



CHURCH STREET

SITES A, B AND C

ES VOLUME I
MAIN REPORT



Church Street Sites A, B and C

ES Volume I: Main Report

Westminster City Council

November 2021

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Chapter 1: Introduction

Westminster City Council

November 2021

1. Introduction

1.1 Overview

1.1.1 AECOM has been appointed by Westminster City Council (hereafter referred to as the 'Applicant') to prepare this Environmental Statement (ES) to support a hybrid planning application for the Church Street Sites A, B and C regeneration scheme: a mixed-use development comprising new residential, community, commercial, retail, market infrastructure and associated landscaping / public realm uses.

1.1.2 The application site (the 'Site') is located wholly within the City of Westminster (WCC). The Site location is shown in Figure 1-1.

1.1.3 The Applicant is seeking a hybrid planning permission for the following development:

The Hybrid Planning Application seeks part-detail/part-outline planning permission for the following ("the Proposed Development"): sought for:

Detailed planning application for Site A, for the demolition of all buildings on Site A and erection of mixed-use buildings providing ground floor flexible commercial use floorspace (use class E), a library (use class F1), market storage (use class B8), residential units (use class C3), landscaped amenity space, car parking, motorcycle parking, cycle parking, market infrastructure and associated works.

A Phased Outline planning application (Sites B, C and the Church Street Market) (all matters reserved) for the balance of the site for:

1. *The proposed demolition of buildings and structures;*
2. *The erection of buildings and works of alteration to existing buildings for the following uses:*
 - a) *Flexible Commercial Floorspace (Use Class E);*
 - b) *Community Floorspace (Use Class F1 and F2);*
 - c) *Public houses, wine bars, or drinking establishments Floorspace (Use Class Sui Generis);*
 - d) *Market Storage (use class B8), and*
 - e) *Residential Floorspace (Use Class C3) and ancillary residential facilities.*
3. *Associated infrastructure;*
4. *Streets, open spaces, landscaping and public realm;*
5. *Car, motorcycle and bicycle parking spaces and delivery/servicing spaces;*
6. *New pedestrian and vehicular access;*
7. *Market infrastructure and ancillary facilities;*
8. *Utilities including electricity substations; and*
9. *Other works incidental to the proposed development.*

Further explanation (not forming part of the formal description of development set out above):

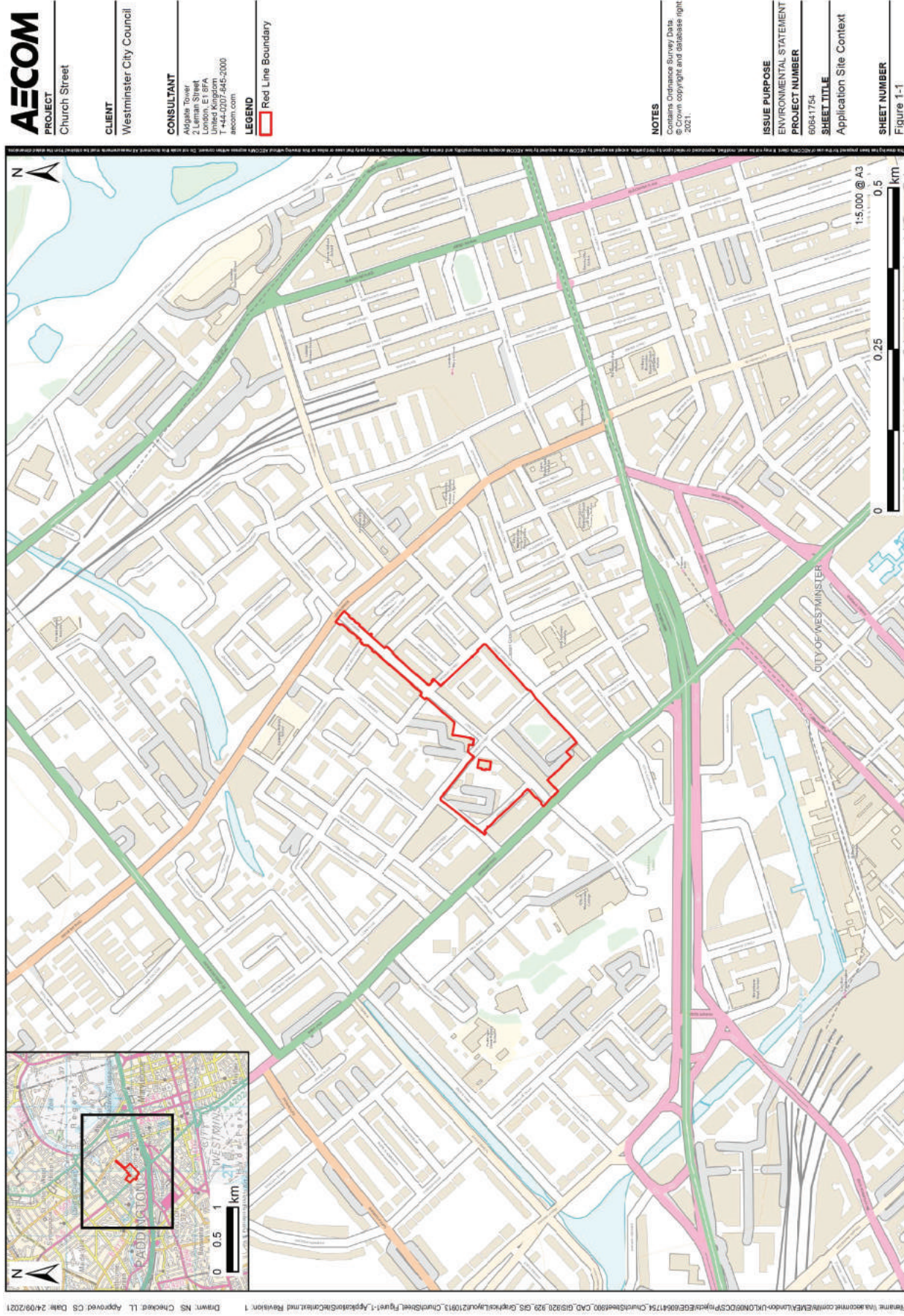
Proposed Development for Site A comprises:

1. *The proposed demolition of all buildings on Site A;*
2. *The erection of buildings, including tall buildings, that could deliver up to:*
 - a) *429 Residential Units (Use Class C3) and ancillary residential facilities;*
 - b) *541 sqm (GIA) of Community Floorspace (Use Class F1);*
 - c) *711 sqm (GIA) of Commercial Floorspace (Use Class E);*
 - d) *1,124 sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - e) *2,102 sqm (GIA) of plant & service and 1,511 sqm (GIA) of parking/deliveries hub.*
3. *Alterations to the existing access road;*
4. *Streets, open spaces, landscaping and public realm;*
5. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
6. *Market infrastructure and ancillary facilities; and*
7. *Other works incidental to the proposed development.*

A Phased Outline planning application (Sites B – C and the Church Street Market) (all matters reserved) for the balance of the site as set out in detail in the accompanying Development Specification for:

1. *The proposed erection of buildings, including tall buildings, and works of alteration to existing buildings that could deliver:*
 - a) *Up to 2,789sqm (GIA) of flexible Commercial Floorspace (Use Class E);*
 - b) *Up to 459sqm (GIA) of Community Floorspace (Use Class F1);*
 - c) *Up to 66,698sqm (GIA) of Residential Floorspace (Use Class C3);*
 - d) *Up to 174sqm (GIA) of Public houses, wine bars, or drinking establishments Floorspace (Use Class Sui Generis);*
 - e) *Up to 3,398sqm (GIA) of Plant & Service;*
 - f) *Up to 3,776sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - g) *Up to 6,989sqm (GIA) of Parking & Delivery Hubs.*
2. *Alterations to the existing access road;*
3. *Streets, open spaces, landscaping and public realm;*
4. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
5. *Market infrastructure and ancillary facilities; and*
6. *Other works incidental to the proposed development.”*

Figure 1-1 Site Context



1.2 The Environmental Statement

Requirement for an EIA

- 1.2.1 The requirement for an EIA is set out in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (the 'EIA Regulations')¹. The Proposed Scheme falls under Schedule 2 (10) (b) Infrastructure Projects – Urban Developments category of the EIA Regulations and exceeds the development thresholds set for this category. Therefore, given the scale of the Proposed Scheme, the location of the Site and the potential for environmental effects, the Proposed Scheme is considered to constitute an 'EIA Development' under the EIA Regulations. The requirement for a statutory EIA is discussed further in *Chapter 7: EIA Methodology*.
- 1.2.2 To meet the requirements of the EIA Regulations and to allow for environmental considerations to be taken into account as part of the design process, AECOM has been commissioned to undertake an EIA and to prepare this ES, which is submitted to support the outline planning application for the Proposed Scheme.
- 1.2.3 The aim of this ES is to describe the likely significant environmental effects of the Proposed Scheme during the demolition, and construction phase, and once it is complete and operational. It has been prepared to inform readers of the nature of the Proposed Scheme; the likely significant environmental effects; and the mitigation measures envisaged to avoid, prevent, reduce, or if possible, offset any significant adverse effects on the environment. Any effects remaining after mitigation measures have been implemented are identified as 'residual effects'.
- 1.2.4 The ES also includes an assessment of any likely significant cumulative effects that arise from both, the interactions of individual effects arising from the Proposed Scheme (these are presented in *Chapter 17: Effect Interactions*) and of the potential effects of the Proposed Scheme together with the effects arising from other committed developments in the area (these are included within each technical chapter, *Chapters 8 – 15*).

Structure of the Environmental Statement

- 1.2.5 The ES has been structured in accordance with the Church Street EIA Scoping Report (refer to *ES Volume III: Appendix 7-A*) and *Chapter 7: EIA Methodology*. In summary, the ES consists of three volumes and a non-technical summary:

- **ES Volume I: Main Report** – This document forms the main body of the ES detailing the results of the environmental assessments, likely significant effects arising from the Proposed Scheme and the proposed mitigation measures. The ES also identifies opportunities for social and economic benefits and environmental enhancement, where appropriate. The ES is divided into a number of background and technical chapters supported with figures and tabular information. ES Volume I considers the environmental effects associated with a number of topics (for details on the structure of the individual chapters refer to *Chapter 7: EIA Methodology*). Each topic has been assigned a separate technical chapter in the ES. The non-technical chapters and technical chapters are as follows:
 - Chapter 1: Introduction;
 - Chapter 2: Planning Policy Context;
 - Chapter 3: Existing Site and Surroundings;
 - Chapter 4: Alternatives and Design Evolution;
 - Chapter 5: The Proposed Scheme;
 - Chapter 6: Demolition and Construction;

¹ HMSO, 2017; 'The Town and Country Planning (Environmental impact Assessment)' Regulations 2017

- Chapter 7: EIA Methodology;
- Chapter 8: Air Quality;
- Chapter 9: Built Heritage;
- Chapter 10: Climate Change;
- Chapter 11: Daylight, Sunlight and Overshadowing;
- Chapter 12: Noise and Vibration;
- Chapter 13: Socio-economics;
- Chapter 14: Traffic and Transport; and
- Chapter 15: Wind Microclimate.
- Chapter 16: Effect Interactions;
- Chapter 17: Summary of Mitigation; and
- Chapter 18: Residual Effects and Conclusions.

1.2.6 The remaining volumes of the ES include:

- **ES Volume II** Townscape and Visual Impact Assessment;
- **ES Volume III: Technical Appendices** – a complete set of appendices is provided for reference. These comprise background data, technical reports, tables, figures and surveys which support the assessments in ES Volume I. The appendices provided are as follows:
 - Appendix 1-1: Statement of Competence;
 - Appendix 7-1: EIA Scoping Report and Scoping Opinion;
 - Appendix 8-1 to 8-5: Air Quality Technical Appendices;
 - Appendix 9-1: Heritage Statement
 - Appendix 10-1: Outline Greenhouse Gas Emissions Assessment;
 - Appendix 11-1: Daylight and Sunlight and Overshadowing Impacts
 - Appendix 12-1: Noise and Vibration Technical Appendix; and
 - Appendix 15-1: Wind Microclimate Technical Report.
- **Non-Technical Summary** – This comprises a summary of the ES in non-technical language as required under the EIA Regulations . It is presented as a separate document, prepared to provide a concise, accessible overview of the Proposed Scheme and the findings of the EIA for a wider and non-technical audience.

Location of Information in the Environmental Statement

1.2.7 Schedule 4 of the EIA Regulations identifies information that is “reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile”. This information and its location within this ES are presented in Table 1-1.

Table 1-1 Location of Information within this ES

Schedule 4 Ref.	Information Required under the EIA Regulations	Location within Environmental Statement
1.	Description of the development, including in particular:	Chapter 5: The Proposed Scheme
a)	a description of the location of the development;	Chapter 3: Existing Site and Surroundings
b)	a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;	Chapter 5: The Proposed Scheme Chapter 6: Demolition and Construction
c)	a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; and	Chapter 5: The Proposed Scheme Chapter 6: Demolition and Construction
d)	an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases	Chapter 5: The Proposed Scheme Chapter 6: Demolition and Construction Technical Chapters 8 – 15
2.	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	Chapter 4: Alternatives and Design Evolution
3.	A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	Technical Chapters 8 – 15
4.	A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	Technical Chapters 8 – 15 Chapter 16: Effect Interactions Chapter 18: Residual Effects and Conclusions
5.	A description of the likely significant effects of the development on the environment resulting from, inter alia:	
a)	the construction and existence of the development, including, where relevant, demolition works;	Technical Chapters 8 – 15 Chapter 16: Effect Interactions

Schedule 4 Ref.	Information Required under the EIA Regulations	Location within Environmental Statement
		Chapter 18: Residual Effects and Conclusions
b)	the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources	Technical Chapters 8 – 15 Chapter 16: Effect Interactions Chapter 18: Residual Effects and Conclusions
c)	the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;	Technical Chapters 8 – 15 Chapter 16: Effect Interactions Chapter 18: Residual Effects and Conclusions
d)	the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);	Technical Chapters 8 – 15 Chapter 16: Effect Interactions Chapter 18: Residual Effects and Conclusions
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;	Technical Chapters 8 – 15 Chapter 18: Residual Effects and Conclusions
f)	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;	Chapter 10: Climate Change Chapter 5: Proposed Scheme
g)	the technologies and the substances used.	Technical Chapters 8 – 15
	The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(a) and Directive 2009/147/EC(b).	Technical Chapters 8 – 15
6.	A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved	Chapter 7: EIA Methodology Technical Chapters 8 – 15
7.	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That	Chapter 5: The Proposed Scheme Chapter 6: Demolition and Construction Technical Chapters 8 – 15

Schedule 4 Ref.	Information Required under the EIA Regulations	Location within Environmental Statement
	description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases	Chapter 17: Summary of Mitigation
8.	A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(c) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(d) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	As discussed in the EIA Scoping Report (refer to ES Volume III: Appendix 7-A), no significant effects as a result of the vulnerability of the Proposed Scheme to major accidents and hazards are considered likely and therefore, this assessment has been scoped out of the EIA.
9.	A non-technical summary of the information provided under paragraphs 1 to 8.	Non-Technical Summary (NTS)
10.	A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.	ES Volume I Chapters 1 – 18 ES Volume III: Technical Appendices

Supporting Documents

1.2.8 In addition to the ES, a number of other documents will be submitted to the WCC as part of the planning application. These include:

- Application Drawings (including Parameter Plans);
- Planning Statement;
- CIL Form;
- Archaeological Desk Based Assessment;
- Acoustic Statement
- Biodiversity Survey and Report;
- Circular Economy Statement;
- Construction Management Plan;
- Contamination Assessment Phase 1;
- Daylight/Sunlight Assessment
- Design Code;
- Development Specification;
- 3D Model for Vu City;
- Design and Access Statement;
- Energy Statement and Sustainability Appraisal;
- Estate Management Strategy;

- Estate Regeneration Statement;
- Equalities Impact Assessment;
- Fire Statement;
- Flood Risk Assessment and Sustainable Urban Drainage System Strategy;
- Foul Sewerage and Utilities Statement;
- Health Impact Assessment;
- Landscaping Strategy;
- Lighting Assessment;
- Operational Waste Management Strategy;
- Statement of Community Involvement;
- Signed Draft Appendix A checklist from WCC Code of Construction Practice (for Level 1 and 2 major schemes)
- Signed Draft Appendix A checklist from WCC Code of Construction Practice (for basements)
- Structural Survey/Structural Methodology Statement;
- Sustainability Statement;
- Transport Assessment (Incl. Framework Travel Plan);
- Tree Survey and Arboriculture Impact Assessment;
- Ventilation/Extraction Statement; and
- Viability Statement (including Affordable Housing Statement); and
- Whole Life Cycle Carbon Assessment

EIA Project Team

- 1.2.9 This ES has been compiled by AECOM and presents the results of an EIA carried out by AECOM and a number of specialist designers and consultants appointed by the Applicant. These designers and consultants are identified in Table 1-2, along with their respective disciplines, project roles and contribution to the EIA.
- 1.2.10 AECOM is a registrant to the EIA Quality Mark scheme run by the Institute of Environmental Management and Assessment (IEMA), demonstrating AECOM's EIA credentials and competency for the preparation of an ES. Further evidence on AECOM's and the EIA technical team's competency has been provided within *ES Volume III: Appendix 1-A Statement of Competence*.

Table 1-2 Project Team Input into Environmental Impact Assessment

Organisation	Project Role / EIA Input
Westminster City Council	The Applicant
AECOM	EIA Project Management and Co-ordination Production of the following technical ES chapters: Climate Change, Socio-Economics
Savills	Planning Consultant Built Heritage Consultant Viability Consultant
Arcadis	Project Managers

Organisation	Project Role / EIA Input
Bell Phillips	Architect and Principal Designer
Camlins	Landscape Architects
GIA	Daylight, Sunlight and Overshadowing Consultant
Max Fordham	Noise and Vibration Energy and Sustainability
Neaves Urbanism	Townscape, Visual Impact
RWDI	Wind Microclimate Consultant
Stantec	Traffic and Transport Consultant

Environmental Statement Availability

- 1.2.11 This ES is available for viewing by the public via the WCC public access portal: (<https://www.westminster.gov.uk/planning-building-and-environmental-regulations>).

aecom.com



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Chapter 2: Planning Policy and Context

Westminster City Council

November 2021

2. Planning Policy Context

2.1 Overview

- 2.1.1 This chapter provides details of the overarching planning policy context relevant to the EIA and highlights key policy documents relevant to the Site and the Proposed Scheme. The policies summarised below have been considered throughout the design of the Proposed Scheme.
- 2.1.2 Guidance, policy and legislation which are relevant to the consideration of environmental effects are discussed within the specific technical chapters of this ES (Chapters 8 – 15).
- 2.1.3 The Planning Statement¹, which forms part of the planning application, provides a policy compliance assessment of the Proposed Scheme.

2.2 National Planning Policy and Guidance

National Planning Policy Framework (NPPF)

- 2.2.1 At a national level, the Government published the National Planning Policy Framework (NPPF)² in 2012. The NPPF supersedes previous national planning policy guidance (PPGs) and planning policy statements (PPSs). The NPPF summarises in a single document the Government's planning policies for England and how these are expected to be applied.
- 2.2.2 The NPPF sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities, and is a material consideration for determining planning applications.
- 2.2.3 The NPPF introduces a presumption in favour of sustainable development and paragraph 197 states that Local Planning Authorities should apply this presumption when assessing and determining development proposals.
- 2.2.4 The NPPF was updated in July 2021³, superseding the previous version published in February 2019⁴ (as amended).

National Planning Practice Guidance

- 2.2.5 The Planning Practice Guidance (PPG)⁵ was published on the 6 March 2014 to provide more in-depth guidance to the NPPF. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date. As such, the PPG was amended in July 2017⁶ to reflect the updated EIA Regulations. Relevant guidance from the PPGs and how it relates to the technical assessments undertaken as part of the EIA will be provided in the relevant technical chapters of this ES.

2.3 Regional Planning Policy

The London Plan: The Spatial Development Strategy for London (2021)

- 2.3.1 The London Plan⁷ was formally adopted on 2nd March 2021 and is part of the statutory development plan for London, meaning that the policies in the Plan should inform decisions on planning applications across the capital. Borough's Local Plans must be in 'general conformity' with the London Plan, ensuring

¹ Savills, 2021; Planning Statement – Church Street

² DCLG, (2012); National Planning Policy Framework

³ DCLG, (2021); National Planning Policy Framework

⁴ DCLG, (2019); National Planning Policy Framework

⁵ DCLG (2015); National Planning Practice Guidance

⁶ DCLG (2017); National Planning Practice Guidance

⁷ GLA, (2021); The London Plan Spatial Development Strategy for Greater London

that the planning system for London operates in a 'connected system' and reflects the overall strategy for how London can develop sustainably, as set out within the London Plan.

2.3.2 In addition to the London Plan, the Mayor has produced more detailed strategic guidance on issues which cannot be addressed in sufficient detail in the London Plan. The Supplementary Planning Guidance (SPG) documents do not set out any new policies, but instead provide guidance on policies established by the London Plan.

2.3.3 Relevant supplementary guidance, published by the Mayor, to support policies in the London Plan include (but are not limited to):

- Shaping Neighbourhoods: Play and Informal Recreation SPG (2012)⁸;
- Sustainable Design and Construction SPG (2014)⁹;
- Accessible London: Achieving an Inclusive Environment SPG (2014)¹⁰;
- Housing SPG (2016)¹¹;
- Affordable Housing and Viability SPG (2017)¹²;
- London Office Policy Review (2012)¹³; and
- Greater London Authority (GLA) SPG: The control of dust and emissions during construction and demolition (July 2014)¹⁴.

GLA Emerging Guidance

2.3.4 There are nine GLA documents currently out for consultation, including Good Quality Homes for All Londoners, Public London Charter, Circular Economy Statements, Whole Life-Cycle Carbon Assessments, Be Seen Energy Monitoring Guidance, Air Quality Positive Guidance, Draft Fire Safety Guidance, Transport Land Guidance, and Urban Greening Factor Guidance. All except for Air Quality Positive Guidance, Draft Fire Safety Guidance, Transport Land Guidance and Urban Greening Factor Guidance have been consulted upon from October 2020 to January 2021 and a consultation summary document is anticipated to be published alongside the final guidance in summer 2021. Air Quality Positive Guidance, Draft Fire Safety Guidance, Transport Land Guidance, and Urban Greening Factor Guidance will be consulted upon in summer 2021. All of these draft documents carry little weight as they are currently at an early-stage consultation period and not finalised yet for adoption.

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

2.3.5 A Green Future: Our 25 Year Plan to Improve the Environment¹⁵ is the Mayor of London's Environment Strategy. It was published in May 2018 and sets out the Mayor's vision of London's environment up to 2050. The strategy includes a number of policies and aspirations, with an accompanying implementation plan, setting out actions the Mayor is prioritising for the next five years to help implement the aims of the strategy. This is the first strategy to bring together approaches to every aspect of London's environment, integrating air quality, green infrastructure, climate change mitigation and adaptation, waste, noise and a low carbon circular economy.

⁸ Mayor of London, (2012); Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance

⁹ Mayor of London, (2014); Sustainable Design and Construction Supplementary Planning Guidance

¹⁰ Mayor of London, (2014); Accessible London: Achieving an Inclusive Environment Supplementary Planning Guidance

¹¹ Mayor of London, (2012); Housing SPG, November 2012

¹² GLA, (2017); Homes for Londoners, Draft Affordable Housing and Viability Supplementary Planning Guidance

¹³ Mayor of London; (2012); London Office Policy Review

¹⁴ Mayor of London, (2014); The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance

¹⁵ Mayor of London, 2018: London Environment Strategy

2.4 Local Planning Policy

City Plan 2019 – 2040

- 2.4.1 The City Plan 2019 - 2040¹⁶ was formally adopted in April 2021. It is the Local Plan for Westminster and has replaced all current policies in Westminster's City Plan (November 2016) and saved policies in the Unitary Development Plan (2007). It is therefore part of Westminster's Development Plan together with the London Plan and any made Neighbourhood Plans.
- 2.4.2 The key three themes of the plan are as follows:
- Homes and communities;
 - A healthier and greener city; and
 - Opportunities for growth.
- 2.4.3 The Site has the following planning designations:
- Proposed District Energy Networks: Church Street;
 - District Centres: Church Street / Edgware Road;
 - Archaeological Priority Areas: Watling Street;
 - Housing Renewal Areas: Church Street / Edgware Road;
 - Nature Deficiency Areas: Maida Vale;
 - Air Quality Focus Areas: A5 Edgware Road from Avenue Hall / Marylebone / Seymour Street; and
 - Partly within the Central Activities Zone ('CAZ'): Ladbrokes Betting Shop.
- 2.4.4 The Site is located within the Church Street / Edgware Road and Ebury Bridge Estate Housing Renewal Areas. Redevelopment of the Church Street / Edgware Road Housing Renewal Area over the Plan period will deliver the following priorities:
- At least 2,000 high quality new homes, in accordance with the Church Street Masterplan (2017);
 - At least 350 new jobs and linking further employment opportunities in the Central Activities Zone (CAZ) to the local community;
 - Community facilities, including a new health and well-being hub;
 - New green infrastructure and public realm improvements, including a north-south green route or 'green spine';
 - Improved mobility through infrastructure improvements to support active travel;
 - Innovative and high-quality design to ensure the most efficient use of land, including tall buildings; and
 - Enhancements to Church Street / Edgware Road District Centre, including improved facilities for Church Street Market.

¹⁶ WCC, 2021; City Plan 2019-2040

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Chapter 3: Existing Site and Surroundings

Westminster City Council

November 2021

3. Existing Site and Surroundings

3.1 Introduction

3.1.1 This chapter describes the existing conditions on the Site, as well as the environmental and socio-economic context surrounding the Site. This forms the existing baseline environment which surrounds the Site and is used throughout the ES and within specific technical chapters of this ES (Chapters 8 - 15).

3.2 The Site

3.2.1 A Site Boundary Plan is shown in Figure 3-1. The Site lies centred on grid reference TQ 26935 81970).

3.2.2 The Site is bound by Salisbury Street to the north-east, Boscobel Street to the north-west and Penfold Street and part of Church Street to the north, Edgware Road to the south-west, Broadley Street to the south-east. The Site area is approximately 3.84 ha.

3.2.3 The land opposite the Proposed Scheme along Boscobel Street is mostly comprised of residential housing and commercial space, as well as Penfold Community Centre. The land adjacent to the northern side of the Proposed Scheme along Church Street and Penfold Street is comprised of the Church Street Neighbourhood Centre, Church Street Estate Office and residential apartments. The north-east boundary of the Site is bounded by Salisbury Road, which the land adjacent is mostly made up of residential apartment blocks.

3.2.4 Several retail and commercial uses are present within the Site including a supermarket, Church Street Library, a Pound Superstore, a pub, two chemists, an optician, a DIY store, and two takeaways. The majority of the retailers are located along Church Street .

3.2.5 The Site is spread over three development plots: Sites A, B and C running adjacent to Church Street. Church Street itself runs through the centre of the Site. The predominant land use for the Site is residential, across the three sites, commercial uses, including Ladbrokes, Greggs, the Lord High Admiral public house, Tesco and independent retailers and community uses, including the Church Street Library.

Site A

3.2.6 Site A includes the 4-storey residential building blocks of Blackwater House, Ingrebourne House, Lambourne House; the 3 storey townhouses of Cray House, and residential properties Nos. 356 to 382 Edgware Road. In total, 145 homes are located at Site A.

3.2.7 Retail units, market storage areas and pitches along Church Street and single level basement car park are also within Site A. There is also a Public House located on Church Street known as Lord High Admiral which will be removed as part of the Proposed Scheme and is assessed as part of this ES. In total, 14 businesses are currently operating commercial space within Site A.

3.2.8 Internal access roads provide access to the retail units at ground floor of Blackwater House. Access to the basement parking is via a ramp off Broadley Street and Penfold Street.

Site B

3.2.9 Site B includes the 4 storey residential building blocks of Wandle House, Ravensbourne House, Lea House, Eden House and Medway House and Roding House. In total, there are 176 homes are located at Site B.

3.2.10 Also within Site B are retails units, the Church Street Library, and market pitches along its Church Street frontage and basement parking.

- 3.2.11 An internal access road provides access to the basement service area for retail units at Eden House and the library, and access to the basement parking is via Penfold Street and Salisbury Street.

Site C

- 3.2.12 Site C includes the residential building blocks of Colne House, Darent House, Derry House, Isis House, Windrush House and Mole House, along with residential properties Nos. 288 to 240 Edgware Road. In total, there are 79 homes are located at Site C.
- 3.2.13 Site C also features a number of commercial units.
- 3.2.14 Located within the application boundary, but excluded from the hybrid planning application is Kennet House. A 16 storey residential block.

Church Street market infrastructure

- 3.2.15 Church Street market is a six day a week outdoor market comprised of a stalls along Church Street. The market ranges from its southern border with Edgware Road, through the centre of the Site and up to its northern border at Lisson Grove.
- 3.2.16 The existing market operates Monday-Saturday 8am-6pm with 135 pitches between Edgware Road and Salisbury Street, Monday to Friday, and 220 pitches between Edgware Road and Lisson Grove on a Saturday.

3.3 Environmental and Socio-economic Context

- 3.3.1 A summary of key features of the environmental and socio-economic context specific to the Site and the surrounding area is provided below. Further information on the environmental and socio-economic baseline of the Site and the surrounding area is provided in the technical chapters of this ES (*Chapters 8-16*). Figure 3-2 illustrates the environmental and socio-economic context of the Site.

Site History and Previous Uses

- 3.3.2 Historically, the Site was undeveloped agricultural land until the late-18th century. From the early 1880s, the Application Site has been used for residential, commercial and industrial purposes.¹
- 3.3.3 Since the 1950s, following damage during from bombing in World War II, the Site has been redeveloped, including the construction of the existing buildings in the late 1960s. The Site has predominantly been used for residential purposes following its redevelopment.

Topography

- 3.3.4 The topography of the Site is a gradual fall from north-west of the Site to the south eastern part, from a high point of 35.5 mAOD to at low point of 31.92 m AOD.

Air Quality

- 3.3.5 WCC has declared a borough wide Air Quality Management Area (AQMA) for exceedances of the annual and 1-hour mean nitrogen dioxide (NO₂) objectives and the annual and daily mean particulates (PM₁₀) objectives, and this encompasses the Site.
- 3.3.6 The Proposed Scheme is also partially within the Edgware Road Air Quality Focus Area (AQFA) and is located within the boundary of the Low Emission Zone (LEZ) and the boundary of the proposed expansion of the Ultra-Low Emission Zone (ULEZ), which is due in October 2021.
- 3.3.7 WCC operates ten automatic air quality monitoring sites to date. Data taken from the nearest location (Marylebone Road), showed exceedances of both the annual and short term NO₂ objectives during 2019, however this site is located significantly close to the kerb of the road, unlike the Site, which is set back over 6m of the main source of pollution in the vicinity of it (Edgware Road). There are no diffusion tube sites in close proximity to the Proposed Scheme, however, WCC has proposed a borough wide NO₂ diffusion tube programme which they propose to commence later in 2021.

Archaeology

- 3.3.8 Part of the Proposed Scheme lies within an Archaeological Priority Area (APA) (Tier 2), designated for its vicinity to the Roman Watling Road along the alignment of Edgware Road.
- 3.3.9 The Proposed Scheme does not fall within a conservation area, nor does it include any statutory listed buildings or further designated built heritage assets. There are no known non-designated built heritage assets within the Site.

Daylight, Sunlight and Overshadowing

- 3.3.10 Being located in a central London urban location, the surrounding area is predominantly residential uses made up of terraced houses (approximately 3 storeys) to the north and east as well as blocks of flats (ranging from 4-6 storeys) to the south and west. There are pockets of private and public amenity surrounding the Site.

¹ Church Street Estate Regeneration Site A, B and C, Phase 1 and 2 Ground Condition Assessment (Stantec 2021)

Ecology and Biodiversity

- 3.3.11 There are no statutory designated sites for ecological value, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Areas of Conservation (SAC) or Ramsar Sites, nor are there any located within a 1 km radius of the Proposed Scheme. Two Sites of Importance for Nature Conservation (SINCs), St Mary's Churchyard and Paddington Green (Borough Grade II) and Lisson Garden (Local) are located approximately 0.25 km from the survey area, west and south-east respectively. The London's Canal (Grand Union Canal system) which is SINC of Metropolitan importance, is 0.4 km to the north east.

Ground and Hydrology

- 3.3.12 The ground conditions at the Site is made ground overlying the London Clay Formation, comprising of clay, silt and sand. Based on ground investigations undertaken, River Terrace deposits and Langley Silt were encountered overlying the London Clay Formation.²
- 3.3.13 Groundwater was recorded between 1.4 and 2.6m below ground level on the northern part of the Site and approximately 10.5m below ground level in the southern part of the Site.
- 3.3.14 The Site is not located within an Environment Agency Groundwater Source Protection Zone.

Noise and Vibration

- 3.3.15 The key noise and vibration sources to be considered are:
- Edgware Road (A5) – the dominant traffic noise source near the Site;
 - Boscobel Street, Penfold Street, Church Street, Salisbury Street and Broadley Street – lower and/or intermittent traffic flows in and around the Site adding to the baseline noise environment;
 - Intermittent over-passing aircraft (helicopters, and relatively distant arriving and departing aircraft from London Heathrow and/or London City Airport;
 - More distant general traffic noise and 'city noise' (traffic and construction works);

Social Infrastructure

- 3.3.16 Eighteen schools and two universities are located within 1 km of the Proposed Scheme, including the University College London (UCL) and London Business School. Fifteen of the eighteen schools are located within 500m of the Proposed Scheme, as well as UCL. A number of pre-schools/nurseries are included within the eighteen schools identified, including Philease Fox, Portman, Imps and Little Elves Montessori Nursery Schools. The schools with the closest proximity to the Proposed Scheme are Portman Nursery School, Imps Pre-School and King Solomon Academy, located 20m east, 50m east and 60m south-east respectively.
- 3.3.17 Medicspot Clinic Marlyebone is currently situated within Site B, whereas Church Street Dental is situated along Church Street itself. There are 5 GP practices within 1 km of the Proposed Scheme. The nearest GP practice is Crawford Street Surgery.
- 3.3.18 In the vicinity of the Proposed Scheme are the major rail termini at Marylebone and Paddington Stations where London Underground and National Rail connections are available.
- 3.3.19 The closest open spaces to the Proposed Scheme are Broadley Street Gardens (adjacent the eastern boundary of the Proposed Scheme), Paddington Green, St Mary's Churchyard and Orange Park.

² Church Street Estate Regeneration Site A, B and C, Phase 1 and 2 Ground Condition Assessment (Stantec 2021)

Townscape and Built Heritage

- 3.3.20 The Proposed Scheme is located within the Lisson Grove townscape character area.
- 3.3.21 The Proposed Scheme does not fall within a conservation area. The nearest conservation areas are: Lisson Grove, to the south-east some 50 metres away; Paddington Green, to the south-west some 60 metres away; Fisherton Street Estate, to the north some 125 metres away; Maida Vale, to the west some 235 metres away; and St John's Wood, to the north some 300 metres away.
- 3.3.22 Within a 300m radius of the Site boundary there are twenty-four statutory listed buildings (some structures), with the latter comprising twenty-one statutory listed at Grade II and three at Grade II*. There are no other designated built heritage assets and no known non-designated built heritage assets within the 300m radius.

Transport

- 3.3.23 The Site currently has a Public Transport Accessibility Level (PTAL) of 6a and 6b with excellent accessibility to modes of public transport. Edgware Road Underground Station and Marylebone Underground and National Rail Station are located approximately 150m south and 250m east of the Proposed Scheme, providing access to the London Underground network and Chiltern Line which is part of the national rail network. There are also a number of bus services located within 500m, including (but not limited to) routes 6, 16, 98, 332, 414, 139, 189, 18, 27 and 205, ranging from five to fifteen vehicles per hour.

Water Environment

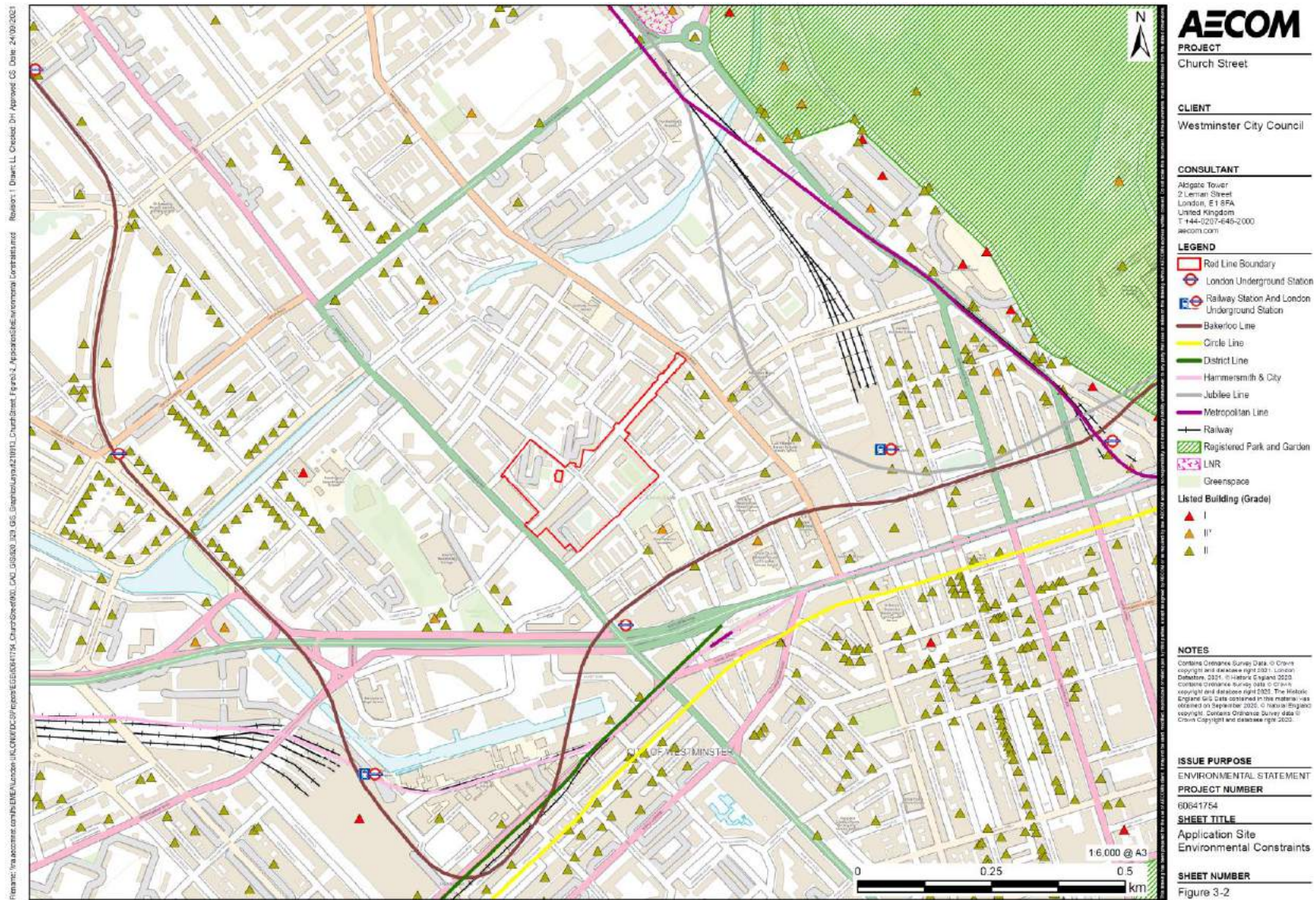
- 3.3.24 There are no natural watercourses within the Proposed Scheme or within close proximity. The closest body of water is the Regent Canal, which is located approximately 300m to the west. The closest open water body is a Boating Lake in Regents Park situated 1.1 km to the east. The Site falls within Flood Zone 1, meaning that there is a less than 1 in 1,000 annual probability of river or sea flooding that could affect the Proposed Scheme.
- 3.3.25 The majority of the Site is at very low susceptibility to surface water flooding, with some areas of higher susceptibility towards the middle of the Site³.

Wind Microclimate

- 3.3.26 The wind climate in London has been analysed based on wind data from London Heathrow and London City Airports, and prevailing winds originate from the west and southwest – where they occur most frequently throughout the year, and have a tendency to be of the highest speeds. Secondary winds originate from the northeast, and occur mostly during spring. Winds from other directions do occur, however are greatly reduced in their frequency and magnitudes on an annual basis.

