Operational Phase Assessment

The assessment of the effect of the Proposed Scheme on a receptor (an area of townscape or visual receptor experiencing a view) will be made based on professional judgement which will take into account relevant planning policies and guidance.

The same method would be applied for the Demolition and Construction Stage and the Completed Development Stage. The assessments for Demolition and Construction Stage and the Completed Development Stage would be presented separately. The approach to cumulative effects is described later in this section.

In summary, the assessment has four stages:

- Baseline assessment of value;
- Assessment of sensitivity;
- Assessment of magnitude of impact; and
- Assessment of likely effect.

The methodology will describe the criteria and approach to assessment at each stage outlined above. The first stage is undertaken at baseline stage. The second, third and fourth stages are part of the assessment of the Proposed Development.

The identification of the townscape and visual baseline is described below. This would result in a value (for townscape character and visual amenity as experienced by visual receptors) based on a word scale, ranging from Very Low to High.

The assessment stage would identify the susceptibility of the receptors to the type of change introduced by the Proposed Development (Demolition and Construction and Completed Development Stage) on a word-scale (High, Medium, and Low). This would be calibrated against the value using a common matrix to identify the sensitivity of the receptors.

A qualitative assessment would then be made as to the magnitude of impact of the Proposed Development (Demolition and Construction and Completed Development Stage). This would also be recorded as a word-scale, and consider all aspects of the proposals, positive and negative, upon the receptor's value. Effectively this would arrive at a net position of either benefit, adverse or neutral impact. The magnitude of impact would be calibrated with its sensitivity using a common matrix. This would result in a nature of effect (None, Negligible, Negligible to Minor, Minor, Minor to Moderate, Moderate, Moderate to Major, or Major) and professional judgement would determine if the effect was Beneficial, Adverse or Neutral.

Effects which are Moderate, Moderate to Major, or Major will be considered significant.

For each effect, a statement will be made as to whether they are direct or indirect, temporary, or permanent, and short-, medium- or long-term.

The assessment will also consider secondary mitigation and residual effects. It is anticipated that mitigation would be embedded for townscape and visual considerations i.e., included as part of the design and considered as part of the main assessment.

The cumulative assessment would consider schemes that have received planning permission (the 'Cumulative Schemes'). The TVIA would take the additive approach to cumulative assessment, as set out in GLIVIA i.e., the assessment would consider the cumulative schemes as a baseline and the additional impact of the Proposed Development, rather than assessing the in-combination impact of the Proposed Development and cumulative schemes.

The assessment of townscape and visual effects will be informed by visual tools, including a ZTV, non-verified massing studies and accurate visual representations ('AVRs'). The tools inform the assessment of the impact of the Proposed Development on townscape and visual receptors e.g., they allow an understanding of the geographical extent and magnitude of visibility from representative locations. The tools are not receptors themselves, unless comprising strategic views designated in the development plan, such as, in London, the 2012 London View Management Framework.

For each of the identified views, AVRs are to be provided in the following scenarios:

- Existing – Baseline Photography
- Proposed – Existing plus the Proposed Development; and
- Cumulative – Existing plus Proposed Development with selected Approved Projects.

The objective of a photomontage is to simulate the likely visual changes that would result from a Proposed Development, and to produce printed images of a size and resolution sufficient to match the perspective in the same view in the field.

3.3.5. Consultation

Concerning townscape and visual considerations, ongoing consultation will continue with the Local Planning Authority in the lead up to the submission of the full planning application.

3.3.6. Potential Mitigation

The Proposed Development will include secondary mitigation and residual effects. It is anticipated that mitigation would be embedded for townscape and visual considerations i.e., included as part of the design and considered as part of the main assessment.

3.3.7. Summary

The ES will assess the likely effects of the Proposed Development on the local townscape character and visual receptors identified in this report. The visual receptors will be represented by 18 AVRs and supplementary non-verified views prepared using VuCity and other tools presented in the submitted Design and Access Statement. The viewpoint locations have been agreed with the Council during pre-application discussions.

The ES Chapter will be supported and informed by a standalone TVIA that will provide a policy analysis of the impact of the Proposed Development on townscape and visual receptors, including those to be 'scoped-out' of the ES (owing to the anticipated effect on their overall value).

3.4. Built Heritage

3.4.1. Introduction & Key Issues

The ES will identify the likely effects of the Project on built heritage receptors. The assessment will be undertaken by Montagu Evans LLP.

Built heritage receptors comprise heritage assets that are above-ground or have upstanding remains, including listed buildings, conservation areas (CAs), Scheduled Monuments (with upstanding remains) and Registered Park and Gardens (RPGs).

The built heritage assessment will not consider archaeological (below-ground) heritage assets which are considered elsewhere in the submission.

The Built Heritage ES Chapter will be informed and supported by a Heritage Impact Assessment (also by Montagu Evans LLP) that will be appended to the ES and submitted as an independent report as part of the planning application. The Heritage Impact Assessment will contain the assessment of the Proposed Development and heritage impacts against policy to assist the decision-maker in determining the applications.

3.4.2. Baseline

The Site is comprised of a 1960s housing estate, including approximately 80 existing residential units and garages. It does not include, or fall within the boundary of, any built heritage designations.

Site observations and surveys, a manual desk-based review of Ordnance Survey Maps, relevant policy and guidance documents and relevant heritage receptors have been used to determine a study area for the assessment of built heritage receptors. To inform the Study Area and Baseline assessment, a Zone of Theoretical Visibility (ZTV) has been produced, illustrating potential visibility of the Proposed Development from the surrounding locality. The ZTV provides a visual representation of potential visibility of the Proposed Development at 1.6m from the ground. It has been produced by Cityscape

Digital using Environmental Agency's LiDAR DSM & DTM Data (100cm & 200cm) with trees included in the Viewshed calculation. The ZTV is reproduced at **Appendix A**.

The Site is located to the immediate east of Wellesley Road Conservation Area, and within the setting of several designated and non-designated heritage receptors. There is therefore the potential for the Proposed Development to cause significant effects on the value of heritage receptors identified within the Study Area.

A Heritage Asset Plan has been produced (see **Appendix B**), which illustrates the location of heritage receptors in a 1km radius of the Site boundary. This includes the identification of all designated heritage assets¹⁰ within a 1km radius, and all formally identified non-designated heritage assets¹¹ located within a 500m radius.

The following designated heritage assets are identified as having the potential for a likely significant effect, and will therefore be scoped into the ES at full assessment stage:

- Parish Church of St. Michael and All Angels (Grade I);
- Church of St. James (Grade II*);
- 120, Church Street (Grade II);
- 237 and 239, Sydenham Road (Grade II);
- 226-228, Sydenham Road (Grade II);
- Wellesley Road (North) Conservation Area;
- Central Croydon Conservation Area; and,
- St Mary's Church (Locally Listed Building).

It is considered that those scoped out heritage receptors (identified below) include receptors whose setting will not be materially altered by the Proposed Development, for instance due to occlusion through orientation of streets and spaces, interposing development and where there is no historic functional relationship between the receptor and the Site. This is based on professional judgment and the production of a Zone of Theoretical Visibility (see **Appendix A**). It is proposed that the heritage receptors noted below are considered and assessed as part of a separate Heritage Impact Assessment, provided as a separate report in support of the planning application.

- Parish Church Of St John The Baptist (Grade I);
- Hospital of the Holy Trinity (Whitgift Hospital) (Grade I);
- Croydon War Memorial (Grade II*);
- Electricity Showrooms and Offices (Grade II);
- Segas Offices (Grade II);
- Former Grant's Department Store (Grade II);
- Municipal Buildings, comprising the clock tower, public library, and Corn Exchange, and including the area balustrade which incorporates a war memorial and a statue of Queen Victoria (Grade II);
- Union Bank Chambers (Grade II);
- Nat West Bank (Grade II);
- The Ship Public House (Grade II);
- The Dog and Bull Public House (Grade II);
- 11, Crown Hill (Grade II); and,
- 13 and 13a, Crown Hill (Grade II);

- 61, 63, 65, Church Street (Grade II);
- 91 and 93, Church Street (Grade II);
- Numbers 2 to 8 (Even) with Boundary Wall and Entry Arches and Piers (Grade II);
- Rose And Crown Public House (Grade II);
- Elis David Almshouse Including Railings and Gates to Street (Grade II);
- 120, Church Street (Grade II);
- Surrey Street Pumping Station;
- West Croydon United Reformed Church (Grade II);
- Church Of St Saviour (Grade II);
- Wall Enclosing Churchyard of Church Of St Saviour (Grade II);
- Queen's Road Hospital (Entrance Block) (Grade II);
- Davidson Lodge (Grade II);
- Entrance Lodge to Davidson Lodge (Grade II);
- Walls And Four Piers at Entrance To Davidson Lodge (Grade II);
- Leslie Arms Public House (Grade II);
- Church Street Conservation Area;
- Croydon Minster (Formerly Parish Church) Conservation Area;
- East India Estate Conservation Area;
- Whitgift Almshouses Courtyard (Locally Listed Park and Garden); and,
- Queens Gardens (Locally Listed Park and Garden).

3.4.3. Potential Impacts

Section 3.4.2 outlines the heritage receptors that have been identified where significant effects resulting from the Proposed Development may occur.

Demolition and Construction effects are likely to vary according to their temporary nature and some operation may have more perceptible effects than others. The assessment concerning effects arising on heritage receptors will be based on a worst-case scenario when construction activities are at their peak (such as when the Proposed Development is at its tallest point, and when construction activity such as traffic and cranes is most intense). The effects are likely to vary according to distance between heritage receptors and the activities/ the Site, and those receptors located close to the Site and more exposed to a high degree of intervisibility of machinery and infrastructure, as well as noise and unattractive, part complete buildings, are likely to experience a larger effect than those at a greater distance. These effects are likely to be identified as adverse, but short-medium term, temporary and not significant in the meaning intended within the EIA. Such effects are indirect, with the intrinsic value of the heritage receptors, and the value they derive from their historic and architectural interest not directly affected.

The assessment of the Completed Development will outline the likely impact of the Proposed Development on the value of the heritage receptors by virtue of a change to setting (both visual and non-visual). This will be expressed as the overall effect.

The likely effects on heritage receptors situated within a 250m radius of the Site are anticipated to range from between a nil to moderate effect (beneficial, neutral, or adverse). Heritage receptors beyond a 500m radius are considered to have a greater ability to accommodate the change proposed, owing to the nature of interposing

development, distance, an existing appreciation of modern development within their immediate and wider settings, and a lack of association between the Site and the receptor. It is anticipated that heritage receptors over a 500m radius of the Site will not experience a likely significant effect. For such receptors, an assessment of their heritage value (including an assessment of setting) is to be included within the separate Heritage Impact Assessment supporting the planning application. It is accepted that some heritage receptors – such as those that form prominent landmarks due to their skyline features such as churches – may have a lower susceptibility to change, although our initial scoping exercise has not identified any that fall outside the study area.

3.4.4. Assessment Methodology

An assessment will be made of the significance of the identified heritage receptors in their existing states (cross-referencing the townscape and visual baseline). This will be based on a study of the historic development of the area with reference to relevant publications, and study of the present-day condition of the area based on site visits, study of maps and aerial photography. These assessments will be proportionate to the significance of the assets and the likely effect of the Proposed Scheme on them. In line with Paragraph 200 of the NPPF, they will demonstrate an understanding of the potential impact of the Proposed Development on their heritage value (significance).

The assessment will accord with best practice guidance, including *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets* (2017) and *Tall Buildings: Historic England Advice Note 4* (2022). Due regard will also be given to emerging guidance, such as the Greater London Authority's recently published Practice Note on *Heritage Impact Assessments and the setting of heritage assets*.

3.4.4.1. Construction Phase Assessment

The assessment of demolition and construction works will be based on the typical impacts and effects associated with a development of the proposed nature and scale taken in conjunction with the particular site and sensitivities. The visual character and effects of the process would alter at different times of day and throughout the different phases of demolition and construction work, and so it is not possible to accurately represent the process in the verified views. Additionally, none of the effects resulting from the process, apart from those associated with the completed Proposed Scheme, would continue beyond the construction process. They are temporal in nature and are a necessary step to deliver the Completed Development. The duration and permanence of the Completed Development stage will be reflected in the assessment of magnitude of impact to heritage receptors. Accordingly, a qualitative assessment will be undertaken based on professional judgement and experience.

3.4.4.2. Operational Phase Assessment

The assessment of the effect of the Proposed Development on a receptor (a heritage asset, as identified above for the purposes of this assessment) will be based on professional judgement which considers relevant planning policies and guidance.

The sensitivity to change of each heritage asset or groups of assets will be considered in relation to impacts (considering both direct and indirect effects). This is based on the

designation and grade of the heritage asset and an assessment of its heritage significance (in light of NPPF policy), i.e., what elements of its fabric/constituent parts and setting contribute to its heritage significance (at the designated grade/level). It will be assessed as high, medium, or low.

The magnitude of the impact resulting from the Proposed Development will be assessed as high, medium, low, very low or nil according to the change to the receptor. These two measures will be combined to provide a conclusion as to the level of effect (major, moderate, minor, or negligible).

The likely level of effects is derived through consideration of the magnitude of impact and the sensitivity to change of the heritage assets. This assessment considers the heritage significance of the heritage asset and how this is impacted by the Proposed Development.

The Proposed Development may have a nil effect to a receptor. Where effects are identified they will also be assessed qualitatively as beneficial, adverse, or neutral in respect of their direction of effect on the heritage value of the receptor. This is in recognition of the fact that an effect on a heritage receptor or its setting can enhance its heritage significance (a beneficial effect), harm its heritage significance (an adverse effect) or be overall neutral (a neutral effect). The assessment may also identify both adverse and beneficial impacts that, on balance, equate to a 'net' neutral effect; where this occurs, the qualitative text will be required with detail for both the adverse and beneficial impacts.

The direction of effect (adverse, beneficial, or neutral) is independent of whether it is a major, moderate, or minor, albeit this will be reported in the ES determined following this through professional judgement. This assessment accounts for the nature and condition of the heritage receptor and its setting as found today and how these contribute to its heritage value. Whether the effect is significant or not will be informed by professional judgement alongside the evidence prepared.

For each effect, a statement will be made as to whether they are direct or indirect, temporary, or permanent, and short-, medium- or long-term.

The assessment will be informed by visual aids, including a ZTV and verified views. The viewpoint selection (see **Appendix C**) has been informed by the presence of heritage receptors, and the assessment on the historic environment will take those views into account for setting purposes.

The general conclusions about the impact of the Proposed Development on heritage receptors include consideration of the overall impact on the historic environment in the round.

The approach to cumulative assessment for built heritage will include the combination of the Proposed Scheme with other Approved projects.

The assessment of cumulative effects will be presented in the ES in accordance with the methodology set out in this EIA Scoping Report.

3.4.5. Consultation

It is anticipated that Historic England will be consulted as part of the determination of the planning application due to the potential impact on highly graded receptors, such as the Parish Church of St. Michael and All Angels (Grade I) and Church of St. James (Grade II*). Conservation officers at the Greater London Authority will also be consulted. Ongoing consultation will continue with the Local Planning Authority in the lead up to the submission of the full planning application.

3.4.6. Potential Mitigation

The assessment will also consider secondary mitigation and residual effects. It is anticipated that mitigation would be embedded for built heritage, i.e., included as part of the design and considered as part of the main assessment.

3.4.7. Summary

The ES will assess the likely effects of the Proposed Development on built heritage receptors. The Proposed Development will likely have indirect effects on heritage receptors in the surrounding area as a result of the change to their setting. There is the potential to be significant effects arising on 8 heritage receptors, which will be assessed as part of the ES.

The ES Chapter for built heritage will be supported and informed by a Heritage Impact Assessment that will provide a policy analysis of the impact of the Proposed Development on heritage assets identified in the Study Area, including those scoped out of the ES.

3.5. Socio-Economics

3.5.1. Introduction & Key Issues

It is recommended that socio-economics will be scoped into the EIA for the Proposed Development. The assessment will be undertaken by Lichfield's.

3.5.2. Baseline

A high-level socio-economic and labour market review was undertaken, drawing primarily on published sources from the Office for National Statistics ('ONS'), such as the 2021 Census and other datasets related to population, labour market activity, occupations, and educational attainment.

The Site is located within Fairfield Ward in the LBC. It should be noted that the ensuing analysis draws on the 2022 Ward boundaries, covering a local impact area ('LIA') comprising the following wards - Addiscombe West, Broad Green, Fairfield, Park Hill and Whitgift, and Selhurst. This represents the area over which the effects generated by the Proposed Development are most likely to be felt.

In 2021 the LIA had a population of approximately 70,800 people, which is equivalent to 18.1% of LBC's total population. It is estimated that approximately 8.9% of the LIA's population is aged 65 or over, compared with 13.6% across the wider Borough. The population of LIA is characterised by the following labour market indicators:

- A slightly higher labour market participation rate (also defined as economic activity rate) of 65.8%, relative to LBC (of 63.4%) and the London average (of 63.5%);
- A slightly lower employment rate (of 92.6%) relative to LBC (of 93.5%) and London (of 93.6%);
- A slightly higher unemployment rate (of 7.4%) relative to both LBC (6.5%) and London (6.4%);
- A lower level of economic inactivity rate (of 25.1%), relative to both LBC (of 28.3%) and the London average (of 26.6%);
- An estimated student population of around 5,100 people equivalent to 9.1%, which is higher than the LBC average (of 8.3%), but below the London average (of 9.9%);
- A slightly higher proportion of residents (aged 16+) with degree level qualifications (of 43.5%) relative to LBC (of 41.0%), but below the London average (of 46.7%);
- A lower proportion of residents in higher managerial and professional occupations (48.1%) relative to both LBC (49.7%) and London (55.7%); and,
- As of November 2023, there were around 3,360 residents claiming unemployment benefits within the LIA, representing 7.3% of the LIA's core working age population (16-64) and around 22.8% of all claimants in LBC. Overall, this is higher than the equivalent rate for both LBC (of 5.7%) and London (of 5.0%).