³ Church Street Estate Regeneration Site A, B and C, Flood Risk Assessment & Surface Water Drainage Strategy (Stantec 2021)

Figure 3-2 Site Environmental Constraints



3.4 Emerging Context

- 3.4.1 The Site is located within the Church Street / Edgware Road and Ebury Bridge Estate Housing Renewal Areas⁴. This has been developed from the Church Street Masterplan (2017) Redevelopment of the Church Street / Edgware Road Housing Renewal Area over the Plan period will deliver the following priorities:
- At least 2,000 high quality new homes, in accordance with the Church Street Masterplan;
 - At least 350 new jobs and linking further employment opportunities in the CAZ to the local community;
 - Community facilities, including a new health and well-being hub;
 - New green infrastructure and public realm improvements, including a north-south green route or 'green spine';
 - Improved mobility through infrastructure improvements to support active travel;
 - Innovative and high-quality design to ensure the most efficient use of land, including tall buildings; and
 - Enhancements to Church Street / Edgware Road District Centre, including improved facilities for Church Street Market.
- 3.4.2 The redevelopment of the Church Street / Edgware Road Housing Renewal Area is a key priority for WCC. The Church Street Masterplan creates a framework for development in the area and is a material consideration for any planning applications.
- 3.4.3 It is envisaged that at least 2,000 new homes will be delivered in the Church Street / Edgware Road Housing Renewal Area over the next 15-20 years. Sites in the area will make efficient use of land through densification, incorporating innovative and high-quality design, including the development of higher buildings where these will deliver high quality homes that meet local needs.
- 3.4.4 Alongside the delivery of new homes, the regeneration of Church Street / Edgware Road will create at least 350 new jobs in the local area, as well as supporting around 3,500 jobs during the construction phase. The area is within easy reach of transport hubs at Edgware Road Station and Marylebone Station, and the potential these links have to attract businesses and create a new destination for workspace has not yet been fully realised.
- 3.4.5 Church Street / Edgware Road lies within an area of open space deficiency. The redesign of public realm and the introduction of a 'green spine' north-south route across the area represents an opportunity to improve both mobility and access to open space. The Church Street Masterplan envisages an increase of up to 40% in publicly accessible open space in the area. Public realm and environmental improvements to increase walking and cycling and to enhance accessibility, connectivity, safety and comfort, will improve mobility and active travel across the area, including the introduction of 20mph traffic calming zones.
- 3.4.6 The Site's south-west edge of the Site is bounded by Edgware Road, which is a major thoroughfare. Edgware Road is comprised of a mixture of residential housing above ground floor retail units towards the western end. However, adjacent the southern end of Edgware Road opposite the Site is located the new West End Gate development (planning application reference 15/11677/FULL), due to be completed in 2021.
- 3.4.7 Additional detail on this scheme and its location can be found within *Chapter 7: EIA Methodology*.

⁴ WCC (2021) The City Plan 2019 - 2040



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 4: Alternatives and Design Evolution

Westminster City Council

November 2021

4. Alternatives and Design Evolution

4.1 Introduction

- 4.1.1 Schedule 4 of the EIA Regulations¹ requires that an Environmental Statement (ES) includes: *'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'*
- 4.1.2 This chapter of the ES sets out how the design of the Proposed Scheme has evolved up to the submission of the hybrid planning application in September 2021.
- 4.1.3 A number of designs and options have been studied to explore how best to achieve the requirements of the Site's allocation in the Church Street / Edgware Road Housing Renewal Areas² (as described in *Chapter 2: Planning Policy and Context*) within the constraints of the existing environmental and socio-economic context (as described in *Chapter 3: Existing Site and Surroundings*). This ES chapter identifies the opportunities and constraints influencing the height, layout, massing and other aspects of the general principles of the Proposed Scheme and provides a summary of the design evolution leading to the current proposals presented in *Chapter 5: The Proposed Scheme*.
- 4.1.4 Throughout the design process there has been regular consultation with Westminster City Council (WCC), Greater London Authority (GLA) and other statutory stakeholders. In addition, a community engagement programme has been undertaken to inform the design process, as discussed in the Statement of Community Engagement³ (SCE) submitted in support of the planning application for the Proposed Scheme.
- 4.1.5 This chapter has been prepared by AECOM Limited (AECOM) in conjunction with Bell Phillips (the 'Architects'), Camlins (the 'Landscape Architects') and the wider design team. It outlines the vision for the Proposed Scheme and alternatives studied. Further details can be found within the Design and Access Statement⁴ (DAS) and the SCE produced and submitted in support of the planning application for the Proposed Scheme.

4.2 Vision for the Proposed Scheme

- 4.2.1 The Church Street Masterplan was launched in December 2017. The masterplan encompasses a vision for Church Street that will see a significant increase in housing as well as measures to promote healthy lifestyles and opportunities for new jobs.
- 4.2.2 The vision for the Proposed Scheme is underpinned by core values of high quality design and sustainability, and is delivered in the following ways:
- Health and Wellbeing
 - Consideration of the public realm is at the heart of the design. Streets and parks have been shaped to enable access to high quality public amenity and open space for all;
 - A place that is green and healthy. All homes will have views over and access to green courtyard spaces. The overall amount of public open space will increase when compared to the existing site and surroundings;
 - Low energy buildings will be delivered that reduce energy bills and have a lower environmental impact;

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

² WCC (2021) The City Plan 2019 - 2040

³ Savills, 2021; Church Street – Statement of Community Engagement

⁴ Bell Phillips, 2021; Church Street– Design and Access Statement

- Homes will be designed to be dual aspect, maximising natural ventilation and levels of daylight to enhance wellbeing;
- Places to learn, meet and play with shared space for leisure will be created, such as the new 'garden street'; and.
- Healthy lifestyles will be promoted through provision of cycle storage and a focus on providing a walkable streetscape with shops and services provided locally.
- Homes
 - A significant increase in the number of new homes provided;
 - ;
 - It will be a place where people want to live and where they feel safe through good natural surveillance, optimizing dual aspect homes, maximizing daylight, minimizing overshadowing, adaptability for changing needs and mixed tenures;
 - Generous and inviting communal entrances and routes into homes will encourage residents to linger and interact with their neighbours; and
 - All homes will have generous private external amenity space.
- Market and Enterprise
 - A place to work, shop and enjoy will be delivered through a mix of much improved commercial, retail and enterprise space that supports local needs;
 - The mixed-use character of the existing neighbourhood will be enhanced through an improved and increased capacity street market on Church Street. The market infrastructure will be improved with delivery parking, storage and welfare facilities within Sites A and B; and
 - A new community centre, library and garden are incorporated into the proposals that adds to the rich mix of amenity and leisure on offer in the neighbourhood.
- Making Connections
 - New connections have been established through the Application Site and the quality of existing ones improved. The positioning and character of these has been informed by the historic street pattern to restore a more consistent and successful urban character;
 - Streets have been designed with a pedestrian focus to encourage walking and cycling use, leading to health benefits to the local population; and
 - Active frontages to streets will increase activity, provide natural surveillance and add vitality to the street scene.

4.3 Public Consultation

4.3.1 During the design process, a comprehensive consultation and community engagement strategy has been implemented since 2018, involving key stakeholders and the community at each stage of the design process. The consulted stakeholders included:

- WCC Planning Officers;
- WCC Design Officers;
- WCC Arboriculture Officers;
- WCC Highways Officers;
- WCC Refuse Officers;
- WCC Markets Team;
- WCC Library Team;

- Ward Councillors and Cabinet Members;
 - Greater London Authority (GLA)
 - Transport for London (TFL);
 - Market traders;
 - Local residents;
 - Local businesses;
 - Church Street Neighbourhood Forum;
 - Friends of Church Street Library; and
 - Secured by Design Officer of the Metropolitan Police
- 4.3.2 The Statement of Community Involvement (SCI) sets out the consultation process undertaken by the Applicant, with key stakeholders and the local community, and is submitted in support of the planning application.
- 4.3.3 Since the Church Street Masterplan was launched in December 2017, a number of consultation have been carried out, the key themes of which are listed out below:
- Priorities (2018);
 - Options (2019) ;
 - Design update for Church Street Site A (2020);
 - Delivery options/best value for Church Street Site A (2020); and
 - Two-stage pre-planning process (2021).
- 4.3.4 In total, since the inception of the Church Street Masterplan launch, over 30 weeks of formal consultation exercises with residents, ward councillors and amenity groups in the local area took place, including drop-in events, webinars and stakeholder meetings.
- 4.3.5 Events were well attended by the general public, with a total of
- 2,707 pieces of feedback gathered via the Commonplace website;
 - 592 completed surveys – pop up exhibition, Commonplace website, freepost and telephone;
 - 80% of respondents provided ‘positive’ or ‘somewhat positive’ feedback across all design principles; and
 - 65 people attended webinars.
- 4.3.6 The consultation provided up-to-date information online and in print to residents, businesses and market stallholders, and made sure that engagement remained high during the Covid-19 lockdown restrictions by using online activity, such as Zoom meetings and webinars, to make sure that people were able take part remotely.
- 4.3.7 To enable the project team to respond to the main issues raised during the pre-application consultation, questions received by the project team have been answered where necessary. We received feedback from a small number of residents and stakeholders who raised issues with certain design aspects of the proposals. During the consultation process we continued to discuss the proposals with these groups and have set out design responses. A list of the most common concerns and the project team’s response to these issues have been listed in the SCI. A summary of how the design team have responded to ultimately lead to the design of the Proposed Development are included below:
- Established guarantees to secure tenants and leaseholders impacted by the regeneration should they require to move home;
 - Created a series of pledges to put residents and the community at the heart of the scheme (see appendix 1 of the SCI);

- Worked with residents and stakeholders to develop key priorities for the regeneration;
- Listened to feedback and incorporated it into our designs, including the location of Church Street Library, the design and layout of new homes, more public green spaces, new community facilities, and plans to improve Church Street Market; and
- Our dedicated housing and relocations team offer reassurance and guidance about what the regeneration means for each resident’s property.

4.4 Alternatives Analysis

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

4.4.2 In accordance with this requirement, and following best practice and the Mayors Good Practice Guide to Estate Regeneration (2018), the sections below present those alternatives to the Proposed Scheme which have been considered by the Applicant, including:

- The ‘No Development’/‘Do Nothing’ Alternative – the consequences of no redevelopment taking place on the Site; or
- ‘Alternative Sites’ – the rationale behind choosing the Application Site; or
- ‘Alternative Designs and Design Evolution’ – the ES will summarise the evolution of the design of the Proposed Scheme, the modifications which have taken place to date and the environmental considerations which have led to those modifications. A summary of the main alternatives considered, will be presented together with a summary justification for the final design.

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

The ‘No Development’ Alternative

4.4.4 The ‘No Development’ alternative refers to the option of leaving the Application Site in its current state. A comparison of environmental effects have been carried out and presented in

4.4.5 Table 4-1.

Table 4-1 Comparison of environmental effects between No Development and Development Scenario.

Scenario	Beneficial impacts compared to the Proposed Development	Negative impacts compared to the final design
No Development	<p>Avoidance of construction noise, air quality and traffic impacts;</p> <p>Avoidance of disturbance of on-site vegetation and potential ecological habitat;</p> <p>Retention of existing trees and hedgerow habitat within the Site boundary;</p>	<p>A lost opportunity to provide new homes in accordance with the Spatial Development Priority for Church Street within the City Plan 2019-2040⁵;</p> <p>A lost opportunity to provide jobs to meet the Spatial Development Priority target for Church Street of 350 new jobs;</p> <p>A lost opportunity to provide new community facilities to meet the Spatial Development Priority target for Church Street;</p> <p>A lost opportunity to provide new green infrastructure and public realm improvements to meet the Spatial Development Priority target for Church Street;</p>

⁵ WCC (2021) The City Plan 2019 - 2040

4.4.6 In addition to the no development alternative, Westminster City Council were presented four options for the existing site in May 2019. The report focussed on the views of the community on each of the options through an extensive public consultation exercise, the assessment carried out by WCC and its consultants on each of the options, and the views of the market through a soft market testing exercise. These were:

- Option 1 – Maintenance;
- Option 2 – Refurbishment
- Option 3 – Part refurbishment, part redevelopment; and
- Option 4 – Full redevelopment

4.4.7 The outcome of the report was Option 3 was approved as the preferred way forward to progress Sites A, B and C and Church Street market.

Alternative Sites

4.4.8 The Proposed Scheme is an estate regeneration project for land under the ownership of WCC. No alternative sites have been considered.

4.5 Alternative Designs and Design Evolution

4.5.1 This section outlines the design evolution process, taking into account the Site constraints and opportunities as previously outlined within *Chapter 3: Existing Site and Surroundings*. The design of the Proposed Development has taken shape and evolved through a continuous consultation process with the design team and a number of key statutory and non-statutory consultees and interested parties, as listed in *Chapter 7: EIA Methodology*.

4.5.2 Alternative designs were considered as part of the evolution of the Proposed Scheme. For example, alternative massing and layout options were tested to explore how best to achieve the requirements of the Application Site's allocation in Church Street / Edgware Road and Ebury Bridge Estate Housing Renewal Areas, within the constraints of the existing context. This section outlines the development from the initial concept design to the Proposed Scheme.

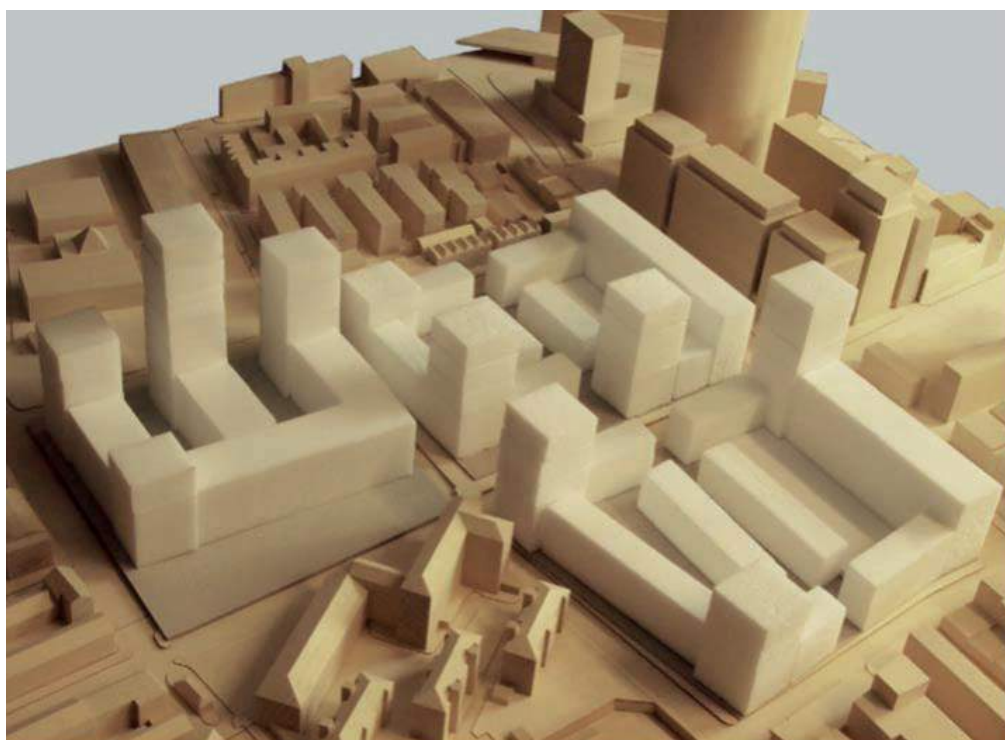
4.5.3 The consultation process has resulted in amendments to the design of the Proposed Scheme and informed the planning application submission. Within this process, there were five main design iterations. These iterations represent how the Proposed Scheme has evolved through a process of analysis, design testing and consultation. However, a number of key features informed the design and are maintained throughout the interactions. These key features are as follows:

- To reinstate the historic urban structure with conventional perimeter blocks arranged around communal gardens accommodating residential use above a mix of commercial, community and residential use on the ground floor that present active frontages to the surrounding streets;
- To create improvements to the street market and public realm on Church Street which will be improved along its entire length;
- To provide affordable homes for the residents of Westminster;
- To create new public spaces including a new pedestrian connection on Site A, which will include planting and seating areas and a new public open space on Site B around Kennet House;
- To improve Church Street Market, with new infrastructure including market storage, welfare facilities and parking on Sites A and B; and
- To create green residential courtyards that will provide communal amenity, increase the amount of urban greening, enhance sustainability and give homes a direct aspect onto green spaces contributing to the health and wellbeing of residents at the centre of each block.

Design Iteration 1: Pre-app Workshop 1, October 2018

- 4.5.4 At the first pre-app workshop the development team presented a detailed analysis of the local context and set out alternative design approaches. Of these, it was agreed that an approach based on courtyards interspersed with modest points of height was the preferred option to develop further.
- 4.5.5 At this stage, the development team were exploring a more comprehensive development that included the Edgware Road frontage on Sites A and C. Kennet House was also included within the Application Site at this stage. As a result, it was proposed to realign Venables Street so that it would align with Hatton Street to the north. As per the Church Street Masterplan a new street is proposed through Site A aligning with the new alignment of Venable Street and Hatton Street.
- 4.5.6 Significant points of height were proposed adjacent to Broadley Gardens and the Church Street frontage of Site B was set back to provide an enlarged 'market square'.

Figure 4-1: Design Iteration 1



Design Iteration 2: Pre-app Workshop 2, November 2018

- 4.5.7 In response to feedback from WCC Planning Officers, the height of the aspects of the Proposed Scheme adjacent to Broadley Gardens were significantly reduced. In doing so, adverse impacts were likely reduced on local heritage assets, townscape views, daylight/sunlight/overshadowing provision and potential adverse wind microclimate impacts.
- 4.5.8 The new street through Plot A was removed in preference for a new 'enterprise square' comprising a public courtyard with enterprise space fronting on to it. A taller building was then introduced terminating the southern end of Venables Street. The Church Street frontage of Site B was extended northwards corresponding to the alignment of the existing building. A covered market was also introduced to the ground floor of Site B.

Figure 4-2: Design Iteration 2 snapshot of illustrative image



Design Iteration 3: Pre-app Workshop 3, February 2019

- 4.5.9 In February 2019 the development team was progressing two alternative options; the first, a comprehensive development including the Edgware Road frontage to Sites A and B and Kennet House, the second, a combination of newbuild development and retention with the Edgware Road frontages and Kennet House retained. Following consultation with local residents and stakeholders, and analysis of existing buildings it was the latter option that was taken forward. As a result of this Venables Street was not realigned, but retained its existing alignment maintaining its relationship with the rear of the Edgware Road properties on Site C.
- 4.5.10 A taller building was proposed on the Edgware Road frontage of Site A, providing a visual marker signalling the entrance to Church Street.
- 4.5.11 Further consideration of the market layout concluded that its distinctive character is best served by retaining its format as a street market. As a result, the covered market on the ground floor of Site B was removed in lieu of retail space.

Figure 4-3 Design Iteration 3 snapshot of illustrative image



Design Iteration 4: Pre-app Workshop 7, June 2019

- 4.5.12 By June 2019, the most significant change to the design was to Site B which was changed in form with the central block omitted. This formed a conventional perimeter block focussed on a communal courtyard.
- 4.5.13 The massing and form of the blocks evolved with the perimeter blocks taking the forms of taller 'villas' connected by set-back link blocks. This helped to break down the scale of the iteration, giving it a richer, more granular quality that seeks to appropriately transition into the finer grain character of Marylebone.

Figure 4-4 Design Iteration 4 snapshot of illustrative image



Design Iteration 5: Pre-app Workshop 8, February 2020

- 4.5.14 By early 2020 with the principles of the masterplan established, focus turned to the detailed design of Plot A. In response to feedback from the local community the library was introduced back into the design, taking a prominent location on Site A immediately adjacent to Church Street.
- 4.5.15 The enterprise space was removed from Site A in preference for more homes and the library. The design was rationalised, removing the enterprise yard and forming two perimeter blocks with a landscaped pedestrianised street between thereby increasing the amount of public open green space in the local area. The layout of the upper floors were redesigned to ensure that every dwelling is dual aspect.

Figure 4-5 Design Iteration 5 – snapshot of illustrative image



Design Iteration 6: Pre-app Workshop 10, September 2020

- 4.5.16 In September 2020, elevations were being developed. The elevations saw that Site A was rationalised into equal bay widths with a 'pattern book' approach with different heights, ground floor and roof details for each bay, resulting in a varied appearance intended to reflect the richness of the surrounding historic townscape.
- 4.5.17 Patterned brick was introduced to add visual interest in prominent locations with arches and barrel vaults inspired by local mansion blocks.

Figure 4-6 Design Iteration 6 - snapshot of illustrative image

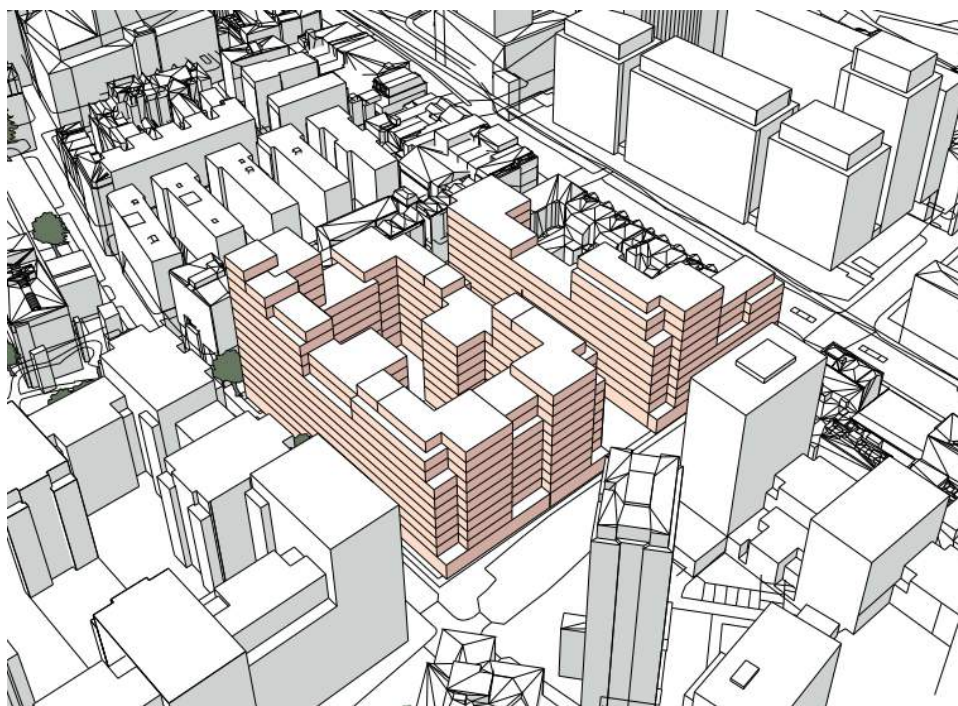


Design Iteration 7: Pre-app Workshop 11, October 2020

4.5.18 By October 2020 the principles of the design set out in this chapter had been broadly established. Further work on the elevations saw a more structured and rationalised design with the following changes:

- Less variation in height;
- Simplification of brick colours to just two bricks; red and cream; arranged in bays;
- Bays introduced along Penfold Street and the new street incorporating alternative projecting and inset balconies to reduce the visual impact of the balconies and to add variation and interest;
- Set back floors added increasing the amount of homes provided without significantly impacting on the streetscape; and
- Design of arches on the ground floor simplified.

Figure 4-7 Design Iteration 7 snapshot of illustrative image



4.6 Public Realm, Landscape and Play Provision

Public Realm and Landscape Strategy

4.6.1 The Public Realm design for the Site has been developed through each evolution stage alongside the Architects, environmental teams and wider design team. A set of design principles that the public realm and landscape strategy must adhere are highlighted below:

- To provide a functional / fit for purpose, versatile public realm by:
 - Providing updated materiality that is easily cleanable and aesthetically pleasing;
 - An asymmetrically one-way carriageway that puts more emphasis on pedestrian movement; and
 - Introduction of green spaces and trees where possible to enhance the streetscape
- To provide a safe and healthy place to live by:
 - Providing overlooked and secure communal courtyards;
 - Play and social amenity encased in heavily soft landscaped spaces;
 - Encouraging active travel by pushing the scheme to a more pedestrian dominated feel; and
 - Providing external lighting to all landscaped spaces
- To provide a sense of community and neighbourhood by
 - Inclusive and accessible, outdoor facilities and amenities;
 - Embracing community diversity through cultural design references and colour palettes; and
 - Introduction of external community facilities such as, the library garden and vegetable garden planters.
- To provide a biodiverse and climate resilient landscape by
 - Introduction of planting that responds positively to pollution reduction;
 - Provision of drought tolerant planting to reduce the stress on mains water; and
 - Provision of shade tolerant planting that responds to the daylight/sunlight assessments.
- To provide a landscape encouraging greater active travel by
 - Introduction of 'New Street Gardens' as a pedestrian dominated public realm space;
 - Increasing the pedestrianisation of Church Street both in and out of market hours; and
 - Working with adjacent projects to coordinate the overall pedestrian and cycle strategy.

Construction Alternatives

4.6.2 Currently, this ES has identified control measures for construction practices within *Chapter 6: Demolition and Construction*. The principal contractor will be identified within the Construction Environmental Management Plan (CEMP). Once identified, the principal contractor will define the construction methodology which will incorporate mitigation measures set out within this ES to ensure that no additional or significant adverse effects occur.

4.7 Conclusions

The Applicant has considered alternative designs throughout the design process. The design team's approach has been iterative, whereby design options and the results of technical analysis have been interpreted and proposed design solutions and refinements have been made. The proposed outline design has been developed through consultation with the public, WCC and other stakeholders.



Church Street Sites A, B and C

ES Volume I: Main Report

Chapter 5: The Proposed Scheme

Westminster City Council

November 2021

5. The Proposed Scheme

Introduction

- 5.1.1 This chapter of the Environmental Statement (ES) provides a summary of the ‘Church Street Estate Regeneration – Sites A, B and C’ development (hereafter referred to as the ‘Proposed Scheme’), for which planning permission is sought via submission of a hybrid planning application.
- 5.1.2 Detailed planning permission with no matters reserved for future determination is sought for Site A. This is referred to as the ‘detailed element’. Outline permission with all matters reserved is sought for the Sites B and C and public realm works to Church Street. These elements are referred to as the ‘outline element’.
- 5.1.3 The development parameters which are sought for approval at this stage are set out in the Parameter Plans¹² for the outline elements, and detailed application drawings for the detailed element. The planning application is also accompanied by design guidelines³, in the form of a Design Code, which are seeking approval for the outline elements and will be applied to future applications for the approval of reserved matters (which are when the full details of the Proposed Scheme will be established). The accompanying Development Specification sets out the principle components of the Illustrative Masterplan, including the description of development; the amount and uses of development; residential home numbers; open space provision; car and cycle parking; and indicative development phasing. It also provides the primary reference for understanding the nature of the planning applications and the suite of planning documents.
- 5.1.4 Where relevant, illustrative examples (i.e. artistic impressions) which present selected aspects of the Proposed Scheme are presented in this ES chapter in order to assist in visualising the scheme. The examples presented have been taken from various planning documents supporting this application (e.g. Design and Access Statement (DAS)⁴.
- 5.1.5 This chapter has been prepared by AECOM, with input from the Applicant, Bell Phillips, Camlins and wider design team.

Overview of the Proposed Scheme

- 5.1.6 Planning approval is sought for development, comprising detailed planning permission with no matters reserved for future determination for Site A, and outline permission with matters reserved for the Sites B and C and public realm works to Church Street. The proposals comprise:

“The Hybrid Planning Application seeks part-detail/part-outline planning permission for the following (“the Proposed Development”): sought for:

Detailed planning application for Site A, for the demolition of all buildings on Site A and erection of mixed-use buildings providing ground floor flexible commercial use floorspace (use class E), a library (use class F1), market storage (use class B8), residential units (use class C3), landscaped amenity space, car parking, motorcycle parking, cycle parking, market infrastructure and associated works.

A Phased Outline planning application (Sites B, C and the Church Street Market) (all matters reserved) for the balance of the site for:

1. *The proposed demolition of buildings and structures;*
2. *The erection of buildings and works of alteration to existing buildings for the following uses:*
 - a) *Flexible Commercial Floorspace (Use Class E);*

¹ Bell Phillips, 2021; Church Street Parameter Plans: Drawings 10527, 0100 - 0105

² Camlins, 2021; Church Street Parameter Plans: Drawings 10527, 0110 - 0112

³ Bell Phillips, 2021; Church Street Design Codes

⁴ Bell Phillips, 2021; Church Street Design and Access Statement

- b) *Community Floorspace (Use Class F1 and F2);*
 - c) *Public houses, wine bars, or drinking establishments Floorspace (Use Class Sui Generis);*
 - d) *Market Storage (use class B8), and*
 - e) *Residential Floorspace (Use Class C3) and ancillary residential facilities.*
3. *Associated infrastructure;*
 4. *Streets, open spaces, landscaping and public realm;*
 5. *Car, motorcycle and bicycle parking spaces and delivery/servicing spaces;*
 6. *New pedestrian and vehicular access;*
 7. *Market infrastructure and ancillary facilities;*
 8. *Utilities including electricity substations; and*
 9. *Other works incidental to the proposed development.*

Further explanation (not forming part of the formal description of development set out above):

Proposed Development for Site A comprises:

1. *The proposed demolition of all buildings on Site A;*
2. *The erection of buildings, including tall buildings, that could deliver up to:*
 - a) *429 Residential Units (Use Class C3) and ancillary residential facilities;*
 - b) *541 sqm (GIA) of Community Floorspace (Use Class F1);*
 - c) *711 sqm (GIA) of Commercial Floorspace (Use Class E);*
 - d) *1,124 sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - e) *2,102 sqm (GIA) of plant & service and 1,511 sqm (GIA) of parking/deliveries hub.*
3. *Alterations to the existing access road;*
4. *Streets, open spaces, landscaping and public realm;*
5. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
6. *Market infrastructure and ancillary facilities; and*
7. *Other works incidental to the proposed development.*

A Phased Outline planning application (Sites B – C and the Church Street Market) (all matters reserved) for the balance of the site as set out in detail in the accompanying Development Specification for:

1. *The proposed erection of buildings, including tall buildings, and works of alteration to existing buildings that could deliver:*
 - a) *Up to 2,789sqm (GIA) of flexible Commercial Floorspace (Use Class E);*
 - b) *Up to 459sqm (GIA) of Community Floorspace (Use Class F1);*
 - c) *Up to 66,698sqm (GIA) of Residential Floorspace (Use Class C3);*
 - d) *Up to 174sqm (GIA) of Public houses, wine bars, or drinking establishments Floorspace (Use Class Sui Generis);*
 - e) *Up to 3,398sqm (GIA) of Plant & Service;*
 - f) *Up to 3,776sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - g) *Up to 6,989sqm (GIA) of Parking & Delivery Hubs.*
 2. *Alterations to the existing access road;*
 3. *Streets, open spaces, landscaping and public realm;*
 4. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
 5. *Market infrastructure and ancillary facilities; and*
- Other works incidental to the proposed development.”*

The Form of the Planning Application

Detailed Site Plans

5.1.7 The planning application drawings that form the basis of the Proposed Scheme are as follows:

- Existing Site Plan
- Demolition Plan
- Illustrative Landscape Masterplan
- Proposed General Arrangement Plans

- Proposed General Arrangement Sections
- Proposed Elevations
- Proposed Block Plans (Site A)

Parameter Plans

5.1.8 A series of Parameter Plans for Sites B and C (outline application) components are submitted for approval. The Parameter Plans are presented throughout this chapter and have been appended at the end of this ES chapter to support the description of the Proposed Scheme.

5.1.9 The following Parameter Plans are submitted.

- Parameter Plan 10527 0100: Existing Demolition
- Parameter Plan 10527 0101: Site Levels
- Parameter Plan 10527 0102: Maximum Building Footprint:
- Parameter Plan 10527 0103: Ground Floor Uses:
- Parameter Plan 10527 0104: Typical Floor Uses:
- Parameter Plan 10965 0105: Maximum Building Heights
- Parameter Plan 10527 P2110: Application Boundaries:
- Parameter Plan 10527 P2111: Circulation Routes:
- Parameter Plan 10527 P2112: Open Space:

The Design Code

5.1.10 The Design Code³ establishes the design principles to be applied to future Reserved Matters Applications (RMAs). These have been developed as a result of the design evolution and consultation process and have been informed by the findings of the environmental assessment work.

5.1.11 The main topics covered by the Design Code include:

- Ground and upper floor uses;
- Site wide layout;
- Access and movement
- Building height, massing and layout;
- Character and appearance; and
- Landscape and public realm.

5.1.12 The Design Code establishes the characteristics of the masterplan and provides guidance to identify how the future design proposals may look and feel. The guidance informs future RMAs on site-wide elements, including development zone structure, site movement and open spaces, to building elements, including height, entrances, windows, balconies, landscaping, and architectural language and materiality.

5.1.13 The Design Code document should be read in conjunction with the Parameter Plans which set out the overall parameters and quantum of the Sites B and C. The 'Illustrative Masterplan' shown in the DAS demonstrates one of the ways in which buildings can be designed in accordance with the Design Code.

The Development Specification

5.1.14 The Development Specification document sets out the long form description of development for the Proposed Scheme for which consent for the Outline Element is sought. The key aims of the Development Specification are fourfold:

- Setting out the details of buildings to be demolished;
- Setting out the details of exactly what permission is sought for;
- Setting out the principles and parameters which constrain the flexibility allowed by the Outline Element of the planning application; and
- Informing the EIA to ensure it is assessing the correct parameters and principles for which permission is sought.

Floorspace Uses

Overall

- 5.1.15 Table 5-2 sets out the area schedule for the amount of development that is proposed and the land uses proposed for the Proposed Scheme.

Table 5-1 Land Use Classes

Use Class	Area (sqm) GIA
Residential (C3)	103,000
Storage and Distribution Space (B8)	4,900
Commercial, Business and Service Area (E)	3,500
Local Community and Learning Area (F1)	1,000
Parking	8,500
Plant and Service Spaces	5,500
Sui generis	174

Site A

- 5.1.16 The detailed element comprises Site A, which is made up of a courtyard block and an L-shaped block that forms a new urban block that includes the existing buildings along Edgware Road and Broadley Street.

- 5.1.17 The Proposed Scheme for Site A comprises:

8. *The proposed demolition of all buildings on Site A;*
9. *The erection of buildings, including tall buildings, that could deliver up to:*
 - f) *429 Residential Units (Use Class C3) and ancillary residential facilities;*
 - g) *541 sqm (GIA) of Community Floorspace (Use Class F1);*
 - h) *711 sqm (GIA) of Commercial Floorspace (Use Class E);*
 - i) *1,124 sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - j) *2,102 sqm (GIA) of plant & service and 1,511 sqm (GIA) of parking/deliveries hub.*
10. *Alterations to the existing access road;*
11. *Streets, open spaces, landscaping and public realm;*
12. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
13. *Market infrastructure and ancillary facilities; and*
14. *Other works incidental to the proposed development*

- 5.1.18 Table 5-2 sets out the area schedule for the amount of development that is proposed and the land uses proposed for the detailed element of the planning application.

Table 5-2 Summary Area Schedule for Site A

Use Class	Unit Numbers	Area (sqm) GIA
Residential (C3)	429	36,302
Storage and Distribution Space (B8)	-	1,124
Commercial, Business and Service Area (E)	-	711
Local Community and Learning Area (F1)	-	541
Parking	-	1,511
Plant and Service Spaces	-	2,102
Sui generis	-	0

Commercial

5.1.19 Of the 711 sqm of Use Class E, it is considered unlikely that any one sub class will comprise 100% of this space. *Chapters 8 – 16* will outline within their methodology sections as to what mixture of uses their assessment has used to form a ‘worst-case scenario’.

Residential

5.1.20 Site A will deliver 429 residential units. This will include:

Table 5-3 Breakdown of Residential Units for Site A

Type	1 Bed	2 Bed	3 Bed	4 Bed	5 Bed	Total
Market Sale	113	83	19	0	0	215
Social Reprovision	60	16	9	11	2	98
New Social	12	12	21	1	0	46
New Intermediate	24	27	19	0	0	70
Total	209	138	68	12	2	429

Sites B and C

5.1.21 The Proposed Scheme for Sites B and C comprises:

1. *The proposed erection of buildings, including tall buildings, and works of alteration to existing buildings that could deliver:*
 - h) *Up to 2,789sqm (GIA) of flexible Commercial Floorspace (Use Class E);*
 - i) *Up to 459sqm (GIA) of Community Floorspace (Use Class F1);*
 - j) *Up to 66,698sqm (GIA) of Residential Floorspace (Use Class C3);*

- k) *Up to 174sqm (GIA) of Public houses, wine bars, or drinking establishments Floorspace (Use Class Sui Generis);*
 - l) *Up to 3,398sqm (GIA) of Plant & Service;*
 - m) *Up to 3,776sqm (GIA) of Market Storage Floorspace (Use Class B8); and*
 - n) *Up to 6,989sqm (GIA) of Parking & Delivery Hubs.*
6. *Alterations to the existing access road;*
 7. *Streets, open spaces, landscaping and public realm;*
 8. *Car, motorcycle and bicycle parking spaces and servicing spaces;*
 9. *Market infrastructure and ancillary facilities; and*
 10. *Other works incidental to the proposed development.”*
- 5.1.22 Site B comprises a single courtyard block with a mix of uses on the ground floor and residential on the floors above. Commercial and/or community spaces will provide an active frontage to Church Street with residential use providing an active frontage to Salisbury Street, Penfold Street and the frontage addressing Broadley Gardens.
- 5.1.23 Site C comprises a single courtyard block with a wing extending along Venables Street to Church Street. The building will have a mix of uses on the ground floor with residential on the floors above. A new open space will be created between the proposed building and Kennet House.
- 5.1.24 Table 5-4 sets out the Maximum Parameters area schedule for the amount of development that is proposed and the land uses proposed by this outline aspect of this planning application; Sites B and C.

Table 5-4 Summary Area Schedule for Site B and Site C – Maximum Parameters

Use Class	Unit Numbers	Area (sqm) GIA
Residential floorspace (C3)	Up to 692	66,698
Storage and distribution floorspace (B8)	-	3,562
Flexible commercial floorspace (E)	-	2,375
Community floorspace (F1)	-	302
Parking and delivery hubs	-	6,623
Plant and service spaces	-	2,968
Sui generis	-	174

Commercial

- 5.1.25 Of the up to 3,286 sqm of Use Class E, it is considered unlikely that any one sub class will comprise 100% of this space. *Chapters 8 – 16* will outline within their methodology sections as to what mixture of uses their assessment has used to form a ‘worst-case scenario’.

Residential

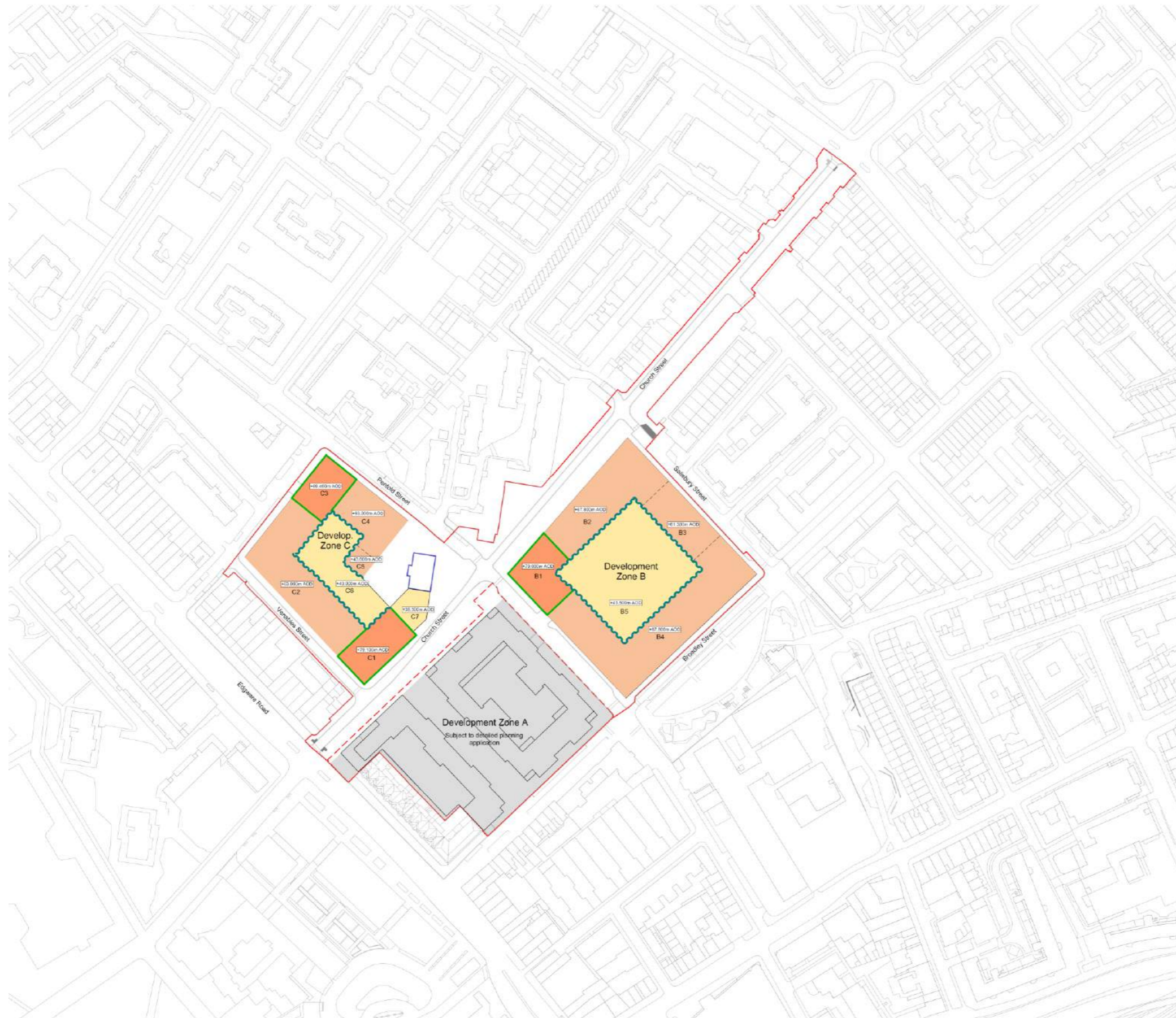
- 5.1.26 Site B and Site C will deliver up to 692 residential units. The Illustrative Scheme incorporates an accommodation schedule as is outlined below. Please note, these figures are but one interpretation of how the Proposed Scheme could be configured within the Maximum Parameters outlined in the planning application. The figures below are for illustrative purpose only, detail of the accommodation schedule for Sites B and C will be sought at the reserved matters stage:

Table 5-5 Breakdown of Residential Units for Site B and Site C

Type	1 Bed	2 Bed	3 Bed	4 Bed	5 Bed	Total
Markets sale	157	160	34	0	0	342
Social reprovion	74	26	30	0	0	130
New social	15	42	24	2	0	83
New intermediate	56	68	3	0	0	137
Total	302	296	92	2	0	692

5.1.27 Church Street Market comprises alterations to market infrastructure and ancillary facilities, as well as public realm improvements.