The latest Business Register and Employment Survey ('BRES') indicates that there are currently around 59,100 workforce jobs located within the LIA, accounting for just under half (i.e., 46.5%) of total employment across LBC. Key employment sectors within the LIA include public administration & defence (accounting for 23.9% of all jobs), retail (14.4%) and professional, scientific & technical service (10.3%). Since 2015, total employment within the LIA has increased by 18.0%, which was higher than the equivalent growth across both LBC (of 5.0%) and London (12.5%).

3.5.3. Potential Impacts

Considering the current baseline position and the nature of the Proposed Development, the likely socio-economic effects which are proposed to be considered are as follows:

- Employment and economic output generated during the construction phase of the Proposed Development;
- Employment and economic output generated during the operational phase of the Proposed Development;
- Effects of the Proposed Development on the local labour market;
- Effects of the Proposed Development on housing;
- Effect of the Proposed Development on deprivation in the local community; and,
- Effects of the Proposed Development on social and community infrastructure comprising education provision (i.e., early years, primary and secondary schools), healthcare (i.e., GP surgeries and dental practices), open space and play space provision, as well as other community facilities (such as libraries and community spaces)

The effects of the Proposed Development will be assessed in gross and net additional terms and will be benchmarked against the local and sub-regional contexts where relevant.

3.5.4. Assessment Methodology

The assessment will consider the effect of the Proposed Development on both its LIA (i.e., as defined above) and its wider impact area ('WIA'). These will be defined using statistical geographies, such as Lower-layer Super Output Areas ('LSOA') and/or Census wards. The WIA will be based on the administrative boundary of LBC.

Once the impact areas are defined, the baseline condition will be set out using a combination of statistical data sources, including the ONS (such as the Annual Population Survey ('APS'), BRES, and 2021 Census), the Ministry of Housing, Communities and Local Government / Department for Levelling Up, Housing and Communities ('MHCLG' and 'DLUHC'), the Department for Education (DfE), and National Health Service ('NHS').

Local, regional, and national planning policies relevant to the socio-economic effects of the Proposed Development will be reviewed and summarised, focussing on economic development, housing and community infrastructure. Relevant economic strategy documents and/or action plans will also be considered.

The evaluation of the effects of the Proposed Development will be based on an assessment of the magnitude of impact and the sensitivity of the identified receptors. Effects will be defined on a matrix basis from major adverse through to major beneficial, representing the scale of an effect beyond the baseline position. Where possible, the scale of each effect will be quantified in relation to current conditions. When it is not possible to do so, the assessment will be based on a qualitative assessment of the effect on the receptors(s) identified.

3.5.4.1. Construction Phase Assessment

The assessment of the construction phase will be driven by the level of capital investment in the Proposed Development, and length of the construction period. This will draw on best practice and guidance by the Homes and Communities Agency ('HCA') – now Homes England – to generate an estimate of the direct, indirect, and wider induced impacts on jobs and economic output (measured in terms of gross value added ['GVA']).

3.5.4.2. Operational Phase Assessment

The assessment of the operational phase will draw on the proposed uses on-site, any community/commercial floorspace as well as the proposed housing mix. The additional demand for social and community infrastructure (i.e., including health, education, and wider facilities) will be considered based on the population accommodated within the Proposed Development (drawing on the proposed housing mix and outputs from the Greater London Authority's ['GLA'] Population Yield Calculator).

3.5.5. Consultation

There is no statutory requirement for consultation on socio-economic matters. Nevertheless, if considered appropriate engagement with LBC will be undertaken regarding the sensitivity of local receptors and the capacity of local resources. In addition, the assessment will also draw on insight gained from consultation undertaken as part of the wider planning application process, as well as inputs from other ES chapters where relevant.

3.5.6. Potential Mitigation

The need for mitigation measures to address any adverse effects and/or enhance beneficial effects will be considered as appropriate. This could include references to the provision of training and workforce development initiatives, or mitigation in the form of additional on-site provision and/or financial contributions (i.e., in the form of a Section 106 Agreement ['S106'] and/or Community Infrastructure Levy ['CIL']) if relevant.

3.5.7. Summary

The socio-economics chapter will be scoped into the EIA and will review the relevant national and local policy contexts as well as baseline conditions within the defined impact areas. The chapter will consider the effects generated during construction as well as once the Proposed Development is occupied and/or fully operational. This will include an assessment of the Proposed Development's effects on housing, the economy (i.e., jobs and GVA), population and the labour market and demand for social and community infrastructure.

3.6. Climate Change & Resilience - Greenhouse Gas Assessment

3.6.1. Introduction & Key Issues

This chapter of the ES Scoping Report has been produced by Hilson Moran (HM) in its capacity as sustainability consultants. The chapter focuses on the likely Climate Change and Greenhouse Gases (GHG) implications arising from the Proposed Development to define a framework for the forthcoming assessment.

The assessment will assess the likely significant effects arising from the Proposed Development associated with climate change. It will consider the potential effects of construction and operational phases of the Proposed Development on climate change, as well as the effects of climate change on the Proposed Development.

The assessment will cover the following studies:

- To consider how the physical effects of future climate change will affect the significance of the environmental effects being considered in other areas, i.e., in combination with other factors.
- Consideration of the proposed resilience of the development to the physical effects of future climate change ('Climate Change Resilience' (CCR) assessment); and,
- Assessment of the impact of climate change through greenhouse gas calculations, in terms of operational and construction carbon usage. The calculations will look at the potential for significant effects to arise from the Proposed Development in terms of greenhouse gas (GHG) emissions over its lifetime ('GHG assessment').

Schedule 4 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) stipulates the 'Information for inclusion in Environmental Statements', with paragraph 5(f) stating inclusion of "the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change". In line with Schedule 4, it is deemed a Climate Change and GHG Chapter should form part as an ES chapter and should be scoped in the EIA.

The primary point – "the impact of the project on climate" - is considered within a GHG assessment, with the CCR assessment addressing the vulnerability of the project.

The consideration of a combination of factors of the potential climate (e.g., high and low temperatures, high and low precipitation, humidity, insolation (solar irradiation), storms/lightning strikes and wind) is covered by the physical effects of future climate change and the significance of the environmental effects. The Climate Change and GHG Chapter is intended to include the analysis of the combination of both physical effects and environmental effects on the Proposed Development.

3.6.1.1. Policy

The Climate Change Act (2008)¹², amended in June 2019, established a legal requirement for the UK to achieve 100% cut in carbon dioxide emissions (below 1990 levels) by 2050. The Government has set out a Net Zero Strategy – Build Back Greener (October 2021) –

with supporting policies, for the decarbonisation of all sectors of the UK economy to meet the net zero target by 2050.

The National Adaptation Programme sets out government's response to the second Climate Change Risk Assessment, showing the actions government is, and will be, taking to address the risks and opportunities posed by a changing climate. It forms part of the five-yearly cycle of requirements laid down in the Climate Change Act 2008 to drive a dynamic and adaptive approach to building our resilience to climate change.

The Site is located in LBC. The Croydon Local Plan, adopted in February 2018, provides the strategic direction and growth of the Borough. The following policies related to climate change will be considered within the GHG assessment and Climate Change ES Chapter:

- Policy SP6: Environment and Climate Change;
- Policy SP7: Green Grid;
- Policy DM23: Development and Construction; and,
- Policy DM25: SuDS and Reducing Flood Risk.

LBC adopt Strategic Objectives in the Local Plan which set out how detailed strategy can be achieved in line with high level spatial vision.

- SO9: Ensure the responsible use of land and natural resources and management of waste to mitigate and adapt to climate change; and,
- SO11: Tackle flood risk by making space for water and utilising sustainable urban drainage systems.

In July 2019, Croydon declared a climate emergency. The Croydon Climate Crisis Commission was set up to guide the response to the climate emergency, including a report of recommendations to enable the borough to become carbon neutral by 2030. In February 2022, the Croydon carbon neutral action plan was approved.

LBC are preparing a new Local Plan which sets the vision and framework for how the Borough will be transformed to 2039. A period of consultation referred to as the 'Issues and Options consultation' took place between November 2019 and January 2020. A draft was due to be submitted to Secretary of State in June 2022.

The Council aims to encourage that the impacts of climate change will have been minimised, especially by building exemplar new developments and increasingly sustainable travel choices. As a result, local carbon emissions will be low relative to UK averages.

3.6.1.2. Guidance

There is currently no singular industry approach or nationally adopted methodology for assessing GHG emissions within EIA and therefore the Climate Change and GHG assessment draws upon the IEMA guidance on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'¹³ and IEMA guidance on 'Climate Change Resilience and Adaptation'¹⁴. The documents provide guidance on the assessment of the impact of climate change, within the context of EIA, emphasising the need for proportionality in the context of national, sector and local GHG emissions. The guidance document sets out advice to

the key components necessary to deliver a robust, appropriate and consistent assessment.

3.6.2. Baseline

The data use for the assessment will arise from publicly available data and desktop studies such as current and future climate conditions and scenarios based on UKCP18¹⁵.

In addition, future climate change scenarios will be considered by each of the technical topics covered with the ES, and the level of assessment and methodology is proportional to the available evidence base.

The construction and demolition figures for embodied energy will be based around GLA Benchmarks and RICS Benchmarks set out in 'Methodology to calculate embodied energy of materials'¹⁶.

Information related to the transportation of materials during construction and associated journeys during operation will be based on information obtained through the Transport and Air Quality assessments report within the ES.

The baseline operational emissions for energy and water will be estimated for the existing operational onsite uses based on information provided by the project team.

GHG emissions associated with the energy use of the Proposed Development will be taken from the Energy Strategy, prepared by Hilson Moran, which accompanies the planning application.

Emissions for operational Transport will be derived by taking movement figures provided by transport consultant and multiplied by gov.uk carbon conversion factors.

3.6.3. Potential Impacts

The following elements have been considered as significant impacts and therefore have been scoped in the GHG assessment:

- Demolition and Construction Impacts:
 - Embodied carbon;
 - Transport.
- Operational Impacts
 - Operational transport;
 - Operational Energy use;
 - Operational Water use; and,
 - Repair, Maintenance, Refurbishment and Decommissioning.

The planning application will be accompanied with a supporting energy and sustainability statements, which will highlight how the Proposed Development plans to mitigate against climate change.

3.6.4. Assessment Methodology

Part A: Climate Change Resilience Assessment (Adaptation Strategy)

The Proposed Development's Climate Change Resilience (CCR) will be assessed as part of this ES chapter. The approach to assessing the potential impact of climate change on the Proposed Development will be undertaken in line with the IEMA guidance 'Climate Change Resilience and Adaption'¹⁷, which presents a framework for the consideration of climate change resilience and adaption in the EIA process.

The CCR assessment will look at the impact of future climate scenarios on the development from both the construction and operational phases. The following climate change issues will be considered on the development (i.e., the physical effects of future climate change):

- High and low temperatures;
- High and low precipitation;
- Humidity;
- Insolation (solar irradiation);
- Storms/lightning strikes; and,
- Wind.

The CCR assessment will look at how the Proposed Development responds to impacts of climate change in relation to the topics and elements scoped in the EIA, which include:

- Air Quality;
- Acoustics: Noise & Vibration;
- Townscape & Heritage;
- Visual Impact Assessment;
- Socio-economics;
- Daylight, Sunlight & Overshadowing; and,
- Wind Microclimate.

The CCR assessment will be qualitative and based on professional judgement. It will consider both the construction and operation of the development.

In the construction stage, elements are assessed against the potential impact the hazard may have on the construction programme. For the operation of the Proposed Development, the assessment would focus on the impacts from the climate hazards listed above.

Data projections for future climate change will be sourced from the UKCP18 climate change projections, which are the latest available for UK climate change. Data are provided for different time periods from 1961 until 2100 under different scenarios with different probability levels within each scenario. The CCR assessment will require information on current and projected future climate conditions. The assessment will use three sets of climate data:

- Current climate conditions – based on weather observations;
- 2050s future climate scenario – based on UKCP18 projections; and,
- 2080s future climate scenario – based on UKCP18 projections.

Adaptation measures will be provided against each of the potential effects identified within the CCR assessment.

Part B: Greenhouse Gas (GHG) Assessment (Mitigation Strategy)

The GHG assessment is quantifies the amount of emissions arising from the Proposed Development. The GHG emission calculations would look at the amount of carbon emissions or sinks arising from the demolition, construction and operation of the Proposed Development. The magnitude of impact on climate change is quantified as mass of GHG emissions expressed as tonnes of carbon dioxide equivalent (tCO₂e) in total or per annum. The scope of the GHG assessment will comprise:

- Demolition & Construction emissions – related to the extraction, processing, manufacture and construction of materials; and,
- Operational emissions – from the everyday running of buildings on the Site.

The calculation is made of the following elements:

- Embodied energy from the construction materials used, and the energy and fuel used during demolition and construction of the Proposed Development;
- Operation of the Proposed Development for general use, equipment used and the resulting fuel, energy and water consumption and associated carbon emissions; and
- Carbon associated with the transportation of construction materials and journeys associated with the operation of the Proposed Development.

The construction and demolition figures for embodied energy will be based around the GLA Benchmarks and RICS Benchmarks set out in 'Methodology to calculate embodied energy of materials'¹⁸.

The operation of the Proposed Development will be based on the carbon emissions calculated through the energy strategy.

The transportation of materials during construction and associated journeys during operation will be based on information obtained through the Transport and Air Quality elements of the ES.

The assessment of GHGs is limited in terms of identifying sensitive receptors, as GHG emissions do not directly affect specific locations or receptors but rather lead to indirect effects by contributing to climate change. In the context of climate change, there is one sole sensitive receptor - the global climate. Impacts on specific areas will not be included within this assessment, since the impacts of GHG emissions will affect the global atmosphere, and therefore need to be considered in a total context, rather than on localised areas.

IEMA perceives the global climate as highly sensitive and all GHG emissions as significant. It therefore recommends that their occurrence should be addressed through mitigating actions. It is however acknowledged that some projects have a higher GHG profile than others, and the significance of its emissions should be assessed based on overall impact over its lifetime. The GHG emissions during both construction and operation have been considered in the context of the wider CO₂e emissions for the LBC region and UK carbon budgets.

For defining significance, the guidance from IEMA’s ‘Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance’¹⁹ has been adopted. This identifies three underlying principles to inform the assessment of significance, as follows:

- The GHG emissions from all projects will contribute to climate change; the largest interrelated cumulative environmental effect;
- The consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Directive – e.g., population, fauna, soil, etc.; and,
- GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered significant.

Based on these principles, IEMA have provided a set of criteria to aid in assessing a project’s significance:

- Projects that follow a ‘business-as-usual’ or ‘do minimum’ approach that is incompatible with the UK’s net zero trajectory or other accepted practice/area-based transition targets are considered as having significant adverse effect;
- Projects that contribute to relevant transition scenarios by complying with carbon budgets, up-to-date policy, and ‘good practice’ reduction measures are seen as having minor adverse effects that is not significant;
- Projects with emissions mitigation measures that go substantially beyond the reduction trajectory, or substantially beyond existing and emerging policy compatible with that trajectory, is assessed as having a negligible effect that is not significant; and,
- Projects that actively causes GHG emissions to be avoided or removed from the atmosphere has a beneficial effect that is significant.

As recommended by IEMA guidance on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’, the assessment takes a highly precautionary approach where any net increase in GHG emissions is treated as having a likely significant effect. Following the guidance summarised above, the criteria will be used to determine the significance of emissions associated with the Proposed Development and cumulatively, relative to the baseline CO₂e emissions from the wider Croydon region, which accounts for 1,133.5 ktCO₂e (data taken from the 2005 - 2021 UK local authority and regional greenhouse gas emissions national statistics²⁰). Consideration is also given to Site emissions relative to the national UK carbon emissions. Example of significance criteria are demonstrated below in Table 3.7.

Table 3.7 Greenhouse Gas Significance Criteria

Significance	Criteria
Major Adverse	Major increase (adverse) or decrease (beneficial) (above 1 %, or above 11,335 tCO ₂ e) in annual Croydon emissions.
Moderate Adverse	Moderate increase (above 0.1 %, or above 1,133.5 tCO ₂ e) in annual Croydon emissions.

Significance	Criteria
Minor Adverse	Minor increase in GHG emissions (below 0.1 %, or below 1,133.5 tCO ₂ e) in annual Croydon emissions, considered to be negligible.
Beneficial	A project that causes GHG emissions to be avoided or removed from the atmosphere has a beneficial effect that is significant.

An overall emissions assessment of the Proposed Development will be determined using the criteria from Table 3.7 above (1,133.5 ktCO₂e estimates for LBC 2005-2021 data). A project with a resulting 'Major Adverse', 'Moderate Adverse' or 'Beneficial' impact is seen as significant. Minor impacts with residual emissions, in alignment with IEMA guidance, are seen as not significant.

GHG Emissions from construction create an immediate effect, however for this assessment emissions from the construction phase will be added to the emissions calculated for the first year of operations to give an overall overview of the impact created once the Proposed Development is operational. Therefore, GHG emissions predicted by this assessment will occur during the first year of the fully completed developments operation and will be continuous in that they will continue to occur over the lifetime of the project, albeit most likely with year-on-year GHG emission reductions due to decarbonisation of the grid and electrification of vehicles etc.

The magnitude of the impact on climate change by the Proposed Development is quantified in this assessment as mass of GHG emissions, expressed as tonnes of carbon dioxide equivalent (tCO₂e) in total or per annum. This accounts for six key GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆).

Geographical Scope

The study area will be based on the redline boundary defined for the planning application. The scope of the assessment is reflective of the scheme proposals for the Proposed Development:

- Demolition of existing buildings;
- Construction of new buildings;
- New vehicle access and pedestrian connections; and
- Associated hard and soft landscaping within external amenities, including green roofs.

The GHG assessment will consider the emissions of GHG arising from demolition, construction, and operation of the Proposed Development. For demolition and construction, some GHG emission will be emitted from within the boundary of the Site, but the majority of the construction emissions will be derived from the manufacture and transportation of the construction products. The operation of the Proposed Development will mainly be within the boundary of the Site unless any carbon offsetting off site has occurred.

Spatial scope of the assessment will calculate emissions at the site level and determined significance by comparing GHG emissions relative to the local (LBC) and national level.

Temporal Scope

The assessment will estimate the Proposed Development’s GHG emissions for construction works (figures will be annualised by number of construction years) and for operational use (figures will be annual estimations based on the first year of operation, following completion of construction works). GHG emissions for the first year will be assessed for the entirety of the Proposed Development when it is operational and comprises a worst-case assessment, due to projected decarbonisation of the energy supply in the future and increase in sustainable transport.

GHG Emissions for the Proposed Development are calculated for the year of first operational year and assumes an estimated operational lifetime of 100 years, which is a typical assumption for a development of this type and is in accordance with British Standard (BS) EN 15978:2011²¹. A total emissions figure is provided for 60-year lifespan period as indication of Proposed Development’s carbon footprint but will not be used for assessing significance.

The GHG assessment covers the life cycles under modules A – C of the development, as per the **Figure 3.3**.

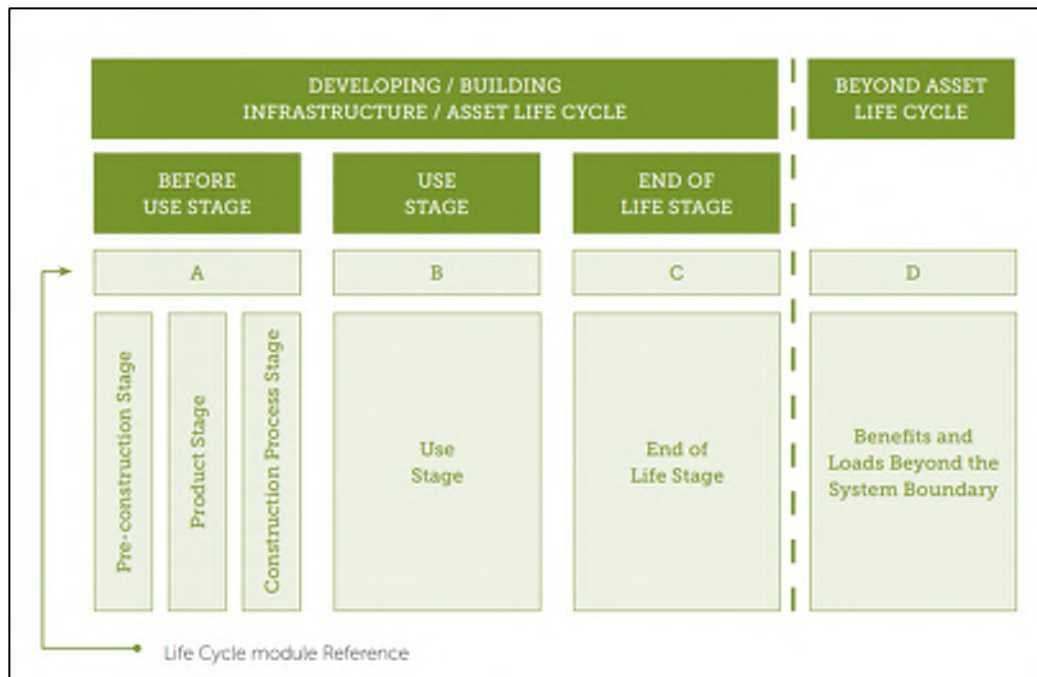


Figure 3.3 Development Lifecycle

3.6.5. Potential Mitigation

Mitigation measures will be provided against each of the effects and potential impacts identified within the GHG Assessment.

In terms of mitigation, IEMA recommends that mitigation should in the first instance seek to avoid GHG emissions. Where GHG emissions cannot be avoided, the development should aim to reduce the residual significance of a project's emissions at all stages. Where GHG emissions remain significant, but cannot be further reduced, approaches should be considered that compensate the project's remaining emissions.

Mitigation measures to climate change impacts will be developed into the sustainability statement for the Proposed Development. The sustainability statement will summarise the mitigation measures that have been put in place to reduce the impact of climate change, through construction practices.

Mitigation measures for the GHG emissions will be calculated in the Part L calculations that will be developed to minimise energy demand as a priority. The energy strategy will highlight the key CO₂ emissions.

A climate change risk assessment will be developed to highlight the risks associated with the hazards of climate change and circulated within the design team. Identified mitigation will be adaptable to respond to future climate change as it develops.

A whole life cycle carbon assessment will be developed as the design develops looking at CO₂ emissions. Workshops will be encouraged to discuss how material usage can be reduced, to reduce the overall embodied energy of the Proposed Development.

During the detailed design, an operational energy analysis will be undertaken on the commercial elements in line with the Chartered Institution of Building Services Engineers (CIBSE) recommendations for operational energy. This will highlight further opportunities to reduce CO₂ emissions associated with the Site, potentially through SMART building controls, and understanding of the Proposed Development's usage.

CO₂ emissions associated with transportation of the construction and operation will be reduced, by providing facilities for electric vehicle charging. The sustainability statement will encourage the locally sourcing of materials to reduce CO₂ emissions associated with transportation. Changes to legislation will result in electric vehicle charging reducing the overall CO₂ emissions associated with transportation.

3.6.6. Uncertainties

The assessment will be based on indicative information available at this stage of the project, which may impact the level of accuracy of the assessment. The use of industry benchmarks and preliminary modelling results will support the development of this assessment. The findings arising from this assessment can provide insight as to the priority areas for reducing the impact of GHG emissions resulting from the Proposed Development. A level of uncertainty will need to be considered within this assessment.

The assumed lifespan of the Proposed Development will be 100 years. This may be an uncertainty as the development may be retained for a shorter or longer period.

The assessment will calculate annual carbon emission figures for demolition, construction and operational stages. Demolition and construction emissions will be annualised over the course of number of years that construction will take place, and therefore the impact is not assessed on its whole but rather on annual basis. A yearly carbon footprint will also

be calculated for operation stage for first year when the Proposed Development is fully operational (in tonnes of CO₂ per year).

It is important to note that consumption rates may vary over time, in line with uses within buildings and technological advancements, therefore operational emissions are difficult to project and are an estimate over the course of 100 years.

Due to carbon factors changing on an annual basis (the factors tend to be lower from year to year), particularly for emissions under operational phase, it is not possible to provide an accurate and precise overall carbon footprint for the Proposed Development over the 100-year lifecycle.

Detailed information regarding material quantities (i.e., aluminium, steel, timber, etc) may not be available at the time of preparing this GHG assessment and therefore benchmarks will be used to determine embodied carbon at a high level. Procurement has not been determined and therefore the source of materials is unknown. An assumption of 20 km will be taken as average trip distance for every heavy good vehicle (HGV) and light goods vehicle (LGV) trip to enable estimations.

3.6.7. Summary

In summary, the Climate Change and GHG assessments are deemed to be included as one chapter within the ES, in line with Schedule 4 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

Tables 3.8 summarises the climate change effects to be included for detailed in the CCR and GHG assessments in the ES. Adaptation measures will be provided against each of the potential effects identified within the CCR assessment.

Table 3.8 *Greenhouse Gas Assessment Scope*

Receptor	Activity	Effects	Scoped In
Demolition & Construction Phase			
Global Climate	Demolition and Construction	Embodied carbon resulting from demolition and construction of the development, including materials used.	✓
Global Climate	Transport in Construction	Emissions arising from transport due to construction and transportation of materials to and from site.	✓
Operational Phase			
Global Climate	Operational Transport	Emissions arising from operational transport from residents and visitors moving to and from the development.	✓
Global Climate	Energy Consumption	Emissions arising from energy consumption on-site (fuels and electricity).	✓

Receptor	Activity	Effects	Scoped In
Global Climate	Water Consumption	Emissions arising from water consumption, related to the supply and treatment of potable water.	✓
Global Climate	Repair, maintenance, refurbishment	Emissions arising from repair, maintenance, refurbishment of the development.	✓
Global Climate	End-of-life/Decommissioning	Emissions arising from the decommissioning of the development.	✓

Mitigation measures will be provided for each of the effects and potential impacts identified within the GHG Assessment.

The planning application will be accompanied with a supporting energy and sustainability statements, which will highlight how the development plans to mitigate against climate change.

3.7. Daylight, Sunlight, and Overshadowing

3.7.1. Introduction & Key Issues

This chapter will outline the methodologies applied to identify and assess the baseline conditions at the Site and of its surroundings, the potential daylight, sunlight, and overshadowing impacts and effects to sensitive receptors; and the likely residual daylight, sunlight, overshadowing, solar glare and light spillage impacts and effects associated with the Proposed Development.

The analysis and chapter will be produced by Delva Patman Redler ('DPR'), and it will be assessed against the criteria and guidance set out in the BRE Guidelines (3rd Edition – 2022).

A series of daylight, sunlight and overshadowing technical studies have been undertaken over the past five years to support the design evolution of the Proposed Development which indicate alterations in light that are supportable and consistent with the scale of the Proposed Development.

3.7.2. Potential Impacts

The potential daylight, sunlight, overshadowing, solar glare and light spillage impacts, and effects associated with the Proposed Development are as follows:

- Changes to the daylight and sunlight amenity within surrounding residential properties identified which have a reasonable expectation to natural light throughout the demolition and construction works and once the Proposed Development is operational; and,
- Changes to overshadowing of surrounding outdoor amenity spaces throughout the demolition and construction works and once the Proposed Development is operational.

In order to test the effect of the Proposed Development upon neighbouring receptors it will be necessary to run a full BRE assessment which considers VSC (Vertical Sky Component), NSL (No Sky Line), APSH (Annual Probable Sunlight Hours) and SHOG (Sun Hours on Ground) analysis in both the existing baseline and Proposed Development scenarios.

3.7.2.1. Construction Phase Assessment

The level of effect in relation to daylight, sunlight and overshadowing for the identified sensitive receptors will vary throughout the demolition and construction phase, depending on the level of obstruction caused. The effect will almost certainly be less than that of the completed Proposed Development, given that the extent of permanent massing will decrease throughout the demolition phase and increase throughout the construction phase, until the buildings are complete. Therefore, a quantitative assessment of the demolition and construction phase is not required. A qualitative assessment of these impacts and subsequent effects will be provided.

3.7.3. Potential Mitigation

Mitigation measures have been included through the design process of the Proposed Development, taking the surrounding properties into consideration to reduce the potential impact to these receptors.

Several architectural design decisions have been implemented in certain areas of the Proposed Development, to help reduce the impact of neighbouring daylight and sunlight levels, including maintaining gaps between blocks and podium levels.

Accordingly, no further mitigation measures have been suggested. The likely residual effects in relation to daylight and sunlight would be negligible to moderate adverse overall, with some major adverse changes to properties located directly opposite the taller elements of the scheme, which is to be expected with a scheme of this nature.

3.7.4. Summary

Given the potential residual effects identified above, we propose to scope Daylight, Sunlight and Overshadowing into the ES.

3.8. Wind Microclimate

3.8.1. Introduction & Key Issues

The objective of the proposed wind microclimate study will be to determine the impact of the Proposed Development on the pedestrian level wind environment across the Site and its surroundings. The wind assessment will consider the effect of the surrounding context and will pay particular attention to wind effects in open amenity spaces, building entrances and pedestrian routes to determine the level of compliance against the recommended standards.

3.8.2. Baseline

The urban density of the area surrounding the Site will affect the wind conditions within and in the vicinity of the Proposed Development itself. The surrounding context and the

nature of the terrain upstream of the Site do in fact influence the strength, the level of turbulence as well as the local directionality of the winds that are approaching the Site. For this reason, modelling and studying these conditions is an important step of the wind microclimate assessment. The baseline assessment will be carried out as a representation of the existing conditions, i.e., the existing buildings on the Site in the context of the existing surroundings. Any buildings under construction within 500m from the Site will be considered as completed as part of the baseline assessment, unless instructed otherwise by the planning/EIA team. The baseline assessment will then be used as a reference point from which the magnitude of change will be measured once the Proposed Development is assessed under the same conditions.

3.8.3. Potential Impacts

The impact of the Proposed Development on the wind microclimate conditions, both in terms of comfort and safety, will be considered for both on-site and off-site receptors.

To determine the significance of the effect of the Proposed Development on the wind environment, a comparison can be made with the baseline conditions. However, because the pedestrian use of the Proposed Development will change from that of the existing site, the assessment will also be based on the suitability of the different areas of the Proposed Development for the desired pedestrian use. The likely significance of effects will be based on the following factors:

- The magnitude of change of the wind environment;
- Compliance with the Lawson criteria; and,
- The sensitivity of the receptor.

The following sensitive receptor locations have been identified and will be considered within the EIA:

- High Sensitivity: areas intended for sitting and standing (e.g., benches, restaurants, and bars, building entrances).
- Medium Sensitivity: areas intended for leisure walking (i.e., commercial, or residential streets).
- Low or Negligible Sensitivity: areas intended for business walking (e.g., streets leading to back-of-the-house or maintenance entrances, areas intended for car parks and high-speed roads) and roof-tops only accessible for maintenance.

3.8.4. Assessment Methodology

A quantitative assessment of the existing wind environment at the Site will be used to establish the 'Baseline' scenario. This will be followed by a quantitative assessment of the Proposed Development modelled within the existing surroundings. A further quantitative assessment of the Proposed Development will include the consented developments to determine the cumulative effects.

The methodology to be adopted for the study incorporates Computational Fluid Dynamics (CFD) modelling to predict the wind field within and in the vicinity of the Proposed Development.

CFD as a tool for pedestrian wind modelling is well validated against wind tunnel tests and real-world data and is often considered advantageous due to its advanced visualization and domain wide measurement capabilities. Also, CFD is performed at full scale with wind speeds calculated at tens of millions of discrete points, allowing for large amount of data to be used for the assessment of the wind microclimate conditions. Like any other tool, it has its own limitations – however – good quality CFD is increasingly becoming an accepted tool in modern standards and guidance documents (e.g., the “Wind Microclimate Guidelines” published by the City of London in 2019).

The CFD simulations will be used to quantify the local wind speeds within and in the vicinity of the Site at street level and, if required, at elevated levels (e.g., balconies and terraces) for a comprehensive range of wind directions.

Long-term wind records from London Heathrow Airport will be used to develop a site-specific wind climate model. To account for the differences in terrain surrounding the weather station at London Heathrow Airport and the Site, adjustments to the wind records will be made using the wind model proposed by ESDU, an engineering advisory organisation based in the UK.

The local wind speeds obtained from the CFD simulations will then be combined with the site-specific wind climate model to determine the probability of exceedance of pre-defined wind speed thresholds.

To assess the suitability of wind conditions within and in the vicinity of the Site, the LDDC version of the Lawson criteria - which associates the probability of exceedance of wind speed thresholds to a range of pedestrian activities - will be used.

As the Lawson criteria were specifically derived for pedestrian activities, this assessment will only focus on assessing areas accessible to pedestrians.

3.8.4.1. Construction Phase Assessment

As construction works progress, the conditions on and around the site would be expected to gradually transition between those of the baseline and the final completed Proposed Development. Therefore, any effects on pedestrians arising from changes in the local wind environment as a result of progressive changes to the massing of the built form on site during the construction works are expected to be temporary.

Generally, for wind microclimate assessments undertaken for schemes in London, the potential effects during construction are assessed based on the professional judgement of an experienced wind engineer, taking into account an assessment of the background wind microclimate at the site and an understanding of the effects of wind in the built environment. A qualitative approach will be taken to the assessment of the construction works.

3.8.4.2. Operational Phase Assessment

Once the Proposed Development is complete and operational, potential for undesirable wind speeds at the following locations will be considered:

- Within the site, specifically:

- Ground level pedestrian thoroughfares and entrances; and
- Accessible elevated levels (i.e., podium terraces and balconies, if any).
- External to the site, specifically:
 - Ground level pedestrian thoroughfares and entrances;
 - Public realm / amenity spaces; and
 - Bus stops and potential pick-up / drop-off points.

The assessment of the wind microclimate impacts comprises the following three (3) scenarios:

- Scenario 1: assessment of the wind conditions across the Site in its present conditions in the context of the existing surroundings (i.e., Baseline);
- Scenario 2: assessment of the wind conditions across the site of the Proposed Development in the context of the existing surroundings; and,
- Scenario 3: as per 'Scenario 2' but with the addition of future developments with planning consent in the surrounding area which may influence the local wind conditions across the Site.

3.8.5. Potential Mitigation

The scheme will be assessed with the proposed landscaping strategy in place. Any localised exceedances of the LDDC version of the Lawson criteria (safety and comfort) will be mitigated using localised bespoke interventions such as screens or landscaping elements.

3.8.6. Summary

CFD simulations will be used to quantify the impact of the Proposed Development on the pedestrian level wind environment across the site and its surroundings. The wind assessment will pay particular attention to wind effects in open amenity spaces, building entrances and pedestrian routes to determine the level of compliance against the LDDC version of the Lawson criteria for both safety and comfort. Due to the potential impacts and subsequent effects, wind microclimate is to be scoped into the EIA.

4. Other Matters for Consideration

It is deemed appropriate to exclude the subjects below from the scope of the EIA. Although these considerations may not be significant to the EIA, any relevant information can be supplied in future planning applications to ensure the Council is well-informed during its review of the Proposed Development.

4.1. Traffic and Transport

4.1.1. Introduction & Key Issues

This section of the Scoping Report has been produced by Markides Associates and sets out the intended assessment of likely significant environmental effects arising from the Proposed Development upon transport and access.

A Healthy Streets Transport Assessment (TA) will be produced in addition to the ES and will provide a more detailed analysis of trip generation, car parking provision, traffic impacts, walking and cycling linkages, public transport provision, etc. The TA will include a Delivery and Servicing Plan (DSP) chapter, as well as an Outline Construction Logistics Plan (OCLP) chapter.