Figure 5-3 Maximum Building Heights



All drawings to be read in conjunction with specifications, schedules and all other consultant information.
 Do not scale from the drawing. Use written dimensions only. All dimensions to be checked on site. This drawing is based on dimensional survey information provided by others. Bell Phillips Architects cannot accept responsibility for the accuracy of this survey information.
 Any errors or omissions to be reported to Bell Phillips Architects immediately, prior to work being carried out.
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Notes

- Hybrid Planning Application Boundary
- Excluded From Application
- Detailed Planning Application Boundary
- Indicative Detailed Application Building Footprint
- Development Site Footprint
- Maximum AOD building height
- Limits of deviation +/- 8m
- Maximum extent of building portion

NOTE:

- Additional 4m to maximum building height is allowed for roof plant enclosures



Rev	Issued by	Description	Date
REVISIONS			

Project 10527 Church Street Westminster Site B + C

Title Maximum Building Heights

Date 08/21 Drawn by LI Checked by TM Scale at A1 1 : 1000

BELL PHILLIPS ARCHITECTS

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Status **PLANNING ISSUE**

Drawing Number 10527-BPA-SW-ZZ-DR-A-P2105 Revision

Built Form

Maximum Height

- 5.1.28 Figure 5-3 shows the maximum proposed building heights within the development plots at Sites A, B and C.

Site	Maximum Height
Site A	+ 81.125m AOD
Site B	+ 79m AOD
Site C	+ 79.1m AOD

- 5.1.29 The Design Code sets principles to ensure the heights of buildings are varied across the Site.

Basement

- 5.1.30 The Proposed Scheme will include a basement beneath Sites A and B to provide the residential car parking, additional cycle parking, water attenuation tanks and plant. On Site A, the basement extends under the north-western Block (A2). Residential cores in Block A2 extend down in the basement to provide access. The proposed basement for Site A has vehicular access via two car lifts from Penfold Street in the northern corner of Block A1. Each of the four communal residential cores in Block A1 extends down to basement level to provide residential access. The basement provides 22 accessible car parking spaces and 21 car parking spaces for residents. In addition, the basement provides plant space including sprinkler tanks and air handling units, an attenuation tank for SUDS and additional cycle parking for 421 cycles. Plant for both Blocks A1 and A2 is located within the basement of Block A1 with a service trench extending under New Street Gardens connecting the two blocks.
- 5.1.31 On Site B, the basement extends across the entire area, broadly corresponding to the area of the existing basement to minimise excavation and/or filling. Residential cores from the building above will extend down into the basement to provide access.

Rooftop Plant and Flues

- 5.1.32 The maximum building heights allows for varying maximum plant, lift overruns, stair access to roofs, and Building Management Units (BMU) access. Up to 4m (Figure 5-3) is therefore incorporated into the Maximum Parameters across all the outline elements (Sites B and C), which has been set according to the proposed maximum building heights and locations.

Green Infrastructure

Open Space and Recreation

- 5.1.33 Figure 5-4 shows the site wide ground floor general arrangement for the Proposed Scheme. Figure 5-5 shows the Site A detailed landscape strategy at ground floor level.
- 5.1.34 Site A consists of three distinct spaces:
- New Street Gardens which is a new area of public realm that is pedestrian dominated and located away from highways land with private front gardens, play spaces and seating areas;
 - A ground level courtyard and library garden encased within Building A1, which consists of secure communal play and seating spaces, private rear gardens and a public managed library garden that attaches directly onto the new Church Street Library; and

- A podium level secure communal courtyard
- 5.1.35 As part of the illustrative landscaping strategy, set out in the DAS, Church Street is a key piece of public realm in the Church Street ward. The aim behind this area is to maximise pedestrian and active travel priority, whilst maintaining ease of access for servicing and market set up and decant. Back to back stall arrangements and an asymmetrical carriageway allow the market to function to its highest capacity and allows active frontage to be on all sides of the street allowing retail units to benefit from the updates as much as the market pitches.
- 5.1.36 Market facilities will be provided to improve the experience for the market traders which will include, water, electricity, wi-fi, van parking, trader facilities and storage space.

Site B and Site C

- 5.1.37 The following key landscape areas will be designed at the reserved matters stage:
- Public highway streetscape along Church Street, Venables Street and Penfold Street;
 - Public amenity space at ground floor on Site C around Kennet House on Church Street and Penfold Street;
 - Private Residential amenity space at ground floor and / or podium on Sites B and C; and
 - A clear physical separation between public amenity spaces and the residential amenity spaces at ground floor will be provided.
- 5.1.38 Further information is provided in the Design Code.

Figure 5-4 Site Wide General Arrangement

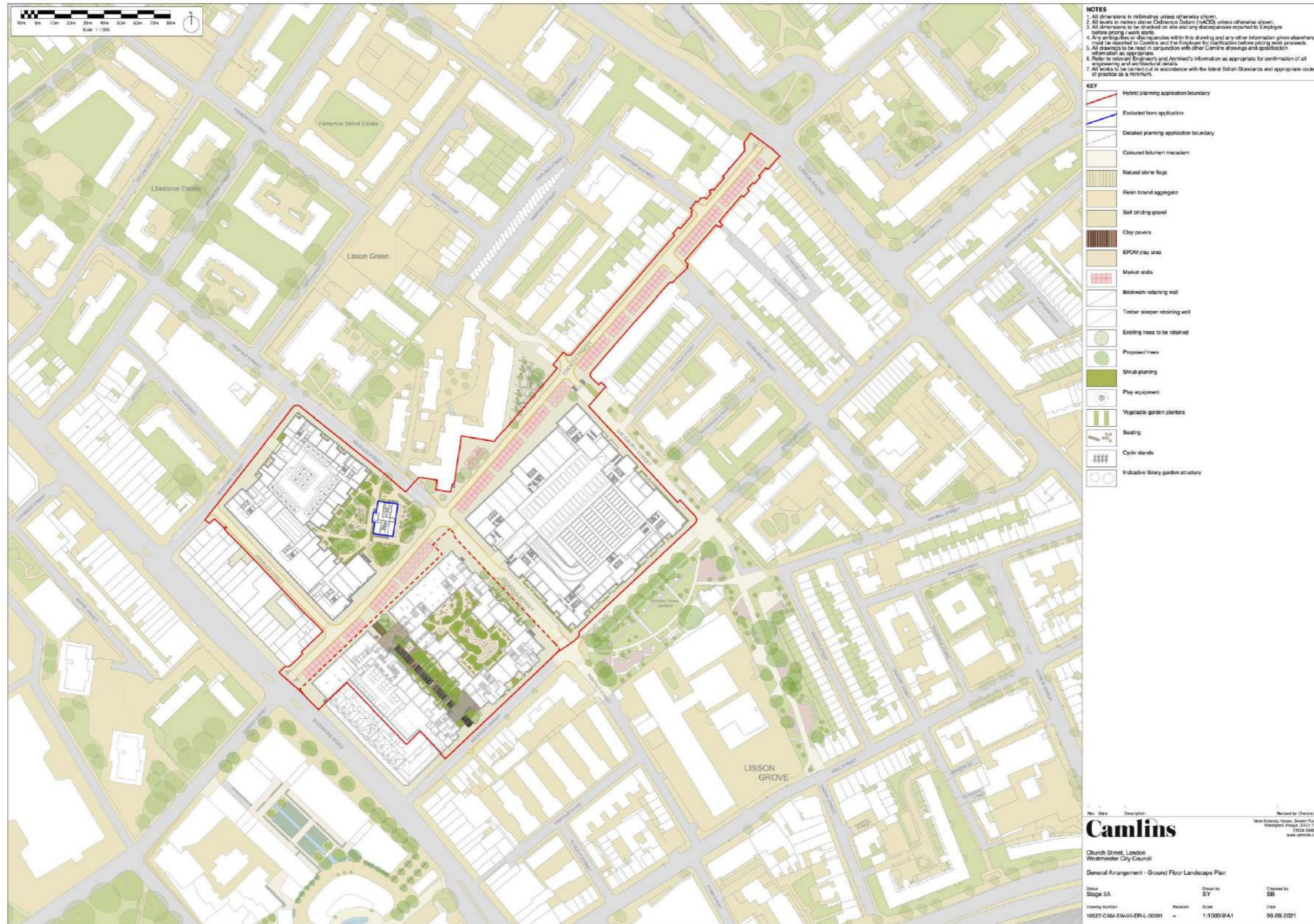


Figure 5-5 Site A Detailed Landscape Ground Floor Masterplan



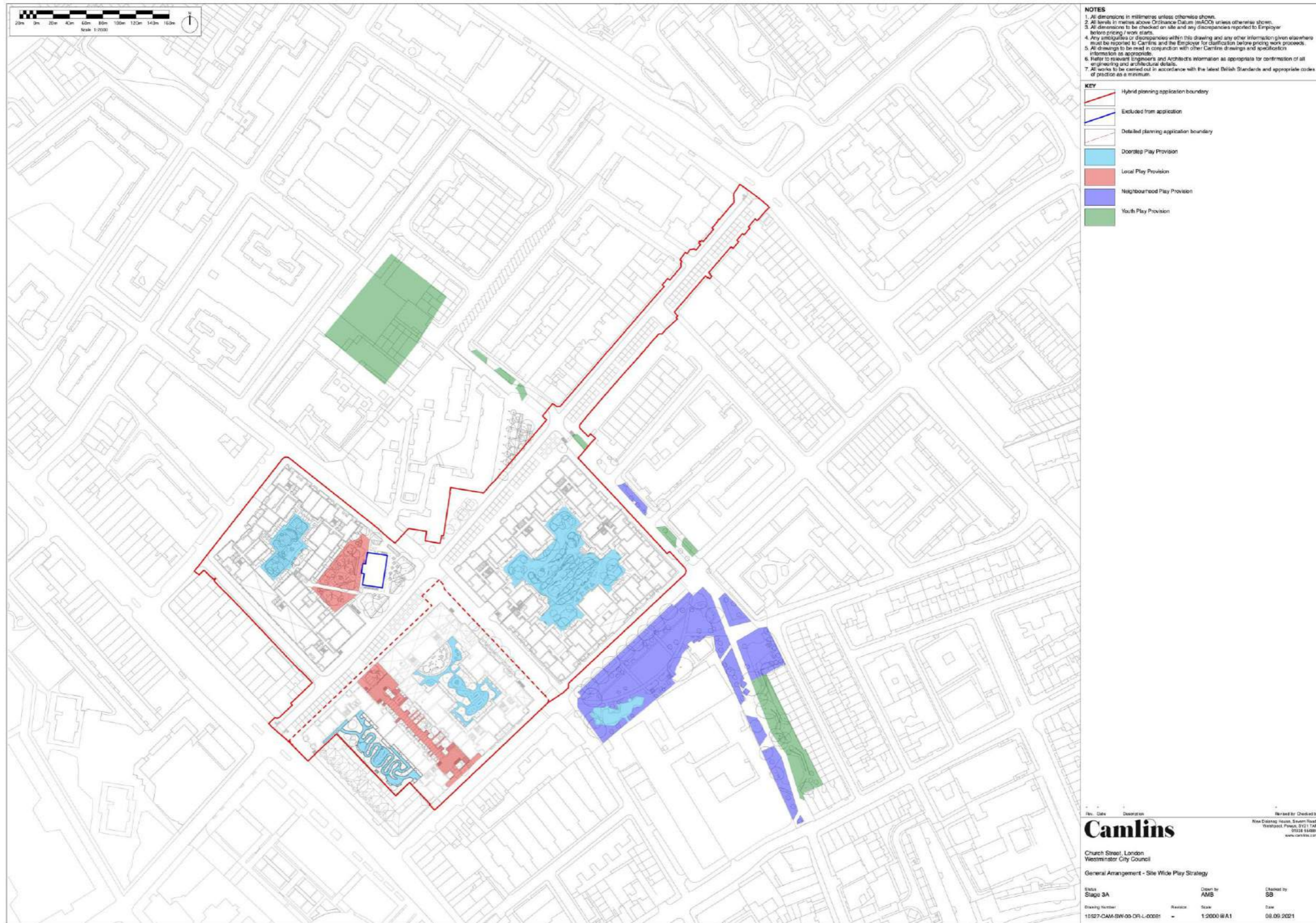
Play space strategy

- 5.1.39 The Proposed Scheme will exceed the levels of dedicated play space set out by the GLA, and will provide dedicated play space across the public and private realms. Please note, these figures are but one interpretation of how the Proposed Scheme could be configured within the Maximum Parameters outlined in the planning application. The figures below are for illustrative purpose only, detail of the play space strategy for Sites B and C will be sought at the reserved matters stage:

Table 5-6. Play space provision across the Application Site and Off-Site

Age Group	Area Provided (sqm)	% of Overall Playspace
0 – 5 years	3,963 (8,570 Off-Site)	27.8
6 to 11 years	1,701	12
12+ years	8,750	60.2
Total	10,814	100

Figure 5-6 Play space strategy



Car Parking

- 5.1.40 The Proposed Scheme will promote more sustainable methods of transport to and from the Site, and will contain a limited number of car parking spaces in comparison to the number of residential units provided on the Site.
- 5.1.41 The total parking spaces for Sites A, B and C will be 196 residential car parking spaces. This constitutes a reduction from the existing 461 spaces.
- 5.1.42 Site A, which is provided in detail, will provide 43 car parking spaces for the residential uses, consisting of 22 accessible spaces, and 21 standard parking spaces
- 5.1.43 In accordance with the WCC City Plan 2019-2040, 50% will have active provision for electric charging. Of the 43 car parking spaces, 22 will have active provision, and the remaining 21 spaces will provide passive provision for future use.
- 5.1.44 A Car Park Management Plan is presented in Chapter 11 of the Transport Assessment.

Cycle Parking

- 5.1.45 The Proposed Scheme will provide up to 690 long stay cycle spaces and 10 short stay cycle spaces at Site A. Cycle parking will be located at ground and basement floors.
- 5.1.46 Cycle parking will be in accordance with the standards set out in the New London Plan (2021) and London Cycling Design Standards (2016).
- 5.1.47 The detailed design for Sites B and C have not been undertaken yet, but will follow the same principles as laid out for Site A.

Servicing and Access Strategy

- 5.1.48 A Delivery and Servicing Plan (DSP) is to be prepared. This document seeks to actively manage the deliveries and servicing trips to the Site. It specifically aims to ensure that the servicing of the development can be carried out safely, legally and efficiently, without creating any negative impacts on the local highway network, neighbouring businesses, local residents and the environment.
- 5.1.49 Regular reviews of delivery and servicing vehicle activity will be held by the site management team and as part of the Framework Travel Plan (FTP). Any issues identified will be raised at the Steering Group meetings and dealt with accordingly through existing processes. The DSP is outlined in further detail in the Transport Assessment.

Waste Management Strategy

- 5.1.50 During demolition, excavation and construction, materials recovered from on-site works may be suitable for reuse on site, reducing the costs of transportation and procurement of virgin materials. This, combined with considerate design practice, will help to minimise construction waste in line with the waste hierarchy. This will be considered separately within a Demolition Construction Environmental Management Plan (DCEMP), secured through a planning condition.
- 5.1.51 Due to the construction of basements, excavation will also be required during the construction phase. If contaminated soils are excavated, where reasonably practicable, a solution will be sought to treat and reuse within the Application Site.
- 5.1.52 Given the nature of the Proposed Scheme, materials required for the construction are unlikely to be particularly scarce or environmentally sensitive, nor is the Proposed Scheme likely to result in materials becoming scarce. Consideration should be given throughout the design process to the specification of suitable materials, including their sustainability and environmental implications, to support an environmentally sensitive and high quality development. Waste from the construction of the residential elements of the Proposed

Scheme is estimated to be a total of approximately 15,300 tonnes. However, this quantity will be confirmed within the Site Waste Management Plan (SWMP), once a Principal Contractor has been appointed.

- 5.1.53 Waste arisings will be monitored and reviewed by the Applicant through a SWMP. The volume/tonnage of waste generated (or sent off-site) as well as the percentage or volume/tonnage reused, recycled or disposed will be recorded throughout the construction phase.
- 5.1.54 During the operational phase of the Proposed Scheme, The Proposed Scheme is targeting the WST03 operational waste credit in line with BREAAAM 2018 requirements. This requires that a minimum of 10 sqm is available for the storage of segregated waste streams where the total floor area is greater than or equal to 5,000 sqm.
- 5.1.55 Further information is provided in the Waste Management Strategy submitted as part of this planning application.

Drainage

Surface Water Drainage

- 5.1.56 The most appropriate method of surface water discharge has been determined based on the hierarchy of surface water disposal set out within London Plan Policy SI 13, as described below:
- Rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation);
 - Rainwater infiltration to ground at or close to source;
 - Rainwater attenuation in green infrastructure features for gradual release (for example biodiverse green roofs, rain gardens);
 - Rainwater discharge direct to a watercourse (unless not appropriate);
 - Controlled rainwater discharge to a surface water sewer or drain; and
 - Controlled rainwater discharge to a combined sewer.

Rainwater harvesting

- 5.1.57 For Site A, some of the rainwater pipes at high level are placed such as to cascade down to the proposed landscape at podium level. The rainwater runoff at high level will then be used to irrigate some of the landscape areas at podium level. Biodiverse green roofs are proposed at the high level roof. The reservoir/drainage layer, which is part of the green roof build up will store rainwater for irrigation of the plants (green roofs) via capillary action. In addition to the above, waterbutts have been proposed for irrigation of soft landscape at podium level.
- 5.1.58 Site B and C will also include rainwater harvesting measures.

Rainwater Attenuation in Green Infrastructure

- 5.1.59 For Site A, Site B and Site C, the proposal to use biodiverse green roofs at high roofs means that the surface water runoff will be stored within the reservoir/drainage layer and soil medium of the biodiverse green roofs and released slowly into the rain water pipes.
- 5.1.60 The proposal to use permeable / porous pavement in the hardstanding areas at ground level (lined paving) and at podiums means that the surface water runoff from these areas will be stored in the granular medium of the pavement and released gradually into the piped drainage system.

Controlled Rainwater Discharge to a Combined Sewer

- 5.1.61 For Site A, It is proposed that the surface water runoff from the development drains at limited discharge rate of 2.0l/s from Block A1 and 1.5l/s from Block A2 for all storms up to and including 1 in 100 years plus climate change allowance.
- 5.1.62 For Site B and Site C, it is proposed that the surface water runoff from Site B and C is limited to 2.0l/s per each connection for all storms up to and including 1 in 100 years plus climate change allowance.
- 5.1.63 Further information is provided in the Flood Risk Assessment Report.

Sustainable Drainage Systems

- 5.1.64 It is a requirement of the NPPF that SuDS are used in all major developments, if feasible. The LLFA also strongly advocate the use of SuDS within new development.
- 5.1.65 CIRIA report C753 'The SuDS Manual' outlines the various types of SuDS, their benefits and limitations, and design considerations associated with each. Not all SuDS components / methods are feasible or appropriate for all developments, factors such as available space, ground conditions and site gradient will influence the feasibility of different methods for a particular development.
- 5.1.66 Green roofs will provide visual benefit, ecological value, enhanced building performance and reduce surface water runoff into the building drainage (source control). It is proposed that the majority of Block A1 and A2 high level roof areas is to consist of green roofs.
- 5.1.67 Blue roofs will control the surface water runoff at source by providing storage at podium level and limiting the discharge into the building drainage system. The blue roof system will be equipped with flow control chambers and overflows at podium level. Blue roofs will be provided on all podium areas of Block A1 and A2, as well as the podium areas of Site B and Site C.
- 5.1.68 It is proposed to use permeable resin bound gravel for the paths on the communal podium courtyards. Furthermore permeable / porous pavement is proposed for private external hardstanding areas.

Foul Drainage

- 5.1.69 The foul water drainage from the existing buildings where Block A1 and A2 are proposed currently discharges into the Thames Water Utilities Limited (TWUL) combined sewers in Church Street, Broadley Street, Penfold Street and Salisbury Street (as shown in the asset records). The foul water drainage from the existing buildings where Site B is proposed discharges into combined sewers in Church Street, Broadley Street, Penfold Street and Salisbury Street (as shown in the asset records). The foul water drainage from the existing buildings where Site C is proposed discharges into the combined sewers in Church Street, Boscobel Street and Penfold Street (as shown in the asset records).
- 5.1.70 At Site A, the Proposed Scheme will drain foul water via existing and new connections into Broadley Street. For Site B, foul water discharge will be via existing sewers in Broadley Street, Salisbury Street and Church Street.
- 5.1.71 For Site C, foul water discharge will be via existing sewers in Boscobel Street, Penfold Street and Church Street.

Energy

- 5.1.72 An Energy Strategy Report has been produced for the Proposed Scheme. It considered the applicable policies and applying CO₂ reduction measures to the development in accordance with the GLA's three step Be Lean, Be Clean, Be Green energy hierarchy. A detailed

assessment was carried out for Site A and these results were proportioned to estimate CO₂ emissions for Sites B and C.

- 5.1.73 During the Be Lean phase of the hierarchy passive and active demand reduction measures were incorporated to the development. This resulted in a development achieving 24% and 16% reduction of CO₂ emissions over Building regulations Part L 2013 minimum requirement for residential and commercial schemes respectively by utilizing energy efficiency measure alone to reduce the demand as far as practically viable. Furthermore, an overheating analysis carried out for the development showed the passive design measures within the building envelope and services design successfully mitigating overheating and reducing cooling demand for the development.
- 5.1.74 Following the reduction of energy demand in the Be Lean stage, supplying energy efficiently and cleanly to reduce CO₂ emissions was investigated in the Be Clean stage of the energy hierarchy. No opportunities to connect to existing or planned district heating networks were identified and CHP was considered unviable for the development. However, with the development located in a heat network priority area, a communal heat network was proposed to future proof the development for easy connection to an area-wide heat network in the future.
- 5.1.75 Opportunities to use renewable energy on-site were considered in the Be Green stage of the energy hierarchy. Ambient loop heating system comprising central air source heat pumps and dwelling level water source heat pumps and solar PV were identified as feasible renewable technologies following a site-specific feasibility analysis. Application of these technologies reduced the CO₂ emissions of the development by 41% and 20% for residential and commercial schemes respectively.
- 5.1.76 Application of the Be Lean, Be Clean and Be Green energy hierarchy to the development resulted in a 65% and 35% reduction of CO₂ emissions over Building Regulations Part L 2013 minimum requirements for residential and commercial schemes respectively with a site wide improvement of 63%. However, in line with the developments' aim to be zero carbon for both residential and commercial schemes, the remaining CO₂ emissions would be met through further use of solar PV as the design develops and a carbon offset payment to WCC's carbon offset fund.
- 5.1.77 Proportioned results for Sites B and C showed outline sites achieving 70% reduction of CO₂ emissions over Building Regulations Part L 2013 minimum requirements.
- 5.1.78 The Energy Statement shows that the Proposed Scheme will comply with the energy policies of the London Plan and WCC as a result of climate change mitigation measures incorporated into the development. The energy assessment demonstrates energy remains an integral part of the development's design and evolution in order to address the climate change emergency declared and the ambition set by the Mayor of London for London to be net zero carbon.
- 5.1.79 Further information is provided in the Energy Strategy Report.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 6: Demolition and Construction

Westminster City Council

November 2021

6. Demolition and Construction

6.1 Introduction

- 6.1.1 This chapter of the ES describes the demolition and construction works to be undertaken for the Proposed Scheme and outlines the environmental management measures committed to by the Applicant to manage the potential environmental effects associated with the construction and demolition activities (collectively referred to as 'demolition and construction phase' effects).
- 6.1.2 AECOM has prepared this chapter in conjunction with the Applicant and members of the wider design team (refer to Table 1-1 within *Chapter 1: Introduction*). Whilst the methodology for construction is thorough for the detailed element of the Proposed Scheme, it is necessarily broad for the outline elements of the Proposed Scheme at this stage and will be subject to modification during future detailed construction planning and Reserved Matters Applications. It is considered that the assessment of the demolition and construction phase effects set out in this ES are based reliable information and reasonable assumptions where necessary related to the construction programme and the collective experience of the Applicant and wider design team from working on similar projects of this scale and nature.
- 6.1.3 This chapter and the ES outline mitigation measures for the management of potential demolition and construction phase effects which will need to be included within a Construction Environmental Management Plan (CEMP) (or equivalent) that will be prepared by the demolition and construction contractors with further Reserved Matters Applications for the Proposed Scheme outline elements prior to the start of works.
- 6.1.4 The assessment of potential environmental effects arising from the demolition and construction works identified within this chapter is presented in each of the technical chapters of this ES (i.e. *Chapters 8 – 16*). Where required, the environmental management and mitigation measures applicable to the demolition and construction phase are further discussed within the respective technical chapters (i.e. *Chapters 8 – 16*). A summary of all mitigation measures is provided in *Chapter 18: Summary of Mitigation*.

6.2 Programme of Works

- 6.2.1 An indicative construction programme has been prepared for Site A, B and C in order to enable assessment of the likely environmental effects during the demolition and construction phase of the Proposed Scheme, as shown in Figure 6-1
- 6.2.2 For the purpose of the EIA, and as detailed in Figure 6-1, the demolition and construction works will be undertaken from 2022 to 2035. Phase 1 will begin in 2022 and finish in 2026, Phase 2 will begin in 2026 and finish in 2032, and Phase 3 will begin in 2032 and finish in early 2036. For the purposes of this Environmental Statement it has been considered that early phases of the Proposed Scheme may be occupied during the construction of latter phases and therefore a qualitative assessment has been undertaken and included within the technical chapters. The effects on early occupants would not change if the order of phasing varied.

Figure 6-1 Site A, B and C Construction Programme

	Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Site A															
Demolition of existing structures		█	█												
Foundation and substructure			█	█											
Superstructures			█	█											
External Envelope			█	█	█										
Fit out / finishes				█	█	█									
Commissioning				█	█	█									
Landscaping works					█	█									
Site B															
Demolition of existing structures						█									
Construction works						█	█	█	█	█					
Site C															
Demolition of existing structures											█				
Construction works												█	█	█	

6.3 Description of Works

6.3.1 The following sections provide a description of the works involved in the demolition and construction phase of the Proposed Scheme. The stages will be as follows:

- Site possession and welfare establishment;
- The soft strip and asbestos removal (all sites);
- A staged demolition of the entire Site A buildings as one exercise (Site B and then Site C to follow as per the phasing described above);
- The careful deconstruction of the existing south west corner building on Site A, abutting 381 Edgware Road, during the above demolition exercise and localised propping as required (Site A only);
- Construction of proposed developments, to include all substructure works (foundations and piling), Superstructure works, External envelopes to buildings, fit-outs of both domestic and commercial units, testing and commissioning, landscaping to central communal podium areas.

Site Clearance

6.3.2 Prior to the start of demolition, the enabling works on site are likely to comprise:

- Welfare set up; and
- Additional site investigations, if necessary.

6.3.3 Before commencing demolition works, the existing buildings information from the landlord will be reviewed in respect of known asbestos. Based on this information, a Refurbishment and Demolition survey will be commissioned to establish the extent of or otherwise of any asbestos in the buildings. This survey will be carried out in strict accordance with the Control of Asbestos Regulations 2012 and the relevant HSE guidance notes.

6.3.4 Further works if required, will be undertaken by parties accredited to an appropriate body, of proven competence to perform such work in compliance with ISO 17020 and 17025 respectively. The results of the above will determine the extent to which provisions will be made for asbestos removal in the buildings. Soft strip out of the premises will progress ahead of demolition works and will be linked to any asbestos strip out works. Sequencing of both elements of works will be from the roof down to the basement.

Demolition

6.3.5 The Application Site clearance will include removal of all existing structures on-site within the Application Site boundary, excluding Kennet House on Site C, which is excluded from the Planning Application. The structures to be removed are shown Figure 6-2.

6.3.6 The demolition works for the development will undoubtedly have a direct impact on the local community and environment over the phased duration of the proposed works and has been assessed as part of the planning process. The appointed Contractor and his demolition specialist team will be required to produce the following set of information which will outline their management strategies to be employed to minimise the impact of the works:

- Construction Environment Management Plan
- Construction Traffic Management Plan
- Site Waste Management Plan

6.3.7 The currently proposed sequence for the demolition of Site A is as follows, with two site teams for efficiencies on the programme:

- Demolition works at Site A will be sequenced from Edgware Road towards Penfold Street.

- Appropriate Site protection hoardings to be installed along Church Street. This will be along the pavement line, as there is a cantilevered overhanging structure at 1st-floor level, which is approximately 1500 mm from the pavement line;
 - Team A commence demolition of Ingrebourne House to create an internal working space from where all the demolition works can be coordinated, to minimise the local impact;
 - Team A commence demolition of Blackwater House and SW Corner Block;
 - Team A progress to Cray House demolition;
 - Team B commence demolition works on Lambourne House;
 - Team B to commence demolition works on Pool House;
 - Team B progress to Pool House demolition;
 - Team B to commence at the Penfold Street end of Blackwater House and work towards Team;
 - The central plant room which forms a natural barrier to the rear of the Edgware Road properties should be the last section of demolition works to be completed and will similarly require a constructed separation to the rear courtyards of the Edgware Road properties.
- 6.3.8 The excavation of the basement below Block A1 will follow on after demolition works on Ingrebourne, Cray and Blackwater Houses are completed, following the above prescribed direction. The above process is intended to be replicated on Sites B and C.
- 6.3.9 Demolition arisings will be processed on-site where possible to maximise recycling and reuse and to minimise the need to take material off site, thus reducing the number of Heavy Goods Vehicles (HGV) trips entering and departing the Application Site. Any waste steel will be extracted for recycling off-site and a crusher will be used to process bulk material, foundations and hard standing for re-use on-site, where possible, for use as back fill and piling mats, reducing the amount of new materials needed for construction.
- 6.3.10 Following the removal demolition works, existing utilities will be diverted, and the Application Site will be remediated to bring the existing brownfield areas to an acceptable standard for new development.

Substructure and Foundations

- 6.3.11 To pre-empt the need for supporting some of the adjacent roads and retained services in the pavements where applicable, design specifies a secant piled basement wall system for Block A1's basement construction. Localised temporary propping may also be required the basement foundation works.
- 6.3.12 Following on from the demolition works, the support piling works will commence for Blocks A1-1, A1-2 and A2-1 along the Church Street elevation, working away towards Broadley Street. For Block A1, this will be a communal basement, hence the construction of this will be a singular construction exercise, whereas the super structure is likely to be staggered in their construction. It is envisaged the selected tower cranes for the project will be installed at this stage, to assist with the works.
- 6.3.13 The proposed works sequence to be implemented ensures that during the basement construction, any potential ground movements are minimised and managed adequately. With the building demolished down to the existing basement level (Church Street elevation) and temporary propping installed as required to the elevations, the installation of the foundations can progress.

Super Structure

- 6.3.14 The superstructure works will also follow the sequence instigated for the substructure and foundations, working away from Church Street towards Broadley Street elevations. The current programme indicates Block A2 (A2-1 and A2-2) will be completed some three months ahead of the first units in Block A1 (A1-1 to A1-4), facilitating a staged handover of completed units to WCC over a 12 month sequence of completions.
- 6.3.15 The current design allows for a standard concrete framed building for each of the Site A blocks, with a 600mm podium slab at Ground Floor for Block A1's proposed garden and internal landscaping. The units

for A1-1 to A1-4 are built to surround the central landscaping. There is a 550 mm podium slab at Mezzanine level to the rear of Block A2, which will also be used for the building's landscaping feature.

- 6.3.16 Each block will have its own set of lifts, stairs as well as the shared service areas. The completion of the concrete structure is integral to the next stage of the works, external envelope, internal partitions, mechanical and electrical, joinery and glazing commencing. The above process is intended to be replicated on Sites B and C.

Envelope, Fit out and Finishes

- 6.3.17 The Bell Phillips drawings for the external envelope is currently indicated as a brick panelled cladding system, incorporating balconies on some properties. The timely installation of this envelope will release the floors for any internal works, such as partitions, joinery and M&E. Fit-out of the development will be standard in all the WCC designated properties.
- 6.3.18 The properties will be finished as per the agreed specifications from the council's developer partners. Central core installations of the lifts, service areas, stairs balustrades will progress in tandem with the internal finishes.
- 6.3.19 M&E installations for the project will comprise within Site A an ASHP low carbon heat source system, two electrical substations per site, with additional substations to support off-site electrical loads, a site-specific boosted cold water systems with the sprinkler systems and ventilation systems to include smoke vents.

6.4 Construction, Excavation and Demolition Waste

6.4.1 Waste arising from Application Site clearance, earthworks and installation of foundations is expected to comprise of demolition rubble, vegetation, topsoil, and arisings from piling activities.

6.4.2 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another development site or for disposal at appropriately licensed facilities (these are expected to be inert waste landfill sites).

6.4.3 Waste expected to be generated during construction includes packaging (including wooden pallets, cable drums), plasterboard, timber, cement and plaster, insulation, metal, dry concrete products (blocks, slabs), plastic products, ceramic material and landscape materials. Other waste types including doors, frames, partitioning, fixtures and fittings etc. may also be generated. All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation in line with WRAP's 'Halving Waste to Landfill' initiative by:

- Agreeing with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
- Implementing a 'just-in-time' material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
- Using standard size components in design detailing to eliminate risk at source where possible to do so;
- Paying attention to material quantity requirements to avoid over-ordering and generation of waste materials;
- Re-using materials wherever feasible, e.g. re-use of excavated soil for landscaping (the Government has set broad targets of the use of reclaimed aggregate, and in keeping with best practice, contractors will be required to maximise the proportion of materials recycled);
- Segregating waste at source where practical;
- Re-using and recycling materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing);
- Colour coding and signposting skips to reduce risk of cross contamination and covered to prevent dust and debris blowing around the site, these will be cleared on a regular basis; and
- Not burning waste or unwanted materials on-site.

6.4.4 Estimated volumes of demolition waste at the Site A are shown in Table 6-1, and equate to a total 18,139 tonnes. Estimated excavation waste at Site A is equates to a total 18,109 tonnes. Estimated volumes for demolition and excavation waste at Site B and Site C are not available at this stage, however they are anticipated to be similar in quantity and type to Site A.

Table 6-1 Estimated Demolition Works Waste for Site A (Cray House, Ingrebourne House, Pool House, Lambourne House, Blackwater House)

Waste Stream	Estimated Quantity (Tonnes)
Concrete	13,644
Steel	167
Glazing	82
Brickwork	803
Carpet	2
Gypsum	87

Waste Stream	Estimated Quantity (Tonnes)
Lightweight steel	1
Blockwork	2,257
Mineral Fibre	4
Tiles and Ceramics	8
Timber	150
Concrete	167
Floor Coverings	4
Wood	4
Soils	713
Asphalt	16
Total	18,109

6.4.5 Due to the construction of underground basements, excavation will also be required during the construction phase. If contaminated soils are excavated, where appropriate, a solution will be sought to treat and reuse within the Application Site.

6.4.6 The relevant contractors will be required to carry out works in such a way that, as far as is reasonably practicable, the amount of spoil and waste to be disposed of by landfill is minimised and that any waste arisings from the Application Site are transported and disposed of in accordance with relevant legislation including the following:

- The Environmental Permitting (England and Wales) Regulations 2018 (as amended);
- The Waste (England and Wales) Regulations 2011 (as amended);
- The Waste Management (England and Wales) Regulations 2006; and
- Clean Neighbourhoods and Environment Act 2005.

6.4.7 In addition, the contractors, in consultation with the WCC, and the Environment Agency, will identify disposal sites and routes. When assessing the most suitable option for landfill disposal, the mode of waste transportation and alternatives to reduce adverse environmental effects, transport times and landfill capacity will be considered.

6.4.8 Due to the fact that waste generated during construction will be minimised and reused wherever feasible, there is not predicted to be any significant effect upon landfill capacity as a result of the construction waste volumes.

6.4.9 The Principal Contractor will be required to prepare a Construction Resource Management Plan (CRMP) (or equivalent) in line with the Building Research Establishment Environmental Assessment Methodology (BREEAM) UK New Construction Technical Manual (2014) (refer to BREEAM Pre-Assessment submitted with the planning application). The CRMP will aim to promote the reuse, recycling and recovery of waste rather than disposal, thereby improving efficiency and profitability; reduce fly-tipping; and increase environmental awareness.

6.4.10 The CRMP will set out the principles for construction waste management, identify measures to minimise waste by design, estimate construction waste quantities, set targets for waste minimisation and a framework for construction waste monitoring that the Principal Contractor will be required to implement

on Site. Furthermore, the CRMP will set out measures required for compliance with waste legislation and relevant planning policies.

Table 6-2 Estimated Construction Works Waste for Residential Aspect

Material	Site A (Detailed)	Sites B and C (EIA Maximums)
	(Tonnes)	(Tonnes)
Bricks	433	759
Tiles and Ceramics	31	54
Concrete	613	1,074
Inert	1,662	2,913
Insulation Materials	26	45
Metals	76	134
Packaging Materials	150	263
Plasterboard / Gypsum	177	310
Binders	7	11
Plastic (excluding packaging waste)	103	181
Timber	474	830
Floorcoverings (soft)	3	5
Electrical and Electronic Equipment	2	4
Furniture	0	1
Canteen / Office / Adhoc Waste	48	84
Liquids	3	5
Oils	0	1
Bituminous Mixtures	34	59
Hazardous Waste	38	66
Other Waste	145	254
Mixed Construction and / or Demolition Waste	1,534	2,688
Total	5,559	9,741

Plant and Equipment

6.4.11 The assumed plant and equipment associated with each key phase of the demolition and construction process are set out in Table 6-3 as follows.

Table 6-3 Indicative Plant and Equipment

Plant and Equipment	Enabling Works	Demolition and Site Clearance	Earth works and Substructure	Super Structure	Roofing and Cladding	Fit-out & Lift Install
Tower cranes				✓	✓	
Passenger/goods hoists				✓	✓	✓
Excavators and breakers	✓	✓	✓			
Cutters, drills and small tools	✓	✓	✓	✓	✓	✓
Crushers		✓	✓			
Floodlights		✓	✓	✓	✓	
Fork lift truck			✓	✓	✓	✓
Hydraulic benders and cutters			✓	✓		
Lorries and Vans	✓	✓	✓	✓	✓	✓
Mobile Cranes			✓	✓	✓	✓
Mobile Lorry mounted concrete pump			✓	✓		
Poker vibrator			✓	✓		
Ready mixed concrete lorry			✓	✓		
Concrete splitters/concrete saws		✓	✓	✓		

6.5 Hours of Works

6.5.1 It is anticipated that the core working hours for both the demolition and construction phases would be as follows, with no working normally undertaken on Sundays or Bank Holidays:

- 08:00 – 18:00 weekdays; and
- 08:00 – 13:00 Saturday.

6.5.2 All works will be within the agreed hours, unless or in the event of exceptional circumstances such as;

- An emergency or health and safety issue demands continuation of works (e.g. if safety hoarding is dislodged and needs to be replaced);
- Works are being carried out within the containment of the building envelope;
- Completion of an operation that would otherwise cause greater interference with the environment / general public if left unfinished;

- A requirement to complete concrete pours due to unforeseen overruns caused by, for example, offsite batching plant issues and traffic delays; and/or
- Weekend periods when partial road closures may be required for works, such as tower crane installation and decommissioning, and craning plant onto roof spaces, so not as to disrupt traffic during a weekday when the area will be busier.

6.5.3 Although night-time working will not normally be undertaken, it is possible that some deliveries may be required at night and that certain works may be undertaken during this period. Any night-time work activities would be discussed and agreed with the WCC and carried out subject to reasonable notice.

6.5.4 It is recognised that approval from the WCC will be required for any works that need to be undertaken outside of these permitted hours, and that the WCC might vary these hours (by agreement) where the works are in close proximity to sensitive businesses and/or residential properties.

6.6 Traffic Management

6.6.1 A Construction Traffic Management Plan (CTMP) will ensure that construction traffic is appropriately managed. This will be prepared and implemented for all three phases of the development, with particular attention to be given to Site A, which has access challenges. Church Street and Broadley Street are both one-way streets in the same direction, towards Edgware Road. Broadley and Penfold Streets are also fairly small roads, and the metered parking makes them unsuitable for construction traffic. The CTMP will specify the required measures to ensure the flow of both local and construction traffic within the environs of the construction sites. Additionally, vehicular access routes and agreed noisy times will have been identified by the appointed Demolition and Main Contractor and agreed with the Council.

6.6.2 Estimated numbers of vehicle site movements (see Table 6-4 below), traffic direction and controls on the local feeder roads, communication with local stakeholders and information regarding local levels of pedestrian and vehicular traffic and proximity to sensitive neighbouring properties, will all be contained in the CTMP. The CTMP will be updated during the life cycle of the entire development to reflect changes to the locality, which can impact the agreed strategies.

Table 6-4 Construction and Demolition Traffic during project delivery phases

Vehicle Type	Anticipated average daily trips
HGV	35
Care and light goods vehicles	35

6.6.3 Abnormal load traffic management measures will also be required for the delivery and removal of the tower cranes to be used for the construction works, as well as similar deliveries. With these deliveries, a notification will be issued to WCC and the Police, as required by the CTMP. Specific unloading/loading bays will also be established for each of the sites and construction phases, to mitigate further congestion on the roads immediately surrounding the development sites. All vehicles making deliveries to or removing site waste material will be required to travel via designated routes (refer to *ES Volume I Chapter 15 Traffic and Transport* for further details).

6.6.4 Clearly identified pedestrian / vehicular access will be established around the entire site perimeter, with particular attention to Church Street Market, to ensure complete segregation of pedestrians and vehicular traffic. All hoardings, related lighting, safety barriers, etc., will be maintained. All footpaths and carriageways within the site environs will be kept clean and in a safe condition.

Construction Logistics Plan

6.6.5 A Construction Logistics Plan (CLP) will be produced and submitted as part of this application, which will provide a framework for the management of construction vehicle movements to and from the Application Site. The CLP will set out measures so that construction materials can be delivered, and demolition and construction waste can be removed in a safe, efficient and sustainable manner.

6.6.6 The CLP will implement a series of measures to reduce the impact of construction vehicle traffic upon the highway network, these include;

- Any bulk transit trips/abnormal loads will be undertaken during off-peak periods in order to minimise road user delays;
- If lane closures on the local highway network are deemed necessary, these will take place during off-peak periods to minimise road user delay;
- Designated construction routes will be utilised by all vehicles associated with the construction of the Proposed Scheme;
- Abnormal load traffic management measures will also be required for the delivery and removal of the tower cranes to be used for the construction works, as well as similar deliveries. With these deliveries, a notification will be issued to the Council and the Police, as required by the CTMP;
- Specific unloading/loading bays will also be established for each of the sites and construction phases, to mitigate further congestion on the roads immediately surrounding the development sites. All vehicles making deliveries to or removing site waste material will be required to travel via designated routes;
- Construction vehicle routes to site will be agreed with WCC and will seek to minimise impact on the local road network and community. Wherever possible routes will avoid local schools and where this is not possible time restrictions will be put in place to avoid school start and finish times;
- Commitment to use a Delivery Management System (DMS) to ensure contractors and suppliers forward plan and pre-book deliveries. This will enable site managers to control deliveries and vehicle flow to site including avoiding peak network times where possible;
- Investigate the need for a vehicle holding area to help further control vehicle flow and manage deliveries to site;
- Investigate the use of construction consolidation centre to help maximise vehicle load efficiency and reduce vehicle trips;
- Investigate modular and pre-fabricated construction techniques to help minimise the number of deliveries to site;
- Commitment to use contractors and suppliers that are members of best practice schemes such as Considerate Constructors Scheme (CCS), Fleet Operators Recognition Scheme (FORS) and Construction Logistics and Community Safety (CLOCS);
- Ensure a sufficiently robust CLP management, monitoring and compliance regime is in place so that the CLP is implemented correctly and remedial actions are taken when necessary; and
- The implementation of a physical barrier as part of the site boundary/perimeter along the Church Street site perimeter to both maintain site security, but more importantly provide protection to the Market Traders.

6.6.7 The CLP also provides a framework for future on site contractors for construction to develop targets including, the number of construction vehicle trips during AM and PM peak hours, the proportion of servicing and delivery companies to be members of FORS and a percentage of vehicles to be 'green' or low emission vehicles.

Track out and Wheel Washing

6.6.8 Mud and debris on the road is one of the main environmental nuisance and safety problems arising from construction sites. In the early stages of the construction, vehicle wheel washing facilities will be made available. Where utilised, a wash bay area will be impermeable and isolated from the surrounding area by a raised kerb or roll over bund to contain solids, with effluent directed to the foul sewer (foul and surface water drainage will be connected to the existing Thames Water networks).

6.6.9 The contractor(s)'s on-site supervisors will assess if wheel washing is needed to ensure that mud/detritus originating from the construction works are not deposited on the public highway, and they will be responsible for carrying out a subsequent inspection.

- 6.6.10 No vehicles will be permitted to leave the Application Site if it is considered they pose any risk to the public highway. To ensure highways are maintained in good order it is anticipated that the contractor(s) will undertake cleaning of the surrounding roads as necessary to remove any unwanted material from the wearing course.
- 6.6.11 Muck away vehicles will be fully sheeted to minimise the risk of any mud over-spilling onto the highway and watering down will be carried out as required to suppress dust on:
- Unpaved areas that are subject to traffic or wind;
 - Sand, spoil and aggregate stockpiles; and
 - During loading/unloading of dust generating materials.
- 6.6.12 The following procedure is intended to ensure no mud, dirt, debris or other loose material is deposited outside the Application Site on the public highway:
- During the earthworks phase of the Proposed Scheme, facilities for wheel washing will be installed and maintained at the main site vehicle entrance;
 - All loads of loose or dusty materials transported from the Site shall be securely sheeted; and
 - Sufficient road sweeping equipment and personnel will be provided to keep the highways clean.

6.7 Construction Environmental Management Plan (CEMP)

- 6.7.1 An ISO 14001 (or equivalent) compliant CEMP is to be prepared by the Principal Contractor and submitted prior to the start of construction works in each Parcel (or part therein). The aim of the CEMP is to provide an overarching and strategic framework for the management of environmental effects and the implementation of measures prior to, and during, the demolition and construction phase of the Proposed Scheme. The CEMP will be a 'live' document and will be continually reviewed and updated by the Principal Contractor, following the submission and approval of the Reserved Matters Application in accordance with the measures agreed under the approved reserved matters.
- 6.7.2 The CEMP will include the following information (but not be limited to):
- Site information:
 - Location of the works, including a Site plan, showing construction site boundaries and any sensitive receptors (e.g. retained trees, water courses, local residents etc.);
 - Detailed management structure and key contacts (such as the appointed Liaison Manager, Site Environmental Manager, the relevant LBE contacts and contacts at the Environment Agency and Highways Agency in the event of an emergency); and
 - Procedures for environmental training of all permanent and temporary Site staff, which staff will be covered within the 'Toolbox Talks', a series of training sessions relating to specific health and safety issues relating to the construction industry.
 - Construction information:
 - A description of the works to be undertaken and a detailed programme of the construction activities;
 - Proposed working hours during construction, including any abnormal hours;
 - Details of the main haulage routes and Site access points;
 - Proposed dates and sequence of the works;
 - Equipment and plant to be used; and
 - Method of delivery / removal of materials and plant.
 - Environmental Management:
 - An internal environmental audit programme, e.g. ISO 14001 or details of policies specific to the Applicant;

- An Environmental Mitigation Register with associated procedures, which show how environmental risks will be addressed for each activity;
- Schedule of potential environmental effects relating to each activity (based on the effects identified in the ES);
- Procedure for neighbourhood liaison and dealing with complaints;
- Measures to exclude the public from the vicinity of the Site during construction and ensure maintenance of public safety;
- Measures to reduce visual impact of the construction Site, including nuisance from construction lighting;
- Arrangements for the removal of contaminated material, where appropriate;
- Arrangements for the storage of raw materials on-site (including potentially contaminative material, such as fuels);
- Waste storage and removal arrangements (either as part of the CEMP or a separate SWMP, or equivalent);
- Measures to be followed to minimise noise, dust and vibration levels during demolition and construction, including limits to be complied with for certain activities (such as piling), as appropriate;
- Any specific management plans relating to archaeological works;
- Measures to minimise effects on ecology;
- Measures to deal with waste water generated during construction activities, to minimise the risk of potentially contaminative material entering the local drainage network; and
- Emergency procedures to be followed in the event of an environmental incident (e.g. spillage).
- Monitoring:
 - Targets for continuous improvement on construction environmental performance, such as energy and water use, carbon emissions, and waste;
 - Monitoring requirements and procedures for recording and reporting the results and for taking remedial action in the event of a non-compliance with specified limited (if appropriate); Monitoring proposals, which should include details on the receptors for which monitoring will be undertaken; frequency of monitoring; factors against which the monitoring results will be analysed; threshold levels; list of organisations / individuals to whom results will be distributed; and actions to be taken in the event that thresholds are breached;
 - Procedures for monitoring construction processes against the project environmental objectives and for the appropriate action if thresholds have been breached; and
 - Procedures for co-ordinating the monitoring results to ensure that the combined effect of the works in different locations does not trigger threshold levels.
- Legal requirements:
 - Schedule of appropriate environmental legislation and good practice that will be adhered to, which is both current at the time of contract and which may come into force during the course of the contract;
 - A list of specific objectives and targets that have been imposed by planning conditions and agreed in consultation with third parties; and
 - A register of permissions and consents required, with responsibilities allocated and a programme for obtaining them.

6.7.3 The CEMP will be updated and developed throughout the demolition and construction phases in consultation with WCC. The CEMP will be regularly monitored during the construction works and revised to reflect any changes to programme or events and activities on-site.

- 6.7.4 Further details on specific measures to be included within the CEMP to mitigate potential effects identified within this ES are provided within technical chapters (*Chapters 8-16*), and *Chapter 18: Summary of Mitigation*.

Considerate Constructors Scheme

- 6.7.5 The Site will be registered with the 'Considerate Constructors Scheme'. This is a national initiative through which construction sites and companies registered with the scheme are monitored against a Code of Considerate Practice, designed to encourage best-practice beyond statutory requirements.

Neighbour and Public Relations

- 6.7.6 A key aspect of the successful management of the Proposed Scheme will be the maintenance of good relations with neighbours and the general public. The project team is engaged in consultation with a range of stakeholders and neighbours and this will continue through the various phases of the Proposed Scheme.

- 6.7.7 Regular communications with the local neighbourhood organisations and residents will take place during the works, to ensure they are kept fully updated of the various construction stages, abnormal deliveries or activities, etc. The Principle Contractor will be responsible for managing all community-related activities;

- Organise regular community liaison group meetings and assist in giving presentations to the neighbourhood on programmed milestone moments of the project;
- Arrange open forums to encourage general public participation, as required;
- Prepare and issue regular site newsletters to all neighbourhood properties with updates;
- Prepare and display project milestone activities on-site hoardings in prominent locations;
- Ensure Site Manager also is involved with the neighbourhood engagement;
- Ensure strategy and procedure to receive feedback from the community and actions to address any concerns raised and how to mitigate similar from reoccurring.

Management of Trade Contractors

- 6.7.8 Individual contractor contracts will incorporate relevant requirements in respect of environmental control, based largely on the standard of 'good working practice' as outlined within the CEMP, as well as statutory requirements. All trade contractors will be required to demonstrate how they will adhere to procedures set out within the CEMP, satisfying regulations and best-practices regarding environmental control



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 7: EIA Methodology

Westminster City Council

November 2021

7. EIA Methodology

7.1 Introduction

7.1.1 This chapter of the ES sets out the overall approach and methodology for assessing the environmental effects of the Proposed Scheme. In particular, it details the process of identifying the environmental topics to be included in the ES, the method of assessing the effects that are likely to arise from the Proposed Scheme and the significance of these effects. Details of the Proposed Scheme are presented in *Chapter 5: The Proposed Scheme* and *Chapter 6: Demolition and Construction* of this ES.

7.1.2 Further detail on how the assessment methodology is applied to each technical discipline is presented within the respective technical chapters of this ES (*Chapters 8 - 16*), along with a description of baseline, the likely effects of the Proposed Scheme and any mitigation requirements.

7.2 The Requirement for an EIA

7.2.1 Planning applications for development that require an EIA under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (As Amended)¹ (hereinafter referred to as the 'EIA Regulations') are termed 'EIA Applications'. Development that requires an EIA under the EIA Regulations is defined as 'EIA Development'.

7.2.2 The requirement for an EIA is based on the likelihood of significant environmental effects arising from a proposed development; and is either mandatory or conditional depending on the classification of the proposed development. EIA Developments are divided into Schedule 1 and Schedule 2 developments under the EIA Regulations.

7.2.3 Schedule 1 developments constitute those developments that are deemed to have likely significant effects on the environment and therefore, for which undertaking an EIA is mandatory. Schedule 1 developments include major chemical or petrochemical projects, industrial plants and major infrastructure projects, such as new power stations, transport, water and wastewater infrastructure, over a certain threshold. For developments which fall under Schedule 2, the need for an EIA is determined on the basis of a set criteria, which is outlined below:

- The development is within one of the classes of development stated in Schedule 2; AND
- EITHER it meets or exceeds the applicable threshold criteria for that class of development in Schedule 2; OR the development is to be carried out partly or wholly within a sensitive area (as defined in Part 1 of the EIA Regulations); AND
- It is likely to have significant effects on the environment by virtue of factors such as its nature, size or location.

7.2.4 Hence, the selection criteria are not just simply related to the scale or characteristics of development, but also consider the sensitivity of the receiving environment that will be affected by a development.

7.2.5 The Proposed Development falls within the development description of Column 1, Paragraph 10(b) of Schedule 2 of the EIA Regulations:

"b) Urban development projects, including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas".

7.2.6 For development falling within paragraph 10(b), the EIA Regulations set the following criteria to assist in determining whether an EIA is required:

"(i) The development includes more than 1 hectare of urban development which is not dwellinghouse development; or

(ii) The development includes more than 150 dwellings; or

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

(iii) The overall area of the development exceeds 5 hectares.”

- 7.2.7 Given that the Proposed Scheme exceeds thresholds (i), (ii) and is below threshold (iii) as defined above, and taking into account the location of the Site and the potential for significant effects to arise, the Proposed Scheme constitutes an ‘EIA Development’ under the EIA Regulations. Therefore, an EIA has been undertaken and the results are reported in this ES.

7.3 Legislation and Guidance for EIA and Preparation of Environmental Statements

- 7.3.1 This ES has been prepared in accordance with the requirements of the ‘EIA Regulations’ and current guidance together with applicable best practice guidance and case law relating to the EIA process, including:

- Department for Communities and Local Government (DCLG) Planning Practice Guidance (Environmental Impact Assessment) (2017)²;
- Office of the Deputy Prime Minister (ODPM) Environmental Impact Assessment – A Guide to Procedures (2006)³;
- Institute of Environmental Management and Assessment’s (IEMA) Guidelines for Environmental Impact Assessment, 2004 (amended 2006)⁴;
- European Commission’s Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (1999)⁵;
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development, July 2016⁶; and
- IEMA ES Review Criteria (where applicable)⁷.

7.4 Consultation

- 7.4.1 The process of consultation is critical to the preparation of a comprehensive and balanced ES. The views of key statutory and non-statutory consultees serve to focus the environmental assessments and help identify specific matters which require further investigation. Early consultation also enables mitigation measures to be incorporated into the project design, thereby avoiding or limiting adverse effects and enhancing benefits.

- 7.4.2 Consultees involved in the evolution of the design and/or preliminary assessment of environmental effects either during the EIA Scoping stage or via separate consultation have included (but not are limited to):

- Westminster City Council (WCC);
- Greater London Authority (GLA);
- Environment Agency (EA);
- Transport for London (TfL);
- Historic England (HE);
- Natural England (NE);
- Network Rail (NR);
- National Grid (NG);
- Thames Water Utilities Limited (TWUL) and other service providers; and

²Department for Communities and Local Government (DCLG), (2017); Planning Practice Guidance

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

⁴Institute for Environmental Assessment (IEMA), (2006); Guidelines for Environmental Impact Assessment (as amended 2006)

⁵European Commission, (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions

⁶IEMA (2016); Environmental Impact Assessment Guide to: Delivering Quality Development, July 2016

⁷IEMA (2016); Environmental Statement Review Criteria: EIA Quality Mark Applicant Guide.

https://www.iema.net/assets/newbuild/documents/EIA%20Quality%20Mark_Applicant%20Guide%20June%202016%20V6.pdf [Accessed 20th December 2019]

- Local residents, community organisations, local businesses and local community and workspace operators.

7.4.3 Changes made to the Proposed Scheme as a result of consultation are discussed in *Chapter 4: Alternatives and Design Evolution* and the final design is outlined within *Chapter: 5 Proposed Scheme*. Furthermore, feedback from consultation relevant to the technical assessments is discussed in the relevant technical chapters of the ES (*Chapters 8-16*).

7.5 EIA Scoping

7.5.1 EIA Scoping forms one of the first stages of the EIA process and it is through scoping that the Local Planning Authority (LPA) and key statutory and non-statutory consultees are consulted on those environmental aspects that have the potential to be significantly affected by the Proposed Scheme and as such, should be included in the scope of the EIA. The main purpose of the scoping process is to:

- Consider the potential for likely significant effects from the Proposed Scheme;
- Identify which environmental areas are not likely to experience significant effects and therefore can be scoped out of the EIA;
- Identify which environmental areas may be subject to significant effects or for which sufficient information is not available, and therefore, would need to be scoped into the EIA for further assessment;

7.5.2 For topics scoped into the EIA, the EIA Scoping Report:

- Identifies data and appropriate surveys to be undertaken to establish the existing baseline; and
- Outlines the scope and assessment methodology for determining likely significant effects.

7.5.3 Regulation 15 of the EIA Regulations provides that the Applicant may ask the LPA to state in writing its opinion as to the scope and level of detail of the information to be provided in the ES. An EIA Scoping Report was formally submitted to WCC on 18th June 2021 and WCC's EIA Scoping Opinion was received on 3rd September 2021. A copy of the EIA Scoping Report and WCC's Scoping Opinion are provided in *ES Volume III: Appendix 7-A: EIA Scoping Report and Scoping Opinion* of this ES, including the statutory consultation responses to the request for the EIA Scoping Opinion.

7.5.4 Each technical chapter (*Chapters 8 – 16*) contains a table within the 'Consultation' section, which provides a summary of the key points raised in the WCC's EIA Scoping Opinion with regards to their specific topic.

7.5.5 No comments were raised in relation to the overarching assessment methodology.

Topics Scoped Into the EIA

7.5.6 As a result of the EIA Scoping process and subsequent consideration of potential effects, the following technical topics have been included within the EIA:

- Air Quality (*Chapter 8: Air Quality* of this ES);
- Built Heritage (*Chapter 9: Built Heritage* of this ES);
- Climate Change (*Chapter 10: Climate Change* of this ES);
- Daylight, Sunlight and Overshadowing (*Chapter 11: Daylight, Sunlight and Overshadowing* of this ES, supported by the Daylight, Sunlight and Overshadowing Technical Results in *ES Volume III Appendices 11-A to 11-D*);
- Noise and Vibration (*Chapter 12: Noise and Vibration* of this ES);
- Socio-economics (*Chapter 13: Socio-economics* of this ES);
- Townscape, Visual and Impact Assessment (*ES Volume II: Townscape and Visual Impact Assessment* of this ES);
- Traffic and Transport (*Chapter 15: Traffic and Transport* of this ES, supported by the Transport Assessment (Includes the Framework Travel Plan));
- Wind Microclimate (*Chapter 16: Wind Microclimate* of this ES, supported by the Wind Microclimate Technical Report provided in *ES Volume III Appendix 16-A*); and

7.5.7 Where certain aspects of the technical assessments listed above have been scoped out of the EIA, this is explained within the technical chapters of this ES. In addition, the technical chapters of the ES define the spatial scope of the assessments undertaken.

Topics Scoped Out of the EIA

7.5.8 The EIA scoping process has also identified a number of technical topics that can be 'scoped out' of the EIA, as it is considered that the likely effects to arise from the Proposed Scheme related to these technical topics are 'not significant', and therefore do not require further assessment within the EIA. These topics include:

- Archaeology;
- Ecology and Biodiversity;
- Ground Conditions;
- Waste and Resources; and
- Water Environment.

Archaeology

7.5.9 A desk based archaeological assessment has been completed in 2021⁸. In terms of relevant, nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wrecks or Historic Battlefields lie within the application site or the immediate vicinity. Archaeological finds and features from within a 600m radius of the Proposed Scheme recorded on the Greater London Historic Environment Record have been reviewed for the desk based assessment, together with a review of documentary sources and a map regression charting the history of the application site from the eighteenth century to the present day.

7.5.10 The application site is considered likely to have a generally low archaeological potential for the prehistoric periods: the only two finds of prehistoric date within the 600m radius have comprised individual Palaeolithic artefacts, with no Mesolithic, Neolithic, Bronze Age or Iron Age finds recorded. The application site can be considered likely to have an archaeological potential for the Roman period, associated with the adjacent road alignment, with archaeological evidence for the road noted to the

⁸ RPS (2021); Church Street Desk Based Archaeological Assessment

south of the Proposed Scheme. Past post-depositional impacts within the application site is considered likely to have had a severe, negative archaeological impact, as a result of previous development, together with the impact of World War Two bomb damage. The perceived generally low archaeological potential, combined with the considered impact of previous development, indicates that the likely significance of the archaeological remains likely to occur within the application site is considered to be generally low. Therefore, significant environmental effects are not considered likely in relation to archaeology at the application site, and further assessment of archaeology has been scoped out of the EIA. The archaeological DBA prepared by RPS will form the technical document in support of the planning application, instead of an ES Chapter.

Ecology and Biodiversity

- 7.5.11 An extended Phase 1 habitats survey was undertaken in October 2018 by Arcadis to identify potential constraints and the need for additional surveys. This information was updated in September 2020 by Arcadis. Desk-based ecological information was also collated from multiple sources. The Site is not situated within any statutory designated sites for ecological value, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Areas of Conservation (SAC) or Ramsar Sites, nor are there any located within a 1km radius of the Site. The closest identified non-statutory designated site is the St Mary's Churchyard and Paddington Green (Borough Grade II) and Lisson Garden (Local) are located approximately 0.25km from the survey area, west and south-east respectively (Sites of importance for Nature Conservation (SINC)). A limited range of habitats were recorded including introduced shrubs, amenity grassland and scattered trees.
- 7.5.12 Trees located within the survey area were assessed from ground level for their potential to support roosting bats. No features suitable for roosting bats were observed within the trees present within the survey area. Furthermore, buildings within the survey area were assessed as having low potential to support roosting bats. Emergence / re-entry surveys on buildings with a low potential were conducted in September 2020. No bats were recorded or observed during the emergence / re-entry surveys conducted on these buildings.
- 7.5.13 It is considered that impacts to flora and fauna on and around the site can be controlled through standard approaches. Recreational pressures on three non-statutory designated sites, St Mary's Churchyard and Paddington Green, Lisson Garden and the London's Canal were considered. Due to the habitats present within the survey area and the highly-urbanised nature of the surroundings, any direct or indirect impacts were provisionally considered unlikely. A specific EIA Biodiversity Chapter is scoped out of the EIA. A EclA which will report surveys conducted to date and the results and a Biodiversity Net Gain Assessment will be prepared in support of the hybrid planning application.

Ground Conditions

- 7.5.14 There are no designated geological or geomorphological sites or features of conservation value in the area affected by the Proposed Scheme. There are no minerals safeguarding zones or allocated mineral extraction areas in the borough. The materials on the application site are not considered to represent workable land-based reserves of aggregate. Given the potential for unstable ground to be present is generally assessed to be very low, mitigation and management actions are not deemed necessary.
- 7.5.15 The geology and geomorphological setting of the application site is such that the potential for unstable ground to be present is generally assessed to be very low. The exception relates to the potential hazard associated with shrinking/swelling clays as the near-surface soils are expected to have a high volume change potential. Therefore, due allowance will be made for the presence of the trees and shrubs in the design of foundations, floor slabs and infrastructure in accordance with NHBC Standard guidelines⁹ such that there will be no potential significant effects related to shrinking/swelling clays. With respect to unexploded ordnance, 1st Line Defence recommends appropriate mitigation measures such that there will be no potential significant effects related to unexploded ordnance.
- 7.5.16 A Phase 1 Ground Condition Assessment will be undertaken to support the planning application. The Phase 1 Ground Condition Assessment will include qualitative assessments of (i) the potential risks and

⁹ NHBC Standard Part 4 Foundations, Chapter 4.2, Building near trees. National House Building Council, Amersham, Buckinghamshire, dated 2021.

hazards associated with existing or potential future contamination in the ground, and (ii) the geological hazards and potential ground stability risk arising from artificial cavities; natural cavities; and other potential adverse foundation conditions together with initial comments in relation to likely remediation strategies. Based on a preliminary assessment of the existing baseline conditions, the overall potential for significant contamination to be present on the site is assessed to be Low, whilst the potential for hazardous ground gases to be present is assessed to be Very Low. As such it is anticipated that a ground investigation will not be required to verify the preliminary assessment of land contamination risks in support of the planning application for proposed redevelopment of the application site, and that the Phase 1 Ground Condition Assessment will be sufficient for this purpose.

- 7.5.17 When considering the above, no significant effects with regards to ground conditions that cannot be managed by well understood methods and common practice are anticipated as a result of the Proposed Scheme. Therefore, Ground Conditions is scoped out of the ES.

Waste and Resources

- 7.5.18 It is considered that there are no likely significant effects from the Proposed Development on the local waste infrastructure, as there is sufficient capacity within the existing infrastructure to accommodate waste from the construction and operational phases of the Proposed Development, as demonstrated in the EIA Scoping Report (*ES Volume III Appendix 7-A*). A waste management strategy will be prepared for the Proposed Scheme which will demonstrate how the Proposed Scheme will be aligned to local planning policy, including the ambitious local targets as set out within the Westminster City Plan. Furthermore, an Operational Waste Management Strategy (OWMS), a Framework Site Waste Management Plan (SWMP) and a Circular Economy Statement will also be prepared for the application site.
- 7.5.19 These are considered appropriate mechanisms to manage waste and materials effectively, minimise environmental impacts and maximise benefits throughout the lifetime of the Proposed Scheme. As such, no likely significant effects are expected, and therefore Waste and Materials is scoped out of the ES.

Water Resources, Flood Risk and Drainage

- 7.5.20 As explained in the EIA Scoping Report, it is considered that there are no likely significant effects on the risk of flooding as a result of the Proposed Scheme, with appropriate mitigation incorporated within design. This includes the use of Sustainable Drainage Systems (SuDS) (such as rain gardens and attenuation tanks), to provide adequate treatment of runoff and to manage surface water runoff for all rainfall events up to and including the 1 in 100 (1 %) AP, including an appropriate allowance for climate change. Following the implementation of this mitigation there would be a negligible effect on flood risk during the complete and operational phase.
- 7.5.21 The scale of the Proposed Development would not alter the type of and effectiveness of any water quality mitigation that may be required during the either the construction or operational phases. A number of measures will be implemented through the construction phase of the Proposed Development to mitigate any effects on water resources including:
- Implementation of a Construction Environmental Management Plan (CEMP);
 - Discharge operations in accordance with the Water Industry Act 1991¹⁰;
 - Adherence to Control of Substances Hazardous to Health Regulations 2002¹¹ and the Control of Pollution (Oil Storage) (England) Regulations 2001¹²; and
 - Good practice as described in relevant British Standards, Construction Industry Research and Information Association (CIRIA) publications (e.g. C753, C650, C648, C532), Environmental Agency Guidance of Pollution Prevention and any un-updated Pollution Prevention Guidance documents.
- 7.5.22 Overall, the baseline flood risk identifies that there is a low risk of flooding to this application site from the various flood sources. In addition, with the inclusion of embedded mitigation and good practice

¹⁰ Water Industry Act 1991

¹¹ Control of Substances Hazardous to Health Regulations 2002

¹² Control of Pollution (Oil Storage) (England) Regulations 2001

measures there is unlikely to be potential for likely significant effects on the flood risk receptors and therefore this topic is scoped out of the ES.

7.6 General Assessment Methodology

Overview

- 7.6.1 This section outlines the general EIA methodology used throughout the ES for a consistent identification of likely significant effects. Details relating to the specific assessment methodologies of individual technical topics are provided in the technical chapters of this ES (*Chapters 8-16*). In summary, each technical chapter of the ES follows a five stage approach, as set out below.

Stage 1: Determining the value/ sensitivity of the receptor or environmental resource

- 7.6.2 The technical chapters define the baseline conditions against which the likely significant environmental effects of the Proposed Scheme are determined, and identify receptors and environmental resources which may be impacted by the Proposed Scheme. Each receptor and/ or environmental resource is assigned a value on the basis of its importance or sensitivity to potential impacts, according to the methodology set out in the relevant technical chapter.

Stage 2: Determining the magnitude and attributes of impacts

- 7.6.3 The technical chapters identify the potential impacts of the Proposed Scheme from the demolition and construction phase, and upon completion and operation. The magnitude of the impact or scale of change in comparison to baseline conditions is determined in line with the topic specific methodology, while taking into account any mitigation that forms an inherent part of the Proposed Scheme (defined as 'primary mitigation' by IEMA¹³, outlined in the 'Environmental Design and Management' section of each technical chapter) or is considered as standard practice or a legislative requirement for managing commonly occurring environmental effects (defined as 'tertiary mitigation' by IEMA, outlined in the 'Additional Mitigation and Monitoring' section of each technical chapter). Where it has not been possible to quantify impacts, qualitative assessments have been carried out, based on expert opinion (see *ES Volume III: Appendix 1-A*) and professional judgement. Where uncertainty exists, this is noted in the relevant ES chapter.

Stage 3: Classification of the effect

- 7.6.4 The technical chapters classify the effect of the Proposed Scheme by combining the sensitivity/ value of the receptor or environmental resource and the magnitude of impact. Each technical topic has its own method for classifying effects, based on industry standards, accepted criteria and legislation where available. An example of how this might be undertaken is given in Table 7-1 below.

¹³ IEMA (2016); Environmental Impact Assessment: Guide to Delivering Quality Development.
<https://www.iema.net/assets/newbuild/documents/Delivering%20Quality%20Development.pdf> [Accessed 20st December 2019]

Table 7-1 Classification of effects

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

7.6.5 The classification of effects may consider the following descriptors, as applicable:

- Sensitivity of the receptor;
- Extent and magnitude of the impact;
- Effect duration (whether short, medium or long-term);
- Effect nature (whether direct, indirect, reversible or irreversible);
- Whether the effect occurs in isolation, is cumulative or interactive;
- Performance against any relevant environmental quality standards; and
- Compatibility with environmental policies.

7.6.6 For consistency, the following terminology has been used throughout the ES to characterise effects:

- *No Effect* – No positive and/or negative influence from the Proposed Development;
- *Adverse* – Detrimental or negative effects to an environmental resource / receptor; or
- *Negligible* – Imperceptible effects to an environmental resource / receptor; or
- *Beneficial* – Advantageous or positive effect to an environmental resource / receptor.

7.6.7 Where adverse or beneficial effects are identified, these have been assessed against the following scale:

- *Minor* – Slight, very short or highly localised effect of no significant consequence; or
- *Moderate* – Limited effect (by extent, duration or magnitude), which may be considered significant; or
- *Major* – Considerable effect (by extent, duration or magnitude) that may be in breach of recognised acceptability, legislation, policy or standards.

7.6.8 When addressing the duration of an effect, the following terminology has been used:

- *Temporary* – Short, medium or long-term (e.g. a short-term temporary effect relates to an activity with a duration from several weeks to a few months, a medium-term temporary effect estimated to be several months to a year and long-term estimated to be several years); and
- *Permanent* - effects that are non-reversible, generally associated with the complete and operational Proposed Development.

7.6.9 The scale of the effect has been referenced as follows, where applicable:

- *Local level* – effects affecting the Site and/ or the neighbourhood;
- *Regional level* – effects influencing Greater London;
- *National level* – effects impacting different parts of the country or the UK.

Stage 4: Identifying additional mitigation measures, as necessary

- 7.6.10 Where possible, mitigation has been incorporated into the Proposed Scheme as part of the iterative design process (i.e. primary and tertiary mitigation, as defined by IEMA). Where major or moderate adverse effects are predicted after this mitigation has been taken into account, additional measures are identified to avoid, further mitigate or remedy those effects. As defined by IEMA, these measures are classed as 'secondary mitigation' and may be imposed as part of a planning condition or through inclusion in the ES. All mitigation measures, whether primary, tertiary or secondary, are described within the technical chapters and summarised within *Chapter 18: Summary of Mitigation*.

Stage 5: Identifying residual effects

- 7.6.11 Following the identification of any additional mitigation measures, if required, the residual effects of the Proposed Scheme are determined. In general, residual effects found to be '**moderate**' or '**major**' are deemed to be '**significant**'. Effects found to be '**minor**' are considered to be '**not significant**', although they may be a matter of local concern. '**Negligible**' effects are considered to be '**not significant**' and not a matter of local concern. In relation to the assessment of climate change, as set out in *Chapter 10: Climate Change* there is a deviation from this approach, as any effect can be considered significant. The residual effects for each technical discipline are described within each of the technical chapters and are summarised within *Chapter 19: Residual Effects and Conclusions* of this ES.

7.7 Assessment Scenarios

- 7.7.1 On the basis of the proposed construction period and year of completion set out in *Chapter 5: Proposed Scheme* and *Chapter 6: Demolition and Construction*, the temporal scope of the EIA has been defined as follows:

- Description of Baseline Conditions:
 - The baseline (i.e. the existing Site) as it is today (2021). Survey data has been gathered across 2019, 2020 and 2021. The age of baseline data is set out in each technical chapter. Where cumulative schemes are expected to be completed before construction of the Proposed Scheme commences, these developments have been considered as part of the future baseline scenario in the technical assessments, as appropriate. Cumulative schemes considered as part of the future baseline are summarised in Table 7-3.
- Demolition and Construction Assessment (2022 – 2035):
 - The demolition and construction phase assessment assesses the demolition and construction period.
 - Impacts during the construction phase on any future on-site occupants or users of parts of the Site while construction is still on-going have been qualitatively considered as part of the construction phase assessment for the technical topics. However, any quantitative modelling will only be undertaken for the peak year of construction that is considered to represent the 'worst case scenario'. The level of assessment is for each technical discipline to determine, but it must be justified, robust and defensible.
 - The assumptions made on the status of cumulative schemes during the construction period of the Proposed Scheme are summarised in Table 7-3 for determining any likely cumulative effects during the construction period.
- Completed and Operational Assessment:
 - The Proposed Scheme is assumed to be fully completed and operational by 2035.
 - The completed and operational Proposed Scheme in 2035 is also assessed together with cumulative schemes listed in Table 7-3, in order to determine any likely cumulative effects.

- 7.7.2 For each of the technical disciplines, the approach to assessment scenarios relevant to that topic are described further in the relevant technical chapter (*Chapters 8 – 16*).

7.8 Approach to Effect Interactions and Cumulative Effects Assessment

7.8.1 In accordance with the EIA Regulations, the EIA needs to consider 'cumulative effects'. By definition, these are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together (i.e. cumulatively) with the Proposed Scheme.

7.8.2 For the cumulative assessment, two types of effect have been considered:

- Type 1 - The combined effect of individual effects, for example noise, airborne dust or traffic on a single receptor (defined as 'effect interactions'); and
- Type 2 - The combined effects of nearby consented or under construction development schemes which may, on an individual basis not be significant but, cumulatively, have a likely significant effect (defined as 'cumulative effects').

Effect Interactions (Type 1 Effects)

7.8.3 There is no established EIA methodology for assessing and quantifying effect interactions that lead to combined effects on sensitive receptors, however the European Commission (EC) has produced guidelines for assessing effect interactions "*which are not intended to be formal or prescriptive, but are designed to assist EIA practitioners in developing an approach which is appropriate to a project...*"¹⁴. AECOM has reviewed these guidelines and has developed an approach which uses the defined residual effects of the Proposed Scheme to determine the potential for effect interactions that lead to combined effects.

7.8.4 The EIA has predicted a number of beneficial and adverse effects during construction and on completion and operational of the Proposed Scheme, which are classified as minor, moderate or major. Several effects on one receptor or receptor group could interact or combine to produce a combined significant overall effect.

7.8.5 An exercise which tabulates the effects on receptors or receptor groups has been undertaken to determine the potential for effect interactions and so combined effects and is presented within *Chapter 18: Effect Interactions*. Only adverse or beneficial residual effects classified as minor, moderate or major have been considered in relation to potential effect interactions. Residual effects, which are classified as negligible have been excluded from the assessment of the effect interactions as, by virtue of their definition, they are considered to be imperceptible effects to an environmental / socio-economic resource or receptor.

7.8.6 For the purposes of the assessment of effect interactions, the receptors or resources which may experience effects identified across a number of technical ES chapters are identified in Table 7-2 below. Where there is considered to be no potential for effect interactions that lead to combined effects, this is stated. For other environmental topics, it is apparent that effect interactions could occur and the Proposed Scheme could impact upon individual resources / receptors in different ways, such that combined effects may occur.

7.8.7 The identified residual effects have been reviewed against the receptors they affect. Where more than one effect on a particular receptor/ resource has been identified, the potential for combined effects has been assessed in *Chapter 18: Effect Interactions*. Consideration has been given to the construction stage, and once the Proposed Scheme is complete and occupied.

¹⁴European Commission (EC) (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. <http://ec.europa.eu/environment/archives/eia/eia-studies-and-reports/pdf/guidel.pdf>

Table 7-2 List of Sensitive Receptors

Category	Description of Receptor/ Resource	ES Chapter Reference	Potential for Effect Interactions?
Demolition and Construction Workers	Workers employed for the demolition and construction phases of the Proposed Scheme.	<i>Chapter 8: Air Quality</i> <i>Chapter 12: Noise and Vibration</i> <i>Chapter 13: Socio-economics</i>	Y
Future on-site Users	Future residents and employees of the Proposed Scheme who occupy the Site when the development or parts of the development have been completed; also maintenance workers and general public who may access the Site. Includes the buildings, building entrances, thoroughfares and amenity space which will be used by future occupiers.	<i>Chapter 8: Air Quality</i> <i>Chapter 10: Climate Change</i> <i>Chapter 11: Daylight, Sunlight and Overshadowing</i> <i>Chapter 12: Noise and Vibration</i> <i>Chapter 13: Socio-economics</i> <i>Chapter 14: Traffic and Transport</i> <i>Chapter 15: Wind Microclimate</i>	Y
Neighbouring Residential Properties	Existing Neighbouring residential properties within the immediate vicinity of the Proposed Scheme	<i>Chapter 8: Air Quality</i> <i>Chapter 11: Daylight, Sunlight and Overshadowing</i> <i>Chapter 12: Noise and Vibration</i> <i>Chapter 13: Socio-economics</i> <i>Chapter 14: Traffic and Transport</i> <i>Chapter 15: Wind Microclimate</i>	Y
Neighbouring and Local Commercial Properties and Businesses	Existing commercial properties and businesses within the immediate vicinity of the Site, and the local economy overall.	<i>Chapter 8: Air Quality</i> <i>Chapter 11: Daylight, Sunlight and Overshadowing</i> <i>Chapter 12: Noise and Vibration</i> <i>Chapter 13: Socio-economics</i> <i>Chapter 14: Traffic and Transport</i> <i>Chapter 15: Wind Microclimate</i>	Y
Neighbouring / Local Amenity / Open Space	Neighbouring / local open spaces and areas of public realm and their users	<i>Chapter 8: Air Quality</i> <i>Chapter 11: Daylight, Sunlight and Overshadowing</i> <i>Chapter 12: Noise and Vibration</i> <i>Chapter 14: Traffic and Transport</i> <i>Chapter 15: Wind Microclimate</i>	Y
Pedestrian and Cycle Network	Pedestrians and cyclists on the Site and in the surrounding area.	<i>Chapter 14: Traffic and Transport</i>	N
Local Highway Network	Road users surrounding the Site.	<i>Chapter 14: Traffic and Transport</i>	N
Public Transport Network	Users of local public transport network (i.e. buses, rail).	<i>Chapter 14: Traffic and Transport</i>	N
Built Heritage Assets	Heritage assets, such as conservation areas, listed buildings and locally listed buildings.	<i>Chapter 9: Built Heritage</i>	N

Category	Description of Receptor/ Resource	ES Chapter Reference	Potential for Effect Interactions?
Townscape Character	Geographical areas which have readily identifiable characteristics	<i>ES Volume II: Townscape and Visual Impact Assessment</i>	N
Local and Long Distance Views	Key short, medium and long distance views to the Site.	<i>ES Volume II: Townscape and Visual Impact Assessment</i>	N
Climate	Global climate and the UK Carbon Budget	<i>Chapter 10: Climate Change</i>	N

Cumulative Effects (Type 2 Effects)

- 7.8.8 The approach to cumulative effects assessment with reasonably foreseeable cumulative schemes adopted within this ES has been based on the guidance presented in the Planning Inspectorate 2015 Advice Note 17¹⁵.
- 7.8.9 In summary, the Zone of Influence (ZOI) of the Proposed Scheme within which any potential effects of the Proposed Scheme may combine with the effects arising from other developments has been determined on the basis of the maximum study areas of the technical assessments considered within the EIA. For the majority of technical assessments this has not exceeded 1km, with the exception of the TVBHIA, for which the study area has been determined on the basis of a 'visual study area' of the Proposed Scheme. This considers the anticipated extent of visibility from a height of approximately 1.5m (eye level) above the ground.
- 7.8.10 A long list of schemes within the visual study area has been identified and filtered on the basis of project specific criteria to short list 'cumulative schemes' for the assessment of cumulative effects together with the Proposed Scheme.
- 7.8.11 The project specific criteria for 'cumulative schemes' to be included in the cumulative effects assessment comprises those developments:
- Which are located within an approximate 1km radius of the Site; and
 - Result in an increase of more than 10,000m² gross external area (GEA) in floor area (or over 150 residential units); and
 - Which have a planning application submitted, have planning permission or a resolution to grant consent, or are under construction; or
 - Which are key regional infrastructure projects;
- 7.8.12 The short list of cumulative developments within the ZOI and a map indicating their locations are included in Table 7-3 and Figure 7-1. Each technical chapter of the ES has considered which of these schemes may result in cumulative effects together with the Proposed Scheme from the perspective of the relevant technical assessment.
- 7.8.13 It should be noted that some of the cumulative schemes that meet the above criteria are due to be occupied prior to the start of construction of the Proposed Scheme or before the Proposed Scheme is expected to be completed. As a result, these schemes may be considered as 'built' within the EIA assessment scenarios and included as part of the future baseline (particularly for studies that involve modelling of built development massing, such as wind microclimate and daylight, sunlight and overshadowing assessments). Where applicable, this has been stated in Table 7-3 below and within the relevant technical chapters.
- 7.8.14 For the majority of technical topics, the assessment of cumulative effects has been qualitative and has been reported as a collective assessment of the identified cumulative schemes rather than an assessment of each of the individual schemes. For the TVIA, wind microclimate and daylight, sunlight

¹⁵ Planning Inspectorate, PINS (2015); 'Advice Note 17: Cumulative Effects Assessment', Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/Advice-note-17V4.pdf> [Date Accessed: 20/12/2019].

and overshadowing assessments, the cumulative schemes have been built into the 3D models used for the assessments.