The impacts of increased public transport usage on existing capacities, i.e., numbers of additional journeys on buses, trams and trains during peak periods will be assessed in detail as part of the TA.

A separate Travel Plan (TP) will also be produced.

4.1.2. Baseline

The Site has two existing vehicle accesses, one being to the west on Wellesley Road and the second one to the east from Tavistock Road. The two accesses and the existing road running through the Site are considered wide enough to accommodate two-way flow for cars. Pedestrian and cyclists can also enter the Site from a third access just north of the vehicle access on Wellesley Road or via a footpath from the north-west corner of the Site on Newgate.

The current parking provision capacity on the Site is estimated to be 90 parking spaces including both informal on-street parking and garages/formal bays.

The Site is in a Croydon controlled parking permit zone, therefore some areas of Wellesley Road and Tavistock Road have intermittent single-yellow car parking restrictions, whereas Newgate Roundabout has double yellow lines. The single yellow line restriction in place prohibits any waiting/parking between 9am – 5pm from Monday to Sunday on Tavistock Road.

All roads surrounding the Site benefit from footways on both sides of the road and the two nearby train stations, East and West Croydon, are within easy walking distance. Several bus routes use Wellesley Road with a bus stop just opposite the Site. Also, advisory cycle lanes are provided on both sides of the carriageway.

The Site benefits from being located within proximity of a range of social infrastructure that acts as typical trip attractors for residential developments, including employment,

education, health, leisure, and food retail land uses. This ensures that these trips attractors can be accessed by modes other than the private car and on foot, thereby satisfying requirements of national, regional, and local planning policy for creating sustainable communities.

Annual Average Daily Flows (AADF) sourced from the Department of Transport (DfT) for manual count point site number 28766, located close to the Site on Wellesley Road (see **Figure 4.1**) states that there is a total AADF of 490 HGV movements, the full AADT breakdown can be seen in Table 4.1 below.

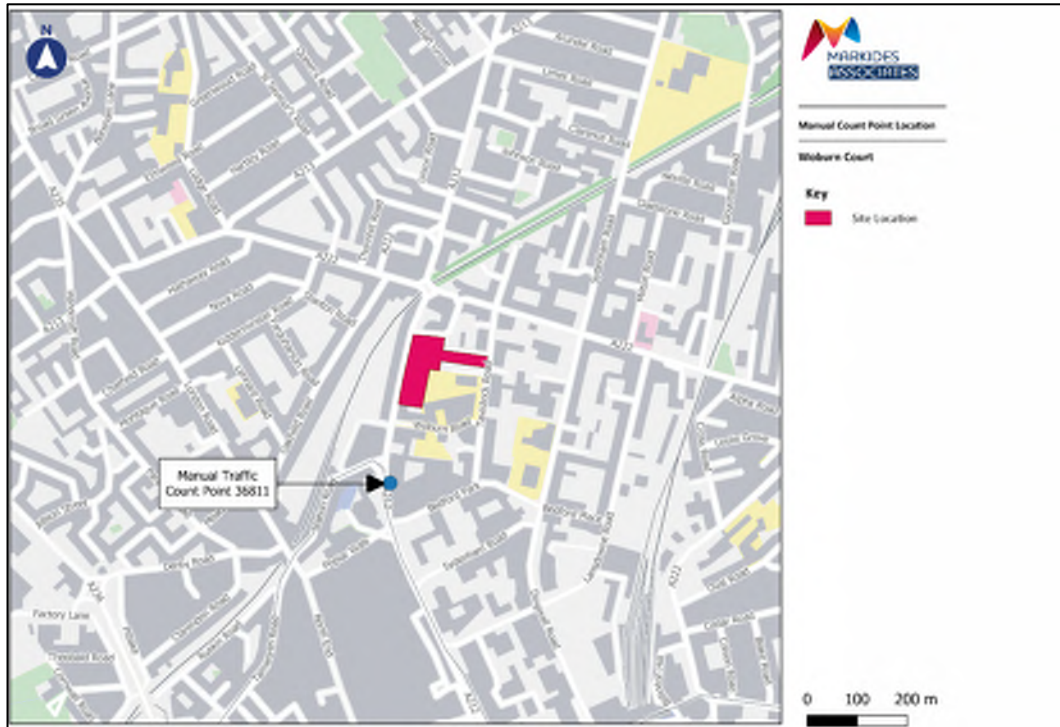


Figure 4.1 – Wellesley Road Manual Count Point Site Location

Table 4.1 2022 AADT on Wellesley Road

Vehicle Type	Count
Pedal Cycles	188
Two wheeled motor vehicles	669
Cars and taxis	15687
Buses and coaches	3093
Light goods vehicles	3182
Heavy goods vehicles	490
All motor vehicles	23121

To assess the existing mode share for the Site, the 2011 Census ‘Journey to Work’ data has been utilised. This data is considered to more suitable, in light of the COVID-19 conditions at the time of the 2021 Census. The Site is located in the Croydon O20 Middle-Layer Super Output Area (MSOA) and based on the associated ‘Journey to Work’ data it is

possible to understand the existing likely mode share of the Site. This modal split can be seen in Table 4.2 below.

Table 4.2 2011 Census Journey to Work Mode Share

Transport Mode	% Split
Underground, metro, light rail, or tram	8.0%
Train	29.2%
Bus, minibus, or coach	19.6%
Taxi	0.3%
Motorcycle, scooter or moped	0.6%
Driving a car or van	20.7%
Passenger in a car or a van	1.2%
Bicycle	1.1%
On foot	18.8%
Other	0.5%

A multi-modal trip generation exercise has been undertaken using trip rates that have previously been agreed with LBC, these trip rates and the associated multi-modal trip generation is shown below in Table 4.3. This shows that the existing Site currently generates a total of 389 daily two-way trips of that total daily number the Site generates a total of 81 two-way car trips.

Table 4.3 Existing Site Multi-Modal Trip Generation

Mode	AM Peak		PM Peak			Daily Flows			
	In	Out	Total	In	Out	Total	In	Out	Total
Agreed Trip Rates	0.08	0.44	0.52	0.31	0.14	0.44	2.35	2.54	4.89
Trip Generation									
Underground, metro, light rail, or tram	1	3	4	2	1	3	15	16	31
Train	2	10	12	7	3	10	55	59	114
Bus, minibus, or coach	1	7	8	5	2	7	37	40	77
Taxi	0	0	0	0	0	0	0	1	1
Motorcycle, scooter or moped	0	0	0	0	0	0	1	1	2
Driving a car or van	1	7	8	5	2	7	39	42	81
Passenger in a car or van	0	0	0	0	0	0	2	2	4
Bicycle	0	0	0	0	0	0	2	2	4
On foot	1	7	8	5	2	7	35	38	73
Other	0	0	0	0	0	0	1	1	2
Total	6	34	40	24	10	34	187	202	389

4.1.3. Potential Impacts

The effects on traffic and transport caused by the Proposed Development are not considered to be significant, and justification as to why further assessment will not be included within the ES, is outlined below.

Demolition and Construction Phases

During the demolition and construction works there is likely to be a short term, temporary increase in local traffic, including Heavy Goods Vehicles (HGVs), as a result of the transportation of building materials, workers, and other deliveries, which is likely to result in some temporary, localised disruption to road users. However, these temporary short-term effects would be typical of any construction project and could be effectively managed through the implementation of a CLP.

The most likely origin of construction workers/material means that they will arrive using the M25 and subsequent 'A' road network, the routing to the Site has taken this into consideration and the route planned accordingly to follow the LBC and TfL Strategic Road Networks until accessing the Site where local roads will be used.

Figure 4.2 demonstrates that all construction traffic, at this indicative early stage, is expected to travel south along A212 Wellesley Road, before linking with the A232 south of Croydon Town Centre. This route benefits from an underpass along Wellesley Road, separating the construction traffic from sensitive pedestrian and cyclist dominant areas in the town centre.



Figure 4.2 Provisional Strategic Construction Traffic Routing

The estimates of the construction material quantities have been used to estimate the average vehicle movements over the demolition and construction period. The final vehicle movements will be dependent upon the final development phasing and the construction programme which has yet to be confirmed, but these figures are considered representative of a reasonable scenario.

The estimated construction number of construction vehicles required has been based on a trip estimate of 0.58 trips per sqm of GEA. This is an assumption that was developed by TfL and was derived from surveyed construction movements for building developments associated with the new northern line extension to Battersea. Therefore, this value should prove robust as an initial estimation, prior to contractor engagement and a detailed construction logistics plan being produced. The GEA figures used in the calculations are based on a previous scheme design, it is expected that the GEA for the revised scheme will be lower, therefore the daily construction trips represent a worse-case scenario.

Table 4.4 summarises the estimated daily construction movements.

Table 4.4 Daily Construction Vehicle Trips (Estimate)

	Trips Per Day		
	LGV	HGV	Total
2 -Way Trips	19	45	64

As can be seen in Table 4.4, the average estimated number of daily 2-way HGV trips generated during the construction phase is 45 HGV trips per day; this indicates that there will be an uplift of 9% HGV movements on the local road network and a total uplift of just 0.3% in general vehicle movements on the local road network. It should be noted that this increase in trips represents a worst-case scenario, and there is a possibility that the total number of HGV trips will be lower than what has been forecasted.

The vehicle movements generated by the demolition and construction levels are considered to fall below the levels where this would require further analysis in relation to traffic and transportation matters. With the implementation of standard mitigation measures, no significant effects are anticipated.

Operational Phases

Based on the previously stated trip rates shown in Table 4.3, the proposed trip generation of the development has been calculated based off initial proposals and is presented in Table 4.5, with the net change in trip generation between the proposed Site and the existing Site shown below in Table 4.6.

Table 4.5 Proposed Development Multi-Modal Trip Generation

Mode	AM Peak			PM Peak			Daily Flows		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground, metro, light rail, or tram	4	20	24	14	6	20	112	119	231
Train	14	74	88	52	23	75	406	434	840
Bus, minibus, or coach	10	50	60	35	16	51	273	292	565
Taxi	0	1	1	0	0	0	4	4	8
Motorcycle, scooter or moped	0	1	1	1	0	1	8	9	17
Driving a car or van	0	2	2	2	1	3	14	14	28
Passenger in a car or van	0	0	0	0	0	0	0	0	0
Bicycle	1	3	4	2	1	3	16	17	33
On foot	9	48	57	33	15	48	261	279	540
Other	0	1	1	1	0	1	7	8	15
Total	38	200	238	140	62	202	1101	1176	2277

Table 4.6 Net Trip Change Existing Site vs Proposed Site

Mode	AM Peak			PM Peak			Daily Flows		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground, metro, light rail, or tram	+3	+17	+20	+12	+5	+17	+97	+103	+200
Train	+12	+64	+76	+45	+20	+65	+351	+375	+726
Bus, minibus, or coach	+9	+43	+52	+30	+14	+44	+236	+252	+488
Taxi	0	+1	+1	0	0	0	+4	+3	+7
Motorcycle, scooter or moped	0	+1	+1	+1	0	+1	+7	+8	+15
Driving a car or van	-1	-5	-6	-3	-1	-4	-25	-28	-53
Passenger in a car or van	0	0	0	0	0	0	-2	-2	-4
Bicycle	+1	+3	+4	+2	+1	+3	+14	+15	+39
On foot	+8	+41	+49	+28	+13	+41	+226	+241	+467
Other	0	+1	+1	+1	0	+1	+6	+7	+13
Total	+32	+166	+198	+116	+52	+168	+914	+952	+1866

As can be seen in Table 4.6, whilst the total number of trips generated by the Proposed Development will increase, the amount of car trips generated by the Site will decrease by

65% from 81 daily two-way trips to 28 daily two-way trips. This coupled with the amount of vehicle parking spaces being significantly reduced within the Site illustrates that the potential road traffic impact of the development is minimal.

There will be an additional number of servicing and delivery trips required for the Proposed Development due to the higher population present on the Site, these trips can be seen in Table 4.7 below. These trips will not lead to significant effects on background traffic levels.

Table 4.7 Proposed Site Delivery and Servicing trips

Mode	AM Peak	PM Peak	Daily
Arrivals	3	1	35
Departures	2	1	36
2 - Way	5	2	71

Environmental criteria for Transport Assessments are included in the guidance document ‘*Environmental Assessment of Traffic and Movement (IEMA July 2023)*’ states that:

‘Following the determination of a study areas, it is recommended the competent traffic and movement expert applies two broad rules as thumb as criteria to assist them in delimiting the scale and extent of the environmental assessment:

- *Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and*
- *Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more.’*

Where the predicted increase in traffic flows is lower than the above thresholds, the IEMA guidelines suggests the effects can be stated to be negligible and further detailed assessments are not warranted. The number of highway movements (trip generation) associated with the Proposed Development are predicted to be low and will not trigger the ‘rules’ set out above.

It is expected that there will be an additional number of trips on surrounding transport infrastructure, such as buses, trains, and trams due to the increased population within the Proposed Development. This is not expected to have a significant effect on the continued operation of public transport due to the current high level of transport infrastructure that is close to the development and within Croydon, including two railway stations and multiple bus and tram stops located nearby. Further analysis of this, including a detailed impact assessment will be carried out in the TA, as this does not fall under the IEMA guidance of what should be assessed in the EIA.

4.1.4. Summary

The Site has access to excellent public transport links and the Proposed Development is likely to generate a net reduction in total vehicular trips when compared to the existing Site, as the Proposed Development will be car free (aside from some disabled parking).

The planning application will be supported by a Framework Residential Travel Plan which will set out the long-term strategy for sustainable travel for the future users of the Proposed Development.

The planning application will be supported by a Transport Assessment (TA), which will assess the impacts of the Proposed Development on the nearby public transport services. Relevant stakeholders (LBC and TfL) will continue to be consulted, and the approach agreed.

To conclude there are no significant environmental effects with regards to the impacts of traffic and transport anticipated as a result of the Proposed Development and for this reason this topic is scoped out of the Environment Statement.

4.2. Water Resources and Flood Risk

4.2.1. Introduction & Key Issues

This Water Resources and Flood Risk Chapter considers the potential effects as a result of the Proposed Development has been completed by Heyne Tillett Steel Ltd (HTS).

A desk-based assessment established sensitive receptors and the potential effects that the Site might have on those receptors during the construction and operational phases. This included reviewing information from the Environment Agency (EA), LBC, Thames Water and other relevant documents. Potential receptors to drainage and flood risk include the public drainage network, groundwater and offsite residents.

It is considered that there is limited potential for likely significant effects relating to drainage and flood risk as a result of the Proposed Development. As such, this topic is to be 'Scoped Out' of the EIA.

4.2.2. Baseline

Existing Site

The existing site is largely made up of hardstanding, comprising 3 to 4-storey residential blocks with associated access, parking and landscaped areas.

The Site is closely bound on all sides, with Wellesley Road and Newgate Road to the west and north-west respectively, residential units to the north-east, Tavistock Road to the east and further residential units and St Marys Catholic High School to the south.

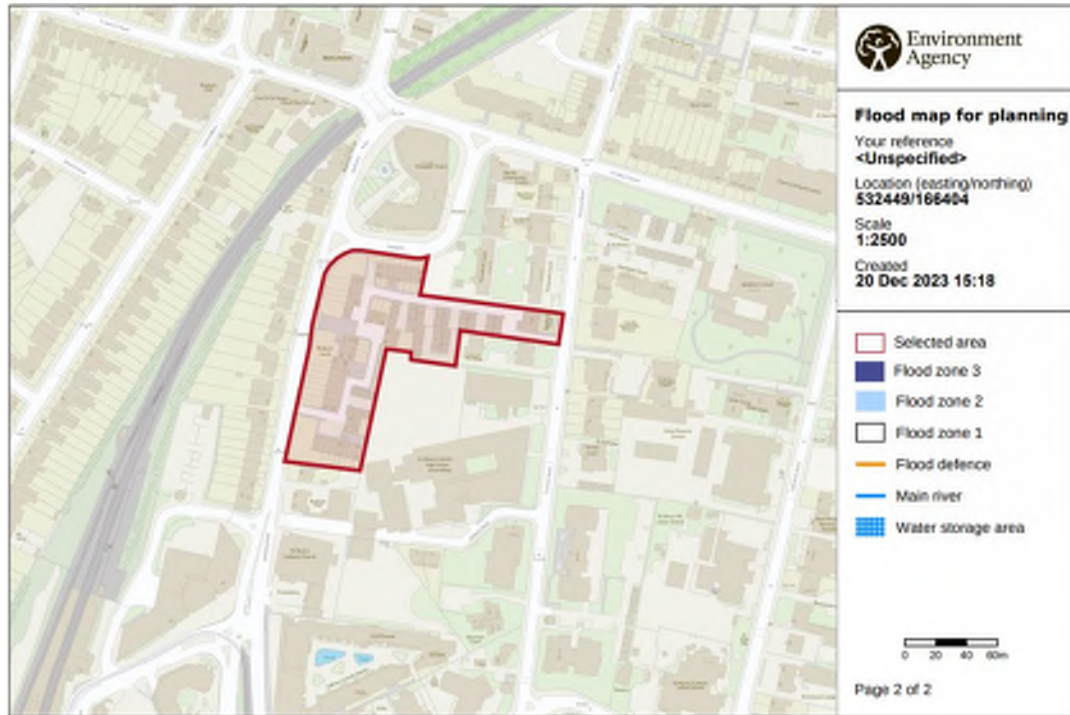


Figure 4.3 EA Flood Map for Planning

Geology and Hydrology

Site-specific borehole information acquired from site investigation by completed Soil Consultants and A-Squared in 2019 indicate the ground conditions to be made up of variable thicknesses of made ground; clayey sand and gravels, overlaying the Lynch Hill Gravel Member; sand and gravel, atop the London Clay Formation; silty clays.

The Site is not located within a Source Protection Zone, however, the Lynch Hill Gravel Member is designated as a Secondary A aquifer.

Groundwater monitoring was carried out as part of the ground investigation finding a maximum observed water level of 50.71 mAOD with minimal fluctuation. In lieu of longer term monitoring, it was advised a characteristic permanent groundwater level be assumed of 52.00 mAOD (approximately 2.0 – 2.5m BGL across the site).