Table 7-3 Schemes Considered in the Cumulative Effects Assessment

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of September 2021
1	One Merchant Square	18/05018/FULL	Redevelopment comprising the erection of a 42 storey building (Building 1) and a 21 storey building (Building 6) above three basement levels. Use of buildings as 426 residential units (Class C3) (including 67 affordable housing units in Building 6), retail floorspace (Classes A1/ A2/ A3/ A4/ A5) and retail/leisure floorspace (Classes A1/ A2/ A3/ A4/ D2); Provision of car parking, cycle parking, ancillary space, plant, servicing, highway works, hard and soft landscaping and other associated development (EIA Development).	Resolution to Consent Subject to S106 being signed
2	Two Merchant Square	10/09757/FULL	This planning application is part of a larger scheme for Merchant Square to provide a mix of uses including residential accommodation, employment (offices), hotel, retail, medical and community facilities. Development comprising: Erection of a 17 storey building; <ul style="list-style-type: none"> • 20,775 m² of office floorspace (Class B1); • 396 m² of retail floorspace (Class A1/A2/A3/A4/A5); • Provision of basement parking to deliver: <ul style="list-style-type: none"> • 10 car parking spaces; and • 196 cycle spaces. • Provision of servicing and ancillary space, highway works, new vehicular and pedestrian access and associated hard and soft landscaping. 	Consented – Signed S106 Construction started 31/08/2015. Status unknown.
3	Paddington Exchange (North Wharf Gardens) Phase 2 East	13/11045/FULL S73 – 16/12289/FULL	Development comprising: <ul style="list-style-type: none"> • Erection of buildings between 6 and 20 storeys; • 335 residential units (Class C3) comprising: <ul style="list-style-type: none"> • Market housing; <ul style="list-style-type: none"> - 98 one bedroom units; - 126 two bedroom units; and - 77 three bedroom units. • Affordable housing; <ul style="list-style-type: none"> - 8 one bedroom units; - 25 two bedroom units; - 26 three bedroom units; and - 5 four (+) bedroom units. • 23,156 m² GIA hotel and serviced apartments (Class C1); 	Consented – Signed S106 Commenced 1/10/16

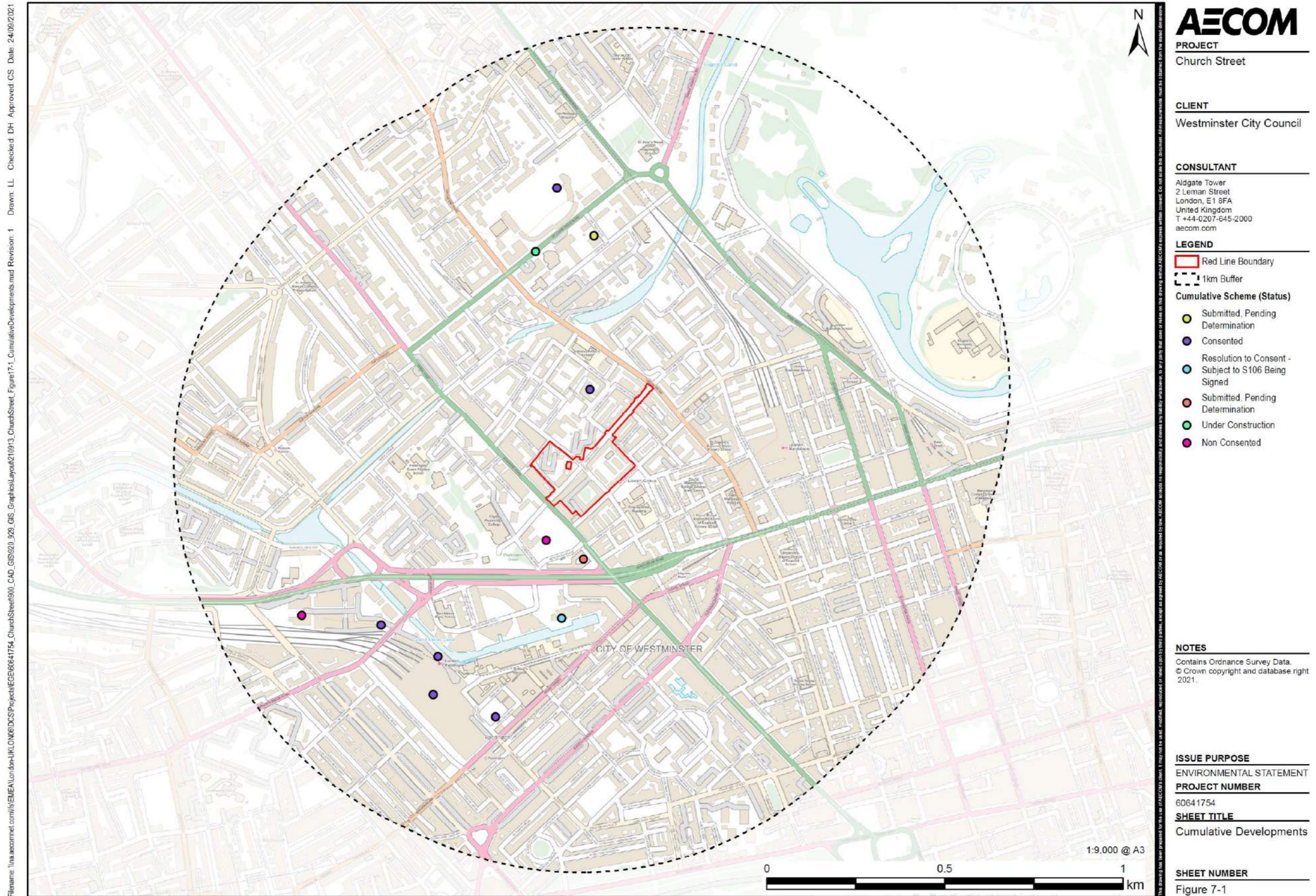
Figure Ref.	Name/Address	Planning Application Number	Description	Status as of September 2021
			<ul style="list-style-type: none"> 548 m2 GIA office floorspace (Class B1); • 915 m2 GIA gym (Class D2); • 943 m2 GIA retail (Class A1/A3); • 2,572 m2 GIA primary school (Class D1); • Provision of basement parking over two storey to deliver; <ul style="list-style-type: none"> - 16 car parking spaces; - 52 wheelchair accessible spaces; and - 598 cycle spaces. • Provision of associated landscaping and open space, highways works, and off street ground floor service bay. 	
4	The Landseer 38-44 Lodge Road	09/09773/FULL 14/04393/FULL 15/00529/FULL S73 – 15/02673/FULL	<ul style="list-style-type: none"> Demolition of existing buildings and redevelopment to include: <ul style="list-style-type: none"> • Erection of buildings between 5 and 12 storeys; • 129 residential units (Class C3) providing 17,594.3 m2 GIA) comprising: <ul style="list-style-type: none"> • Market housing; <ul style="list-style-type: none"> - One studio unit; - 15 one bedroom units; - 36 two bedroom units; - 19 three bedroom units; and - 10 four (+) bedroom units. • Affordable housing; <ul style="list-style-type: none"> - 24 one bedroom units; - 18 two bedroom units; and - 5 three bedroom units. • Provision of basement parking to deliver; <ul style="list-style-type: none"> - 91103 car parking spaces; and - 160258 cycle spaces. • Ancillary leisure and gym facility; and • Provision of associated landscaping and ancillary works. 	Consented – Signed S106 Commenced construction

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of September 2021
5	36 St John's Wood Road 38-44 Lodge Road (same location as site 7)	18/08105/FULL	Redevelopment of land at 36 St John's Wood Road for an extra care facility, ancillary medical and rehabilitation facilities, landscaping, car and cycle parking, and the redevelopment of 38-44 Lodge Road for a care home and residential units along with landscaping, car and cycle parking. <ul style="list-style-type: none"> • 26,000 sqm proposed • 89 extra care residential (C3) • 7,494 sqm care home (C2) • 1,8553 sqm affordable residential (C3) 	Consented April 2020 at appeal
6	Paddington Triangle	12/07668/FULL	Permission exists for the development of the site as part of the Paddington Integrated Project. The development of 'Paddington Triangle' specifically relates to the following: <ul style="list-style-type: none"> • Erection of a 21 storey building; • 34,184 m2 GIA office space (Class B1); • 132 m2 GIA retail space (Class A1/A2/A3); and • Provision of associated landscaping and other associated works. 	Consented – Signed S106
7	Crossrail Paddington Station Eastbourne Terrace	11/05349/XRPS	Request for approval of plans and specifications pursuant to Schedule 7 of the Crossrail Act 2008 for a new station comprising a ticket hall, canopy, two ventilation structures, stairs, escalators, lifts, railings and other associated works.	Consented Under Construction
8	Paddington Cube	16/09050/FULL S73 18/08240/FULL	Demolition of existing buildings and mixed use redevelopment comprising a commercial cube providing up to 50,000 m2 (GEA) floorspace of office/commercial uses, retail and café/restaurant uses at lower levels and top floor level, a retail/restaurant building on Praed Street; a new major piazza including pedestrianisation of London Street, a new access road between Winsland Street and Praed Street, hard and soft landscaping, new underground station entrance and new Bakerloo Line Ticket Hall; and associated infrastructure and interface highway and transport works for underground connections, and ancillary works.(EIA Application accompanied by an Environmental Statement). Site includes 31 London Street, 128-142 Praed Street, London Street, Paddington Station Arrivals ramp and associated surrounds	Consented – Signed S106 Under construction
9	1A Sheldon Square, W2	17/05609/FULL	Demolition of existing management office building and lift building, and erection of a new building comprising basement, three lower levels (canal level -1, amphitheatre level -2 and railway level -3), ground and 19 upper levels plus rooftop plant to provide a hotel with up to 200 bedrooms/suites and associated ancillary facilities including conference facilities/ meeting rooms/ private dining/ bars/ restaurants including publicly accessible restaurant/ bar at Level 19 (Class C1), flexible hotel/ retail (Class	Consented March 2018

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of September 2021
			C1/ A1) at part ground level, flexible hotel/ retail/ restaurant/ bar use (Class C1/ A1/ A3/ A4) at part - 1, and part - 2 level, and hotel (Class C1) at part -2 level as well as Level 17 roof terrace, replacement lift, plant, cycle parking, landscaping and other associated works.	
10	Lords Cricket Ground – Compton and Edrich stands redevelopment St John's Wood Road, NW8	18/08510/FULL	Demolition of the existing Compton and Edrich stands and redevelopment comprising the erection of a new stand to provide up to 11,500 seats, relocation of the existing floodlights, provision of new hospitality facilities, retail and food and beverage floorspace, hard and soft landscaping, servicing facilities, and all necessary ancillary and enabling works, plant and equipment.	Consented March 2019 Under Construction
11	Luton Street/ Capland Street/Bedlow Close site, NW8	17/08619/FULL	Demolition of buildings and redevelopment to provide two six storey buildings above lower ground and a row of three storey townhouses comprising up to 168 residential units with ancillary facilities (Class C3) and a Sports Hall (Class D2), and associated car park, energy centre and all other works incidental to the Proposed Scheme.	Consented March 2019 Implemented/ under construction
12	Former Paddington Green Police Station (14-17 Paddington Green)	21/02193/FULL	Demolition and redevelopment of the site to provide three buildings (1x 32 storey, 1 x 18 storey and 1 x 15 storey), providing 556 residential units (including 210 affordable units) (Class C3), commercial uses (Class E), flexible community/affordable workspace (Class E/F.1), provision of private and public amenity space, landscaping, tree and other planting, public realm improvements throughout the site including new pedestrian and cycle links, provision of public art and play space, basement level excavation to provide associated plant, servicing and disabled car and cycle parking, connecting through to the basement of the neighbouring West End Gate development. This application is accompanied by an Environmental Impact Assessment.	Application Refused
13	5 Kingdom Street	19/03673/FULL	Erection of a mixed-use development comprising ground floor (at Kingdom Street level), plus 18 storeys to provide offices (B1a) and retail (A1/A3) plus ancillary plant and amenity areas. Three floors below Kingdom Street delivered in phases to provide an auditorium (Sui Generis), a community space (D1) and a flexible mix of business (B1a/B1b), retail (A1/A3/Sui Generis), sport and leisure (D2) and exhibition (D1) uses within the former 'Crossrail box'. New outdoor terraces adjacent to railway at basement level; creation of a new pedestrian and cycle link between Harrow Road and Kingdom Street including internal and external garden and landscaping; and associated works. 5 Kingdom Street London	Application Refused

Figure Ref.	Name/Address	Planning Application Number	Description	Status as of September 2021
14	West End Gate	16/11562/FULL 16/11563/LBC 18/07821/ADFULL 18/08004/FULL 18/08090/ADFULL 18/08220/ADFULL 18/08303/ADFULL 20/05083/NMA 20/07571/NMA 21/05816/NMA	Demolition and redevelopment of 14-16 Paddington Green; alteration and partial demolition of 17 Paddington Green; development of land to the east and south of 14-17 Paddington Green (part of site known as 'West End Green') to provide buildings ranging between 4 and 14 upper storeys to provide up to 200 residential units, with associated landscaping, basement car and cycle parking and servicing provision. Various planning applications submitted to amend original planning consent.	Consented 21/05816/NMA: Pending

Figure 7-1 Location of Schemes Considered in the Cumulative Effects Assessment



7.9 Structure of the Technical Chapters

7.9.1 The technical chapters of this ES (*Chapters 8 – 16*) detail the legislative and planning policy context, assessment methodology and significance criteria; baseline conditions; likely significant effects and proposed mitigation measures (where required). In addition, an assessment of potential cumulative effects of the Proposed Scheme in combination with cumulative schemes is provided.

7.9.2 For consistency and ease of reading, a standard structure has been used for each technical chapter, as outlined below.

Table 7-4 Structure of Technical ES Chapters

Section	Content
Introduction	The introduction details the authorship of the technical study, provides a brief summary of what is considered in the chapter and provides any relevant background information.
Legislative and Planning Policy Context	This section includes a short summary of applicable legislation and policy plans (whether formalised or draft) at the local, regional and national level.
Assessment Methodology	The methods used in undertaking the topic-specific technical study are outlined in this section, with references to published standards, guidelines, guidance and relevant significance criteria. The significance of residual effects has been determined by reference to topic-specific effect significance criteria. These criteria apply the established terminology described in Section 7.6 of this chapter. Topic-specific effect significance criteria and standards/guidance from which they are derived are explained and definitions of minor, moderate and major (adverse or beneficial) and negligible effects are given.
Baseline Conditions	This section describes the 'baseline conditions' within the Site and the surrounding area with reference to the results of desk-based studies, site visits and surveys, modelling, consultation and a review of relevant planning policy (or a combination of these, as appropriate). Consideration is also given to the future baseline i.e. the environmental conditions at the Site in the future.
Environmental Design and Management	If applicable, the way that potential environmental effects have been or will be avoided, prevented, reduced or offset through the scheme design and / or management are described in this section. Proposed environmental enhancements are also described, if applicable. These include primary and tertiary mitigation measures, as defined by IEMA. Examples include: <ul style="list-style-type: none"> • Design measures fixed on parameter plans and referenced within the Design Code; • Application of standard construction management controls through a Construction Environmental Management Plan (CEMP) or similar, including monitoring measures during construction which will be outlined within the CEMP; • Consideration of appropriate building massing and design; • Incorporation of landscape features within the design; • Incorporation of sustainable drainage features within the design; and • Management and monitoring requirements set out within any plans submitted with the planning application.
Assessment of Effects	This section identifies the environmental effects resulting from the Proposed Scheme, both during construction and once the Proposed Scheme is complete and occupied. The effects of the Proposed Scheme are assessed against the existing baseline. This section describes each identified effect with reference to the sensitivity of receptors and the magnitude of change. Quantitative descriptors are included as appropriate.
Additional Mitigation Measures	Where potentially significant adverse effects are identified (despite environmental design and management measures having been adopted), additional mitigation measures are identified to avoid or reduce the adverse impact. This section describes the mitigation measures that the Applicant will implement to avoid or reduce adverse effects and enhance the beneficial effects associated with the Proposed Scheme. These measures can relate to any of the key phases of the Proposed Scheme: design, construction, and completion / operation. The additional mitigation measures are defined as secondary mitigation by IEMA.
Residual Effects and Conclusions	Effects arising as a result of the Proposed Scheme and which remain following the implementation of all mitigation measures committed to are known as 'residual effects'. These are discussed for each of the identified effects in this section, and effects which are likely to be significant (i.e. major or moderate) are identified. A brief comparison of the residual effects of the Proposed Scheme with those of the Previous Planning Application for the Site is included.
Cumulative Effects	This section presents an assessment of the cumulative effects of the Proposed Scheme with cumulative schemes (as set out in Section 7.8 of this chapter).

7.10 Assumptions and Limitations

7.10.1 A number of assumptions have been made within the EIA, which are set out below. Assumptions specific to certain environmental aspects are discussed in the relevant technical chapters of this ES. General assumptions include:

- The baseline is considered to be the existing Site as it stands at the time of writing of this ES, with the buildings on Site still in place;
- It is assumed that the cumulative schemes will take place as per the planning descriptions provided in Table 7-3.
- The principal land uses adjacent to the Site remain as they are at the time of the ES submission;
- Information provided by third parties, including publicly available information and databases is correct at the time of publication;
- The year in which it is anticipated that the Proposed Scheme will be fully operational is 2035 (refer to *Chapter 6: Demolition and Construction* of this ES for an indicative programme of construction works);
- The Site or adjacent properties will not be the subject of any unforeseen events of a severe nature; and
- Regarding the flexible floorspace areas, each technical topic has assumed a 'worst case' scenario' specific to their assessment, to ensure that the assessment is robust and the worst effects are captured within the ES.

7.10.2 The EIA is subject to the following limitations:

- Baseline conditions (in relation to the existing Site) are accurate at the time of the physical surveys but, due to the dynamic nature of the environment, conditions may change during the construction and operational phases;
- Further intrusive on-site work may be required in respect of ground conditions, geotechnical conditions and sub-surface archaeological remains so as to fully evaluate and assess matters including localised contamination and archaeological potential, and to enable the substructure construction methods to be finalised; and
- The assessment of cumulative effects is reliant on the information relating to the identified developments considered in the cumulative effects assessment which is available in the public domain. Only schemes that were consented prior to submission for this planning application have been included in the Cumulative Effects Assessment.

7.11 IEMA Quality Mark

7.11.1 AECOM holds the IEMA EIA Quality Mark as recognition of the quality of our EIA product and continuous training of our environmental consultants.

7.11.2 The IEMA Quality Mark 'checklists' for undertaking EIA and preparation of ESs have been referred to throughout preparation of this ES to ensure that this ES meets the stringent IEMA Quality Mark standards. The 'checklists' cover the following aspects: EIA Regulatory Compliance, EIA Context and Influence, EIA Content and EIA Presentation.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 8: Air Quality

Westminster City Council

November 2021

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8. Air Quality

8.1 Introduction

8.1.1 This chapter reports the findings of the air quality assessment and has been completed by Stantec.

8.2 Legislation, policy, and guidance

8.2.1 This assessment has been undertaken considering relevant legislation and guidance set out in national, regional and local planning policy and are summarised below.

Legislation

- EU Framework Directive 2008/50/EC, 2008
- Air Quality Standards Regulations, 2010
- The UK Air Quality Strategy 2007
- Environment Act 1995

Planning Policy

- National Planning Policy Framework
- London Plan 2021, 2021
- London Environment Strategy, 2018
- Department for Environment, Food and Rural Affairs, Clean Air Strategy, 2019
- Westminster City Council, City Plan 2019 – 2040, 2021

Guidance

- National Planning Practice Guidance
- Improving Air Quality in the UK: Tackling Nitrogen Dioxide in our Towns and Cities. UK Air Quality Plan for Tackling Nitrogen Dioxide, 2017
- Local Air Quality Management Technical Guidance 2016 (LAQM.TG(16))
- Environmental Protection UK & Institute of Air Quality Management Guidance 'Land-Use Planning & Development Control: Planning for Air Quality'
- Mayor of London: The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance, 2014
- The Mayor's Air Quality Strategy 'Clearing the Air', 2010
- Westminster City Council, Air Quality Action Plan 2019 – 2024, 2020

8.3 Consultation

8.3.1 Westminster City Council (WCC) and Avison Young requested initial clarifications on some of the air quality sections of the EIA Scoping Report. Details of these clarifications are set out in Table 8-1.

Table 8-1 Comments raised by WCC and Avison Young

Reference	Independent Review Comments/Observations	Additional Information/Clarification Request	EIA team response
Paragraph 7.1.11	States that the proposed development will be powered by an all-electric system, consisting of air source heat pumps and photovoltaic (PV) panels. Confirmation is required as to whether backup generators will be included in the proposals.	Confirmation is required as to whether backup generators will be included in the proposals.	There will be a back-up generator which will be considered within the air quality assessment as appropriate.
Paragraph 7.1.17	It is not clear whether the market is considered a sensitive receptor. This may come under the term 'other sensitive uses', but this should be clarified.	Confirm that the market is considered to be a sensitive receptor.	The Church Street market and its users will be assessed as a sensitive receptor during construction and operational phases.
Paragraph 7.1.20	Can the assessment scenarios be confirmed? Bullet points 2 and 3 – are these 2026 and bullets 4 and 5 – are these 2035? If this is the case, reasoning for excluding 2032 is required.	Confirmation of the rationale for the assessment years chosen and confirm that construction air quality will be assessed in relation to Site A when Site B is being constructed and site B when Site C is being constructed.	Bullet points 2 and 3 are 2026, bullet points 4 and 5 are 2035. As the construction programme is indicative at this stage for Sites B and C, which will be subject to reserved matters applications – it is intended to consider the following completed development scenarios: Opening year – 2026 (of Site A Opening year of whole completed development (Sites B and C).
Paragraph 7.1.26	The assessment criteria set out use change in baseline levels measured against the NAQS. This is a standard approach. The WCC EHO would like regard to be had to the World Health Organisation guideline values for PM _{2.5} in reaching its conclusions.	None, if the reporting of the assessment in the ES regard is to be had to World Health organisation guideline values for PM _{2.5} in reaching conclusions.	We can confirm that the report of the assessment will have regard to the WHO guideline values for PM _{2.5} , in line with the requirements of the London Plan air quality policies.

8.4 Assessment methodology

8.4.1 The assessment methodology detailed in the following sections has been applied to ascertain the potential impacts of emissions to air in order to identify their significance and compliance with policy and regulatory requirements and whether or not additional mitigation is required.

8.4.2 This assessment first defines the 'study area' and outlines the baseline air quality (for both 'existing' and relevant future years i.e. development construction, first occupation or completion) within this study area. The suitability of the site for the proposed end use is then assessed at receptors introduced by the Proposed Scheme.

Determining baseline conditions and sensitive receptors

8.4.3 Any exceedances of the EU Limit Values along roads within the study area have been identified using the 2021 NO₂ and PM Projections Data published by DEFRA (DEFRA, 2020a¹). Information on baseline air quality in the study area has been obtained by collating the results of monitoring carried out by WCC

¹ Department of the Environment, Food and Rural Affairs (DEFRA) (2020a) '2020 NO₂ and PM Projections Data (2018 Reference Year)' [online] Available at: <https://uk-air.defra.gov.uk/library/no2ten/2020-no2-pm-projections-from-2018-data>

and their LAQM reports to identify potential AQMAs. The proximity of the Site to Air Quality Focus Areas (AQFAs) has been identified based on the latest LAEI update (GLA, 2016²). Background concentrations for the study area have been defined using the national pollution maps published by DEFRA which cover the whole country on a 1x1 km grid (DEFRA, 2020b³).

- 8.4.4 Relevant sensitive human receptor locations are places where members of the public might be expected to be regularly present over the averaging period of the NAQOs. The NO₂, PM₁₀ and PM_{2.5} annual mean National Air Quality Objective (NAQO) sensitive locations include existing and proposed residences, existing schools, nurseries. When identifying these receptors, particular attention has been paid to assessing impacts close to junctions, traffic lights and roundabouts where traffic may become congested, where there is a combined effect of several road links and routes along which substantial volumes of traffic generated by the Proposed Scheme will travel. An assessment in relation to the NAQOs and WHO Guideline Values⁴ has been made in relation to the baseline conditions and the detailed assessment carried out for the NAQOs.
- 8.4.5 Based on these criteria, two schools (construction phase), one nursery (construction phase), 23 existing residential properties (construction phase), 22 proposed residential properties (completed development) have been identified as worst-case receptors for the assessment. These locations are described in Table A8.5.2 and Table A8.5.3, Appendix 8.5, and shown in Figures 8.2-8.3.
- 8.4.6 Concentrations have also been predicted at the automatic monitoring site located at Oxford Street East to verify the modelled results. Appendix 8.6 provides further details on the verification method.

Methodology for demolition and construction assessment

Study Area

- 8.4.7 The study area adopted for the demolition and construction assessment is as follows:
- for the demolition and construction dust risk assessment, the study area (based on IAQM, 2014 guidance⁵) is defined as comprising the area up to 350m from the Site boundary and 50m from the route used by construction vehicles (up to 500m from the Site entrance(s));
 - for the demolition and construction phase road traffic emission assessment, the study area (based on the EPUK / IAQM, 2017 guidance⁶) includes all roads (and adjacent properties) predicted to exceed the screening criteria outlined in Table A8.3.1,

Methodology

Dust Impacts

- 8.4.8 During demolition and construction, dust from on-site activities and off-site trackout by construction vehicles has the potential to impact on sensitive human receptors within the study area; the main potential impacts are loss of amenity (as a result of dust soiling) and deterioration of human health (as a result of concentrations of PM₁₀).
- 8.4.9 The suspension of particles in the air is dependent on surface characteristics, weather conditions and on-site activities. Impacts have the potential to occur when dust generating activities coincide with dry, windy conditions, and where sensitive receptors are located downwind of the dust source(s).
- 8.4.10 Separation distance is also an important factor. Large dust particles (greater than 30µm), can be potentially responsible for most dust annoyance, will largely deposit within 100 m of sources. Intermediate particles (10-30 µm) can travel 200-500 m. Consequently, significant dust annoyance is usually limited to within a few hundred metres of its source. Smaller particles (less than 10 µm), which are the predominant fraction that can be potentially responsible for human health impacts largely remain

² Greater London Authority (2019). London Atmospheric Emissions (LAEI) 2016

³ Department of the Environment, Food and Rural Affairs (DEFRA) (2020b). '2018 Based Background Maps'

⁴ World Health Organization (2018), Ambient (outdoor) air pollution – Air quality guideline values.

⁵ Institute of Air Quality Management (2014). 'Assessment of Dust from Demolition and Construction', IAQM, London

⁶ EPUK / IAQM (2017). 'Land-use Planning & Development Control: Planning for Air Quality'. V1.2. The Institute for Air Quality Management, London

airborne. However, the impact on the short-term concentrations of PM₁₀ occurs over a shorter distance due to the rapid decrease in concentrations with distance from the source due to dispersion.

Screening Assessment

- 8.4.11 The first stage of the assessment involves screening to determine if there are sensitive receptors within threshold distances of the activities associated with the construction phase of the Proposed Scheme; defined as the study area. No further assessment is required if there are no receptors within the study area.
- 8.4.12 The IAQM guidance outlines that an assessment is only required in cases where:
- A 'human receptor' is located within:
 - 350 m of the boundary of the Site; OR
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Site entrance(s).
 - An 'ecological receptor' is located within:
 - 50 m of the boundary of the Site; OR
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Site entrance(s).

Further Assessment

- 8.4.13 The risk of impacts associated with dust soiling and PM₁₀ caused by the Proposed Scheme has been determined (following the IAQM guidance⁵) based on the dust emission class (or magnitude) for each activity arising from four activities in the absence of mitigation (demolition, earthworks, construction and trackout), the sensitivity of nearby receptors and the overall sensitivity of the area. The dust emission class, receptor sensitivity and the overall sensitivity of the area are determined using the criteria outlined in Table A8.4.1, Table A8.4.2, Table A8.4.3, Table A8.4.4, and Table A8.4.5 of Appendix 8.4 (based on the IAQM guidance), indicative thresholds and professional judgement. The risk of dust impacts arising is a product of the relationship between the dust emission magnitude and the area sensitivity and is based on the criteria outlined in Table A8.4.6 (based on the IAQM guidance). The risk of impact is then used to determine the mitigation requirements.
- 8.4.14 The IAQM guidance⁵ recommends that no assessment of the significance of effects is made without mitigation in place, as mitigation is assumed to be secured by planning conditions, legal requirements or required by regulations.
- 8.4.15 With appropriate mitigation in place, the IAQM guidance⁵ indicates that the residual effect dust emissions associated with the demolition and construction can be classified as being 'not significant'.

Traffic Emissions

Screening Assessment

Impacts of Road Traffic Emissions on Existing Human Receptors

- 8.4.16 The potential for a significant overall effect on existing sensitive receptors within the Study Area as a result of emissions from demolition and construction traffic generated by the Proposed Scheme has been determined quantitatively, taking into consideration the screening criteria outlined in the EPUK / IAQM guidance (EPUK / IAQM, 2017) (see Appendix 8.3), the anticipated routing of the generated traffic and the anticipated duration of impacts associated with the generated traffic. If it is not possible to screen out the potential for significant impacts, then a detailed assessment will be undertaken.

Detailed Assessment

Impacts of Road Traffic Emissions on Existing Human Receptors

- 8.4.17 Emissions from road vehicles during the construction phase and their resultant impact at receptor locations have been predicted using the ADMS-Roads dispersion model (v5.0.0.1). The model requires the user to provide various input data, including traffic flows (in AADT format), vehicle composition (i.e.

the proportion of Heavy Duty Vehicles (HDVs)), road characteristics (including road width, gradient and street canyon dimensions, where applicable), and average vehicle speed. 2026 baseline AADT flows and the proportions of HDVs, for roads within the study area have been provided by the Project's transport consultant, Stantec. Peak construction traffic (2026) has been added to the 2026 'Do Minimum' traffic flows to provide a 'Do Something' scenario for the construction phase. Additionally, traffic flows from the London Atmospheric Emission Inventory (LAEI)² factored up to the relevant assessment year have been used in the assessment.

8.4.18 It should be noted that at the time this chapter was submitted, the CoW planning portal did not indicate any impending construction works in the immediate vicinity of the Site or along any of the links considered in this chapter.

8.4.19 Details of the traffic data scenarios that have been assessed are provided below:

- 2019, in order to verify the models;
- 2026 'Do Minimum' (without Proposed Scheme); and
- 2026 'Do Something' (with Proposed Scheme peak construction traffic).

8.4.20 The model also requires meteorological data and has been run using 2019 meteorological data from the London City Airport meteorological station, which are considered suitable for this area. Appendix 8.5 provides further details on the model inputs.

8.4.21 Traffic emissions have been calculated using the Emission Factor Toolkit (EFT) v10.1 (DEFRA, 2020c⁷), which was the latest version available at the time the assessment was undertaken. EFT v10.1 utilises NO_x emission factors taken from the European Environment Agency (EEA) COPERT 5 emission tool. The traffic data were entered into the EFT to provide emission rates for each of the road links entered into the model. Road vehicular emissions are primarily associated with the exhaust emissions but also include particles generated from abrasion (of tyres, brakes and road). The EFT allows users to calculate road vehicle pollutant emission rates for NO_x, PM₁₀, (exhaust and brake, tyre and road wear) and PM_{2.5} (exhaust and brake, tyre and road wear) for a specified year, road type, vehicle speed and vehicle fleet composition.

6.1.1. The EFT provides pollutant emission rates for 2018 through to 2030 and takes into consideration the following information available from the National Atmospheric Emissions Inventory (NAEI):

- fleet composition data for motorways, urban and rural roads in London and rest of the UK;
- fleet composition based on European emission standards from pre-Euro I to Euro 6(a-d)/VI;
- scaling factors reflecting improvements in the quality of fuel and some degree of retrofitting; and
- technology conversions in the national fleet.

8.4.22 As a result of this the road vehicle exhaust emissions are projected to decrease year-on-year due to technological advances and improvements to the fleet mix i.e. penetration of Euro VI HDVs, which recent research suggests are performing well. Whilst there has been uncertainty over NO_x emissions from vehicle exhausts (particularly from Euro 5 and 6 Light Duty Vehicles (LDVs)) it is important to note the EFT is not based on the Euro emission standards. Specifically, the latest version of the EFT (v10.1) includes updated NO_x and PM speed emission coefficient equations for Euro 5 and 6 vehicles taken from the EEA COPERT 5.3 emission calculation tool, reflecting emerging evidence on the real-world emission performance of these vehicles.

8.4.23 Generally, concentrations of air pollutants in the UK are anticipated to decrease in the coming years; as such, in most cases, the earlier the year that is assessed, the more worst-case the assessment is. 'Do Minimum' (without Proposed Scheme) traffic data for the assessment of construction traffic impacts has been provided for 2026 (the peak construction year, which coincides with the year when construction finishes on Site A and starts on Site B). In order to take account of uncertainties relating to future year vehicle emissions and background pollutant concentrations, emission factors and background

⁷ Department of the Environment, Food and Rural Affairs (DEFRA) (2020c). 'Emissions Factor Toolkit (Version 10.1)' Online, available at: <https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>

concentrations from 2022 (the year when construction starts on Site A) have been used. Therefore, emission factors and background concentrations from 2022 have been combined with traffic data from 2026 for the assessment of road traffic impacts during the construction phase.

Methodology for completed development effects

Study Area

- 8.4.24 The study area adopted for the operational phase assessment is as follows:
- for the operational phase road traffic emissions assessment, the study area (based on EPUK / IAQM, 2017 guidance⁶) includes the Site, all roads (and adjacent properties) within 250m of the Site boundary.

Sensitive Receptor Locations

- 8.4.25 Relevant sensitive human receptor locations for the operational phase are places where members of the public might be expected to be regularly present over the averaging period of the NAQOs. The NO₂, PM₁₀ and PM_{2.5} annual mean and 1-hour mean NAQO sensitive locations include proposed residences within the Proposed Scheme.
- 8.4.26 A quantitative assessment to determine whether there is a potential for exceedances of the relevant NAQOs at sensitive locations within the Proposed Scheme has been undertaken, taking into account future baseline air quality conditions within and in close proximity to the Site, and the proximity of sensitive locations within the development to nearby sources of emissions. These locations are described in Table A8.5.2 and Table A8.5.3, Appendix 8.5 and shown in Figure 8.3. A reduction in traffic during the operational phase is expected, therefore an assessment on off-site receptors (which would include the existing Church Street market) is not required.
- 8.4.27 Concentrations have also been predicted at the automatic monitoring site located at Oxford Street East to verify the modelled results. Appendix 8.6 provides further details on the verification method.

Methodology

- 8.4.28 Concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) have been predicted at a range of different heights at worst-case locations of relevant human receptor exposure at sensitive new residential units within the Proposed Scheme to allow comparison with the NAQOs and the WHO Guideline Values⁴.
- 8.4.29 Emissions from road vehicles and their resultant impact at receptor locations have been predicted using the ADMS-Roads dispersion model (v5.0.0.1). AADT flows and the proportions of HDVs, for roads within the study area have been provided by the Project's transport consultants, Stantec. Additionally, traffic flows from the London Atmospheric Emission Inventory (LAEI)² factored up to the relevant assessment years have been used in the assessment. Traffic data used in this assessment are summarised in Appendix 8.5. Given the length of the construction programme, the following scenarios have been modelled:
- 2019 Baseline;
 - 2026 with Site A development traffic with committed developments;
 - 2035 with Site A, B and C development traffic with committed developments.
- 8.4.30 The model has been run using 2019 meteorological data from the London City Airport meteorological station, which are considered suitable for this area. Appendix 8.5 provides further details on the model inputs.
- 8.4.31 The assessment has been calculated combining 2026 traffic data (which represents the year where Site A will be completed) with 2026 emission factors and background concentrations, and 2035 traffic data (which represents the year when all sites will be completed) with 2030 emission factors and background concentrations. 2030 is the latest year with emission rates and mapped background concentrations available.

8.4.32 The Air Quality Neutral calculations have been undertaken following the methodology described in the 'Air Quality Neutral Planning Support Update: GLA80371' guidance⁸.

Significance criteria

Construction Phase

8.4.33 The relevant NAQOs are set out in Table A8.2.2, Appendix 8.2. The predicted pollutant concentrations in the construction year (2026) at each identified sensitive receptor have been compared to the relevant NAQOs and WHO guideline values and any exceedances identified.

8.4.34 Analysis of long-term monitoring data suggests that if the annual mean NO₂ concentration is less than 60 µg/m³ then the 1-hour mean NO₂ NAQO is unlikely to be exceeded where road transport is the main source of pollution. Therefore, in this assessment this concentration has been used to screen whether the one-hour mean objective is likely to be achieved⁹. Analysis of long-term monitoring data also suggests that if the annual mean PM₁₀ concentration is less than 32 µg/m³ then the 24-hour mean PM₁₀ NAQO is unlikely to be exceeded where road transport is the main source of pollution. Therefore, in this assessment this concentration has been used to screen whether the 24-hour mean NAQO is likely to be achieved.

8.4.35 There is no official guidance in the UK on how to assess the significance of the air quality impacts of the Proposed Scheme on existing receptors. The approach developed by EPUK and the IAQM (EPUK / IAQM, 2017⁶), which considers the change in air quality as a result of a proposed development on existing receptors in combination with baseline concentrations at the receptors, has therefore been used. The guidance sets out three stages: determining the magnitude of change at each receptor, describing the impact, and assessing the overall significance. Impact magnitude relates to the change in pollutant concentration; the impact description relates this change to the air quality objective and is shown in Table 8-2.

Table 8-2 Impact Significance Criteria

Long term average concentration at receptor in assessment year	% Changes in Concentration with development in relation to NAQO / Limit Value			
	1*	2-5	6-10	>10
> 110 % ^a	Moderate	Substantial	Substantial	Substantial
>102% - ≤110% ^b	Moderate	Moderate	Substantial	Substantial
>95% - ≤102% ^c	Slight	Moderate	Moderate	Substantial
>75% - ≤95% ^d	Negligible	Slight	Moderate	Moderate
≤75% ^e	Negligible	Negligible	Slight	Moderate

Where concentrations increase the impact is described as adverse, and where it decreases as beneficial.

% change rounded to nearest whole number. Where the % change is 0 (i.e. Less than 0.5%) the impact will be Negligible.

^a NO₂ or PM₁₀: >44 µg/m³ annual mean; PM_{2.5}>27.5 µg/m³ annual mean; PM₁₀>35.2 µg/m³ annual mean (days).

^b NO₂ or PM₁₀: >40.8 – ≤44 µg/m³ annual mean; PM_{2.5}>20.4 – ≤22 µg/m³ annual mean; PM₁₀>32.64 – ≤35.2 µg/m³ annual mean (days).

^c NO₂ or PM₁₀: > 38 – ≤40.8 µg/m³ annual mean; PM_{2.5}>19 – ≤20.4µg/m³ of annual mean; PM₁₀>30.4 – ≤32.64 µg/m³ annual mean (days).

^d NO₂ or PM₁₀: >30 - ≤38 µg/m³ annual mean; PM_{2.5}>15 - ≤19 µg/m³ annual mean; or <24 - ≤30.4 µg/m³ annual mean (days).

^e NO₂ or PM₁₀: ≤30 µg/m³ annual mean; PM_{2.5}≤15 µg/m³ annual mean; PM₁₀≤24 µg/m³ annual mean (days).

8.4.36 The guidance states that the overall assessment of significance should be based on professional judgement, considering factors including:

- the number of properties affected by 'Slight', 'Moderate' or 'Substantial' adverse air quality impacts and a judgement on the overall balance;
- the magnitude of the changes and the descriptions of the impacts at the receptors;

⁸ Air Quality Consultants, (2014), Air Quality Neutral Planning Support Update: GLA 80371.

⁹ Department of the Environment, Food and Rural Affairs (DEFRA) (2018). *Local Air Quality Management – Technical Guidance (TG16)*, 2018.

- whether or not an exceedance of an NAQO or limit value is predicted to arise in the operational study area (where there are significant changes in traffic) where none existed before or an exceedance area is substantially increased;
- the uncertainty, comprising the extent to which worst-case assumptions have been made; and
- the extent to which an NAQO or limit value is exceeded.

8.4.37 Therefore, where impacts at an individual receptor are classified as 'Negligible' or 'Slight', effects would typically be considered 'not significant'. However, where 'Moderate' or 'Substantial' adverse impacts are identified at individual receptors, the overall effect needs to be considered in the round considering the changes at all of the modelled receptor locations, with a judgement made as to whether the overall air quality effect of the development is 'significant' or not.

Operational Phase

8.4.38 There is no official guidance in the UK on how to assess the significance of the air quality impacts of existing air quality on a new development. The assessment of proposed receptors within the Site has therefore been limited to predicting pollutant concentrations at worst-case receptors within the Site and comparing these predicted concentrations to the relevant NAQOs, with the overall significance being based on whether the NAQOs for each pollutant are exceeded or not.

Limitations and assumptions

8.4.39 There are many components that contribute to the uncertainty in predicted concentrations. The model used in this assessment is dependent upon the traffic data that have been input which will have inherent uncertainties associated with them. There is then additional uncertainty as the model is required to simplify real-world conditions into a series of algorithms.

8.4.40 There has been an acknowledged disparity between national road transport emissions projections and measured annual mean concentrations of nitrogen oxides (NO_x) and NO₂ for many years. Recent monitoring has shown that reductions in concentrations are now being measured in many parts of the country (Air Quality Consultants Ltd., 2020a), however, there is still some uncertainty regarding the rate at which emissions will reduce in the future and therefore some consideration must be given to the accuracy of any projection and to appropriately respond to this.