Tidal and Fluvial Flood Risk

The EA (Environment Agency) Flood Map for Planning shows the Site is located in Flood Zone 1 refer to Figure 4.3. Flood Zone 1 is defined as land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding.

The nearest water courses are the partially culverted River Wandle approximately 1.1km to the south-west and the Norbury Brook approximately 1.5km to the north east.

The EA’s extent of flooding from rivers or sea map also shows the Site to lie outside the extent of flooding, meaning the chance of flooding posed to the Site from rivers and sea is less than 0.1% annually.

Pluvial Flooding

Review of the EA's long-term flood risk information shows that surface water flooding is contained within the Site boundary. The majority of the Site is at a very low risk of surface water flooding. However, there is a low to high risk of surface water flooding contained within Wellesley Road and Tavistock Road along the Sites western and eastern boundaries respectively, also within a carpark serving the residential units off Newgate Road to the north.

The London Borough of Croydon's Strategic Flood Risk Assessment 2021 presents the Site to lie outside critical drainage areas with no recorded surface water flooding incidents at the Site.

Groundwater Flooding

Review of the London Borough of Croydon's Strategic Flood Risk Assessment 2021 presents the Site to be located in a zone with the "potential for groundwater flooding of property situated below ground level". This is corroborated by the findings of the Site investigation completed in 2019.

Artificial Sources of Flooding

Review of the EA's long-term flood risk information shows the Site lies outside the maximum extent of flooding boundary for the simulated breach scenario, including the scenario in which there is also river flooding.

Sewer Flooding

Review of acquired Thames Water asset maps shows the Site is served by separate surface and foul water public sewers within Wellesley Road, Newgate Road and Tavistock Road.

Review of the information extracted from the Thames Water DG5 register with the London Borough of Croydon's Strategic Flood Risk Assessment 2021 presents the Site postcode area to have experienced 1 internal and 0 external sewer flooding events within the last 10 years.

4.2.3. Potential Impacts

4.2.3.1. Scope of Assessment

A desk-based assessment established sensitive receptors and the potential effects that the Site might have on those receptors during the construction and operational phases. This included reviewing information from the Environment Agency, LBC, Thames Water and other relevant documents.

The potential receptors identified would be the public drainage network, groundwater and offsite residents.

Demolition, Enabling and Construction

A Construction Environmental Management Plan (CEMP) will be implemented to mitigate any effects from the demolition and construction phase.

Operation

Wastewater, Drainage and Flood Risk

Wastewater generated from the Site will drain to the existing Thames Water surface and foul sewer network. The proposed intensification of the Site will bring about additional demand for foul water infrastructure. However, proposals will allow for betterment of the management of surface water on the Site.

Sustainable Drainage Systems (SuDS) will replace the existing drainage network in order to provide multifunctional benefits for the users and restrict the surface water runoff rate to as close to greenfield rates as possible. The strategy will comply with local, regional and national policy requirements and will be designed to include the impact of climate change and to reduce the combined wastewater generation from the Proposed Development.

CCTV survey completed in 2019 presents existing outfall connections from the Site to Thames Water sewers. A pre-planning enquiry will be submitted to Thames Water to confirm sufficient capacity in their network and to agree on the discharge rates from the Site. The assessment, undertaken by Thames Water, would confirm the capacity of the local sewer network and details relating to the points of connection, with the aim of identifying any requirement to upgrade the local sewer network (if required). The existing connections from the site will look to be re-used.

A full assessment of all forms of flooding will be addressed in a detailed site-specific Flood Risk Assessment to be submitted at planning stage. Flood risk from all sources is considered to be low with the inclusion of proposed basement waterproofing in accordance with BS EN 8102 where required and appropriate sewer surcharge mitigation to be explored during the design process. Furthermore, appropriate mitigation will be employed to protect the fabric of the building and ensure any floodwater is routed away from building entrances and managed on site, to ensure on-site residents are not impacted by the Site.

Water Demand

Water demand is expected to increase as a consequence of the Proposed Development, relative to the existing condition. Whilst it is the remit of Thames Water (TW) (and other water companies) to ensure sufficient water supply is provided for new developments, sustainable design measures would be explored, to minimise the water demand of the Proposed Development as far as reasonably practicable. The Proposed Development would implement standard water saving appliances and features as part of the design in line with GLA requirements. Therefore, it is considered that no likely significant effects associated with water demand are expected.

Off-site Flood Risk

In order to comply with policy, the Site will not increase flood risk offsite. This will ensure that off-site residents are not impacted by the Site.

Any cumulative effects that may arise from other developments have been considered. These developments will be required to comply with the NPPF and local, regional and national policies which would require that there are no significant effects to off-site

development as a result of their proposals. It is therefore assessed that the impact of the project Site would be negligible.

4.2.4. Summary

A Flood Risk Assessment (FRA) and Sustainable Drainage Strategy will be prepared by HTS, which will be submitted as a stand-alone report to accompany the Planning Application. This will assess all flood risk to and from the Proposed Development and include the necessary mitigation measures required and will also detail the proposed sustainable drainage strategy for the completed development, to demonstrate how multifunctional and green SuDS have been maximized.

Any drainage solutions required during the demolition and construction phase will be implemented by a CEMP which will be a condition of planning to mitigate the effects from these phases.

It is therefore proposed an assessment of water resources, flood risk and drainage of the Proposed Development is 'Scoped Out' of the ES.

4.3. Ground Contamination

4.3.1. Introduction & Key Issues

This scoping section has been prepared by Fiona Parsons, Contaminated Land Specialist for Hilson Moran.

There are a range of causes that can lead to contamination of land. For example, due to historical and current day pollution incidents involving harmful substances, contamination from historical or current day industrial land use, historical waste deposits such as former landfills, mine workings or high levels of naturally occurring substances. Land contamination can harm:

- Human health;
- Drinking water supplies, groundwater and surface water;
- Soils;
- Ecosystems including wildlife, animals and wetlands; and,
- Property.

It can also affect the current and future land use.

There is therefore a requirement to identify, assess and manage potential land contamination under a range of circumstances, legislation and guidance including as part of a planning application for redevelopment. In England this includes the following:

- The Environmental Protection Act 1990 (as amended);
- Contaminated Land (England) Regulations 2006 (as amended); and,
- Environmental Damage (Prevention and Remediation) (England) Regulations 2015.
- DEFRA: Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance; and
- National Planning Policy Framework (NPPF), 2012;
- Planning Practice Guidance: Contaminated Land.
- Land Contamination Risk Management (LCRM) guidance

- Typically, when considering ground contamination for an environmental impact assessment, the assessment will deal with the separate but interlinked issues of:
- Existing contamination: The assessment will aim to identify and quantify any existing contamination present on-site due to its historical and current uses and evaluate the risk to identified sensitive environmental receptors (including human health). The potential effects of the development upon the existing ground conditions, including soil and groundwater is also assessed; and
- Development contamination: The potential effects of the construction and operation of the development on ground conditions (soils and groundwater) and other identified environmental receptors will be assessed. This will include an appraisal of the geotechnical aspects of the scheme, such as foundations or issues associated with raising ground levels for the development or excavating for basements and below ground structures.

The first step in the land contamination management process is to carry out a Preliminary Risk Assessment (also known as a Phase 1 Assessment) for the Proposed Development. A Phase 1 Assessment generally comprises a desk based study to collect relevant data supplemented by a site reconnaissance visit. This is typically followed by a Phase II intrusive site investigation to confirm ground conditions and the presence and extent of any contamination.

Data used in this assessment will be drawn from a Geo-Environmental Phase 1 Assessment that will be completed for the Proposed Development. The desk study will set out ground contamination issues relating to the Proposed Development and identify the necessary interventions to mitigate any anticipated effects.

4.3.2. Baseline

Previous Investigations

A Geotechnical Design Report ²² was completed at the proposed development site in 2019 by A-squared Studio and provides information on ground conditions including data on ground contamination.

The scope of the investigation comprised the drilling of four deep boreholes (up to 42mbgl), the drilling of ten shallower window sampling holes (up to 2.10mbgl), soakaway testing, sampling of soils for geotechnical and contamination laboratory testing and gas and groundwater monitoring. The primary aims of the investigation were to develop and refine the ground model, assess hydrogeological regime, assess engineering performance of soils, identify geotechnical hazards and define the geo-environmental characteristics of the site.

The information contained within the Geotechnical Design Report has been reviewed and utilised as part of this Scoping Report to provide an initial view on the baseline conditions.

Methodological Approach

The approach to assessing ground contamination will comprise of a desk-based study supplemented by a site reconnaissance and will include the following elements:

- A review of the site history and immediate surrounds (via historic plans and aerial photographs) to establish previous land use, specifically any potentially contaminative uses.
- Obtain and review up to date baseline information for the ground conditions and environmental setting of the site utilising a 'Groundsure Enviro+Geo Insight' report plus a review of online sources such as the DEFRA Magic Map application and the British Geological Society (BGS) online database.
- A review of any available previous reports and ground investigation information for the site or adjacent sites. This will include a search of any relevant publicly available information on the local authority planning database/portal for any nearby planning submissions e.g. site investigation or remediation reports for the development site or nearby sites.
- An initial desk-based assessment of UXO risk through reference to preliminary on-line available risk maps.
- Site reconnaissance visit to provide further information on current site use, surrounding land use and the environmental setting.
- Consultation with the local planning authority/environmental health team to obtain any records they may hold on ground contamination for the proposed development site.
- Development of a preliminary conceptual model of source-pathway-receptor linkages (known as potential pollutant linkages) and a preliminary assessment of the risk associated with the identified pollutant linkages. This will be carried out with reference to the CIRIA Report C552 Contaminated Land Risk Assessment: A Guide to Good Practice. The scale of risk is determined from a matrix that combines the consequence of a hazard with the likelihood of the event happening.
- Identification of the requirement for further site investigation and risk assessment to address uncertainties in the conceptual site model. Plus an initial appraisal of likely mitigation measures required to render the site suitable for use and to mitigate identified unacceptable risks to environmental receptors.

The risk assessment for the Phase1 includes an evaluation of the sensitivity of the identified receptors together with an assessment of the consequences (or magnitude) of the effects as well as the likelihood that the event will occur and therefore is considered appropriate as a basis for establishing significance of effects.

Initial Appraisal of Baseline

An initial appraisal of available information including the previous ground investigation report and the Groundsure Enviro+Geo Insight' Report has been carried out to provide a preliminary assessment of the current site conditions for the purposes of this EIA Scoping Report.

Site History and Surrounding Land Use

The Site has been in residential use since the late 1800's, originally comprising a row of semi-detached properties with large gardens that fronted onto Wellesley Road. The Site was redeveloped into Woburn and Bedford Court in 1964. There was some minor addition of possible garages in the northeastern corner of the Site at the start of the 1940's. A plan from 1965 shows an electrical transformer on the eastern boundary of the

site following its redevelopment. This is labelled as an electrical sub-station on subsequent maps.

Historically, the surrounding area has also predominantly comprised a residential area with churches and schools located to the south of the site and the Croydon & Epsom Railway Line (which is located in a cutting) to the west and north. Historic maps from 1897 show a Flour Mill, mill pond and Smithy around 100m to 150m to the northeast of the Site. A Corn Mill is labelled in this same area in the early part of the Twentieth Century before reverting to Flour Mills following some redevelopment in the 1950s and subsequently a 'Bakery' in the 1960's. There is also a Meter Assembly Works approximately 100m north-east of the site (on the corner of St James Road and Tavistock Grove).

The 1950's maps show the area immediately north of the site to be occupied by Challen Works (Engineering) and a second larger Engineering Works. These appear to remain even after the redevelopment of the Site and construction of the Newgate (A222) Road. This island has subsequently been redeveloped for commercial and residential use.

Likelihood of Contamination

The presence of the any significant existing ground contamination on-site is considered likely to be low based on the current and historic residential use of the Site. Whilst several potentially historic contaminative land uses were present in the vicinity of the Site, including the engineering works immediately north of the Site and the railway line and sidings to the west, it is considered unlikely that these will have had a significant impact on the quality of soils on the Site. There may, however, have been the potential that groundwater quality in the general area may have been impacted by these historic uses.

Geology and Ground Conditions

The published geology below the site indicates superficial deposits of Sand and Gravel (Lynch Hill Gravel Member) overlying bedrock comprising London Clay Formation.

Historic boreholes (one on-site and one 45m north) indicate ground conditions comprising Made Ground (soft clay fill with ashes, brick and concrete) up to 3m thick overlying Superficial Deposits of Gravel (with some Sand), recorded at 1.5m thick in the south of the Site but extending to at least 8m below ground level (bgl) to the north of the Site. In the southern part of the Site London Clay was encountered at around 4.5mbgl underlying the Gravels. Groundwater was encountered within the Gravels to the north of the Site at approximately 6.5mbgl.

Deeper historic boreholes in the area (to the north) indicate that the London Clay is around 30m thick and underlain by Woolwich and Reading Beds, Thanet Sand (around 45mbgl) and then Chalk (around 53mbgl).

The ground investigation carried out in 2019 identified three natural geological units underlying the Made Ground: Lynch Hill Gravel, London Clay Formation and Lambeth Group.

Radon is recorded at less than 1% above the Action Level (estimated properties affected) and no radon protection measures are required.

Environmental Setting

The superficial deposits are classified as a Secondary A Aquifer and the London Clay is classified as Unproductive. The nearest groundwater abstractions is 947m south of the Site and comprises a potable water supply operated by Thames Water. There are no Source Protection Zones within 500m of the Site.

The Site lies in the catchment for the River Wandle, which is located approximately 1km to the southwest with no surface water features within 250m of the Site boundary and no surface water abstractions within 2000m.

There are no ecologically sensitive or designated sites (e.g. SSSI's, SACs/SPAs or LNRs) within 2000m of the Site.

There is a Conservation Area immediately to the west and south of the Site and two listed buildings (Grade II) within 250m.

4.3.3. Potential Impacts

Based on the information reviewed as part of this scoping exercise, it is not anticipated that there will be any widespread gross contamination in soils and groundwater below the Site. It is considered possible, however, that there may be some localised contamination associated with the garages and electrical sub-station. Historic borehole records and ground investigation data indicate there is Made Ground on the Site, probably due to the Site's redevelopment in the 1960s. The origin and nature of any Made Ground is not known but is indicated to include ash, which can contain elevated levels of heavy metals and other inorganic contaminants. There is a possibility that Made Ground on-site also contains asbestos from demolition of historic buildings. There is also a potential, albeit low, for the existence of ground gas due to the presence of Made Ground on the Site.

Due to their age, there is a likelihood that buildings on site contain asbestos and this will need to be managed appropriately to prevent contamination of soils during demolition and construction works.

The findings of the ground investigation carried out in 2019 at the site corroborate the conclusions drawn from a review of the desk-based information with no obvious visual or olfactory evidence of gross contamination of soils or groundwater encountered during the investigation. Concentrations of lead and polyaromatic cyclic hydrocarbons (PAHs) above the adopted assessment criteria for residential use were detected in shallow soils in a few locations. In addition, asbestos was detected in two of fifteen samples tested. The ground gas regime was considered to slightly exceed Characteristic Situation 1 (CS1) due to slightly elevated Carbon Dioxide concentrations and was provisionally classified as Characteristic Situation 2 (CS2) and Amber 1 but this was based on a limited dataset and was considered to be a conservative assessment, with the site concluded to have a low potential for ground gas generation.

Environmental receptors which could be sensitive to any impacts from any existing contamination and during the construction and operation of the proposed development have initially been identified as:

- Secondary A Aquifer (Superficial Deposits); and,
- Buildings within the Conservation Area and nearby Listed Buildings.

Receptors considered within the Phase1 Assessment will also include future site users, neighbouring residents and workers, proposed buildings and construction materials. The soils themselves are also considered as a potentially sensitive receptor.

The potential ground conditions and contamination impact on the identified sensitive environmental receptors will be assessed for the construction and operational phases. An initial view of likely impacts based on the current knowledge and understanding of the ground conditions are provided below.

Construction

For the construction phase the following anticipated effects have been identified:

- Direct contamination of the soil and potential groundwater contamination (Secondary A Aquifer) due to demolition, earthwork operations and potential accidental spillage of fuels, oils and site stored materials during construction activities (e.g. cement or chemical spillages).
- The earthwork and excavation activities, including demolition and removal of hardstanding / Made Ground during construction could potentially expose construction workers (through direct contact / ingestion and inhalation) and/or residents / workers of neighbouring properties (from dust emissions or contaminated groundwater).
- Reduction in the quality of the groundwater in the Secondary A Aquifer due to the mobilisation and leaching of contaminants and migration during construction.
- Exposure to ground gas emissions and volatile contaminants during construction.

It is considered that with the implementation of the assumed (and embedded) mitigation measures outlined in the 'Potential Mitigation' section below the above impacts are likely to be considered 'low risk' and unlikely to be 'significant' in EIA terms.

Operation

With respect to the future operation of the proposed development the following anticipated effects have been identified:

- Direct and indirect contamination of the soil and potential groundwater contamination due to leakages of fuel oils, general operational spillages and other contaminants from within the proposed development and the associated collection of surface water drainage from hardstanding areas.
- Infiltration of surface waters through existing ground materials.
- Exposure of future site users through direct contact with contaminated soils and / or groundwater during operation.
- Reduction in the quality of groundwater due to leaching of contaminants and migration during operation.
- Exposure of future site users to ground gas during operation.

- Exposure of future site users from indoor and outdoor inhalation of volatile contaminants during operation. (NB. There are also no historic or current sources on-site that would give rise to volatile organic compounds. The EIA Study Area is located in an area of low radon risk.)
- Direct contact and plant uptake of contaminants due to areas of floral planting in landscaped areas during operation.

It is considered that with the implementation of the assumed (and embedded) mitigation measures outlined in the 'Potential Mitigation' section below, including the implementation of any remediation strategy to render the Site suitable for its proposed use, the above impacts are likely to be considered 'low risk' and any residual risk is unlikely to be considered 'significant' in EIA terms.

Potential Mitigation

The proposed development will be designed to avoid significant adverse effects resulting during the operational phase and construction works, as outlined below. These represent the assumed measures that will mitigate the identified anticipated effects highlighted above.

To minimise the potential environmental effects of the proposed development on the ground conditions and surrounding area, the following specific measures can be incorporated into the design:

- An efficient system for the collection of storm and foul water from the site and conveyance to an appropriate receptor; and
- Measures to remove background contaminants from surface water drainage prior to discharge and to contain any accidental liquid spillages at the site.

Ground condition assessments are to be carried out as needed via a Phase II intrusive investigation which will confirm the existing geology, chemical characteristics and physical properties of the underlying soils onsite to supplement any existing information from previous investigations. In addition to this any potential existing ground contamination on site will be quantified and delineated, in order to appropriately formulate potential remedial measures, where necessary. Further ground investigation(s) will be undertaken in advance of the commencement of the main construction activities.

Ground investigation works will assess the presence of ground gas, the requirement for any gas protection measures within the new development and the implementation of any mitigation measures required during construction. Any potential risks associated with ground gas will be appropriately mitigated prior to the completion of the construction stage. All new buildings will be designed in line with best practice, e.g. CIRIA C665.

Where contamination is identified, an appropriate remediation scheme will be produced which will outline the activities / measures required to achieve the relevant standards for the proposed end uses (e.g. for instance the use of capping and introduction of clean cover layers). This will be submitted for agreement with the appropriate authorities. On the completion of any remediation, a validation report would be produced to ensure that the remedial criteria set out in the remediation scheme have been achieved.

All works will be undertaken in accordance with relevant legislation and guidance, such as Construction (Design and Management) Regulations, CIRIA C741 and Pollution Prevention Guidance. This will include the development of a Construction Environmental Management Plan (CEMP), which will be submitted and approved by the relevant authorities, to set out the specific working methods / practices to prevent pollution and minimise the risk of detrimental effects on the environment.

Pre-demolition surveys will be undertaken for asbestos / ACMs before the commencement of demolition works. Asbestos will be identified, removed, handled and disposed of in line with appropriate guidance and Regulations, including The Hazardous Waste (England and Wales) Regulations 2005, Control of Asbestos Regulations 2012 and CIRIA C733.

During construction, the potential risks from ground gases will be dealt with by the contractor(s) in accordance with health and safety legislation, including the Confined Space Regulations.

4.3.4. Summary

Based on the information reviewed as part of this scoping exercise, it is not anticipated that there is any widespread gross contamination in soils and groundwater below the Site. There is evidence to suggest the presence of Made Ground below the Site, which contains low levels of heavy metals (lead), PAHs and possibly asbestos due to the redevelopment of the Site in the 1960s. Localised hotspots of oil and hydrocarbon contamination may also be a possibility due to the garages, roadways and electrical substation and may not have been encountered during the previous investigations.

In terms of land contamination, the Site is in a relatively low sensitivity environmental setting with the Secondary A Aquifer below the Site identified as the most sensitive receptor, along with consideration of the future site users, adjacent residents and the nearby Conservation Areas.

Whilst a number of anticipated effects have been identified it is considered that with the implementation of the assumed (and embedded) mitigation measures outlined in this section, including carrying out a supplementary intrusive ground investigation, implementation of a CEMP and implementation of any remediation strategy to render the Site suitable for its proposed use, the impacts are likely to be considered 'low or very low risk' and not 'significant' in EIA terms and hence ground contamination can be scoped out of the EIA.

4.4. Ecology & Biodiversity

4.4.1. Introduction & Key Issues

Hilson Moran are appointed to conduct the ecological assessment for Woburn and Bedford Court Development. This scoping section has been prepared by Tanishia Gearing, Environmental consultant.

The key issues are as follows:

- Protecting and retaining greening, including trees, hedgerows and planted areas wherever possible within the Site;
- Enhance biodiversity, by assessing biodiversity net gain, with a minimum requirement of 10% net gain across the whole Site, in accordance with national and local policy;
- Achieve an Urban Greening Factor (UGF) of 0.4 in line with local policy; and,
- Create and enhance the local biodiversity and connectivity, with specific focus on locally identified Biodiversity Action Plan species (BAP Species).

4.4.2. Baseline

A high-level baseline has been established using existing data obtained from the local record centre Greenspace Information for Greater London (GiGL). This established that there are no statutory designated sites within 2km of the Site boundary and no non-statutory sites within 1km, meaning there are no restrictions to the development based on habitat designation, indicated in **Figure 4.4**.

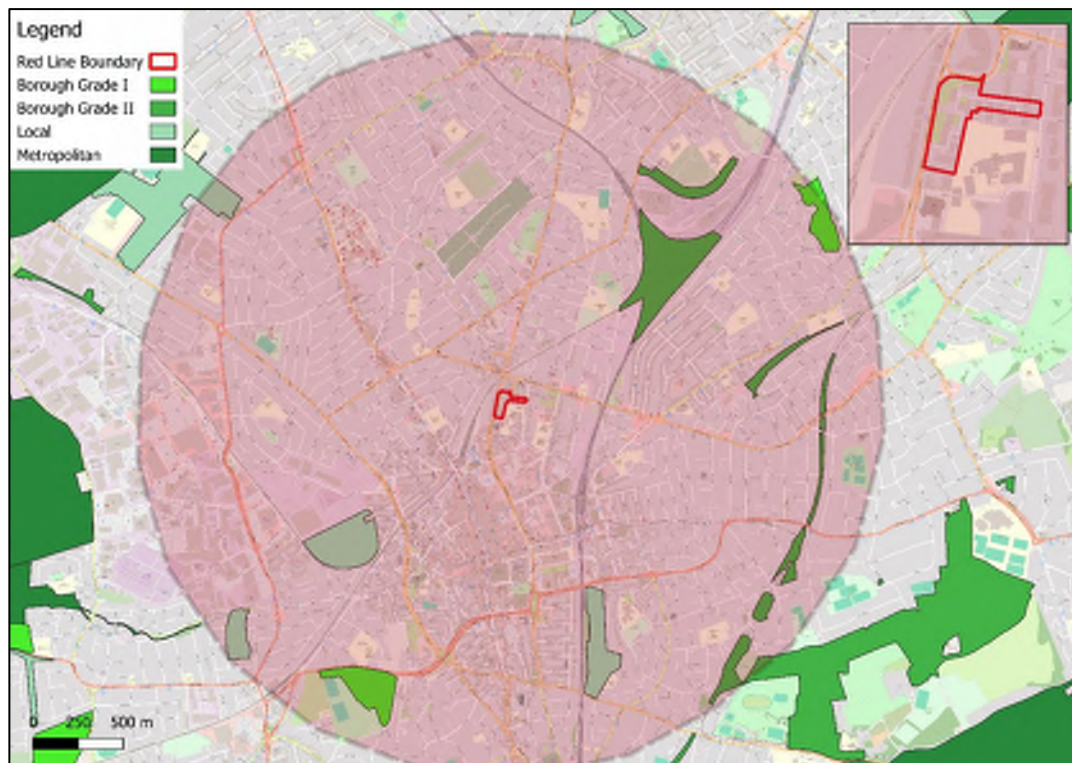


Figure 4.4 Non-Statutory Sites

Protected species records were also returned from GiGL, which revealed nothing of note that would impact the Proposed Development. A stag beetle was recorded in May 2022, 3 metres from the Site boundary, however these are not protected in a manner that would prevent the development progression.

The Site is in an area that is low in biodiversity, with the majority of the Site having a Biodiversity Hotspot Score of 0, indicated in **Figure 4.5**.

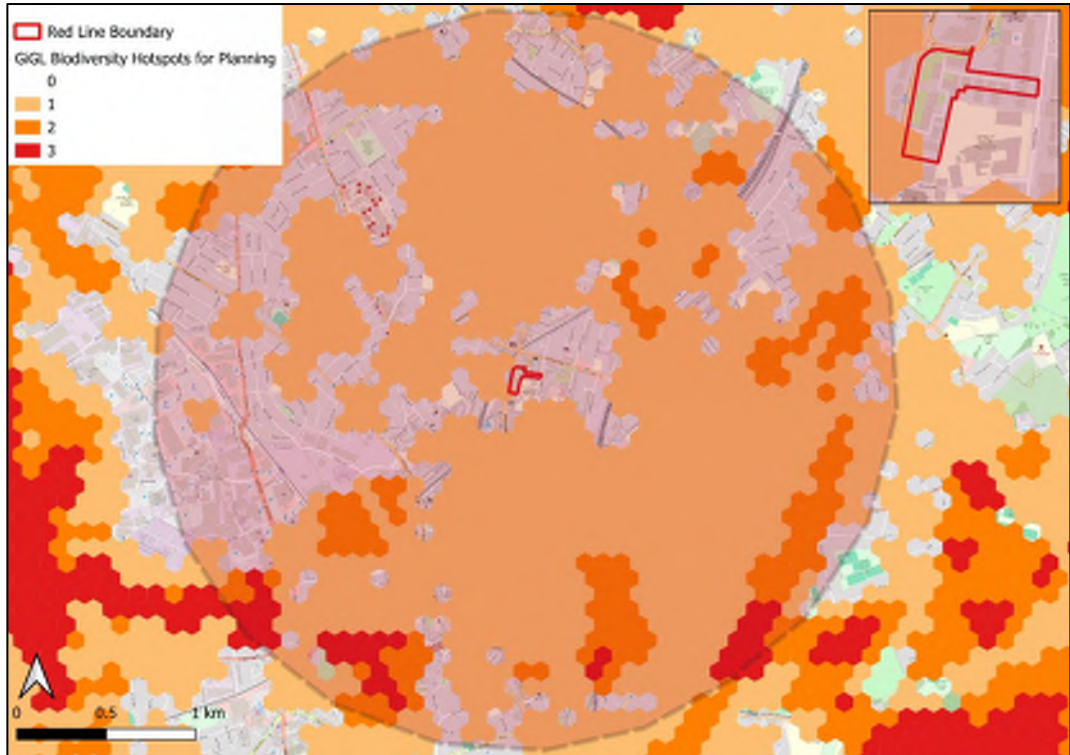


Figure 4.5 *GiGL Biodiversity Hotspots*

The Site is located within two Sites of Scientific Interest Impact Risk Zones, but the restriction of these sites are not related to the type of development proposed for Woburn and Bedford Court, largely relating to aviation and cattle.

A habitat walkover survey was performed to assess the baseline habitat and species present on the Site, and it was found that the Site is predominantly hardstanding and buildings, with smaller areas of modified grassland around the eastern boundary and following the central road through the existing court. No evidence of roosting or nesting species were identified at the time of survey (see **Figure 4.6**).



Figure 4.6 Habitat Walkover Survey Results

Further Assessment

The baseline has been established at a high level, and further detail will be set out in the supporting planning report. The biodiversity net gain of the Proposed Development will be calculated, alongside the UGF score. Based on the findings of both, appropriate enhancements to be included within the proposals, including those that target the locally identified BAP species and habitat will be discussed and implemented where appropriate.

4.4.3. Potential Impacts

There are no immediate impacts anticipated based upon baseline information and the nature of the design.

4.4.4. Summary

As the Site is not within the immediate vicinity of any protected habitats, and the Site was deemed to host habitats of low to negligible ecological value, there are no concerns over the proposed redevelopment of the Site. Where appropriate, the installation of habitats and ecological enhancements will be proposed and subsequently implemented to comply with BNG and UGF legislation, however this should be easily achieved owing to the low scoring baseline values of the Site. Based on the above, we propose to scope Ecology and Biodiversity out of the EIA.

4.5. Waste

The Proposed Development has the potential to give rise to impacts on the environment as a result of waste generation and disposal during the demolition, construction and operational phases. However, through the adoption of an appropriate Waste Management Strategy, opportunities waste minimisation and to ensure its effective management and disposal can be implemented.

As construction, demolition and excavation wastes account for around three-fifths of waste generated in the UK²³ opportunities to minimise waste generation in the demolition and construction phase will be identified through the completion of a Waste Management Strategy, which will consider, amongst other things, opportunities to design out waste and design for deconstruction and re-use, and the appropriate management and handling of construction wastes including identifying opportunities for re-use of materials on site.

Through the completion of a Waste Management Strategy appropriate waste management facilities will be included in the Proposed Development that encourage on-site recycling and allow for effective management of waste. In line with planning validation requirements, estimates of the waste generation from each of the land uses within the scheme will be made from British Standard 5906:2005. The waste estimates will ensure appropriate provision is made in the design for waste storage, including refuse and recycling, and collection, with appropriate access provision for refuse collection vehicles.

Considering the nature and scale of the Proposed Development, it is unlikely that significant impacts arising from waste associated with the Proposed Development would occur, therefore we propose to scope waste out of the EIA. However, a Waste Management Strategy, in line with local planning validation requirements, will be prepared to accompany the planning application.

4.6. Archaeology

4.6.1. Introduction & Key Issues

This Summary Review of archaeology has been prepared by Simon Blatherwick BA, MA, MCI(A), Technical Director (Heritage) RPS Consulting.

The Preliminary Baseline information presented below is informed by a 750m Search of the GLHER Database (Ref 18239: search undertaken 10.1.24).

4.6.2. Baseline

No specific entries are recorded for the Site in the GLHER data and the Site is not located in a LPA designated Archaeological Priority Area (APA).

The closest APA is 'Central Croydon' (GLHER Ref 76644) which:

“covers the core of the historic settlement of Croydon which is situated in an area bounded by Church Street/George Street to the north, Wellesley Road/Park Lane to the east, Lower Coombe Street to the south and Old Town/Mitcham Road to the west.”

GLHER Ref 163592 (to the immediate north of the Site) refers to a desk-based assessment (CgMs 2004) which:

“concluded that there is a moderate potential for archaeological remains dating to the Bronze Age, Iron Age and Roman periods on the site with a low potential for remains dating to all other periods. Additionally it was suggested that levels of made ground deposited prior to the 19th and 20th Century development of the site may have preserved and sealed any archaeological remains the site. However later impacts such as construction, demolition and bomb damage may have had a severe impact on archaeological potential across the southern and western area of the site.”

GLHER Ref 155910 (to the south of the Site) relates to trial trench evaluation at Wellesley Road:

“No archaeological deposits or structures were recovered due to truncation associated with previous structures on the site. It is concluded that the proposed development will have no archaeological impact on the site.”

GLHER Ref 155981(to the west of the Site) is to a Desk Based Assessment at Harris Invictus Academy. This concluded that the site was:

“thought to have a low potential for significant activity in the Prehistoric periods, an low potential for Roman remains and a low potential for evidence of significant activity in the Medieval and Post Medieval periods.”

GLHER Ref 170845 describes a Desk Based Assessment for West Croydon Station which identified remains of the Croydon Canal Railway and remains of the Croydon Canal basin and warehousing as likely to be on that site.

GLHER Ref 97667 refers to the locally listed ‘Our Lady of Reparation Roman Catholic Church (Victorian Roman Catholic Church)’.

The 1838 Croydon Tithe map provides the following information regarding land use in the mid-C19th.

Table 4.8 1838-43 Tithe Apportionments, Croydon – Surrey

Land Parcel	Landowner	Occupant	Description	Land Use/Cultivation
2334	Thomas Russell	Thomas Russell	Thirteen Acres	Arable
2337	Church Burial Ground	-	-	-
2338	Thomas Russell	Thomas Russell	Church Field	Arable
2339	The Governors of Croydon Hospital	Charles Moreton	Cow Meadow	Meadow
2340	The Governors of Croydon Hospital	John Thatcher	Meadow Ground	Meadow

The north-western corner of Plot 2339 is occupied by a pond with a small channel running to the east.

The current development form is first shown in the 1966 Ordnance Survey mapping for the Site. This shows the Site as largely developed with the western frontage not subject to built form.

The GLHERE Data does not identify any sensitive receptors on the Site.

4.6.3. Potential Impacts

Impacts on any potential archaeological resources that the Site may contain will occur as a result of demolition and construction. However, these are not considered to be 'significant' in EIA terms and as such it is considered that archaeology can be scoped out of any future EIA. An archaeological desk-based assessment – submitted with the Planning Application – is considered to be appropriate.

4.6.4. Summary

As the Site is not in an APA and no specific entries are recorded for the Site in the GLHER data, it is considered that the Site can be scoped out of any future EIA. An archaeological desk-based assessment – submitted with the Planning Application – is considered to be appropriate.

4.7. Health Impacts

National planning policy recognises the importance of the design and use of the built and natural environment in relation to our health and wellbeing, and the value that well-designed development projects can bring to creating healthy and safe environments for all.

The LBC reflects this through their Local Plan²⁴, identifying in Policy DM16: Promoting Healthy Communities that *'The Council, working with relevant organisations, will ensure the creation of healthy communities which encourage healthy behaviours and lifestyles.'*

A HIA is defined by the World Health Organisation (WHO) as *'a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of these effects within the population'*²⁵.

The NHS guidance identifies HIAs to be split into three types, full, rapid or desktop, depending on the level of detail required for the assessment. The assessment considers a range of assessment criteria in relation to housing design and affordability, access to health and social care services and other social infrastructure, access to open space and nature, air quality, noise and neighbourhood amenity, accessibility and active travel, crime reduction and community safety, access to healthy food, access to work and training, social cohesion and inclusive design, minimising the use of resources and climate change.

In line with LBC's planning policy requirements, a HIA will be produced to accompany the planning application. Considering the scale and nature of the Proposed Development, it is proposed to complete a rapid assessment following the Healthy Urban Development Unit (HUDU) Rapid HIA tool.

The '*Health Impact Assessment in Spatial Planning Guide*', published by Public Health England (October 2020) indicates that a Rapid HIA is appropriate for EIA subjected planning applications.

Many of the planning aspects such as impacts on the environment, access to greenspace, accessibility and travel, etc. have been addressed and evidenced to be not significant. Whilst there will be some alterations, likely significant effects are not anticipated in relation to health impacts and it is, therefore, scoped out of the ES.