8.4.41 The complete development modelling has been based on 2026 and 2030 emission factors and background concentrations, whilst utilising traffic flows for 2026 and 2035. The construction phase assessment has been based on 2026 traffic flows and 2022 emission factors and background concentrations. This is considered to provide an appropriately conservative assessment taking into account the uncertainties regarding future vehicle emission factors. The model has been verified against 2019 monitoring data.

8.4.42 The projections in the DEFRA 2018 reference year background maps³ and associated tools are based on assumptions which were current before the Covid-19 outbreak in the UK. In consequence these tools do not reflect short- or longer-term impacts on emissions in 2020 and beyond resulting from behavioural change during the national or local lockdowns.

8.5 Baseline conditions

8.5.1 WCC has declared a borough wide Air Quality Management Area (AQMA) for exceedances of the annual and 1-hour mean nitrogen dioxide (NO₂) objectives and the annual and daily mean particulate (PM₁₀) objectives, and this encompasses the site. The site is also partially within the Edgware Road Air Quality Focus Area (AQFA).

Local Monitoring Data

Nitrogen Dioxide

8.5.2 WCC carries out monitoring at 10 automatic monitoring stations, the nearest of which (Marylebone Road AURN) is located approximately 1km to the southeast of the Site (Figure 8.1). WCC does not deploy

any NO₂ diffusion tubes within the study area. 2015-2019 monitoring results for the Marylebone Road AURN are shown in Table 8-3.

Table 8-3 Measured Annual Mean NO₂ Concentrations and Exceedances of the 1-Hour Mean NO₂ NAQO (2015 – 2019)

Site ID	Site Type	Within AQMA	Annual Mean (µg/m ³)				
			2015	2016	2017	2018	2019
Marylebone Road	Kerbside	Yes	88	87	84	85	63
NAQO			40				
			Number of Hours >200µg/m ³				
Marylebone Road	Kerbside	Yes	56	49	38	29	0
NAQO			18				

Exceedances of the NAQOs are highlighted in **bold**.

2015 – 2019 data taken from the WCC Air Quality Annual Status Report (ASR) for 2019¹⁰

8.5.3 Concentrations exceeding the annual mean NO₂ NAQO have been measured at the Marylebone Road monitoring site for all years during the 2015-2019 monitoring period. Exceedances of the 1-hour mean NAQO have also been measured at the Marylebone Road monitoring site from 2015 to 2018, and none in 2019. An overall trend of decreasing concentrations is apparent at the site during the period 2015-2019. Concentrations at the Marylebone Road site are predicted to exceed the EU limit value until 2028¹¹.

8.5.4 It should be noted that the Marylebone Road automatic monitoring site is situated at a kerbside location (1.5m back from the road), and the Proposed Scheme is set back over 6 m from the main source of pollution in the vicinity of it (Edgware Road). Measured concentrations of NO₂ at the monitoring site will, therefore, be higher than concentrations within the Site.

Particulate Matter

8.5.5 The Marylebone Road automatic monitoring site also measures concentrations of PM₁₀ and PM_{2.5}. Measured concentrations of PM₁₀ and PM_{2.5} at the site is presented in Table 8-4 and Table 8-5.

Table 8-4 Measured Annual Mean PM₁₀ Concentrations and Exceedances of the 24-Hour Mean PM₁₀ NAQO (2015 – 2019)

Site ID	Site Type	Within AQMA	Annual Mean (µg/m ³)				
			2015	2016	2017	2018	2019
Marylebone Road	Kerbside	Yes	30	29	27	26	24
NAQO			40				
			Number of Days >50µg/m ³				
Marylebone Road	Kerbside	Yes	22	13	15	12	5
NAQO			35				

2015 – 2019 data taken from the WCC Air Quality Annual Status Report (ASR) for 2019 (WCC, 2020)

Table 8-5 Measured Annual Mean PM_{2.5} Concentrations (2015 – 2019)

Site ID	Site Type	Within AQMA	Annual Mean (µg/m ³)				
			2015	2016	2017	2018	2019
Marylebone Road	Kerbside	Yes	16	16	15	16	14
NAQO			20				

¹⁰ Westminster City Council (2020) Westminster City Council Air Quality Annual Status Report for 2019. July 2020

¹¹ Defra (2020). '2020 NO₂ Projections Data (2018 Reference Year)' Online, available at: <https://uk-air.defra.gov.uk/library/no2ten/2020-no2-pm-projections-from-2018-data>

Site ID	Site Type	Within AQMA	Annual Mean ($\mu\text{g}/\text{m}^3$)				
			2015	2016	2017	2018	2019
WHO Guideline Value			10				

2015 – 2019 data taken from the WCC Air Quality Annual Status Report (ASR) for 2019 (WCC, 2020)

- 8.5.6 Measured concentrations of PM₁₀ and PM_{2.5} are below the relevant NAQOs and Limit Values for the duration of the monitoring period presented. Furthermore, no exceedances of the 24-hour mean PM₁₀ NAQO have been measured during this period. However, measured concentrations of PM_{2.5} are above the WHO guideline values in all reported years.

Predicted Background Concentrations

- 8.5.7 Estimated background concentrations for the site have been obtained from the latest national maps provided by Defra³. The mapped background concentrations have been calibrated against background concentrations measured at the Covent Garden automatic monitoring site (see Appendix 8.7 for more details). The predicted background pollutant concentration within the Site is presented in Table 8-6 below for the existing and future years.

Table 8-6 Estimated Annual Mean Background Concentrations

Year	Location	Annual Mean ($\mu\text{g}/\text{m}^3$)		
		NO ₂	PM ₁₀	PM _{2.5}
2019	527500, 181500 ^a	39.6	20.6	13.1
	529500, 181500 ^b	41.2	20.0	13.1
2026	527500, 181500	31.4	18.8	11.9
2030	527500, 181500	29.8	18.8	11.9
NAQOs		40	40	20
WHO Guideline Value				10

^a Development Site.

^b Location of monitoring site used for verification.

- 8.5.8 Predicted background concentrations within the Site are below the relevant NAQOs for the existing (2019) and future year (2026 and 2030) scenarios. 2019 has been used as the 'existing' year as this is the latest year for which local monitoring data are available to verify the air quality model.
- 8.5.9 Predicted PM_{2.5} background concentrations exceed the WHO Guideline Value in all current and future years, as is the case for much of London.

8.6 Environmental design and management

Demolition and Construction

- 8.6.1 A Construction and Environmental Management Plan (CEMP) will be implemented throughout the construction phase of the Proposed Scheme. This will include standard mitigation measures outlined in Section 8.8, which take into account the outcomes of the construction dust risk assessment presented in Section 8.7.
- 8.6.2 All Non-Road Mobile Machinery (NNRM) associated with demolition and construction will meet the below emission standards, as defined in the Mayor of London "Non-Road Mobile Machinery Practical Guidance v.4"¹²
- From January 2025, the standards will be stage IV throughout London (coinciding with the construction of Site A and B); and

¹² Mayor of London (2020) 'Non-Road Mobile Machinery (NRMM) Practical Guidance v.4'

- From 1 of January 2030, the standards will be stage V throughout London (coinciding with the construction of Site B and Site C).

Operational Phase

- 8.6.3 The proposed residential units in Site A have been designed to be located at a significant distance (more than 90 m) from one of the main sources of pollution in the vicinity of the Site (Edgware Road). This will allow future users of Site A to experience likely acceptable levels of pollutants.
- 8.6.4 The Proposed Scheme will be powered by Air Source Heat Pumps (ASHPs) and photovoltaic panels (PV), with proposed generators running approximately 5 minutes weekly, with an annual load bank test. The proposed generators will meet stage V emission standards, as defined in the Mayor of London “*Non-Road Mobile Machinery Practical Guidance v.4*”.
- 8.6.5 The Proposed Scheme will lead to a net reduction in car parking spaces and traffic generation, therefore emissions associated with the operational phase will be lower than current emissions in the area. The Proposed Scheme has been designed to prioritise pedestrian and cyclist movements, and at Church Street it is proposed to narrow the carriageway to allow one lane of traffic and associated street furniture to enhance the environment.
- 8.6.6 A Travel Plan will be submitted which provides a set of measures aimed at encouraging sustainable travel and a plan for implementation and monitoring of those measures.

8.7 Assessment of effects

Effects during demolition and construction

Dust Impacts

- 8.7.1 There are several existing sensitive human receptors (including residential properties, two schools, a nursery and a hospital) located within 350m of the Site boundary and within 50m of the routes that will be used by demolition and construction vehicles. As such, further assessment of the risk of dust soiling and PM₁₀ emissions is required.
- 8.7.2 There are no sensitive ecological receptors located within either 250m of the Site boundary or within 50m of the routes used by demolition and construction vehicles on the public highway. The closest designated ecological site to the Site is located >700m from the Site boundary. As such, the potential for ecological impacts because of dust soiling can be screened out as being ‘not significant’.

Dust Emissions Magnitude

- 8.7.3 The dust emissions magnitude of demolition, earthworks, and construction activities and trackout have been determined based the criteria shown in Table A8.4.1, Appendix 8.4.
- 8.7.4 Each phase of the development is expected to take between three to five years to be completed, however there will be overlap between each phase, therefore it has been assessed as a whole in terms of construction dust impacts.
- 8.7.5 Proposed demolition activities comprise the demolition of an all-existing buildings and structures, with an estimated building volume of more than 50,000 m³. Based on this, the dust emission magnitude of demolition activities is judged to be ‘large’.
- 8.7.6 Proposed earthworks activities comprise of alterations to the existing access road, open spaces, landscaping and other works incidental to the development. The Site is approximately 38,765 m² in area and soil at the Site is moderately dusty (being deep, argillaceous soil with a silt to silty loam texture and argillaceous subsoil (British Geological Survey, 2021¹³)). Based on this, the dust emission magnitude of earthworks activities is judged to be ‘large’.
- 8.7.7 Construction activities comprise the construction of buildings up to 14 storeys in Site A and single courtyard blocks in Sites B and C as well as ancillary facilities, with an estimated building volume of

¹³ <https://www.bgs.ac.uk/discovering-geology/maps-and-resources/maps/>

more than 100,000 m³. Based on this, the dust emission magnitude of construction activities is judged to be 'large'.

- 8.7.8 There will be 16 outward HGV movements expected per day at the peak of construction (2026). Based on this, the dust emission magnitude of trackout is judged to be 'medium'.

Area Sensitivity

- 8.7.9 The area sensitivity to dust soiling and human health impacts has been determined based on the criteria shown in Table A8.4.3, Table A8.4.4, Table A8.4.5, Appendix 8.4.

- 8.7.10 Residential properties, schools and nurseries are classed as being 'high sensitivity' receptors to dust soiling, based on the IAQM guidance (IAQM, 2014⁵) (see Table A8.4.2, Appendix 8.4). There are more than 10 residential properties located within 20m of the Site boundary; as such, the sensitivity of the area surrounding the Site to dust soiling is judged to be 'high'.

- 8.7.11 The IAQM guidance⁵ states that trackout may occur for distance of up to 500m from large sites. The demolition and construction traffic routing is likely to be Edgware Road, Broadly Street and Penfold Street. There are more than ten residential properties located within 20m of roads extending up to 500m of the Site and King Solomon Academy is located within 20m of a road extending up to 500m of the Site; as such, the sensitivity to dust soiling of the area surrounding roads along which material may be tracked is judged to be 'high'.

- 8.7.12 The IAQM also defines residential properties as being 'high sensitivity' receptors to human health impacts (see Table A8.4.2, Appendix 8.4). Based on the predicted existing PM₁₀ concentrations (lower than 24 µg/m³) and the number of sensitive receptors within 20m of the Site boundary and roads along which material may be tracked, the sensitivity to human health impacts of the areas surrounding the Site and the area surrounding roads along which material may be tracked are judged to be 'medium'.

Risk of Impacts

- 8.7.13 The risk of construction dust impacts, without mitigation, have been defined based on the criteria shown in Table A8.4.6, Appendix 8.4 and are presented in Table 8-7.

Table 8-7 Risk of construction dust impacts

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High Risk	High Risk	High Risk	Medium Risk
Human Health	High Risk	Medium Risk	Medium Risk	Low Risk

Traffic Impacts

- 8.7.14 During the construction period, the increase in heavy duty vehicles (HDVs) movements on the road network will be above the threshold of 25 movements per day within or adjacent to an Air Quality Management Area (AQMA) for an assessment to be necessary, according to Environmental Protection UK (EPUK)⁶ and IAQM guidance. As such, it is not possible to screen out the potential for significant impacts from construction traffic generated by the Proposed Scheme on existing sensitive receptors and therefore a detailed assessment has been undertaken.

- 8.7.15 Roads which will experience an increase of more than 25 HDV movements include Edgware Road, Penfold Street and Broadley Street, therefore concentrations of NO₂, PM₁₀ and PM_{2.5} have been predicted at existing receptors on those roads, both without and with demolition and construction traffic associated with the Proposed Scheme, and are presented in Table A8.5.6, Table A8.5.7 and Table A8.5.8, Appendix 8.5. The increase in traffic along Church Street is below the IAQM/EPUK threshold and therefore it has not been included in the construction phase assessment. The 'without Proposed Scheme' scenario predicted concentrations include background concentrations and emissions from existing traffic, and the 'with Proposed Scheme' scenario predicted concentrations include background concentrations, emissions from existing traffic and construction road traffic generated by the Proposed Scheme.

- 8.7.16 The predicted annual mean NO₂ concentrations in 2026, without the Proposed Scheme during the construction phase, exceed the objective at receptor locations CR_3 to CR_7, CR_9 to CR_11, CR_13, CR_Schb, CR_15, CR_20 and CR_22 to CR_24.

- 8.7.17 The predicted annual mean NO₂ concentrations in 2026, with the Proposed Scheme during the construction phase, also exceed the objective at receptor locations CR_3 to CR_7, CR_9 to CR_11, CR_13, CR_Schb, CR_15, CR_20, CR_22 to CR_24 and CR_Sch.
- 8.7.18 Predicted annual mean NO₂ concentrations are below 60 µg/m³ at all receptors, indicating that exceedances of the 1-hour mean NO₂ objective are not likely to occur.
- 8.7.19 There are no predicted exceedances of the annual mean PM₁₀ objective in 2026 with, or without the Proposed Scheme in place during the construction phase. The predicted annual mean PM₁₀ concentrations are below 32 µg/m³ at all receptors, indicating that exceedances of the 24-hour mean PM₁₀ objective are not likely.
- 8.7.20 The predicted annual mean PM_{2.5} concentrations in 2026, both without and with the Proposed Scheme in place during the construction phase, meet the NAQOs at all receptors, however they exceed the WHO Guideline Value at all receptors.
- 8.7.21 The changes in annual mean NO₂ concentrations range from 0 to 0.18%; using the criteria set out in Table 8-2, these impacts are described as being 'negligible' at all assessed receptors.
- 8.7.22 The changes in annual mean PM₁₀ concentrations range from 0 to 0.05 %; using the criteria set out in Table 8-2, the PM₁₀ impacts are described as being 'negligible' at all receptors.
- 8.7.23 The changes in annual mean PM_{2.5} concentrations range from 0 to 0.6%, using the criteria set out in Table 8-2, these impacts are described as being 'negligible' at all receptors.
- 8.7.24 It can be concluded the overall air quality effects of the Proposed Scheme during the construction phase on human receptor locations are considered to be 'not significant'.

Effects for completed development

2026 – Site A completed

- 8.7.25 Predicted concentrations of NO₂, PM₁₀ and PM_{2.5} at proposed receptors, in 2026 with the Proposed Scheme in place, are presented in Table A8.5.9, Appendix 8.5. The 'with Proposed Scheme' scenario predicted concentrations include background concentrations, emissions from existing traffic and traffic generated by the Proposed Scheme and committed developments in the area.
- 8.7.26 The predicted annual mean NO₂ concentrations in 2026, with the Proposed Scheme in place, meet the NAQOs at all proposed locations at all floors. Predicted annual mean NO₂ concentrations are well below 60 µg/m³ at all receptors, indicating that exceedances of the 1-hour mean NO₂ objective are not likely.
- 8.7.27 There are no predicted exceedances of the annual mean PM₁₀ objective in 2026 with the Proposed Scheme in place during the operational phase. The predicted annual mean PM₁₀ concentrations are below 32 µg/m³ at all receptors, indicating that exceedances of the 24-hour mean PM₁₀ objective are not likely.
- 8.7.28 The predicted annual mean PM_{2.5} concentrations in 2026, with the Proposed Scheme meet the NAQOs at all proposed locations at all floors. The predicted PM_{2.5} concentrations in 2026 with the Proposed Scheme in place during the operational phase exceeds the WHO Guideline Value at all receptors at all floors.
- 8.7.29 Predicted concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) at worst-case sensitive locations within the Proposed Development will be below the relevant NAQOs and, therefore, new residents of the development will experience acceptable air quality.
- 8.7.30 Air quality within the Proposed Scheme (Site A) will therefore be acceptable and the site can be considered suitable for its residential use without mitigation required.

2035 – Sites A, B and C completed

- 8.7.31 Predicted concentrations of NO₂, PM₁₀ and PM_{2.5} at proposed receptors, in 2035 with the Proposed Scheme in place, are presented in Table A8.5.10, Appendix 8.5. The 'with Proposed Scheme' scenario predicted concentrations include background concentrations, emissions from existing traffic and traffic generated by the Proposed Scheme and committed developments in the area.

- 8.7.32 The predicted annual mean NO₂ concentrations in 2035, with the Proposed Scheme in place, meet the NAQOs at all proposed locations at all floors. Predicted annual mean NO₂ concentrations are well below 60 µg/m³ at all receptors, indicating that exceedances of the 1-hour mean NO₂ objective are not likely.
- 8.7.33 There are no predicted exceedances of the annual mean PM₁₀ objective in 2035 with the Proposed Scheme in place during the operational phase. The predicted annual mean PM₁₀ concentrations are below 32 µg/m³ at all receptors, indicating that exceedances of the 24-hour mean PM₁₀ objective are not likely.
- 8.7.34 The predicted annual mean PM_{2.5} concentrations in 2035, with the Proposed Scheme meet the NAQOs at all proposed locations at all floors. The predicted PM_{2.5} concentrations in 2035 with the Proposed Scheme in place during the operational phase exceeds the WHO Guideline Value at all receptors at all floors.
- 8.7.35 Predicted concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) at worst-case sensitive locations within the Proposed Development will be below the relevant NAQOs and, therefore, new residents of the development will experience acceptable air quality.
- 8.7.36 Air quality within the Proposed Scheme (Sites A, B and C) will therefore be acceptable and the site can be considered suitable for its residential use without the need for mitigation.

Air Quality Neutral Transport Emissions

- 8.7.37 The 'air quality neutral' calculations for the Proposed Scheme's transport emissions are described in Table 8-8. As the benchmarks have not been updated to include the new Land Use Classes, those in use prior to 1st September 2020 have been used.

Table 8-8 Development Land Use and Trip Generation

Land Use Class	Number of Units	Gross Internal Area (GIA, sqm)	Trips/Day	Trips/Annum
Residential (C3)	1199	-	327	119,355
Retail (A1)	-	3500	20	7,304
Community (D1)	-	1000	5.1	1,861.5

- 8.7.38 A comparison between the developments benchmarked and total emissions is shown in Table 8-9. The inner London transport Emissions Factors have been used, and the Proposed Scheme emissions have been compared against the inner London Transport Emission Benchmarks (TEBs). As there are no benchmark emissions for D1, a comparison of benchmarked trips has been carried out.

Table 8-9 Development Transport Emissions Air Quality Neutral Benchmarks

Land Use Class	Benchmarked Emissions (Kg/Annum)		Development Emissions (Kg/Annum)		Comparison to Benchmark Emissions (Kg/Annum)	
	NO _x	PM ₁₀	NO _x	PM ₁₀	NO _x	PM ₁₀
Residential (C3)	624.4	111.9	163.4	29.4	-460.98	-82.53
Retail (A1)	3,120	559.9	15.9	2.9	-3,104	-557.0
Total	3,744	671.8	179.4	32.2	-3565.1	-639.6

- 8.7.39 The total transport NO_x and PM₁₀ emissions of the Proposed Scheme for residential and retail uses are well below the benchmark for NO_x and PM₁₀ and requirements of the Greater London Authority's SPG on 'Sustainable Design and Construction'¹⁴.
- 8.7.40 AS D1 does not have a defined TEB, the comparison of the D1 land use against trip rates is shown below.

¹⁴ Mayor of London (2014) 'Sustainable Design and Construction: Supplementary Planning Guidance'

Table 8-10 Development transport Trip Rate Air Quality Neutral Benchmarks

Land Use Class	Benchmarked Trips (trips/m ² /annum)	Development Trips (trips/m ² /annum)	Comparison to benchmarking trips
Community (D1)	65.1	1.8615	-63.2
8.7.41	The D1 trip rate is 97% below the benchmarked trip rate and is therefore considered to also meet the requirements of being 'air quality neutral'.		
8.7.42	The Proposed Scheme is therefore considered to be in accordance with the air quality neutral requirements of the SPG and the New London Plan ¹⁵ with regards to transport emissions.		

Air Quality Neutral Building Emissions

- 8.7.43 Energy for the development is to be supplied by Air Sourced Heat Pumps (ASHPs) and will have an emergency life-safety diesel generator. The life-safety generator is currently recommended to run a 5 min weekly test with no load and an annual load bank test. This is not predicted to exceed any building emissions benchmarks and therefore the Proposed Scheme is predicted to be 'air quality neutral' in terms of building emissions.

8.8 Further mitigation and monitoring

Construction dust

- 8.8.1 The following standard mitigation measures from the IAQM guidance (IAQM, 2014⁵) are recommended, taking into account the outcomes of the construction dust risk assessment (presented in Table 8-7).

Communication

- Develop and implement a stakeholder communications plan.
- Display the name and contact details of persons accountable on the Site boundary.
- Display the head or regional office information on the Site boundary.

Management

- Develop and implement a dust management plan.
- Record all dust and air quality complaints, identify causes and take measures to reduce emissions.
- Record exceptional incidents and action taken to resolve the situation.
- Carry out regular site inspections to monitor compliance with the dust management plan and record results.
- Increase site inspection frequency during prolonged dry or windy conditions and when activities with high dust potential are being undertaken.
- Agree dust monitoring locations with the local authority and instigate monitoring 3 months in advance of works commencing in the area.
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible.
- Erect solid screens or barriers around dusty activities or the site boundary at least as high as any stockpile on site.
- Fully enclose Site or specific operations where there is a high potential for dust production and the Site is active for an extensive period.
- Avoid site run off of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.

¹⁵ Mayor of London (2021) 'The London Plan: The Spatial Development Strategy for Greater London'

- Remove potentially dusty materials from Site as soon as possible.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Ensure all vehicles comply with the London Low Emission Zone and the NRMM standards, where applicable.
- Ensure all vehicles switch off engines when stationary.
- Avoid the use of diesel- or petrol-powered generators where possible.
- Produce a Construction Logistics Plan to manage the delivery of goods and materials.
- Only use cutting, grinding and sawing equipment with dust suppression equipment.
- Ensure an adequate supply of water on-site for dust suppressant.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use water sprays on such equipment where appropriate.
- Ensure equipment is readily available on-site to clean up spillages of dry materials.
- No on-site bonfires and burning of waste materials on-site.

Demolition

- Incorporate soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure water suppression is used during demolition operation.
- Avoid explosive blasting, using appropriate manual and mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Earthworks

- Re-vegetate earthworks and exposed areas /soil stockpiles to stabilise surfaces as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless required for a particular process.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored silos with suitable emissions control systems.

Trackout

- Use water assisted dust sweepers on the Site access and local roads.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving the Site are covered to prevent escape of materials.
- Record inspection of on-site haul routes and any subsequent action, repairing as soon as reasonably practicable.
- Install hard surfaced haul routes which are regularly damped down.
- Install a wheel wash with a hard-surfaced road to the Site exit where site layout permits.
- The Site access gate to be located at least 10m from receptors where possible

Construction traffic

- 8.8.2 The air quality effects of road traffic during the demolition and construction phase are judged to be 'not significant'. Therefore, additional mitigation is not considered to be required.

Completed development

- 8.8.3 Air quality within the Proposed Scheme in both 2026 (when Site A is completed) and 2035 (when all sites are completed) will be acceptable and the Site can be considered suitable for its residential use without mitigation needed. However, the following measures will be implemented:

- Provision of 50% electric car charging points, with a passive provision for remaining spaces;
- Cycling parking will be available at all Sites, with a provision for 690 long stay spaces and 10 short stay spaces in Block A, and a similar approach to be followed for Sites B and C;
- Submission of a Framework Travel Plan (FTP) with measures focused on encouraging sustainable travel.

8.9 Residual effects and conclusion

Table 8-11 Air Quality Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Dust soiling on properties	High	Temporary, short term	High	Dust management measures set out in the Code of Construction Practice	Not significant	Standard measures set out in IAQM guidance (IAQM, 2014 ⁶)	Not significant
Dust impacts on human receptors	High	Temporary, short term	High	Dust management measures set out in the Code of Construction Practice	Not significant	Standard measures set out in IAQM guidance (IAQM, 2014 ⁶)	Not significant
Construction traffic impacts on existing sensitive receptors	High	Temporary, short term	Low	Not applicable	Not significant	Not applicable	Not significant
Complete and Operational							
Effect of NO ₂ , PM ₁₀ and PM _{2.5} on proposed residential units	High	Permanent	Low	Car free development, air source heat strategy	Not significant	Not applicable	Not significant

8.10 Cumulative effects assessment

Cumulative effects during demolition and construction

- 8.10.1 At the time this EIA was submitted, the City of Westminster planning portal did not indicate any impending construction works in the immediate vicinity of the Site or along any of the links considered in this chapter, therefore there will not be any cumulative effects associated with demolition and construction.

Cumulative effects for completed development

- 8.10.2 All sites will be assumed to have complied with both local and national policy requirements and included their own mitigation measures, secured through approved documents and planning permissions and approvals.
- 8.10.3 It is therefore concluded that there are unlikely to be any likely significant cumulative effects with other developments resulting from the Proposed Scheme.

8.11 Conclusions

- 8.11.1 The air quality impacts associated with the Proposed Scheme at Church Street, located within the boundary of the City of Westminster (CoW) have been assessed.
- 8.11.2 WCC has declared a borough wide AQMA for exceedances of the annual and 1-hour mean NO₂ objectives and the annual and daily mean PM₁₀ objectives, which encompasses the Site. The closest automatic monitoring station (Marylebone Road AURN) measured exceedances of the annual mean NO₂ NAQO in all reported years, however it is not considered representative of the likely air quality conditions at the Site, given its kerbside location.
- 8.11.3 The construction works have the potential to create dust. During construction it is recommended that in accordance with the IAQM guidance⁵ a package of mitigation measures is put in place to minimise the risk of elevated PM₁₀ concentrations and dust nuisance in the surrounding area. With mitigation in place the construction impacts are judged as not significant.
- 8.11.4 The impacts of road traffic during the demolition and construction phase of the Proposed Scheme have been assessed. Detailed modelling of peak construction impacts in 2026 (utilising 2022 backgrounds and emission factors) has been undertaken at discrete human receptor locations. Impacts at all receptors have been classified as 'negligible, therefore the air quality effects of road traffic during the demolition and construction phase are judged to be 'not significant' and additional mitigation is not considered to be required. With regards to the PM_{2.5} WHO guideline values, they are exceeded at all receptors assessed.
- 8.11.5 The impacts of road traffic during the operational phase of the Proposed Scheme have been assessed. Since there is a reduction of traffic expected as a result of the Proposed Scheme, a site suitability assessment has been undertaken, without the need to assess impacts from the Proposed Scheme on sensitive existing receptors. There are no predicted exceedances of the NO₂, PM₁₀ and PM_{2.5} air quality strategy objectives at any of the new residential units within the Site during 2026 (with Site A completed) and 2035 (with all sites completed). Therefore, as per the relevant requirements of the NPPF, the Site is considered suitable for the proposed residential development without the need for mitigation. The predicted annual mean PM_{2.5} concentrations exceed the WHO guideline value at all receptors assessed.
- 8.11.6 The air quality neutral assessment concluded that the transport and building emissions are well below the benchmark for NO_x and PM₁₀ and therefore the Proposed Scheme can be considered 'air quality neutral', meeting the requirements of the SPG and the New London Plan.
- 8.11.7 The cumulative effect assessment concluded that there are unlikely to be any significant cumulative effects with other developments resulting from the Proposed Scheme.
- 8.11.8 The Proposed Development is therefore considered to be in accordance with the requirements of the NPPF, and relevant local and national planning policy and guidance regarding air quality.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 9: Built Heritage

Westminster City Council

November 2021

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9. Built Heritage

9.1 Introduction

- 9.1.1 This chapter reports the findings of an assessment of the likely significant effects on built heritage assets as a result of the Proposed Scheme and has been completed by Savills Heritage. For more details about the Proposed Scheme refer to Chapter 9: The Proposed Scheme.
- 9.1.2 This chapter sets out the methodology to assess the likely significant effects of the Proposed Scheme. It considers the baseline conditions of the Application Site and its surroundings. It identifies the location, type, and value (heritage significance) of built heritage assets (both designated and non-designated) that may be impacted by the Proposed Scheme and, where appropriate, the contribution that the setting of these built heritage assets makes to their heritage significance. It assesses the sensitivity and therefore capacity of the built heritage assets to accommodate change (the Proposed Scheme). In doing so, it sets out the impacts of the Proposed Scheme at demolition and construction phase as well as complete and operational phase on this resource and sets out the classification and significance of any effects in Environmental Impact Assessment (EIA) terms. It also takes into consideration the influence of any surrounding identified cumulative schemes which may affect these assessments of effects, when assessed within its context. Where necessary, the chapter identifies and proposes measures to address the impacts and effects of the Proposed Scheme on built heritage assets.
- 9.1.3 This chapter is supported by a Heritage Statement (Savills, September 2021) which should be read in conjunction and is located in Appendix 9.1. The Heritage Statement is also submitted as a standalone document to satisfy the requirements of paragraph 194 of the NPPF.

9.2 Legislation, policy and guidance

- 9.2.1 This assessment has been undertaken taking into account the following relevant legislation, planning policy and guidance:

Legislation

- Planning (Listed Buildings and Conservation Areas) Regulations 1990 (August 1990).

Planning Policy

- MCHLG [Ministry of Housing, Communities and Local Government] (July 2021) Revised National Planning Policy Framework.
- GLA [Greater London Authority] (March 2021) The London Plan.
- WCC [Westminster City Council] (April 2021) The Westminster City Plan 2019 – 2040.

Guidance

- MHCLG [Ministry of Housing, Communities and Local Government] (March 2019) Planning Practice Guidance (PPG).
- Historic England (October 2019) Advice Note 12 - Statements of Heritage Significance: Analysing Significance in Heritage Assets.
- Historic England (December 2017) Good Practice Advice Note 3 (2nd Ed.) - The Setting of Heritage Assets
- Historic England (February 2019) Advice Note 1 (2nd Ed.) - Conservation Area Appraisal, Designation and Management.
- Historic England (March 2015) Good Practice Advice Note 2 - Managing Significance in Decision-Taking in the Historic Environment.

9.3 Consultation

- 9.3.1 In conjunction with AECOM and the appointed project team, Savills Heritage have consulted on the Proposed Scheme with officers from WCC to agree the scope of assessment and methodology.
- 9.3.2 This allowed a collaborative decision to be made on: the extent of the study area; the relevant built heritage assets to be scoped in for assessment; any associated representative viewpoints and their type (wireline or rendered) to help understand potential impacts; and the suggested assessment methodology to be used within the Heritage Statement and Built Heritage Chapter to assess potential impacts / significant effects. This formed part of the on-going process of engagement and has been kept under review during the course of the assessment process to determine if it needs to be updated if and when new information becomes available, or additional assets are identified.
- 9.3.3 The EIA Scoping Opinion from WCC was received on 3rd September 2021 and from Historic England on 2nd July 2021. A summary of the built heritage related responses are set out in Table 9-1.

Table 9-1 Comments raised in EIA Scoping Opinion

Consultee	Comments
Historic England	The development has the potential to affect designated heritage assets and their settings surrounding the site. Consideration of effects upon designated and non-designated features of architectural, historic, archaeological and artistic interest required. Levels of visibility as a result of the development and temporary impacts derived from construction and associated activities should also be considered.
Westminster City Council	Evidence must be provided to support the assertion that the proposed development will not have any negative effects on the setting / significance of nearby designated and non-designated heritage assets .

9.4 Assessment methodology

- 9.4.1 Relevant built heritage assets requiring assessment have been identified using the best practice guidance / advice from Historic England (noted above), professional experience and judgement, and an assessment of the potential effects of the Proposed Scheme on the built heritage assets. This forms part of a thorough and robust process to identify a proportionate study area and then assess the baseline conditions within this.
- 9.4.2 In considering all of the effects arising from the Proposed Scheme it will be identified whether the effect will be direct or indirect. A direct effect will be where a built heritage asset will be directly affected by the Proposed Scheme - for instance, if the Proposed Scheme directly alters the fabric of a heritage asset (e.g. the Application Site is located within a conservation area). An indirect effect will be where a built heritage asset is only indirectly affected by the Development, for example, a conservation area that the Application Site is not within but experienced in conjunction with.
- 9.4.3 Reference will also be made to the effects being temporary or permanent. Temporary effects will likely arise from demolition and construction and will likely lessen or disappear over time. Permanent effects, in contrast will be the result of the complete and operational development.

Determining baseline conditions and sensitive receptors

- 9.4.4 It is necessary to define an appropriate study area in order to ensure that the Proposed Scheme responds in an appropriate manner to the significance of the identified built heritage assets and allows for a proportionate, thorough and robust assessment of the likely impact of the Proposed Scheme on built heritage assets.
- 9.4.5 In order to define the extent of the study area, a number of factors have been considered, including:
- The nature, scope and extent of the Proposed Scheme;
 - The location and or proximity of built heritage assets to each other and also to the Application Site;

- The degree of legibility of any historical, functional and visual relationship between the Application Site and the identified built heritage assets;
- The relative sensitivity of the significance of the built heritage assets, and their settings, to future change; and
- The approaches to the Application Site and built heritage assets as part of a kinetic experience in the urban environment.

9.4.6 In consideration of the above and in order to identify the relevant surrounding built heritage context and understand the potential impacts of the Proposed Scheme, a 300m radial study area was set from the boundary of the Application Site. Within this study area all designated and non-designated built heritage assets were included for review as part of the baseline assessment. The extent of this study area was based on accepted best practice and professional experience, as well as the scale and nature of the local environs. It was also set with consideration of the Proposed Scheme its proposed scale, heights, the resultant levels of inter-visibility and the likely effects arising from it on built heritage assets. The study area is proportionate to the Proposed Scheme and is sufficient to understand the likely significant effects on relevant surrounding built heritage assets.

9.4.7 All designated and non-designated built heritage assets (listed and locally listed buildings) located within conservation areas are not individually assessed, but are instead included for review as part of the conservation area they fall within. The study area, approach to assessment and overall methodology is proportionate to the significance of the surrounding built heritage assets and relates to the Environmental Statement, the purpose of which is to understand whether there will be any significant impact arising from the Proposed Scheme. Therefore, whilst there may be further built heritage assets within the wider area, given the nature and scale of the Proposed Scheme, there are unlikely to be any significant effects on these and they have been scoped out from further assessment.

9.4.8 The Heritage Statement (Savills, September 2021), which accompanies this chapter, is included as Appendix 9.1. It sets out further baseline conditions and built heritage assets, providing the necessary assessment of significance of the identified built heritage assets / receptors, in line with the requirements of paragraph 194 of the NPPF, and informs the professional judgement and conclusions reached in this chapter.

Surveys

9.4.9 A preliminary desk study was undertaken to establish the physical components of the public realm, building form and mass, vegetation, topography and land use of the Application Site and its surroundings. Potential physical and visual relationships between the Application Site and the surrounding built heritage assets were also identified, both as existed and with consideration of the emergence of a Proposed Scheme.

9.4.10 The designation status of those built heritage assets identified was established through a search of Historic England's National Heritage List for England, as well as through consultation with WCC and their website. Ordnance Survey (OS) maps were utilised to identify and plot these before carrying out a walkover of the area surrounding the Application Site (field study).

9.4.11 A field study was undertaken by two design and heritage specialist from Savills (in tandem) on 29th June 2021, during which the visibility was good. A further solo field study was undertaken by one of the two design and heritage specialists from Savills on 14th August 2021, during which the visibility was also good. Features of the Application Site and its surroundings identified as part of the desk study were explored and verified, including the way in which the significance (and setting) of the surrounding built heritage assets was experienced as existing and with consideration of the emergence of a Proposed Scheme.

Methodology for demolition and construction effects

9.4.12 The effects of the Proposed Scheme during demolition and construction on each of the identified built heritage assets within the study area was considered and a judgement formed as to the nature of change and the role that the Application Site plays in the significance (value) of that asset.

Methodology for completed development effects

- 9.4.13 The complete and operational effects of the Proposed Scheme on each of the identified built heritage assets within the study area has been considered and professional judgement has been made regarding the duration, extent and magnitude of the effect.
- 9.4.14 To assist in the consideration of the effects of the Proposed Scheme on the identified built heritage assets the accurate visual representations included within Volume II TVIA will be used, where appropriate, to assist in coming to a view on the effect of the proposals upon the setting of these built heritage assets. Any built heritage assets within a particular view will be identified and, similarly, where a viewpoint is provided in close proximity to a heritage asset or, in the case of conservation areas, within that area, this will be identified in the text.
- 9.4.15 Other information, including plans submitted for approval as well as the illustrative material that accompanies the Application, including the Design and Access Statement has been used to inform the assessment. Where illustrative material is used to inform an assessment, this is clearly identified. This approach allows for a balanced assessment that considers all the relevant material and allows for judgements to be made on design quality and associated mitigating effects.

Methodology for cumulative effects

- 9.4.16 Cumulative schemes are also considered and a further judgement made on the effect of the Proposed Scheme in conjunction with the agreed cumulative schemes. Chapter 07 EIA Methodology identifies the cumulative schemes that have been considered as part of the assessment process. Possible mitigation measures are then considered. These are measures that could be adopted to offset any effects.

Significance criteria

- 9.4.17 The significance (value) of a built heritage asset is derived from its heritage interest which may be archaeological, architectural, artistic or historic. The significance of a built heritage asset is defined by the sum of its heritage interests. Taking these criteria into account, each identified heritage asset can be assigned a level of significance in accordance with a four-point framework scale as set out in Table 9-2.

Table 9-2: Significance of built heritage assets

Significance (value)	Built Heritage Asset Category
High	World Heritage Sites, Grade I and II* listed buildings, Grade I and II* registered parks and gardens, Conservation Areas.
Medium	Grade II listed buildings, Grade II registered parks and gardens.
Low	Non-designated built heritage assets.
Very low	Built heritage assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade of significance.

- 9.4.18 Having identified the significance of the built heritage asset, the next stage in the assessment is to identify the level and degree of impact to a built heritage asset arising as a result of the Proposed Scheme. Impacts may arise during demolition and construction or complete operation and can be temporary or permanent. Impacts can occur to the physical fabric of the built heritage asset (direct impacts) or its setting (indirect impacts), so the magnitude of impact must be assessed with an understanding of a built heritage asset's significance and setting and therefore its 'sensitivity to change'. The level and degree of impact is assigned with reference to a four-point framework scale as set out within Table 9-3. This assessment of the impact is made with consideration of any embedded design mitigation within the Proposed Scheme.

Table 9-3 Magnitude of impact of the Proposed Scheme

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

9.4.19 An assessment of the level of effect, having taken into consideration any embedded mitigation, is determined by cross-referencing the significance of the built heritage asset (Table 9-2) and the magnitude of impact (Table 9-3). The resultant level of effect (Table 9-4) can be neutral, adverse or beneficial.

Table 9-4 Significance of environmental effect

Significance	Magnitude of Impact			
	High	Medium	Low	Very Low/Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low/Negligible	Minor	Negligible	Negligible	Negligible

9.4.20 Following the identification of the significance of environmental effect and the direction of effect, the two are combined to identify the residual effect.

9.4.21 Within the National Planning Policy Framework (2021), impacts affecting the significance of designated assets are considered in terms of harm, and there is a requirement to determine whether the level of impact amounts to ‘substantial harm’ or ‘less than substantial harm’ or ‘no harm’. There is no direct correlation between the significance of effect and harm. A major adverse (significant) effect on a built heritage asset would, however, be the basis for which the level of harm to the significance of a built heritage asset would be determined as substantial. A moderate adverse (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine less than substantial harm. A minor or negligible adverse (not significant) effect could still amount to less than substantial harm at the very lower end of the spectrum. A neutral effect or ‘no effect’ is classified as no harm. A beneficial effect is reflective of a positive change resulting from the Proposed Scheme which is classified as a heritage benefit or enhancement. In all cases determining the level of harm to the heritage value of the asset arising from development impact is one of professional judgement.

Limitations and assumptions

9.4.22 The heritage baseline assessment relies on the accuracy of the data provided by secondary and archive sources. There is always some degree of uncertainty in relation to these sources.

9.4.23 In considering the effects of the Proposed Scheme on the significance of the identified built heritage assets the assessment will be based on the plans submitted for approval, as well as the illustrative material that accompanies the Application. Consideration has also been given to the illustrative material that accompanies the Application, including the Design and Access Statement, Lighting and Landscape Strategies and accurate visual representations.