4.8. Major Accidents and Disasters

The Proposed Development entails the demolition and new development of existing non-listed buildings and the addition of a number of storeys. The proposed use is predominately residential with some commercial and retail use.

With reference to the Institute of Environmental Management and Assessment's (IEMA) guidance on Major Accidents and Disasters²⁶, consideration of major accidents and disasters was introduced in the 2014 EIA Regulations and covers the assessment of potentially significant adverse effects of a development on the environment deriving from its vulnerability to risks of relevant major accidents and/or disasters. Such incidents may include interruption of critical transport/services infrastructure or anything that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e., contractors) to manage.

The site lies within central Croydon and is surrounded by public highways and publicly accessible buildings. There are no major services passing under the Site such as underground railways or major utility tunnels.

Without mitigation, there is potential for street users and surrounding building users to be exposed to risks from construction traffic movements and demolition/façade renovations and wastes. Without mitigation, construction workers may be exposed to falling building debris, construction vehicles and plant movements, and difficult ground conditions including contamination. There are also areas of pigeon and vermin infestation which presents pathogenic risks.

IEMA's guidance states that major accidents and/or disasters can be scoped out of the assessment if it can be demonstrated that:

- There is no source-pathway-receptor linkage of a hazard that could trigger a major accident and/or disaster or potential for the scheme to lead to a significant environmental effect; or
- All possible major accidents and/or disasters are adequately covered elsewhere in the assessment or covered by existing design measures or compliance with legislation and best practice.

In consideration of the risks that redevelopment of the Site would present, none are assessed as being of a scale or complexity that are beyond the management of a proficient development contractor to adequately control and mitigate. Identification of risks and specific mitigation measures would be set out by the Contractor in demolition plans and the Construction Environmental Management Plan.

In summary, there are no identified elements of the redevelopment of the Site that are considered likely to bring significant risk of major accidents or disasters. It is therefore intended to scope out this topic from the ES.

4.9. Arboriculture

4.9.1. Introduction & Key Issues

This Chapter considers the impact and subsequent effect of the Proposed Development on existing trees and arboricultural issues. This scoping report has been written by Stefan Rose BSc (Hons), TechCert (Arbor A), TechArbor.A who also carried out the Tree Survey and is the Principal Consultant of CBA Trees – details of the site visit can be found in Section 4.9.2.

The Site has the appearance of being level in nature, although it must be noted that the Site is higher than the Wellesley Road. The Site is primarily covered in various forms of hard standing or built form with tree cover primarily around the perimeter of the Site in narrow soft landscaping strips adjacent to footpaths, internal roads or in areas of soft landscaping dominated by grass.

The more dominant trees grow towards the southern and western boundaries of the Site.

4.9.2. Baseline

A tree survey was conducted on 3rd January 2024. This visual, ground level survey was completed to the recommendations of British Standard BS5837:2012 – Trees in Relation to Design, Demolition and Construction Recommendations as set out in Section 4.4. of that Standard. The species and condition of all individual trees included in the survey has been assessed.

This identified a total of twenty-three individual trees, four groups of trees with twelve noted trees within them and one hedge that are either on or adjacent to the Site.

Of the individual trees identified in the above exercise, one high grade tree, seven moderate grade, eleven low grade tree and four poor grade trees were identified.

Several of the identified trees are considered to be of poor quality and have a limited useful life expectancy as they are self-set trees growing at the base of existing garages.

There was one tree considered to be of high grade classification which is a Beech tree and it grows on the western boundary of the Site adjacent to Wellesley Road.

4.9.3. Potential Impacts

The impact on trees and/or the potential tree loss from development can be either directly as a result of the footprint of the Proposed Development or indirectly as a result

of the effects of the requirements for construction. As a guide, the issues that have been considered and will be fully assessed in the proposed Arboricultural Implications Assessment (AIA) include, but are not limited to:

- Changes in the ground level;
- Surface treatment within the root zones of trees;
- Future growth of trees;
- Location of underground and overhead services;
- Location of roads, parking bays and footpaths in relation to tree root zones;
- Compaction of soils;
- Movement of construction traffic through the Application Site;
- Delivery and storage of equipment and materials;
- Site welfare, buildings and compound;
- Construction operational space;
- Requirements and method for demolition;
- Tree protection;
- Protection of areas for tree planting; and
- Relationship of retained trees to proposed built form.

Trees proposed for retention are close to areas of demolition and construction and to provide for their retention, the proposal will require full consideration to be given to the design to reduce any impact on the trees and enable the works to minimally impact on the trees otherwise additional trees may need to be removed.

Overall, it is our view that the loss of the trees is fully addressed and mitigated for through the proposed soft landscaping proposals and this new planting will be planted to enhance the site providing new long term tree cover on site. As such we propose to scope out Arboriculture from the EIA.

4.9.4. Summary

The proposal has sought to retain the trees of value on site where possible whilst providing a design and layout that is practical and suitable for today's needs both economically and environmentally. Initial design parameters indicate that significant areas of soft landscaping will be provided, and these areas will provide new planting of shrubs and trees that enhance the Site.

As we propose to scope out Arboriculture from the EIA a full Arboricultural Implications Assessment and an Arboricultural Method Statement will be completed and submitted as part of the planning application. This will confirm details of tree retention and loss. This, in turn, would enable individual and precise specifications to enable tree retention in close proximity to the proposed construction. Those proposals should cover, amongst other items, the routing of service trenches, overhead services, and precise positions of service roads, fencing and hard landscaping etc to avoid unnecessary damage to root plates of retained trees. It may also include the requirements for the use of no-dig techniques for footpaths, minimal foundations for walls and boundary treatments within the hard landscape setting. Separate documents may be provided for the protection of trees during the demolition phase of site works and for the construction phase of the

proposed development to obviate the potential harmful effects which development can have on trees.

In accordance with widely accepted practice, the Arboricultural Implications Assessment and associated Arboricultural Method Statements would indicate designated areas for the storage of equipment and materials and accommodation during the construction process, and detail routes both into and through the Site in terms of access for both contractors and equipment and the delivery of materials. Finally, they would also include a specification for necessary remedial tree surgery and facilitation of pruning to the trees.

Whilst tree loss does occur (which is subject to further detailed design and construction methods) the proposed soft landscaping will appropriately mitigate for this.

The areas for new planting are to be dealt with in detail within the supporting landscaping report. Every opportunity will be taken to ensure that where new planting takes place, the trees have the appropriate soil rooting volume available, trees are of a known local provenance, and that a programme of after planting care and maintenance is established to include an approved watering regime.

4.10. Landscape

4.10.1. Introduction & Key Issues

Churchman Thornhill Finch are appointed as landscape architects for the Woburn and Bedford Court development. The scope includes the public realm, including Wellesley Road land and the garage site under the local authority ownership, and the podium and roof spaces of the new development.

The key issues are as follows:

- Protect and retain existing trees on and adjacent to the site. Identify and justify any proposed loss of trees;
- Enhance the biodiversity of the site in line with policy;
- Achieve an Urban Greening Factor of 0.4 in line with policy;
- Create safe and inclusive streets and spaces for residents and wider community to enjoy.
- Improving permeability of the site;
- Meet or exceed the policies for open space and plan standards; and,
- Meet or exceed the required surface water run-off rates for the site.

4.10.2. Baseline

The landscape design has been developed over the last 15 months alongside the massing of the buildings. Planning officers and councillors are in broad support of the landscape design development.

There are a small number of trees in the Site, typically located along the boundaries. An arboriculture survey has been undertaken to inform the proposals. This identified the quality of the existing trees and the extent of the root protection areas.

An ecological survey is being undertaken and will inform the design, although it is understood that there are no significant constraints on the Site.

4.10.3. Potential Impacts

There are no significant impacts anticipated on the Site and in the immediate context.

4.10.4. Summary

The identified key issues have been addressed through the developing landscape design and discussed at length with the planning officers. No concerns have been raised over the issues listed above. On this basis, landscape is to be scoped out of the EIA.

5. Summary of Key Issues

For the benefit of the reader, this section summarises the following topics to be either Scoped In or Scoped Out of the EIA.

Scoped In topics:

- Air Quality;
- Acoustics: Noise & Vibration;
- Townscape & Visual;
- Built Heritage;
- Socio-economics;
- Climate Change & Resilience and Greenhouse Gas;
- Daylight, Sunlight & Overshadowing; and,
- Wind Microclimate.

Scoped Out Topics:

- Traffic & Transport;
- Water Resources and Flood Risk;
- Contamination;
- Ecology & Biodiversity;
- Waste;
- Archaeology;
- Health Impact;
- Major Accidents and Disasters;
- Arboriculture; and,
- Landscape.

A summary of the key issues identified for each of the EIA topics, which could arise as a result of the demolition, construction and operational phases of the proposed development that will be addressed in the EIA are provided in Table 5.1.

Table 5.1 Summary of Key Issues

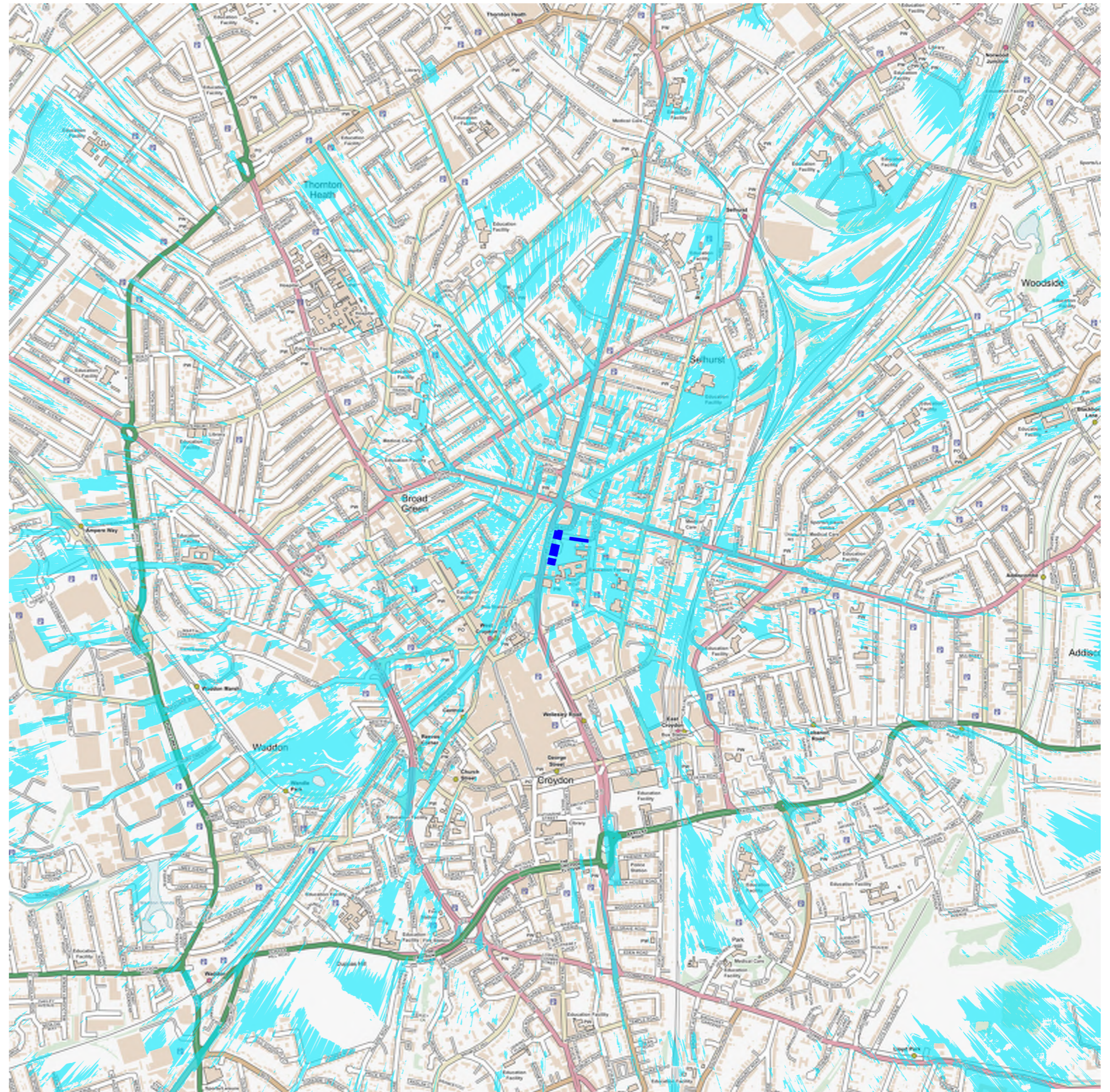
EIA Topic	Key Environmental Issues Anticipated
Air Quality	<ul style="list-style-type: none"> • Dust soiling and PM₁₀ emissions during the demolition and construction; • Impacts of NO₂, PM₁₀ and PM_{2.5} emissions from demolition and construction vehicles; • Future air quality for users and residents; and • Cumulative impact on air quality with other area development at sensitive receptors during demolition, construction and operation.
Acoustics – Noise & Vibration	<ul style="list-style-type: none"> • Impacts from traffic on surrounding roads (construction and operation) • Construction activities at the proposed development;

EIA Topic	Key Environmental Issues Anticipated
	<ul style="list-style-type: none"> • Building services plant noise from the completed development and from completed nearby schemes
Townscape & Visual	<ul style="list-style-type: none"> • The impacts of the Proposed Development on the visual receptors will be represented by 18 AVRs and supplementary non-verified views prepared using VuCity and other tools presented in the submitted Design and Access Statement. The viewpoint locations have been agreed with the Council during pre-application discussions. • The ES Chapter will be supported and informed by a standalone TVIA that will provide a policy analysis of the impact of the Proposed Development on townscape and visual receptors, including those to be 'scoped-out' of the ES (owing to the anticipated effect on their overall value).
Built Heritage	<ul style="list-style-type: none"> • The Proposed Development has the potential to have significant effects arising on 8 heritage receptors, which will be assessed as part of the ES. • The ES Chapter for built heritage will be supported and informed by a Heritage Impact Assessment that will provide a policy analysis of the impact of the Proposed Development on heritage assets identified in the Study Area, including those scoped out of the ES.
Socio-Economic	<ul style="list-style-type: none"> • Review the relevant national and local policy contexts as well as baseline conditions within the defined impact areas. • Consider the effects generated during construction as well as once the Proposed Development is occupied and/or fully operational; • It will include an assessment of the Proposed Development's effects on housing, the economy (i.e., jobs and GVA), population and the labour market and demand for social and community infrastructure.
Climate Change & Resilience/ Energy & Greenhouse Gas	<ul style="list-style-type: none"> • To consider how the physical effects of future climate change will affect the significance of the environmental effects being considered in other areas, i.e., in combination with other factors. • Consideration of the proposed resilience of the development to the physical effects of future climate change ('Climate Change Resilience' (CCR) assessment); • Assessment of the impact of climate change through greenhouse gas calculations, in terms of operational and construction carbon usage. The calculations will look at the potential for significant effects to arise from the Proposed Development in terms of greenhouse gas (GHG) emissions over its lifetime ('GHG assessment').

EIA Topic	Key Environmental Issues Anticipated
Daylight, Sunlight & Overshadowing	<ul style="list-style-type: none"> • Outline the methodologies applied to identify and assess the baseline conditions at the site and of its surrounds, the potential daylight, sunlight, and overshadowing impacts and effects to sensitive receptors; and the likely residual daylight, sunlight, overshadowing, solar glare and light spillage impacts and effects associated with the Proposed Development; • A series of daylight, sunlight and overshadowing technical studies have been undertaken over the past five years to support the design evolution of the scheme which indicate alterations in light that are supportable and consistent with the scale of the proposed development.
Wind Microclimate	<ul style="list-style-type: none"> • CFD simulations will be used to quantify the impact of the Proposed Development on the pedestrian level wind environment across the site and its surroundings. • The wind assessment will pay particular attention to wind effects in open amenity spaces, building entrances and pedestrian routes to determine the level of compliance against the LDDC version of the Lawson criteria for both safety and comfort.

Appendix A – Zone of Theoretical Visibility

Proposed Model ZTV



Analysis has been based on the Environment Agency's DSM/DTM Lidar data.

Preliminary, model-based work is only as accurate as the 3D information provided and so we recommend all decisions based on massing are checked using Accurate Visual Representations.