9.5 Baseline conditions

- 9.5.1 There are no built heritage assets within the Application Site, however, there a number of built heritage assets within the surrounding area which have the potential to be affected by the Proposed Scheme.
- 9.5.2 The study area includes three conservation areas: Lisson Grove Conservation Area (the nearest boundary of which is c.50m to the south-east of the Application Site); Fisherton Street Estate Conservation Area (c.150m to the north); and Paddington Green Conservation Area (c.100m to the south-west). These three conservation areas are set out in Table 9-5 (conservation areas) and are scoped in for further assessment due to their proximity and the levels of inter-visibility with the Proposed Scheme.
- 9.5.3 Whilst the nearest boundary of Maida Vale Conservation Area also falls within the study area (at the junction of Crompton Street and Edgware Road c.300m to the north-west of the Application Site), the Proposed Scheme is sufficiently removed (physically and visually) to have no impact on this built heritage asset. The same can be said for St John's Wood Conservation Area located beyond the study area to the north. A small limb of its southern boundary sits just over c.300m to the north-west of the Application Site, following Aberdeen Place. Consequently, these two conservation areas are scoped out due to their removed location and the levels of inter-visibility with the Proposed Scheme.
- 9.5.4 Twenty-four listed buildings (some structures), comprising twenty-one listed at Grade II and three at Grade II* fall within the study area. Eight fall to the south west of the Application Site, within Paddington Green Conservation Area, whilst ten fall to the east within Lisson Grove Conservation Area. None fall within Fisherton Street Estate Conservation Area. All designated and any non-designated built heritage assets located within these conservation areas are not individually assessed in terms of significance, potential impact and significance of effect, but are instead included for review as part of the conservation area they fall within.
- 9.5.5 All of the remaining listed buildings fall outside of a conservation area. Two sit c.75-100m to the south of the Application Site, beyond Broadley Street. These are Marylebone Lower House North Westminster Community School (Grade II*) and an associated Sculpture (Grade II). Three Grade II sit c.100-200m west of the Application Site, in the area between Ashbridge Street and Lisson Grove. These are The Exeter Arms PH, Nos. 97-127 Lisson Grove (comprising a terrace, odd numbers only, included under one list entry), and Nos. 129-135 Lisson Grove (also comprising a terrace, odd numbers only, included under one list entry). These listed buildings are set out in Table 9-6 (listed buildings) and scoped in for further individual assessment due to their proximity and the levels of inter-visibility with the Proposed Scheme.
- 9.5.6 One further Grade II listed building, The Westminster Arms PH (Grade II), is located 300m to the south of the Site, outside of any conservation area. Whilst within the study area and outside of any conservation area, it is evident that the Proposed Scheme is sufficiently removed (both physically and visually) beyond substantial intervening townscape and will not be experienced in tandem with the built heritage asset. The Proposed Scheme will have no impact on this heritage asset as a result. It is therefore scoped out from further assessment due to its lack of proximity and the levels of inter-visibility with the Proposed Scheme.
- 9.5.7 WCC do not have an adopted Local List identifying locally listed buildings. Therefore WCC were consulted at pre-application stage to determine if any, as yet unidentified, locally listed buildings (non-designated heritage assets) were considered to be in the surrounding area and located outside of a conservation area, therefore requiring individual assessment. Four locally listed buildings were identified by WCC, including The Wallis Building (Spitfire Works) at Penfold Street, Tadema and Eastlacke House bounded by Fisherton-Frampton-Penfold-Luton Street and The Miles Buildings at Penfold Place. These have been scoped in due to their proximity and the levels of inter-visibility with the Proposed Scheme. These locally listed buildings are set out in Table 9-7 (locally listed buildings) and scoped in for further individual assessment due to their proximity and the levels of inter-visibility with the Proposed Scheme.
- 9.5.8 There are no further known built heritage assets within the proposed study area.
- 9.5.9 The baseline condition of the designated and non-designated built heritage assets scoped in for assessment is described in detail in the Heritage Statement (Savills, September 2021) included as Appendix 9.1 and listed, with a summary statement of significance, in Table 9-5, (conservation areas), Table 9-6 (listed buildings), Table 9-7 (locally listed buildings) of this chapter. The location of the built heritage assets is identified in Figure

9-1, included after the associated summary statements of significance beneath. The level of significance of each of the built heritage assets (receptors) is assessed on the basis of Table 9-2.

Table 9-5 Summary statements of significance and sensitivity (conservation areas)

Receptor	Summary Statement of Significance	Significance
Lisson Grove	The Lisson Grove Conservation Area was first designated in 1990. The terraced developments of the late eighteenth, nineteenth and twentieth centuries are considered to make the largest contribution to the architectural interest of the area. The historic interest relates largely to its development during and after the eighteenth century. Despite later infill, the listed and unlisted terraces are largely well preserved; coupled with the larger institutional buildings, allowing the character and significance of the conservation area to be understood, even where seen alongside the much taller modern buildings within its immediate, wider and extended setting.	High
Fisherton Street Estate	The Fisherton Street Estate Conservation Area was designated in 1990, encompassing the early twentieth century Fisherton Street Estate. The estate is of architectural interest for its well-planned homogenous layout. The Fisherton Street Estate was a product of the 'Homes for Heroes' initiative, affording it historic interest. The character and significance of the somewhat insular conservation area is read alongside taller modern buildings within its wider and extended setting.	High
Paddington Green	The Paddington Green Conservation Area was initially designated in 1998. It marks the original medieval settlement within the local area, of which historic interest is derived. The area's historic architecture defines its architectural interest and this is complimented by its verdant character. This character and significance of the conservation area is legible, even where seen alongside the much taller modern buildings within its immediate, wider and extended setting.	High

Table 9-6 Summary statements of significance and sensitivity (listed buildings)

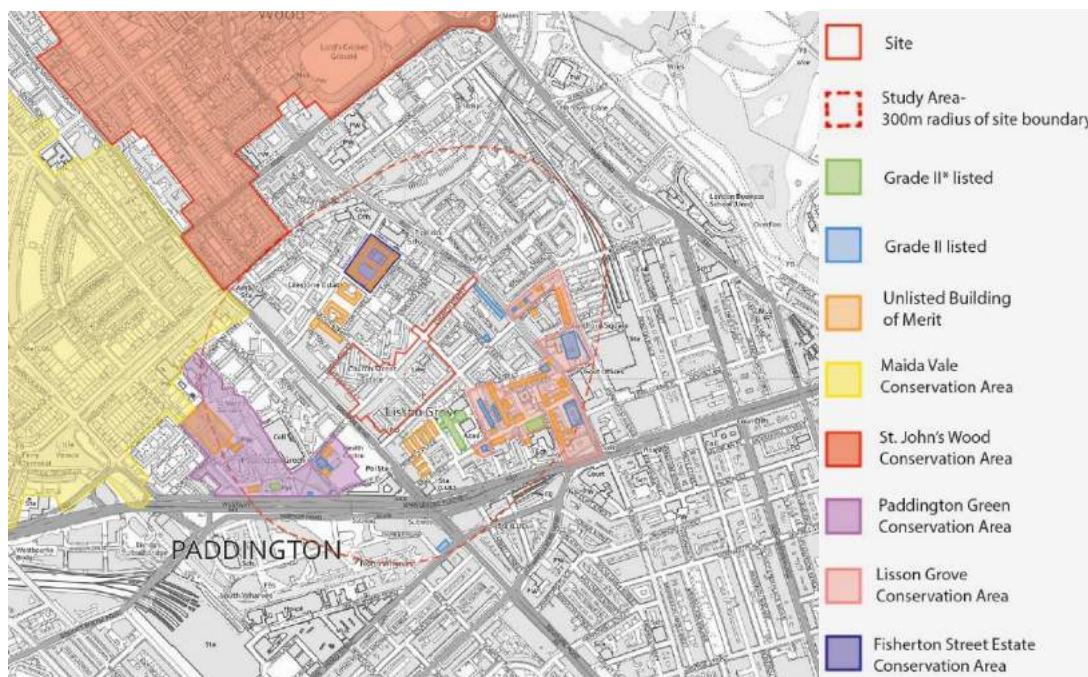
Receptor	Summary Statement of Significance	Significance
Marylebone Lower House North Westminster Community School – Grade II*	Marylebone Lower House is a mid-late twentieth century school laid out in reinforced concrete with a steel frame, designed by Leonard Manessah, a leading British architect of the mid-late twentieth century. The school was a product of the London County Council's secondary school building program. The significance of the grade II* listed school is high and derived from this architectural and historic interest. Save for the associated sculpture, the character and contents of its varied immediate, wider and extended setting, which includes taller buildings, offers no contribution to its significance as an unusual and unique architectural educational intervention within the townscape.	High
Sculpture at Marylebone Lower House North Westminster Community School – Grade II	The group of sculptures at Marylebone Lower House are situated to the west of the main school building. Added when the school was completed in 1960, their architectural and historic interest is derived from their artistic value and historic associations as part of the design of the school. The immediate setting provided by the school provides valuable context and contributes to the ability to understand their significance substantially. The character of the remaining sections of their varied immediate, wider and extended setting offers no contribution to their significance.	Medium
Exeter Arms Public House – Grade II	Constructed between 1830-1840. The building has a well preserved frontage, retaining its Corinthian pilasters, glazed doors, cornice and frieze. As such it is a good example of a nineteenth century former public house. It is this which defines its architectural and historic interest (significance). The building sits alongside the nineteenth century terraces lining the northern side of Broadley Street between Ashbridge Street and Lisson Grove, these contribute to its significance as part of its original townscape. It derives no significance from the remaining sections of its immediate, wider and extended setting which includes a varied scale and character of architecture, including taller buildings.	Medium

Receptor	Summary Statement of Significance	Significance
Nos. 97-127 Lisson Grove – Grade II	Completed in the 1820, Nos. 97-127 represent a consecutive set of late Georgian terraces, laid out in a loosely classical style. The buildings are characteristic late Georgian terraces, with decorative features and symmetrical proportions, indicative of the early nineteenth century development of the area. It is this which defines its architectural and historic interest (significance). The buildings form part of a collection of nineteenth century terraces lining Lisson Grove, Church Street and Broadley Street. This section of their immediate and wider setting contributes to their significance as part of a surviving historic townscape. Conversely, no significance is derived from the remaining sections of their immediate, wider and extended setting which includes a varied scale and character of architecture, including taller buildings.	Medium
Nos. 129-135 Lisson Grove – Grade II	Completed in the 1820, 129-135 represent a consecutive set of late Georgian terraces, laid out in a loosely classical style. The buildings are characteristic late Georgian terraces, with decorative features and symmetrical proportions, indicative of the early nineteenth century development of the area. It is this which defines its architectural and historic interest (significance). The buildings form part of a collection of nineteenth century terraces lining Lisson Grove, Church Street and Broadley Street. This section of their immediate and wider setting contributes to their significance as part of a surviving historic townscape. Conversely, no significance is derived from the remaining sections of their immediate, wider and extended setting which includes a varied scale and character of architecture, including taller buildings.	Medium

Table 9-7 Summary statements of significance and sensitivity (locally listed buildings)

Receptor	Summary Statement of Significance	Significance
Wallis Building (Spitfire Works)	Located on Penfold Street, the Wallis building was constructed after 1920. Architecturally, the building is an example of art deco architecture. Known as the 'Spitfire Works', it has associations with WW2. Its adjoining buildings also have art deco features. All have been heavily altered and adapted. This defines its localised architectural and historic interest (significance). The character of its varied immediate, wider and extended setting, which includes taller buildings offers no contribution to its localised significance as an unusual and unique architectural intervention within the townscape.	Low
Tadema and Eastlake House	Two early twentieth century (c. 1920-1930) apartment blocks situated between Frampton Street and Luton Street. Their architectural interest lies in their simple neo-Georgian architectural style which was typical of architecture during this period. Historically, these blocks were some of many built to address poor living conditions after WW1. This defines their localised architectural and historic interest (significance). Save for the further blocks of an identical style to the north and east, the character of their varied immediate, wider and extended setting, which includes taller buildings, offers no contribution to their localised significance as early twentieth century neo-Georgian flat blocks.	Low
Miles Buildings at Penfold Place	Rows of houses constructed in loose Neo-classical style and built by the Improved Dwellings Association in the 1890s to improve living conditions. This defines their localised architectural and historic interest (significance). Save for their immediate group setting and the small pockets of surviving 19 th century buildings to the south, the character of their varied immediate, wider and extended setting, which includes taller buildings, offers no contribution to their localised significance as nineteenth century housing.	Low

Figure 9-1 Map of 300m study area and built heritage assets scoped in and out



9.6 Environmental design and management

Mitigation during demolition and construction (both detailed and outline components of the Proposed Scheme)

- 9.6.1 Effects will be mitigated within the Proposed Scheme during demolition and construction through Application Site hoardings which will mask many of the operations. Cranes, associated with construction and demolition will be visible, but these are temporary and are the necessary first step in the redevelopment of the Application Site and the surrounding area is characterised by such features.
- 9.6.2 There is the opportunity to use the demolition and construction process and hoardings to provide information to the public, by means, for example, changing boards, observation holes in the hoardings and use of any archaeological information, to help tell the 'story' of the Application Site and its future development. This measure would normally be secured through a condition on the planning consent.

Mitigation once complete and operational (both detailed and outline components of the Proposed Scheme)

- 9.6.3 Effects on identified built heritage assets can be mitigated through the design of the Proposed Scheme as outlined in the material submitted for approval, including, the Design and Access Statement. It is considered that the design of the Proposed Scheme is of high quality and responds to the local context. The high-quality design and materials affect the qualitative part of the assessment and are therefore factored into this.
- 9.6.4 The Proposed Scheme will use a palette of materials informed by the surrounding area. The materials used will be of a high quality, commensurate with the quality of the design. The scale of the Proposed Scheme will therefore complement and sit comfortably alongside the surrounding identified built heritage assets.

9.7 Assessment of effects

Effects during demolition and construction

- 9.7.1 The effects arising from demolition and construction of the Proposed Scheme relate to the erection of tower cranes, the setting up of a temporary compounds, the erection of hoardings to screen the

construction site and construction traffic and noise. These effects will predominantly be localised, however, tower cranes will be visible from a much wider area given the topography and there will be instances where cranes may be visible from conservation areas or may appear behind or alongside listed or locally listed buildings. Visibility of cranes, hoarding and compounds, as well as the experience of construction traffic and noise are inevitable in a townscape which is continually evolving and therefore undergoing change. This would not feel out of context within the townscape and construction related structures would be seen as distinctly separate structures to those in the built environment.

- 9.7.2 The demolition and construction periods of the Proposed Scheme will be temporary, forming the first phase in the development of the Proposed Scheme. As the programme of demolition and construction continues, the associated effects will lessen as the Proposed Scheme nears completion and occupation. The phase will be short term and, in terms of the effects on built heritage assets, the demolition and construction magnitude of effects will range from minor to negligible. The residual effects on heritage assets will range from **minor neutral to negligible neutral** and these will be indirect.
- 9.7.3 The effects resulting from demolition and construction are identified as neutral not adverse based on the understanding of the significance and setting of the built heritage assets. Where these effects are experienced, they are either: at sufficient distance within the intervening townscape not to impact on the significance of built heritage assets by virtue of setting; or, closer but the elements of the setting of the built heritage assets which are altered provide little or no contribution to their significance and therefore the impact is neutral. If construction phases are evident / experienced within a built heritage assets setting, this doesn't automatically mean they result in an adverse impact / effect. The significance of built heritage assets can remain appreciable or unaltered in these circumstances if based on the understanding of the significance and setting of the built heritage assets remaining appreciable.

Effects for completed development.

Conservation areas

Lisson Grove

- 9.7.4 The conservation area and the built heritage assets within its boundaries, are currently experienced within an immediate, wider and extended setting which includes a readily apparent taller building context appreciable at almost all points. These taller buildings sit alongside, above and beyond the existing historic streetscape and buildings of smaller scale within the conservation area, as well as a series of 20th century mid-rise apartment blocks in the surrounding area. The taller buildings include, but are not limited to, Burne House, Kennet House, former Paddington Green Police Station and West End Gate buildings and Braithwaite and Hall Towers.
- 9.7.5 Viewpoints 7-8-9-10 (located within the conservation area) and viewpoint 19 (located beyond the conservation area) set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the conservation area with the established taller building context, as well as the Proposed Scheme.
- 9.7.6 Whilst appreciable from within the conservation area when looking west, the buildings comprising the Proposed Scheme will form a high-quality addition within part of the established taller building context. They will preserve the existing context of the immediate, wider and extended setting which includes a series of taller buildings. The addition of further taller buildings, in the form of the Proposed Scheme, as part of this context will not alter or diminish the ability to appreciate the character and significance of the conservation area. The significance of the heritage asset would be preserved.
- 9.7.7 The magnitude of effect arising from the proposed Scheme would be minor and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **minor neutral**.

Fisherton Street Estate

- 9.7.8 The conservation area is currently experienced within an immediate, wider and extended setting which includes readily apparent taller buildings at almost all points. These sit alongside, above and beyond the existing streetscape and buildings within the conservation area, as well as a series of surrounding 20th century mid-rise apartment blocks in the surrounding area. They include but are not limited to Parson's House, Kennet House, the West End Gate buildings, Braithwaite Tower. The series of modern apartment blocks include No. 85 Frampton Street, Belvedere Heights (No. 199 Lisson Grove), Jordan's House and

Swanbourne House (Capland Street). In addition, the office building of No. 215 Lisson Grove and the emerging Church Street development between Luton and Salisbury Streets are also evident. The not unsubstantial neighbouring buildings in the form of The Gateway Academy (Victorian Board School) and Eastlake House and Stansfield (early-mid-20th century housing blocks) also reinforce this sense of substantial massed blocks within the immediate setting of the conservation area, albeit in a period style.

- 9.7.9 Viewpoint 13 set out within Volume II TVIA provides an indication of the shared proximity and inter-visibility of the conservation area with the established taller building context, as well as the Proposed Scheme.
- 9.7.10 Whilst appreciable from within the conservation area in glimpses above the surrounding roofscape to the south / south-east, the buildings comprising the Proposed Scheme will form a high-quality addition within part of the established taller building context. They will preserve the existing immediate, wider and extended setting and not alter or diminish the ability to appreciate the character and significance of the conservation area. The significance of the heritage asset would be preserved.
- 9.7.11 The magnitude of effect arising from the proposed Scheme would be minor and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **minor neutral**.

Paddington Green

- 9.7.12 The conservation area and the built heritage assets within its boundaries, are currently experienced within an immediate, wider and extended setting which both includes a readily apparent taller building context appreciable at almost all points. These taller buildings sit alongside, above and beyond the existing historic streetscape and buildings of smaller scale within the conservation area, as well as a series of 20th century mid-rise apartment blocks in the surrounding area. The taller buildings include, but are not limited to, Burne House, Parson's House, Kennet House, former Paddington Green Police Station and West End Gate buildings, Braithwaite and Hall Towers, City of Westminster College, and the expansive tall building development lining the southern edge of the A40.
- 9.7.13 Viewpoints 1 (located within the conservation area) and viewpoints 3-4 (located beyond the conservation area) set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the conservation area with the established taller building context, as well as the Proposed Scheme.
- 9.7.14 Whilst appreciable from within the conservation area when looking east / north-east, the buildings comprising the Proposed Scheme will form a high-quality addition within part of the established taller building context appreciable from within the conservation area. They will preserve the existing immediate, wider and extended setting which is populated by taller buildings and not alter or diminish the ability to appreciate the character and significance of the conservation area. The significance of the heritage asset would be preserved.
- 9.7.15 The magnitude of effect arising from the proposed Scheme would be minor and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **minor neutral**.

Listed buildings

*Marylebone Lower House North Westminster Community School – Grade II**

- 9.7.16 The mid-20th century listed building is currently experienced within an immediate, wider and extended setting which is mixed in character and scale. This includes a readily apparent taller building context appreciable at almost all points. These taller buildings sit alongside, above and beyond the listed building, as well as a series of 20th century mid-rise apartment blocks in the surrounding area. The taller buildings include, but are not limited to, Capital House (south side of the A40), Burne House, Kennet House, former Paddington Green Police Station and West End Gate buildings and Braithwaite and Hall Towers.
- 9.7.17 Viewpoints 6-8-17-18 set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the listed building with the established taller building context, as well as the Proposed Scheme.
- 9.7.18 Whilst appreciable from the setting of the listed building, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate

the significance of the listed building as an unusual geometric and structurally innovative mid-20th set-piece intervention within the streetscape. The significance of the heritage asset would be preserved.

- 9.7.19 The magnitude of effect arising from the proposed Scheme would be minor and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **minor neutral**.

Sculpture at Marylebone Lower House North Westminster Community School – Grade II

- 9.7.20 The mid-20th century listed structures are currently experienced within the same setting as the school. They are directly associated with the school and located in its grounds, both of which they derive significance from.

- 9.7.21 Viewpoint 6 set out within Volume II TVIA provides an indication of the shared proximity and inter-visibility of the listed structures with the school, as well as the Proposed Scheme.

- 9.7.22 Whilst appreciable from the setting of the listed structures, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing wider and extended setting and not alter or diminish the ability to appreciate the significance of the listed structures alongside the listed building it is associated with as part of their immediate setting. The significance of the heritage assets would be preserved.

- 9.7.23 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Exeter Arms Public House (No. 9 Ashbridge Street) – Grade II

- 9.7.24 The mid-19th century listed building (former public house) is currently experienced within an immediate, wider and extended setting which is mixed in character and scale. This includes a smaller scale historic terraces within its immediate and wider setting, as well as a series of 20th century mid-rise apartment blocks (Blanche Court, Cotes House and Hubert House). It also includes a readily apparent taller building context appreciable within the extended setting to the south-west, comprising the West End Gate buildings (Westmark Tower),

- 9.7.25 Viewpoint 10 set out within Volume II TVIA provides an indication of the shared proximity and inter-visibility of the listed building with the established taller building context, as well as the Proposed Scheme.

- 9.7.26 Whilst appreciable as part of the extended setting of the listed building, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the listed building as a former mid-19th century public house set within a historic terraced block. The significance of the heritage asset would be preserved.

- 9.7.27 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Nos. 97-127 Lisson Grove – Grade II

- 9.7.28 The early-mid-19th century listed buildings are currently experienced within an immediate, wider and extended setting which is mixed in character and scale. This includes a smaller scale historic terraces within its immediate and wider setting, as well as a series of 20th century mid-rise apartment blocks (Fingest House, Risborough House, Penn House and Portman Gate). It also includes a readily apparent taller building context appreciable within the extended setting to the south-west, comprising the West End Gate buildings (Westmark Tower), Burne House and Kennet House.

- 9.7.29 Viewpoints 10 and 11 set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the listed building with the established taller building context, as well as the Proposed Scheme.

- 9.7.30 Whilst appreciable as part of the extended setting of the listed buildings, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the listed buildings as an early-mid-19th century terrace established as part of the Portman Estate. The significance of the heritages asset would be preserved.

- 9.7.31 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Nos. 129-135 Lisson Grove – Grade II

- 9.7.32 The early-mid-19th century listed buildings are currently experienced within an immediate, wider and extended setting which is mixed in character and scale. This includes a smaller scale historic terraces within its immediate and wider setting, as well as a series of 20th century mid-rise apartment blocks (Fingest House, Risborough House, Penn House and Portman Gate). It also includes a readily apparent taller building context appreciable within the extended setting to the south-west, comprising the West End Gate buildings (Westmark Tower), Burne House and Kennet House.
- 9.7.33 Viewpoints 10 and 11 set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the listed building with the established taller building context, as well as the Proposed Scheme.
- 9.7.34 Whilst appreciable as part of the extended setting of the listed buildings, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the listed buildings as an early-mid-19th century terrace established as part of the Portman Estate. The significance of the heritage assets would be preserved.
- 9.7.35 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Locally listed buildings

Wallis Building (Spitfire Works), Penfold Street

- 9.7.36 The locally listed building is currently experienced within an immediate, wider and extended setting which includes readily apparent taller buildings at almost all points. These, as well as a series of surrounding 20th century mid-rise apartment blocks in the surrounding area sit alongside, above and beyond the locally listed building. They include but are not limited to Kennet House, the West End Gate buildings, Braithwaite and Hall Towers. The series of modern apartment blocks include No. 85 Frampton Street (attached) and those of the mid-20th century within the Church Street Estate (Application Site), as well as the not unsubstantial neighbouring buildings in the form of Westmacott House and Tadema House (early-mid-20th century housing blocks) reinforce an appreciation of the substantial massed blocks within the immediate setting of the locally listed building, albeit in a paired down modern and early-mid-20th century period style. In addition, the emerging Church Street development between Luton and Salisbury Streets are also evident.
- 9.7.37 Viewpoint 14 set out within Volume II TVIA provides an indication of the shared proximity and inter-visibility of the locally listed building with the established taller building context, as well as the Proposed Scheme.
- 9.7.38 Whilst appreciable from the setting of the locally listed building, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the locally listed building as an unusual art-deco mid-20th century set-piece intervention within the streetscape. The significance of the heritage asset would be preserved.
- 9.7.39 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Tadema and Eastlake House, Frampton Street

- 9.7.40 The locally listed buildings are currently experienced within an immediate, wider and extended setting which includes readily apparent taller buildings at almost all points. These, as well as a series of surrounding 20th century mid-rise apartment blocks in the surrounding area sit alongside, above and beyond the locally listed buildings. They include but are not limited to Parson's House, Kennet House, the West End Gate buildings, Braithwaite and Hall Towers. The series of modern apartment blocks include No. 85 Frampton Street (attached) and Jordan's House (Capland Street), as well as those of the mid-20th century within the Church Street Estate (Application Site) and at Wyatt House. In addition, the

not unsubstantial neighbouring buildings from the same period as the locally listed building, in the form of Eastlake, Frith and Frampton (early 20th century housing blocks) also reinforce this sense of substantial massed blocks within the immediate setting of the locally listed building, albeit in a period style. Furthermore, the emerging Church Street development between Luton and Salisbury Streets are also evident.

- 9.7.41 Viewpoints 13-14 set out within Volume II TVIA provide an indication of the shared proximity and inter-visibility of the locally listed building with the established taller building context, as well as the Proposed Scheme.
- 9.7.42 Whilst appreciable from the setting of the locally listed buildings, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the locally listed buildings as early-mid-20th century set-piece housing blocks. The significance of the heritage assets would be preserved.
- 9.7.43 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

Miles Buildings, Penfold Place

- 9.7.44 The locally listed buildings are currently experienced within an immediate, wider and extended setting which includes readily apparent taller buildings at almost all points. These, as well as a series of surrounding 20th century mid-rise apartment blocks in the surrounding area sit alongside, above and beyond the locally listed buildings. The taller buildings include but are not limited to Burne House, Kennet House, the West End Gate buildings, Braithwaite and Hall Towers, Parson's House and the former Paddington Green Police Station. The series of modern apartment blocks include Elmer House and as well as those of the mid-20th century within the Church Street Estate (Application Site). These are experienced alongside a series of traditional historic terraces of a smaller scale and the mid-20th century Marylebone Lower House North Westminster Community School buildings.
- 9.7.45 Viewpoint 6 set out within Volume II TVIA provides an indication of the shared proximity and inter-visibility of the locally listed buildings with the established context, as well as the Proposed Scheme.
- 9.7.46 Whilst appreciable from the setting of the locally listed buildings, the buildings comprising the Proposed Scheme will form part a high-quality architectural addition within an established mixed architectural context. They will preserve the existing, wider and extended setting and not alter or diminish the ability to appreciate the significance of the locally listed buildings as a series of late-19th century set-piece housing blocks. The significance of the heritage assets would be preserved.
- 9.7.47 The magnitude of effect arising from the proposed Scheme would be negligible and on an indirect and permanent basis. The overall effect from the Proposed Scheme would be **negligible neutral**.

9.8 Further mitigation and monitoring

- 9.8.1 In considering the Proposed Scheme, it is important to take into account any measures that mitigate any of the effects. These measures can, if sufficient, reduce or improve the suggested effect. However, no adverse effects have been identified at any stage and therefore no further mitigation or monitoring is required.

9.9 Residual effects and conclusion

- 9.9.1 There are a number of built heritage assets, both designated and non-designated, within the study area, which are likely to be indirectly affected by the Proposed Scheme. This includes three conservation areas, one grade II* listed building, four grade II listed buildings / structures (including two terraces included under one list entry each), and four locally listed buildings.

Effects during demolition and construction

- 9.9.2 The construction of the Proposed Scheme will not give rise to any significant residual effects as they are temporary and will reduce during the construction process.

Effects once complete and operational

- 9.9.3 The completion and occupation of the Proposed Scheme will not give rise to any significant residual effects. The Proposed Scheme will only have indirect and minor or negligible neutral effects as the identified built heritage assets already share, at a number of points, inter-visibility which includes a wider context of mid-rise and taller buildings that surround them and the Application Site, as well as the context of emerging tall building schemes. In addition, the high-quality Proposed Scheme represents an improved architectural context, established through appropriate embedded contextual architectural design measures resulting from design revision throughout the evolutionary design and consultation process with WCC. This results in an opportunity to realise a series of taller building that form an improved series of urban interventions when compared to the buildings which exist on the Application Site.
- 9.9.4 There will be residual effects on all three conservation areas (Lisson Grove, Fisherton and Paddington Green) and one grade II* listed building (Marylebone Lower House North Westminster Community School). These will be **minor neutral**. This effect is minor neutral as a result of the high significance (value) of the conservation area and the grade II* listed building, coupled with the existing ability to appreciate a series of taller buildings from and around these built heritage assets at present (within their established settings), as well as the fact that the elements of their setting altered by the Proposed Scheme make no contribution to their significance. Consequently, the significance of these built heritage assets is preserved when experienced in conjunction with the Proposed Scheme as part of their settings.
- 9.9.5 Residual effects on all four other grade II listed buildings / structures (Sculpture at Marylebone Lower House North Westminster Community School, former Exeter Arms PH, Nos. 97-127 Lisson Grove and Nos. 129-135 Lisson Grove) and all four locally listed buildings (Wallis Building, Tadema and Eastlake House, and Miles Buildings) included for assessment will be **negligible neutral**. This effect is negligible neutral as a result of the medium significance (value) of these grade II and locally listed buildings / structures, coupled with the existing ability to appreciate a series of taller buildings from and around these built heritage assets at present (within their established settings), as well as the fact that the elements of their setting altered by the Proposed Scheme make no contribution to their significance. Consequently, the significance of these built heritage assets is preserved when experienced in conjunction with the Proposed Scheme as part of their settings.

Cumulative effects once complete and operational

- 9.9.6 A number of cumulative schemes have been identified and considered alongside the Proposed Scheme. Whilst there are cumulative schemes within the surrounding area, they would not affect the assessment of the Proposed Scheme set out. The Proposed Scheme will be seen within an broader emerging and established taller building context, with the effect of the Proposed Scheme remaining **minor neutral and negligible neutral**.

Table 9-8 Summary of residual effects

Description of Effect (on receptor)	Significance of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Lisson Grove CA	High	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Minor neutral	Not applicable	Minor neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Fisherton Street Estate CA	High	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Minor neutral	Not applicable	Minor neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Paddington Green CA	High	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Minor neutral	Not applicable	Minor neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Marylebone Lower House North Westminster Community School	High	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Minor neutral	Not applicable	Minor neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Sculpture at Marylebone Lower House North Westminster Community School	Medium	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral

Description of Effect (on receptor)	Significance of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Exeter Arms Public House	Medium	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Nos. 97-127 Lisson Grove	Medium	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Nos. 129-135 Lisson Grove	Medium	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Wallis Building (Spitfire Works)	Low	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Tadema and Eastlake House	Low	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral
Effect of crane towers, hoarding, compounds, construction traffic and noise on setting of Miles Buildings at Penfold Place	Low	Temporary, short team	Very low	General professionalism of Application Site management during demolition and construction in accordance with Code of Construction Practice.	Negligible neutral	Not applicable	Negligible neutral

Description of Effect (on receptor)	Significance of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Complete and Operational							
Effect of the increased scale of the Proposed Scheme on setting of Lisson Grove CA	High	Permanent	Very low	None	Minor neutral	Not applicable	Minor neutral
Effect of the increased scale of the Proposed Scheme on setting of Fisherton Street Estate CA	High	Permanent	Very low	None	Minor neutral	Not applicable	Minor neutral
Effect of the increased scale of the Proposed Scheme on setting of Paddington Green CA	High	Permanent	Very low	None	Minor neutral	Not applicable	Minor neutral
Effect of the increased scale of the Proposed Scheme on setting of Marylebone Lower House North Westminster Community School	High	Permanent	Very low	None	Minor neutral	Not applicable	Minor neutral
Effect of the increased scale of the Proposed Scheme on setting of Sculpture at Marylebone Lower House North Westminster Community School	Medium	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral
Effect of the increased scale of the Proposed Scheme on setting of Exeter Arms Public House	Medium	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral
Effect of the increased scale of the Proposed Scheme on setting of	Medium	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral

Description of Effect (on receptor)	Significance of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Nos. 97-127 Lisson Grove							
Effect of the increased scale of the Proposed Scheme on setting of Nos. 129-135 Lisson Grove	Medium	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral
Effect of the increased scale of the Proposed Scheme on setting of Wallis Building (Spitfire Works)	Low	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral
Effect of the increased scale of the Proposed Scheme on setting of Tadema and Eastlake House	Low	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral
Effect of the increased scale of the Proposed Scheme on setting of Miles Buildings at Penfold Place	Low	Permanent	Very low	None	Negligible neutral	Not applicable	Negligible neutral

Table 9-9 Table of residual effects

Receptor	Significance (value)	Magnitude of Effect	Significance of Effect	Direction of Effect	Direct or Indirect Effect	Temporary or Permanent Effect	Residual Effect
Demolition and Construction Effects							
Lisson Grove CA	High	Very low	Minor	Neutral	Indirect	Temporary	Minor-Neutral
Fisherton Street Estate CA	High	Very low	Minor	Neutral	Indirect	Temporary	Minor-Neutral
Paddington Green CA	High	Very low	Minor	Neutral	Indirect	Temporary	Minor-Neutral
Marylebone Lower House North	High	Very low	Minor	Neutral	Indirect	Temporary	Minor-Neutral

Receptor	Significance (value)	Magnitude of Effect	Significance of Effect	Direction of Effect	Direct or Indirect Effect	Temporary or Permanent Effect	Residual Effect
Westminster Community School							
Sculpture at Marylebone Lower House North Westminster Community School	Medium	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Exeter Arms Public House	Medium	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Nos. 97-127 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Nos. 129-135 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Wallis Building (Spitfire Works)	Low	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Tadema and Eastlake House	Low	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Miles Buildings at Penfold Place	Low	Very low	Negligible	Neutral	Indirect	Temporary	Negligible-Neutral
Complete and Operational Effects							
Lisson Grove CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Fisherton Street Estate CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Paddington Green CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Marylebone Lower House North Westminster Community School	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Sculpture at Marylebone Lower	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral

Receptor	Significance (value)	Magnitude of Effect	Significance of Effect	Direction of Effect	Direct or Indirect Effect	Temporary or Permanent Effect	Residual Effect
House North Westminster Community School							
Exeter Arms Public House	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Nos. 97-127 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Nos. 129-135 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Wallis Building (Spitfire Works)	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Tadema and Eastlake House	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Miles Buildings at Penfold Place	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Cumulative Effects							
Lisson Grove CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Fisherton Street Estate CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Paddington Green CA	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Marylebone Lower House North Westminster Community School	High	Very low	Minor	Neutral	Indirect	Permanent	Minor-Neutral
Sculpture at Marylebone Lower House North Westminster Community School	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Exeter Arms Public House	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral

Receptor	Significance (value)	Magnitude of Effect	Significance of Effect	Direction of Effect	Direct or Indirect Effect	Temporary or Permanent Effect	Residual Effect
Nos. 97-127 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Nos. 129-135 Lisson Grove	Medium	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Wallis Building (Spitfire Works)	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Tadema and Eastlake House	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral
Miles Buildings at Penfold Place	Low	Very low	Negligible	Neutral	Indirect	Permanent	Negligible-Neutral



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 10 Climate Change

Westminster City Council

November 2021

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10. Climate Change

10.1 Introduction

- 10.1.1 This chapter reports the findings of the Climate Change assessment and has been completed by AECOM.
- 10.1.2 To align with the requirements of the 2017 EIA Regulations and IEMA Guidance for assessing climate change mitigation¹ and adaptation² consideration has been given to the following three aspects of climate change:
- Lifecycle greenhouse gas (GHG) Impact assessment – the effects on the climate of GHG emissions arising from the construction and operation of the Proposed Scheme;
 - Climate Change Resilience (CCR) review – the resilience of the Proposed Scheme to climate change, including how the Scheme design has been adapted to take account of the projected impacts of climate change;
 - In-combination Climate Change Impact (ICCI) assessment - the combined impact of the Scheme and future climate change on receptors in the surrounding environment.
- 10.1.3 At the EIA Scoping stage, it was agreed with the WCC that an ICCI assessment could be scoped out of the Environmental Statement (ES).
- 10.1.4 It was further agreed that the lifecycle stages and activities detailed in the scoping report are not expected to result in GHG emissions which would be considered 'significant'. It was therefore agreed that a full GHG impact assessment would be scoped out of the ES. An appendix with an outline GHG assessment is provided within this ES to justify this decision.
- 10.1.5 Therefore, this ES chapter covers the CCR review only. The outline GHG assessment is included at Appendix 10.1

10.2 Legislation, policy, standards and guidance

- 10.2.1 This assessment has been undertaken taking into account relevant legislation, policy, standards and guidance set out in international, national, regional and local planning policy.

Legislation

United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement³

- 10.2.2 The Paris Agreement is an agreement within the UNFCCC requiring all signatories to strengthen their climate change mitigation efforts to keep global warming to below 2°C this century.

EU Directive 2014/52/EU⁴ on the assessment of the effects of certain public and private projects on the environment

- 10.2.3 As of May 2017, an environmental impact assessment (where relevant) must include assessment of the impact of a Proposed Scheme on climate change (for example, the nature and magnitude of GHG emissions).

¹ (IEMA, Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2017)

² (IEMA, Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation, 2015)

³ (UNFCCC), United Nations Framework Convention on Climate Change

⁴ Directive 2014/52/EU of the European Parliament and of the Council amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (2014)

Climate Change Act 2008⁵ Climate Change Act (2050 Target Amendment)⁶

- 10.2.4 The Climate Change Act 2008 (hereafter referred to as the 'Act' sets a legally binding target for the UK to reduce its GHG emissions from 1990 levels by at least 80% by 2050. The target is supported by a series of five-year 'carbon budgets' and an independent committee monitor the UK's progress.
- 10.2.5 In June 2019 Government laid before Parliament 'The Climate Change Act 2008 (2050 Target Amendment) Order 2019', an amendment to the Climate Change Act 2008 to revise the current 2050 GHG target of an 80% reduction of GHG emissions compared to 1990 levels to a net zero carbon target.

Committee on Climate Change, Reducing UK emissions, 2019 Progress Report to Parliament⁷

- 10.2.6 In their latest report to Parliament on progress against the carbon reduction target established in the Climate Change Act 2008, The Committee on Climate Change (CCC) has stated:
- 10.2.7 *"The path to achieving net-zero emissions by 2050 will necessarily entail a steeper reduction in emissions over the intervening three decades. As the existing carbon budgets were set on a cost-effective path to achieving an 80% reduction in UK greenhouse gas emissions by 2050, a more ambitious long-term target is likely to require outperformance of the carbon budgets legislated to date. The Committee will revise its assessment of the appropriate path for emissions over the period to 2050 as part of its advice next year on the sixth carbon budget".*

UK Carbon Budgets⁸

- 10.2.8 The Carbon Budgets Orders 2009, 2011 and 2016 set five-yearly, legally binding, carbon budgets. The first five carbon budgets cover to 2032 and follow a trajectory for the UK to meet an 80% carbon reduction target. The recently agreed sixth carbon, covering 2033 to 2037, aligns with the revised target for the UK to be net zero by 2050

Planning Policy

National Planning Policy Framework (NPPF) 2021⁹

- 10.2.9 The revised National Planning Policy Framework (NPPF) summarises in a single document, the Government's planning policies for England and how these are expected to be applied. The NPPF was updated in July 2021, superseding the previous version published in February 2019.
- 10.2.10 The NPPF introduces the presumption in favour of sustainable development at the heart of the framework, where Section 2, Paragraph 11 states that local planning authorities should promote a sustainable pattern of development when creating plans, and assessing and determining development proposals. Paragraph 152 of the NPPF states that:
- 10.2.11 "the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure."

National Planning Practice Guidance (NPPG) – Climate Change (2019)¹⁰

- 10.2.12 Advises how to identify suitable mitigation and adaptation measures in the planning process to address the impacts of climate change. It states that:

⁵ HMSO, "Climate Change Act," 2008

⁶ The Climate Change Act 2008 (2050 Target Amendment), Order 2019

⁷ Committee on Climate Change, Reducing UK Emissions, 2019 Progress Report to Parliament

⁸ Committee on Climate Change, (2017); UK Carbon Budgets

⁹ Ministry of Housing, Communities and Local Government (2019), National Planning Policy Framework

¹⁰ Ministry of Housing, Communities and Local Government, (2019); National Planning Policy Guidance, Climate Change

- 10.2.13 *“effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases... Planning can also help increase resilience to climate change impact through the location, mix and design of development.”*

Westminster City Plan 2019-2040¹¹

- 10.2.14 Adopted in April 2021, Westminster's Development Plan sets out key policies used in determining planning applications

The London Plan- Spatial Development Strategy for Greater London¹²

- 10.2.15 Published in March 2021, it outlines policies to underpin London's response to climate change, covering mitigation and adaptation strategies. The adopted London Plan also describes the early planning stages as the most effective time to incorporate relevant design and technological measures to ensure the full carbon reduction and climate change adaptation potential is realised.

- 10.2.16 The London Plan seeks *“...to achieve an overall reduction of all greenhouse gas emissions (of which carbon dioxide is the most prominent) with an objective of becoming a zero-carbon city by 2050”* and aims to reduce the impacts of climate change already being felt through sustainable design and construction techniques, urban greening, sustainable urban drainage systems (SUDS), maximising sustainable energy supply, decentralised and renewable energy networks, and improved flooding and waste management schemes.