Appendix B – Heritage Asset Plan

HERITAGE ASSET PLAN

Application Site

Conservation Areas

- A. Wellesley Road North CA
- B. Central Croydon CA
- C. Church Street CA
- D. Croydon Minster (Formerly Parish Church) CA
- E. East India Estate CA

Listed Buildings

Grade I

- 1. Parish Church of St Michael and All Angels
- 2. Hospital of The Holy Trinity (Whitgift Hospital)
- 3. Parish Church of St John The Baptist

Grade II*

- 4. Church of St James
- 5. Croydon War Memorial

Grade II

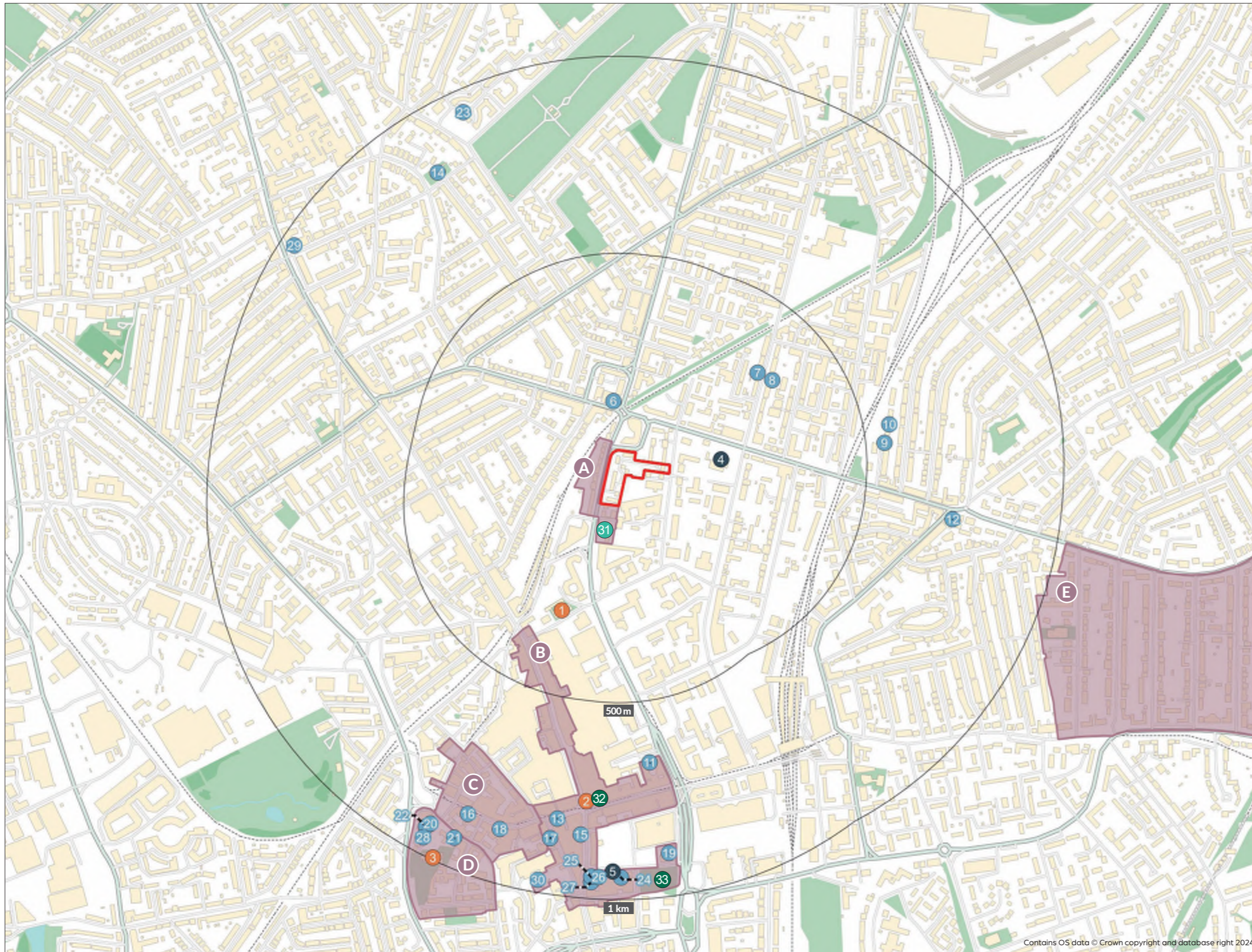
- 6. Baptist Church of West Croydon
- 7. 237 and 239, Sydenham Road
- 8. 226-228, Sydenham Road
- 9. Entrance Lodge to Davidson Lodge and Walls and Four Piers at Entrance to Davidson Lodge
- 10. Davidson Lodge
- 11. Electricity Showrooms and Offices
- 12. Leslie Arms Public House
- 13. 11, Crown Hill and 13 and 13a, Crown Hill
- 14. Church of St Saviour and Wall Enclosing Churchyard of Church of St Saviour
- 15. Former Grant's Department Store
- 16. 91 and 93, Church Street
- 17. The Dog and Bull Public House
- 18. 61, 63, 65, Church Street
- 19. Segas Offices
- 20. 120, Church Street
- 21. Numbers 2 to 8 (Even) with Boundary Wall and Entry Arches and Piers
- 22. Elis David Almshouse including Railings and Gates to Street
- 23. Queen's Road Hospital (Entrance Block)
- 24. Municipal Buildings, Comprising The Clock Tower, Public Library, and Corn Exchange, and including The Area Balustrade which incorporates a War Memorial and a Statue of Queen Victoria
- 25. Nat West Bank
- 26. Union Bank Chambers
- 27. The Ship Public House
- 28. Rose and Crown Public House
- 29. West Croydon United Reformed Church
- 30. Surrey Street Pumping Station

Locally Listed Building

- 31. St Marys Church

Locally Listed Parks and Gardens

- 32. Whitgift Almshouses Courtyard
- 33. Queens Gardens



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LOCATION:
Woburn Court, Croydon

DATE:
January 2024

SCALE:
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FIGURE:

▲ NORTH



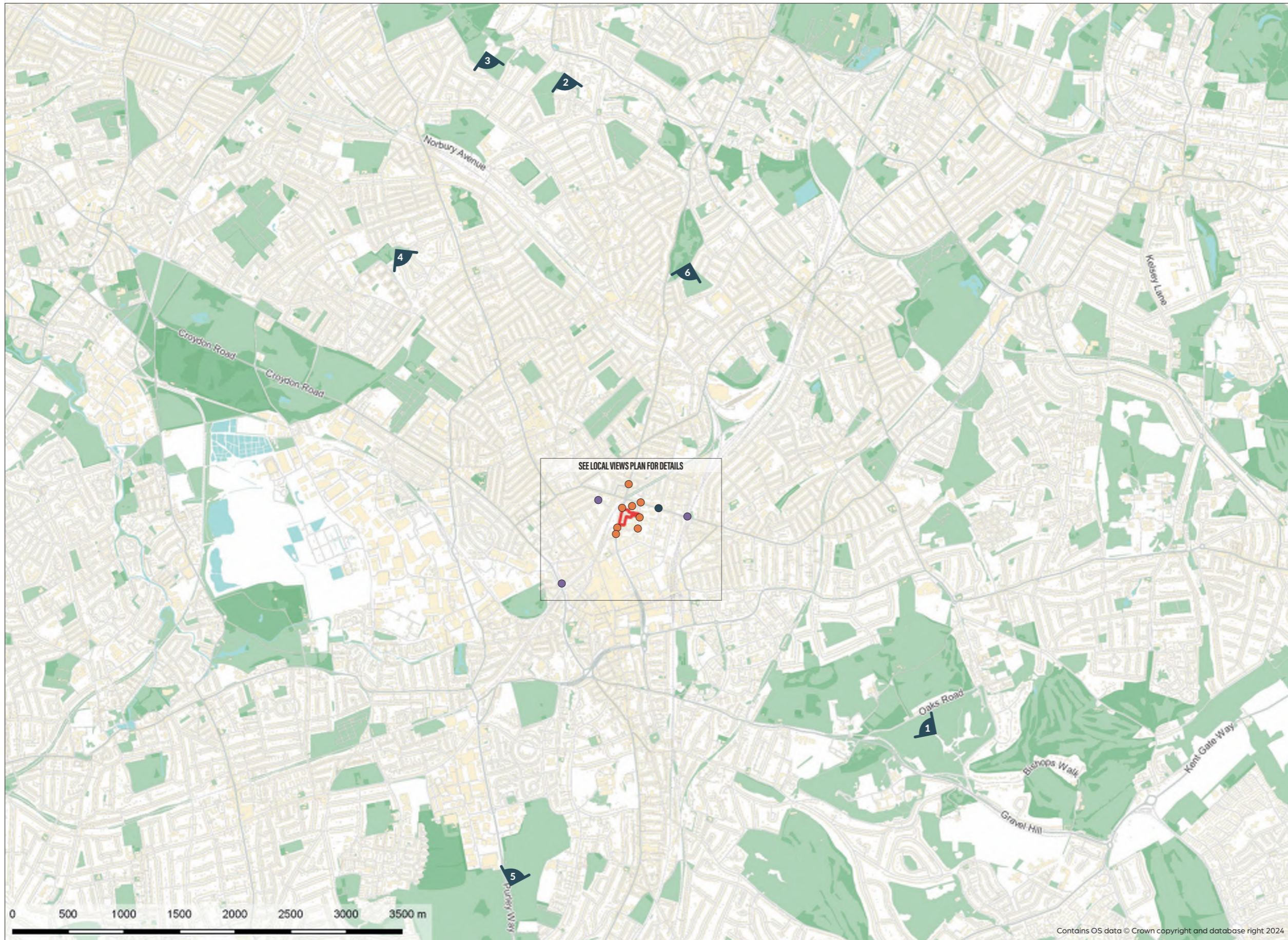
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Appendix C – Viewpoint Location Plan

VIEW LOCATION PLAN DISTANT VIEWS

- Application Site
- RENDER
- WIRE LINE
- Non-Verified Massing Studies

1. Addington Hills of Croydon Metropolitan Centre
2. Biggin Hill of Croydon Metropolitan Centre
3. Norwood Grove of Croydon Metropolitan Centre
4. Pollards Hill of Croydon Metropolitan Centre
5. Purley Way Playing Field of Croydon Metropolitan Centre
6. Ross Road of Ikea Towers



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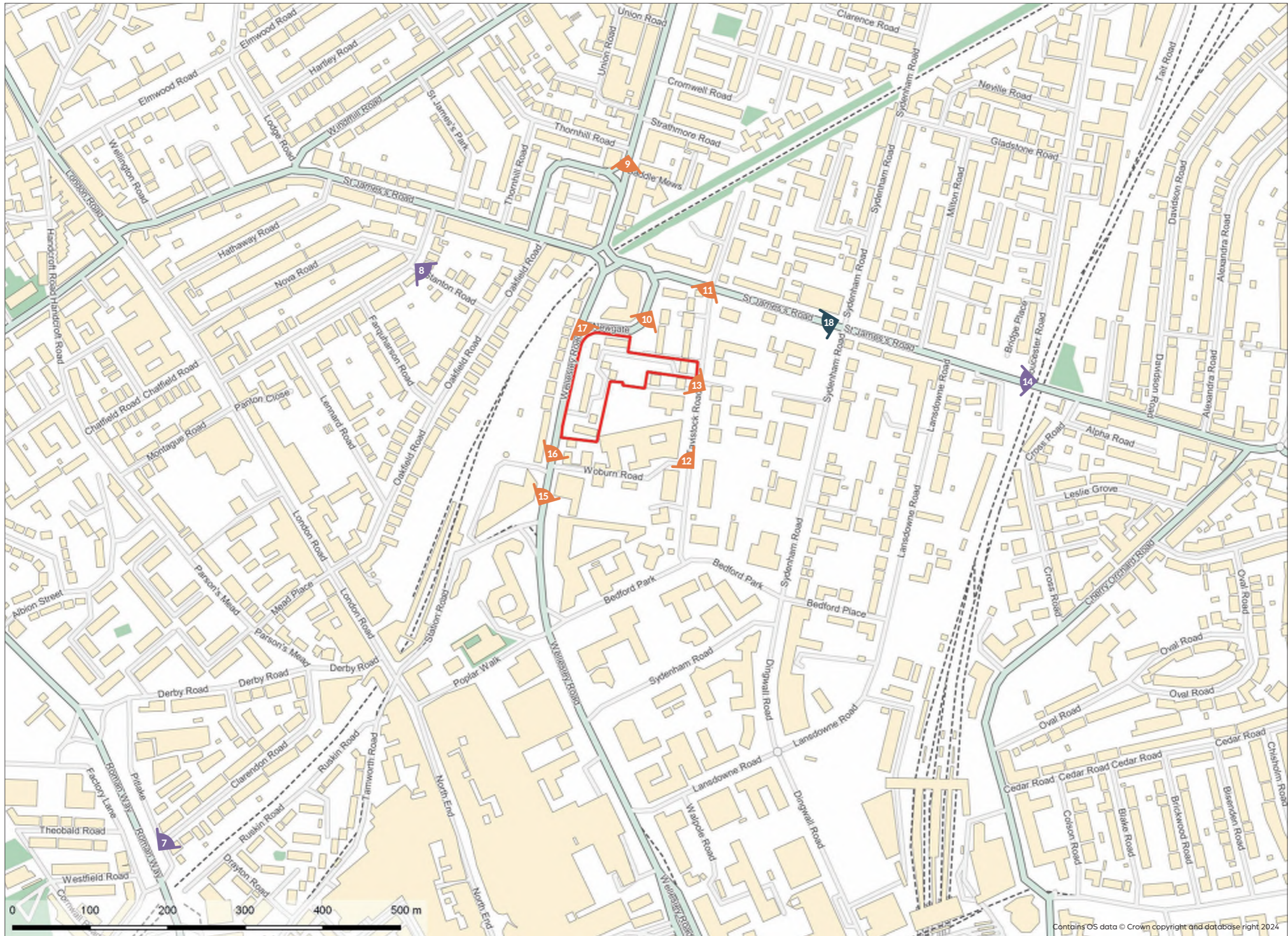
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FIGURE:

▲ NORTH



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VIEW LOCATION PLAN LOCAL VIEWS

- Application Site
- RENDER
- WIRE LINE
- Non-Verified Massing Studies

- 7. Roman Way looking east towards Croydon Metropolitan Centre
- 8. Stanton Road looking south east to Site
- 9. Whitehorse Road looking south to Site – RENDER
- 10. Newgate (South East Corner) Looking South Towards the Site – RENDER
- 11. Junction of St James's Road and Tavistock Road looking south-west to Site – RENDER
- 12. Junction of Tavistock Road and Woburn Road looking north-west to Site – RENDER
- 13. Tavistock Road (opposite The Elms) looking north-west towards Site – RENDER
- 14. Windmill Bridge looking west to Site
- 15. Wellesley Road (west pavement) to the north of junction with Station Road looking north towards Site – RENDER
- 16. Wellesley Road (west pavement) outside 57/59 Wellesley Road looking north towards Site – RENDER
- 17. Wellesley Road (west pavement) outside 91 Wellesley Road looking south towards Site – RENDER
- 18. St James's Road (north pavement) outside of St James' Church looking west to Site – WIRE LINE

LOCATION:
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DATE:
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SCALE:
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FIGURE:

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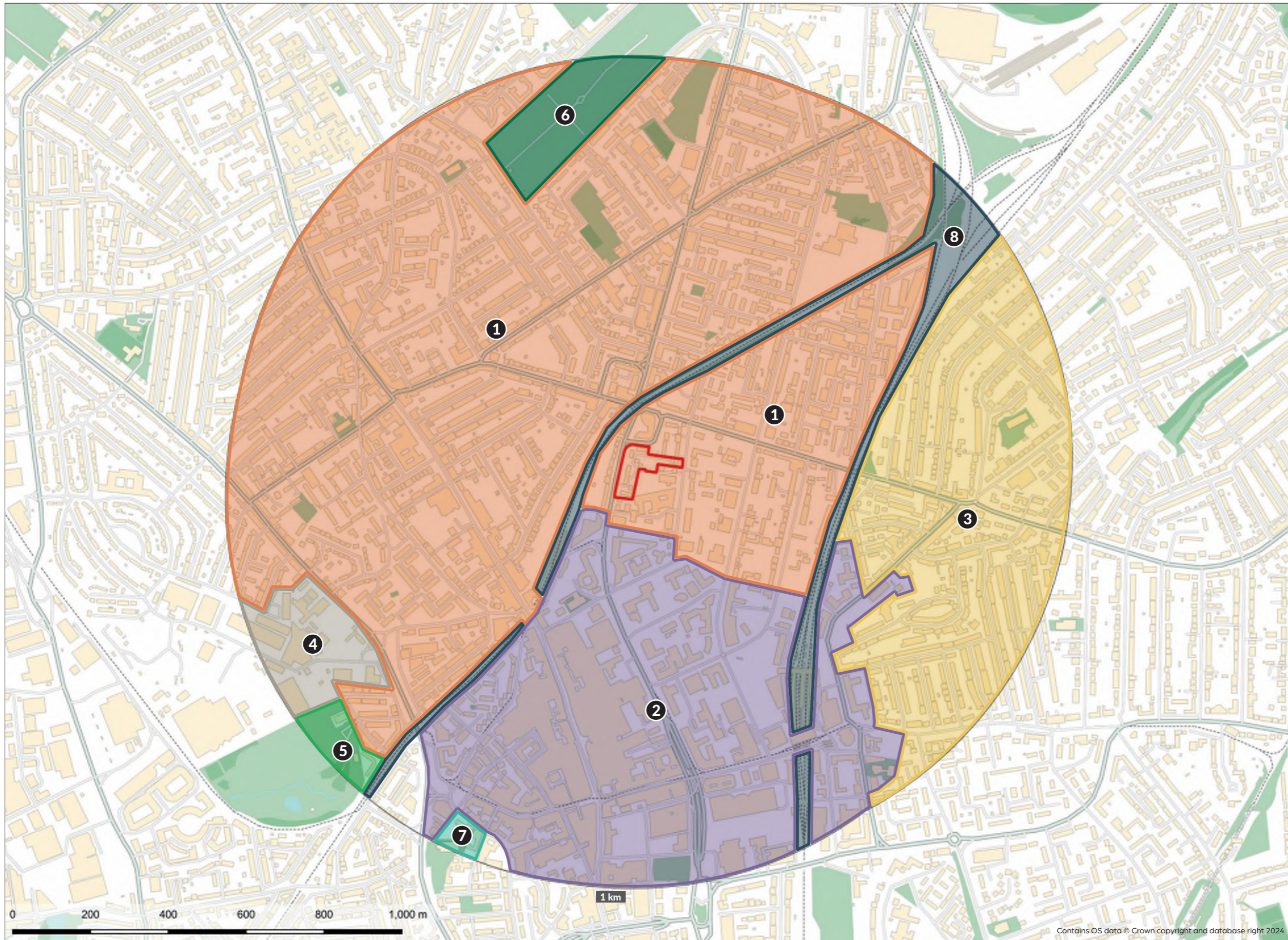
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Appendix D – Townscape Character Area Plan

TOWNSCAPE CHARACTER AREA PLAN

- Application Site
- 1 West/North Croydon Mixed
- 2 Croydon Town Centre
- 3 East Croydon Residential
- 4 West Croydon Industrial
- 5 Wandle Park
- 6 Queen's Road Cemetery
- 7 St John the Baptist/Croydon Minster
- 8 Railway Infrastructure



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FIGURE:

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