- 10.2.17 The following policies within The London Plan are of particular relevance

- Policy SI.1 Improving air quality: The London Plan seeks to tackle poor air quality, protect health and meet legal obligations. Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.
- Policy SI.2 Minimising greenhouse gas emissions: Requires that development proposals make the fullest contribution to minimise greenhouse gas emissions in accordance with the following energy hierarchy:
 - Be lean: use less energy and manage demand during operation
 - Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly
 - Be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site
 - Be seen: monitor, verify and report on energy performance.
- Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.
- Policy SI.3 Energy Infrastructure: Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals.
- Decentralised Energy in Development Proposals: Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites;
- Renewable Energy: Development proposals should seek to utilise renewable energy technologies such as: biomass heating; cooling and electricity; renewable energy from waste; photovoltaics; solar water heating; wind and heat pumps;

¹¹ City of Westminster (2021) City Plan 2019-2040

¹² Greater London Authority, (2021); The London Plan. The Spatial Development Strategy for Greater London

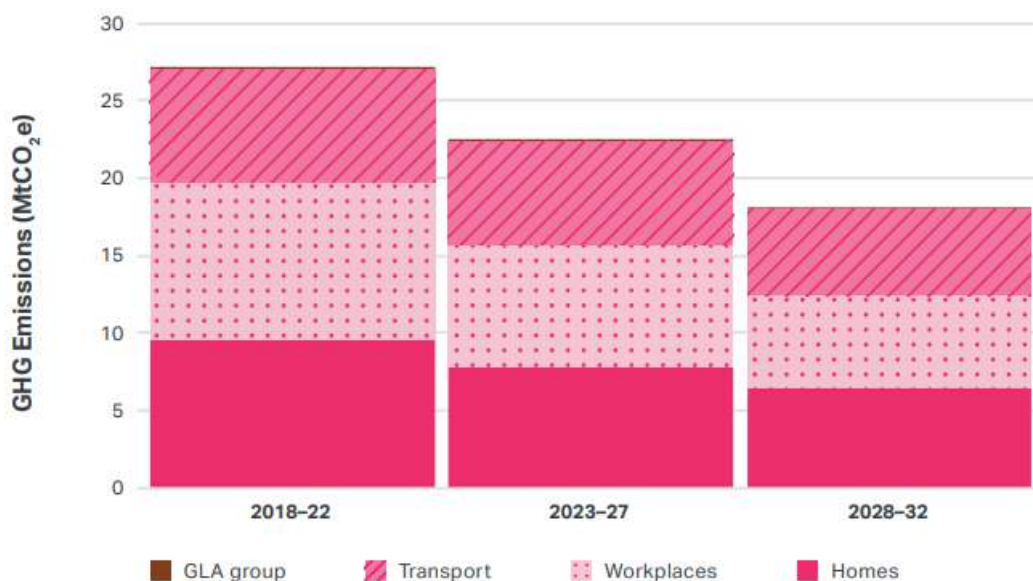
- Policy SI.4 Managing heat risk: Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.
- Overheating and Cooling: Development proposals should maximise opportunities to orientate buildings and streets to minimise summer and maximise winter solar gain; use trees and other shading; increase green areas in the envelope of a building; maximise natural ventilation; expand green networks across London and wherever possible incorporate a range of public and/or private outdoor green spaces;
- Policy SI.13 Sustainable Drainage: Developments should utilise SUDS; and
- Policy SI.7 Reducing waste and supporting the circular economy: A target is set for recycling/ reuse of 95% of construction, excavation and demolition waste.
- Mayor's London Environment Strategy (2018)¹³

10.2.18 The London Environment Strategy was published in May 2018 and sets out the Mayor's vision of London's environment to 2050. The London Environment Strategy outlines seven themes to address environmental issues throughout London affecting Londoners. Two of these themes relate specifically to climate change:

- Chapter 6: Climate change mitigation and strategy – Outlines the aim for London to be a zero-carbon city by 2050, with energy efficient buildings, clean transport and clean energy. This theme focuses on reducing carbon emissions in London's highest emitting areas: transport and buildings. GLA has adopted a system of five-year carbon budgets to create an emissions pathway to 2050 that are illustrated in Figure 10-1.
- Chapter 8: Adapting to climate change – Outlines the aim for London and Londoners to be resilient to severe weather and longer-term climate change impacts (including flooding, heat risk and drought). Climate change will increase the existing pressures on Londoner's wellbeing and prosperity through housing, infrastructure, services and the environment. This theme focuses on improving the resilience of infrastructure, utility networks to help mitigate these impacts.

¹³ Mayor of London, (2018); London Environment Strategy (online). Available at: https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf [Accessed 04 August 2021]

Figure 10-1: GLA's five-year carbon budgets



Budget	Carbon budget level (MtCO ₂ e)				GLA Group	Reduction below 1990 levels
	Total	Homes	Workplaces	Transport		
2015	33.9	12.1	13.5	8.3	0.16	25%
2018-22	27.1	9.5	10.3	7.3	0.13	40%
2023-27	22.4	7.8	7.9	6.7	0.10	50%
2028-32	18.0	6.5	6.0	5.5	0.08	60%

Standards and Guidance

- IEMA: Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance¹

10.2.19 In the absence of any widely accepted guidance on assessing the significance of the impact effect of GHG emissions, the EIA Guidance published by IEMA in 2017 will be followed. This provides a framework for the consideration of GHG emissions in the EIA process, in line with the 2014 European Union (EU) Directive⁴. The guidance sets out how to:

- Identify the GHG emissions baseline in terms of GHG current and future emissions;
- Identify key contributing GHG sources and establish the scope and methodology of the assessment;
- Assess the impact of potential GHG emissions and evaluate their significance; and
- Consider mitigation in accordance with the hierarchy for managing project related GHG emissions (avoid, reduce, substitute, and compensate).

- IEMA: Environmental Impact Assessment Guide to: Climate Chance Resilience and Adaptation²

The IEMA Guidance for assessing CCR and adaptation in EIA will be followed. It provides guidance for consideration of the impacts of climate change within project design. The guidance sets out how to:

- Define climate change concerns and environmental receptors vulnerable to climate factors;

- b. Define the environmental baseline with changing future climate parameters; and
- c. Determine the resilience of project design and define appropriate mitigation measures to increase resilience to climate change.

10.3 Consultation

- 10.3.1 The EIA Scoping Opinion was received in on 3rd September 2021. A summary of the Climate Change related responses are set out in Table 100-1.

Table 100-1 Comments raised in EIA Scoping Opinion

Comments raised	Response provided
The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment "by establishing coherent ecological networks that are more resilient to current and future pressures" (NPPF Paras 170 and 174), which should be demonstrated through the ES.	The landscaping strategy and ecology report has taken into consideration climate change considerations
Paragraph 7.3.7 States an outline GHG assessment will be included in the ES to justify scoping this out of the ES. It would have been helpful to have this at this stage though it is appreciated that sufficient information may not exist to enable this. The applicant should be aware that if this is not accepted there would be a need for a Regulation 25 submission providing a full GHG assessment.	The outline GHG assessment is provided as Appendix 10.1.

10.4 Assessment methodology

Determining baseline conditions and sensitive receptors

- 10.4.1 The CCR review considers the impact of climate on the Proposed Scheme by identifying likely changes to the climate and potential climate hazards over the life of the Proposed Scheme. The baseline describes the current climate, whilst the project-scenario describes the forecast climate during the project-phases.
- 10.4.2 The climate baseline has been developed using historic Met Office data obtained from a meteorological station closest to the Application Site.
- 10.4.3 The receptor for the CCR review is the Proposed Scheme itself and associated users (including residents, workers and visitors). The changes in climate from baseline to the future project-environment inform the requirement for incorporated environmental design and management measures identified.

Methodology for demolition and construction assessment

- 10.4.4 Climate change projections for the Application Site during the enabling works and construction phase have been examined against receptors (including the Proposed Scheme itself and associated users) during this stage. Construction phase receptors of the Proposed Scheme include the workforce, plant, machinery and materials:
- 10.4.5 As described in the EIA Scoping Report (refer to ES Volume III Appendix 7.1), the following climate parameters have been scoped out of the CCR review:
- Sea level rise: The Application Site is not located in an area that is susceptible to sea level rise; and
 - Wind: The impacts of wind on receptors in the surrounding environment are likely to be no worse relative to baseline conditions. *Chapter 15: Wind Microclimate* presents the wind assessment for the Proposed Scheme.

Methodology for completed development effects

- 10.4.6 The CCR assessment has considered the strategic aims and objectives encompassed within the regional planning policy, specifically the London Plan¹² and the Mayor's Environment Strategy¹⁴, which has the overarching aim of minimising the adverse impacts of climate change, whilst requiring new development to take climate change considerations into account within design.
- 10.4.7 The identification and assessment of CCR within EIA is an area of emerging practice. There is no single prescribed format for undertaking such assessments; therefore, the approach adopted to undertaking and reporting the assessment has drawn on good practice from other similar developments and studies, and is aligned with existing guidance such as that published by IEMA².
- 10.4.8 For the complete and occupied phase of the Proposed Scheme, potential climate change impacts have been identified using relevant projections from UKCP18¹⁵ and the CCR review considers their potential consequence to receptors and likelihood of occurrence, taking account of the measures incorporated into the design of the Proposed Scheme. Receptors when the Proposed Scheme is complete and occupied may include the Proposed Scheme assets and their operation, maintenance and refurbishment (pavements, structures, earthworks and drainage, technology assets); and end-users (staff and commercial operators).

Significance criteria

- 10.4.9 The following key terms and definitions relating to the CCR assessment have been used:
- Climate hazard – a weather or climate related event, which has potential to do harm to environmental or community receptors or assets, for example, increased winter precipitation;
 - Climate change impact – an impact from a climate hazard which affects the ability of the receptor or asset to maintain its function or purpose; and
 - Consequence – any effect on the receptor or asset resulting from the climate hazard having an impact.
- 10.4.10 The criteria which have been used to determine the likelihood of an event occurring, based on its probability and frequency of occurrence, are detailed in Table 10-2. The event is defined as the climate event (such as heatwave) and the hazard (such as overheated electrical equipment) occurring in combination.

Table 10-2: Description of Likelihood for Climate Change Hazard

Likelihood Category	Description (probability and frequency of occurrence)
Very likely	90-100% probability that the hazard will occur.
Likely	66-90% probability that the hazard will occur.
Possible, about as likely as not	33-66% probability that the hazard will occur.
Unlikely	0-33% probability that the hazard will occur.
Very unlikely	0-10% probability that the hazard will occur.

*The event is defined as the climate event (such as heatwave) and the hazard (such as overheated electrical equipment) occurring in combination

- 10.4.11 Engagement has been undertaken with relevant environmental disciplines and the engineering design team to discuss the CCR review and identify mitigation measures for incorporation into the design of the Proposed Development.
- 10.4.12 Measures to adapt the Proposed Scheme are proposed where potential climate change consequences are identified as being significant and are reported in this ES chapter.

¹⁴ Mayor of London, (2018); London Environment Strategy (online). Available at: https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf [Accessed 04 August 2021]

¹⁵ Met Office (2020) UK Climate Projections

- 10.4.13 As described previously, as there is no single prescribed format for determining CCR, the approach adopted for the CCR review of the Proposed Scheme has drawn on good practice from other similar developments and studies, and is aligned with existing guidance such as that published by IEMA.
- 10.4.14 In consideration of the nature and scale of this Proposed Scheme, a qualitative approach has been undertaken. Therefore, significance criteria to review CCR measures have not been applied.

Limitations and assumptions

- 10.4.15 Limitations associated with the approach taken for the CCR review relate to uncertainties inherent within UK Climate Projections (UKCP18 data¹⁵).
- 10.4.16 By its very nature, climate change is associated with a range of assumptions and limitations. To overcome these, up to date climate change data and science has been incorporated into the assessment and proven effective approaches undertaken to assess similar project types have been replicated.
- 10.4.17 UKCP18¹⁵ projections are the leading climate change projections for the UK, resulting from over seven years work by the Met Office's Hadley Centre, and over thirty years of work from other contributing organisations.

10.5 Baseline conditions

- 10.5.1 The CCR review considers the impact of climate on the Proposed Scheme by looking at likely changes to the climate over the life of the Proposed Scheme. The baseline describes the current climate, whilst the project-scenario describes the likely climate during the project-phases.
- 10.5.2 The current baseline for the CCR review is based on historic climate data obtained from the Met Office recorded at the closest meteorological station (Hampstead)¹⁵ to the Proposed Development for the period 1981-2010. These data are listed in Table 10-3.

Table 10-3: Historic Climate Data

Climatic Variable	Month	Value
Average annual maximum daily temperature (°C)	-	14.3
Warmest month on average (°C)	July	22.4
Coldest month on average (°C)	February	1.7
Mean annual rainfall levels (mm)	-	704.5
Wettest month on average (mm)	October	77.7
Driest month on average (mm)	February	46.6

- 10.5.3 The Met Office historic 10-year averages for the 'England South East and Central South' region identify gradual warming of a degree between 1971 and 2020, with generally increasing rainfall. Information on mean maximum annual temperatures and mean annual rainfall is summarised in Table 10-4.

Table 10-4: Historic 10-year Averages for Temperature and Rainfall for South East and Central South England

Time Period	Climatic Parameter	
	Mean maximum annual temperatures (°C)	Mean annual rainfall (mm)
1971-1980	13.616	741.93
1981-1990	13.908	750.94
1991-2000	14.323	807.1
2001-2010	14.723	787.29
2011-2020	15.051	814.52

- 10.5.4 The future baseline is based on future UKCP18 data from the Met Office for Hampstead¹⁵. This projection data provides probabilistic indications of how global climate change is likely to affect areas of the UK using pre-defined climate variables and time periods.
- 10.5.5 For the purpose of the assessment, UKCP18¹⁵ probabilistic projections for pre-defined 30-year periods for the following average climate variables have been obtained and will be further analysed:
- Mean annual temperature;
 - Mean summer temperature;
 - Mean winter temperature;
 - Maximum summer temperature;
 - Minimum winter temperature;
 - Mean annual precipitation;
 - Mean summer precipitation and
 - Mean winter precipitation.
- 10.5.6 Projected climatic parameters are presented in Table 10-5 and Table 10-6 and show that at the end of the design life (approximately 2074), 50% of climate model results showed an annual reduction of 2.0% in rainfall, a 30.5% reduction in summer rainfall, and an increase of 16.4% in winter rainfall.
- 10.5.7 UKCP18¹⁵ probabilistic projections have been analysed for the 25 km grid square in which the Overall Site is located. These figures are expressed as temperature/precipitation anomalies in relation to the 1981-2010 baseline. This baseline was selected as it provides projections for 30-year time periods (e.g. 2020-2049) for the parameters analysed within the assessment
- 10.5.8 UKCP18¹⁵ uses a range of possible scenarios, classified as Representative Concentration Pathways (RCPs), to inform differing future emission trends. These RCPs “... specify the concentrations of greenhouse gases that will result in total radiative forcing increasing by a target amount by 2100, relative to preindustrial levels.” RCP8.5 is considered to be the worst-case global scenario with the greatest concentration of GHGs in the atmosphere and has been used as the purposes of this assessment as a worst-case scenario.
- 10.5.9 Construction of the Proposed Scheme is expected to take over approximately 12 years starting in 2023. The Proposed Development is expected to be fully complete and occupied from beginning of 2036 and is assumed to be occupied for up to 60 years. Therefore, the CCR review has considered a scenario that reflects a high level of GHG emissions at the 10%, 50% and 90% probability levels up to the 2089 projection to assess the impact of climate change over as much of the lifetime of the Proposed Development as possible.
- 10.5.10 Table 10-5 and Table 10-6 illustrate the projected changes in climate variables during enabling works and construction, and early operations (2020-2049), mid-way through the complete and occupied Proposed Scheme phase (2040-2069) and the end of the operational design life (2060-2089).
- 10.5.11 Table 10-5 shows that at the end of design life (approximately 2086 for Site A), 50% of climate model results showed warming of up to 3.1°C to the mean annual temperature, up to 4.0°C to the mean summer temperature, up to 2.6°C to the mean winter temperature, up to 4.6°C to the maximum summer temperature, and up to 2.6°C to the minimum winter temperature.

Table 10-5: Projected Changes in Temperature Variables (°C), 50% Probability (10% and 90% Probability in Parenthesis)

Climatic Parameter	Time Period		
	2020-2049	2040-2069	2060-2089
Mean annual air temperature anomaly at 1.5 m (°C)	+1.1 (+0.4 to +1.8)	+2.0 (+1.0 to +3.1)	+3.1 (+1.6 to +4.8)
Mean summer air temperature anomaly at 1.5 m (°C)	+1.4 (+0.5 to +2.3)	+2.6 (+1.0 to +4.2)	+4.0 (+1.6 to +6.6)

Climatic Parameter	Time Period		
	2020-2049	2040-2069	2060-2089
Mean winter air temperature anomaly at 1.5 m (°C)	+0.9 (-0.1 to +2.0)	+1.7 (+0.5 to +3.0)	+2.6 (+0.9 to +4.4)
Maximum summer air temperature anomaly at 1.5 m (°C)	+1.5 (+0.5 to +2.7)	+2.9 (+1.0 to +5.0)	+4.6 (+1.6 to +7.7)
Minimum winter air temperature anomaly at 1.5 m (°C)	+0.9 (-0.2 to +2.0)	+1.7 (+0.4 to +3.2)	+2.6 (+0.8 to +4.6)

Table 10-6: Projected Changes in Precipitation Variables (%), 50% Probability (10% and 90% Probability in Parenthesis)

Climatic Parameter	Time Period		
	2020-2049	2040-2069	2060-2089
Annual precipitation rate anomaly (%)	+0.4 (-4.1 to +5.1)	-2.4 (-8.2 to +3.6)	-2.0 (-7.9 to +3.9)
Summer precipitation rate anomaly (%)	-11.3 (-32.1 to +8.8)	-22.0 (-46.9 to +2.4)	-30.5 (-60.2 to -0.5)
Winter precipitation rate anomaly (%)	+6.9 (-4.0 to +18.0)	+10.3 (-4.9 to +26.7)	+16.4 (-2.8 to +38.2)

10.5.12 Using the climate variable likelihood data for future baselines (Table 10-5 and Table 10-6) and the definitions for likelihood (Table 10-2), the likelihood of occurrence of potential climate hazards are detailed in Table 10-7.

Table 10-7. Potential climate hazards and likelihood of occurrence (from UKCP18 projections)

Climate Variable	Potential Hazard	2020- 2039 Likelihood	2040-2059 Likelihood	2070-2089 Likelihood
Mean annual air temperature anomaly at 1.5 m (°C)	Increase in mean annual air temperature	Very likely	Very likely	Very likely
Mean summer air temperature anomaly at 1.5 m (°C)	Increase in mean summer air temperature	Very likely	Very likely	Very likely
Mean winter air temperature anomaly at 1.5 m (°C)	Increase in mean winter air temperature	Likely	Very likely	Very likely
Maximum summer air temperature anomaly at 1.5 m (°C)	Increase in maximum summer air temperature	Very likely	Very likely	Very likely
Minimum winter air temperature anomaly at 1.5 m (°C)	Increase in minimum winter air temperatures	Likely	Very likely	Very likely
Annual precipitation rate anomaly (%)	Decrease in annual precipitation rate	Possible	Possible	Possible
Summer precipitation rate anomaly (%)	Decrease in summer precipitation rate	Likely	Likely	Likely
Winter precipitation rate anomaly (%)	Increase in winter precipitation rate	Likely	Likely	Very likely

10.6 Environmental design and management

10.6.1 The following climate change mitigation and adaptation measures have been proposed:

10.6.2 Climate adaptation measures incorporated into the Flood Risk Assessment and Foul and Surface Drainage Strategy include:

- Using rainwater as a resource to irrigate the landscaping design.
- Installing biodiverse green roofs high roof levels. The reservoir/drainage layer, which is part of the green roof build up will store rainwater for irrigation of the plants (green roofs) via capillary action.
- Water butts have been proposed for irrigation of soft landscape at podium level. The proposed blue roofs at podium level have been sized to accommodate runoff from the podiums as well as those high-level roof areas that drain into the podium level.
- Surface water drainage design to accommodate runoff during storm events up to the 1 in 100 (1%) AP plus climate change event (40%).
- The use of sustainable drainage system (SuDS) techniques within the Proposed Development

10.6.3 Climate adaptation measures incorporated into the Energy Statement include passive design measures such as:

- Optimising building form, orientation and site layout;
- Use of natural ventilation;
- Use of high-performance glazing;
- Optimising glazing ratio and use of solar shading;
- Use of enhanced thermal insulation and improvements to U-Values; and
- Improvements to fabric air permeability.

And active design measures such as:

- Use of mechanical ventilation with heat recovery (MVHR) system with summer bypass; and
- Installation of low energy LED lighting with photocell/timer clock/presence detection.

10.6.4 In line with the London Plan, it is required to identify potential overheating risk in residential accommodation early in the design process and then incorporate suitable passive measures within the building envelope and services design to mitigate overheating and reduce cooling demand.

10.6.5 Measures to reduce the cooling demand have been considered under the following categories set out in London Plan cooling hierarchy:

- Reduce the amount of heat entering the building: Balconies and deck access roofs provide external shading to the dwellings below, and trees offer external shading in summer where provided. High efficiency building fabric with low U-values incorporated in design would reduce the heat transfer from outside during summer months. The g-value and glazing ratio of windows has been selected to optimise the amount of solar heat gains and natural daylight levels throughout the year
- Minimise internal heat generation through energy efficient design: The heat distribution infrastructure and building services within the building have been designed to minimise heat losses to spaces and improve system efficiencies. An ambient loop system is proposed, which has minimal heat loss (and therefore minimal unwanted heat gains in summer) when compared to a standard communal heat network. All necessary pipe work and ductwork are insulated to exceed the requirements of Building Regulations to further reduce heat losses into spaces. High efficiency LED lighting is used to reduce the heat gains from lighting with optimised lighting control in communal areas.
- Manage the heat within the building: Increasing the amount of exposed thermal mass to absorb excess heat has been considered and has been included within communal stairs. Higher ceiling heights will be targeted within residential units to make use of air stratification.
- Passive ventilation: High levels of passive ventilation have been considered to reduce the likelihood of the dwellings overheating. The dwelling and window designs are provided to maximise the openable area available to each occupied space. All dwellings are dual aspect

allowing higher levels of natural ventilation through opening windows compared to single sided ventilation. The dwelling floor plates are relatively shallow and so occupied spaces are provided close to the façade openings.

- Mechanical ventilation: MVHR units are provided in dwellings for mechanical ventilation. The units are equipped with full summer bypass function to make use of free cooling during the summer months. MVHR units are provided with a boost mode to enable occupants to increase ventilation if required.

10.6.6 In response to the principles set out in the Circular Economy Statement, which is submitted in support of the planning application, during the enabling works and construction phase potential energy loss associated with material wastage would be reduced through the following measures:

- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
- Implementation of a 'just-in-time' material delivery system where practical to avoid materials being stockpiled or over-ordered; and
- Maximisation of waste segregation, re-use and recycling of materials off-site where re-use on-site is not practical (through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing).

10.7 Assessment of effects

Effects during demolition and construction

10.7.1 During the demolition and construction phase, receptors such as the construction workforce, construction plant, vehicles, materials and the construction programme may be vulnerable to a range of climate risks. These could include:

- Inaccessible construction site due to severe weather event (flooding, snow and ice, storms) restricting working hours and delaying construction;
- Health and safety risks to the workforce during severe weather events;
- Unsuitable conditions (due to very hot weather or very wet weather, for example) for certain construction activities; and
- Damage to construction materials, plant and equipment, including damage to temporary buildings/facilities within the site boundary, such as offices, compounds, material storage areas and worksites, for example as a result of stormy weather.

Effects for completed development.

10.7.2 The key potential climate change impacts on the Proposed Scheme and the adaptation methods to increase the resilience of the Proposed Development are detailed in Table 10-8.

Table 10-8: Potential Climate Change Impacts and Relevant Adaptation / Resilience Measures

Potential climate changes	Potential impacts on the Development	Adaptation / Resilience measures
Increased frequency and severity of extreme weather events (such as heavy and/or prolonged precipitation, storm events and heatwaves)	<p>Damage to utilities and roofs due to high winds or intense rainfall</p> <p>Damage to drainage systems, gutters and downpipes due to flooding from intense rainfall</p> <p>Flooding from drainage systems during intense or prolonged rainfall</p> <p>Impacts on the thermal comfort of building users</p>	<p>The majority of the site is located within an area which is considered as being at a 'Very Low' susceptibility to surface water flooding.</p> <p>The impermeable area and the surface water runoff of all sites is not expected to increase. Consequently the surface water flood risk is not expected increase due to the Proposed Scheme.</p> <p>Measures for mitigating overheating risk and reduction of cooling demand include reduced distribution heat losses in heat network within the building, openable windows and MVHR with summer bypass.</p>

Potential climate changes	Potential impacts on the Development	Adaptation / Resilience measures
Increased winter precipitation	Surface water flooding and standing waters	<p>The surface water attenuation for the Proposed Scheme has been sized to accommodate surface water runoff with no flooding for all storms up to and including the 1 in 100 (1%) Annual Probability plus 40% climate change event. This approach satisfies the Building Regulations – Approved Document Part H, 2015 requirement to accommodate runoff during storm events up to the 1 in 30 (3.3%) Annual Probability event.</p> <p>The finish floor level of the proposed buildings will be set above the existing ground levels and the building accesses will be set to fall away towards landscaped areas and/or existing roads. The existing roads levels and subsequently exceedance flood routes will be retained as existing. Furthermore, linear threshold drains will be provided across all access thresholds of the proposed buildings</p>
Decreased summer precipitation	Reduced water supply for building users	<p>The CEMP will include a requirement for contractors to take water efficiency into account when selecting equipment where practicable to reduce the amount of water required.</p> <p>The Proposed Scheme aims to meet the London Plan's water efficiency targets through the specification of water efficient fittings. The Proposed Scheme will minimise mains water consumption by using water efficient fittings to meet a target of 105 litres per head per day.</p>
Increased summer and winter temperatures	Increase in ambient temperature of buildings, leading to higher air conditioning requirements and impacts on the thermal comfort of building users	An overheating risk assessment was carried out for the development using dynamic thermal modelling in line with applicable CIBSE guidelines which showed the measures proposed successfully address the risk of overheating

10.8 Further mitigation and monitoring

10.8.1 No further mitigation measures are proposed.

10.9 Residual effects and conclusion

10.9.1 It was agreed that the lifecycle stages and activities detailed in Table 7.5 of the scoping report are not expected to result in GHG emissions which would be considered 'significant'. It was therefore agreed that a full GHG impact assessment would be scoped out of the ES. The outline GHG assessment is included at Appendix 10.1.

10.9.2 The conclusion from the outline GHG assessment is that the Proposed Scheme is that climate change effects are not considered to be 'significant' and no further mitigation measures are required.

10.10 Cumulative effects assessment

10.10.1 Climate change is the result of cumulative impacts as it is the result of innumerable minor activities; a single activity may itself result in a minor or insignificant impact, but when combined with many other activities, the cumulative impact could be significant.

10.10.2 The climate change resilience (CCR) review considers the resilience of the Proposed Scheme to climate change, including how the Proposed Scheme design has been adapted to take account of the projected impacts of climate change. This is by its nature a consideration of cumulative effects and no further mitigation is required.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 11: Daylight, Sunlight, Overshadowing and Solar
Glare

Westminster City Council

November 2021

11. Daylight, Sunlight, Overshadowing and Solar Glare

11.1 Introduction

- 11.1.1 This chapter reports the findings of an assessment of the likely significant effects on daylight, sunlight, overshadowing and solar glare as a result of the Proposed Scheme.
- 11.1.2 Given the hybrid nature of this application, the maximum extents of Sites B and C and detailed elements of Site A have been assessed in relation to daylight, sunlight and overshadowing, which therefore considers a worst-case scenario.
- 11.1.3 The solar glare assessment relies on the detailed elements of the Proposed Scheme and therefore only Site A has been assessed, which considers a worse-case scenario.
- 11.1.4 This assessment and ES chapter has been produced by GIA and is supplemented by the following Appendices:
- Appendix 11-1: Drawings;
 - Appendix 11-2: Daylight and Sunlight Impacts on Existing Neighbouring Properties;
 - Appendix 11-3: Overshadowing Impacts on Sensitive Areas; and
 - Appendix 11-4: Solar Glare Impacts on Sensitive Viewpoints.
- 11.1.5 This ES Chapter should be read in conjunction with the Daylight and Sunlight Context Report¹ submitted in support of this Application.
- 11.1.6 Daylight, Sunlight and Overshadowing amenity within the Proposed Scheme is considered a design issue and is therefore assessed within the Internal DSO Report submitted in support of this Application

11.2 Legislation, policy and guidance

Legislation

- 11.2.1 There is no national legislation in relation to the daylight, sunlight and overshadowing, as assessed within this ES.

Planning Policy & Guidance

- 11.2.2 This assessment has been undertaken taking into account relevant legislation and guidance set out in national, regional and local planning policy.

National

National Planning Policy Framework (NPPF) (July 2021)

- 11.2.3 The NPPF states that local planning authorities should refuse applications which they consider fail to make efficient use of land. The discussion in relation to daylight and sunlight highlights the Government's recognition that increased flexibility is required in response to the requirement for higher density development:

“Local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient

¹ GIA, 2021; Daylight and Sunlight Context Report – Church Street Sites A, B and C

*use of a site (as long as the resulting scheme would provide acceptable living standards)*² (my emphasis)

National Planning Practice Guidance (NPPG) (June 2021)

- 11.2.4 In light of the update to the Government's Planning Practice Guidance, the following paragraphs are relevant to daylight and sunlight.
- 11.2.5 Paragraph 6 of the NPPG (Ref ID: 66-006-20190722) acknowledges that new development may cause an impact on daylight and sunlight levels enjoyed by neighbouring occupiers. It requires local authorities to assess whether the impact to neighbouring occupiers would be "unreasonable"³.
- 11.2.6 Paragraph 7 (Ref ID: 66-007-20190722) refers to the wider planning considerations in assessing appropriate levels of daylight and sunlight. The test is whether living standards are 'acceptable' and recognises that acceptability will depend to some extent on context⁴.

Regional

The London Plan – The Spatial Development Strategy for Greater London (2021)⁵:

- 11.2.7 The London Plan was published in March 2021 and sets out the integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years.
- 11.2.8 Part D of Policy D6 (Housing Quality and Standards) states that the design of development "should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space". (our emphasis)
- 11.2.9 It is clear that the GLA's focus is on sufficient or retained daylight and sunlight to neighbouring properties and highlights that context will be a consideration to determine sufficiency.
- 11.2.10 Policy D9 (Tall Buildings) states that:
- "...development proposals should address the following impacts: ...buildings should not cause adverse reflected glare [and] ...buildings should be designed to minimise light pollution from internal and external lighting." It continues that "wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building."*

Housing SPG (2017 Update)

- 11.2.11 The Mayor published a Supplementary Planning Guide (SPG) on Housing in March 2016. The SPG remains extant and relevant and provides guidance on sunlight and daylight issues in London.
- 11.2.12 The Housing SPG requires to avoid the rigid application of the national numerical values provided in the BRE Guidelines. Paragraph 1.3.45 states that:
- "An appropriate degree of flexibility needs to be applied when using BRE Guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need to optimise housing capacity; and scope for the character and form of an area to change over time"*⁶.
- 11.2.13 Paragraph 1.3.46 further states that:

² MHCLG. (2019). National Planning Policy Framework (2021), p 37, para 125(c)

³ MHCLG. (2021). National Planning Policy Guidance (2021), para 66-006-20190722

⁴ MHCLG. (2021). National Planning Policy Guidance (2021), para 66-007-20190722

⁵ Greater London Authority (2021) The London Plan – The Spatial Development Strategy for Greater London.

⁶ Greater London Authority. (2016). The London Plan – Housing SPG. London: GLA, p.52 para 1.3.45

“The degree of harm on adjacent properties and the daylight targets within a proposed scheme should be assessed drawing on broadly comparable residential typologies within the area and of a similar nature across London. Decision makers should recognise that fully optimising housing potential on large sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm”⁷.

- 11.2.14 A more flexible and holistic approach to the strict national numerical standards is thus required within developments if they are to make their appropriate contribution to meeting spatial needs. The Housing SPG policy states that *“broadly comparable residential typologies”* should be drawn upon to contextualise and to help judge the acceptability of retained levels.
- 11.2.15 This is a reasoned approach. There are already many areas in London that do not achieve or come close to the national numerical values provided in the BRE Guidelines, but which, nonetheless, provide successful living environments. Some of these areas have existed since Georgian and Victorian times and are highly desirable locations. Others have recently been granted permission and are recognised as high-quality places to live.
- 11.2.16 To summarise, the SPG:
- Calls for an appropriate degree of flexibility in the application of the BRE guidance to the particular circumstances of London;
 - Recommends that the BRE guidance is applied sensitively to high density development, especially in areas such as town centres, where alternative targets (from the normal standards) may be more appropriate;
 - Suggests that the application of the BRE guidance needs to be consistent with optimising housing capacity and growth generally in recognition of the need for change in an area;
 - Advises that comparisons should be made with the daylight and sunlight values achieved in comparable areas and typologies across London (rather than strictly with the national numerical values); and
 - Notes that to fully optimise housing potential on large sites may necessitate a departure from the current “standards”.
- Sustainable Design & Construction Supplementary Planning Guidance (SPG) (2014)
- 11.2.17 Section 2.3 of the SPG provides guidance on key areas such as site layout and micro-climate in relation to site layout and building design.
- 11.2.18 With regard to site layout, paragraph 2.3.6 refers to measures to reduce carbon dioxide emissions *“include enabling access to daylight and sunlight for uses that require [light].”*
- 11.2.19 In addition, the guidance states that *“site planning can minimise the impact of the shadow created by the new buildings to protect existing features such as open space and renewable solar technologies on roofs.”* It goes on to say that *“developers should ensure the layout of their site and buildings maximises the opportunities provided by natural systems, such as light.”*
- 11.2.20 Paragraph 2.3.8 of the SPG continues with effects on the micro-climate caused by new buildings which include *“overshadowing and reducing access to sunlight.”*
- 11.2.21 The guidance states that the above effects should *“be considered during the design of a development and assessed once the designed is finalised.”*

⁷ Greater London Authority. (2016). The London Plan – Housing SPG. London: GLA, p.53 para 1.3.46

Local

City Plan 2019-2040 (April 2021)

- 11.2.22 The City Plan 2019-2040 was adopted in April 2021. It sets out the vision and strategy for the development of the city and contains policies that will be used in determining planning applications.
- 11.2.23 The Site falls within the Church Street / Edgware Road Housing Renewal Area (“HRA”) (Policy 6) which seeks to deliver a number of spatial priorities including a minimum of 2,000 high quality new homes in accordance with the Church Street Masterplan; new jobs, community facilities and green infrastructure.
- 11.2.24 In the supporting text for Policy 6, WCC acknowledge that they have worked closely with key stakeholders to produce an “ambitious” masterplan for the Church Street / Edgware Road HRA:
- “At least 2,000 new homes will be delivered in the Church Street / Edgware Road Housing Renewal Area over the next 15-20 years. Sites in the area will make efficient use of land through densification, incorporating innovative and high-quality design, including the development of higher buildings where these will deliver high quality homes that meet local needs”⁸. (our emphasis)*
- 11.2.25 The Site is a key component of the Church Street / Edgware Road HRA wherein WCC will make efficient use of land through densification to deliver the required housing units.
- 11.2.26 The policy support for densification anticipates change within the Church Street / Edgware Road HRA. It does not anticipate that the area will remain stagnant or that the amenity currently experienced by neighbouring properties would not be noticeably changed.
- 11.2.27 Policy 7 (Managing Development for Westminster’s People) seeks to ensure neighbourly development. Criterion ‘a’ relates specifically to daylight and sunlight amenity. Development will be neighbourly by:
- “Protecting and where appropriate enhancing amenity, by preventing unacceptable impacts in terms of daylight and sunlight, sense of enclosure, overshadowing, privacy and overlooking.” (our emphasis)*

Additional Guidance

- BRE Guidelines: Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice (2011)⁹;
- Historic England Guidance on Tall Buildings – Historic England Advice Note 4 (2015)¹⁰; and
- Commission Internationale de L’eclairage (CIE) Collection of Glare 146:2002 (2002)¹¹.

11.3 Consultation

- 11.3.1 The EIA Scoping Opinion (Appendix 7.1) was received on the 3rd September 2021. A summary of the daylight, sunlight, overshadowing and solar glare related responses are set out in Table 11-1.

⁸ Westminster City Council. (2021). City Plan 2019-2040. London: WCC, p.49 para 6.2

⁹ BRE (2019); BRE Guidelines: Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice

¹⁰ Historic England (2015), Historic England Advice Note 2.

¹¹ Commission Internationale de L’eclairage (CIE) Collection of Glare 146:2002 (2002).

Table 11-1 Comments raised in EIA Scoping Opinion

Reference	Independent Review Comments/Observations	Additional Information/Clarification Request	EIA team response	WCC Response
Paragraph 7.4.5	Outline components to be assessed in solar glare terms on the basis non-reflective block massing. It is noted the townscape assessment section that a design code will be submitted with the planning application. It would be more appropriate to devise a façade treatment based on the design code (assuming this design code will provide portions of materials and glazing in general terms).	Review approach to determining assessment scenario for solar glare in relation to the design code to be submitted.	Solar glare assessments rely on façade details being known. Given that Sites B and C are proposed in outline, a solar glare assessment cannot be undertaken at this stage. Although design codes are being submitted, any façade devised at this stage may not be representative of future detailed design and would therefore generate an assessment which cannot be relied upon.	I don't agree a general non reflective block massing is likely to underestimate the potential for solar glare. Notwithstanding this from experience I expect it will not be significant and there are design solutions if it does prove to be significant and in addition the applicant has undertaken to reassess at RM stage. Therefore, there will be opportunity for WCC to satisfy itself as to the effects on solar glare.
Paragraph 7.4.8	It is not clear whether a WPSH assessment is to be undertaken. It is recommended that this is included within the scope of the assessment.	Confirm whether WPSH will be assessed.	A winter probable sunlight hours (WPSH) assessment will be undertaken.	Noted.
Paragraph 7.4.8	This provides a bullet point list of the streets along which sensitive receptors are likely to be located. It was anticipated that this would include Boscobel Street to the north of the site as this is where the townscape section of the report indicates the tallest buildings will be located. In addition, there appears to be residential property along Hatton Street with windows facing the site.	Clarify why Boscobel Street is excluded from the assessment.	Following further research, the residential elements at the following properties along Boscobel Street / Hatton Street will be assessed: <ul style="list-style-type: none"> • 1 Hatton Street • Westmacott House • 17 Hatton Street – The Old Aeroworks • 65 Penfold Street • 123A Boscobel Street • 125 Boscobel Street 	Noted
Paragraph 7.4.16	General approach in the EIA is to treat earlier phases as receptors to later phases is the DSO doing this?	Clarify whether the DSO will assess earlier phases and if so, what assumptions are made? Will height be indicated on parameter plans? It is evident from 7.4.27 that the scheme is advanced so it would helpful to have this clarified.	Heights will be indicated on the parameter plans. In terms of impacts to neighbouring properties, the DSO chapter will assess the completed development (comprising the detailed component of Site A and two outline development zones (Sites B and C) – this represents the worst case scenario for neighbouring receptors. The internal daylight and sunlight report will provide a technical assessment of the rooms proposed in detail, as well the potential of daylight achievable on the façades of the blocks proposed in outline. This will be based on the Proposed Scheme as fully completed. A phased approach is not considered necessary, as the internal report provides an assessment of the worst case scenario in terms of receptors within the site of the Proposed Scheme.	Accepted

11.4 Assessment methodology

11.4.1 The assessments have been undertaken in line with national, regional and local policy and guidance.

Determining baseline conditions and sensitive receptors

11.4.2 An existing baseline characterisation was completed by firstly undertaking a review of the surrounding land uses, using information and data sources from the Council (Valuation Office Agency (VOA) website) and Google Maps. Information and data derived from these sources has been reviewed to determine the uses of existing buildings, with the accuracy of existing conditions confirmed using Google Maps. Whilst professional judgement has been used to establish the baseline condition of sensitive receptors, the following factors have aided in the characterisation of the surrounding context:

- Property uses as determined through the VOA and planning portal search;
- Google Maps, planning portal and real estate websites to identify windows facing towards the Site; and
- As a guide, the 25° subtend angle has been mapped from continuous obstructions of the Proposed Scheme.

11.4.3 From the review of the surrounding context, a 3D computer model was developed for the existing surrounding properties and amenity areas, as well as the existing conditions which were confirmed with a measured survey undertaken in 2018.

11.4.4 The conditions recorded at the time the data was gathered, either via desktop or survey, are not considered to have changed up to the time of writing this ES chapter, with the exception of cumulative schemes under construction, which have been included within the baseline as completed developments.

Methodology for demolition and construction assessment

11.4.5 Owing to the evolving and changing nature of construction activities, the assessment of potential effects during demolition and construction of the Proposed Scheme on daylight, sunlight, overshadowing and solar glare to surrounding receptors has not been modelled. Instead, a qualitative assessment has been undertaken using professional judgement and experience.

11.4.6 Once the existing building has been demolished and superstructure works commence, it is considered that any daylight, sunlight, overshadowing and solar glare effects will gradually increase to the scale of the potential effects identified for the completed Proposed Scheme. It is therefore considered that the completed Proposed Scheme represents the worst-case assessment in terms of likely daylight, sunlight, overshadowing and solar glare effects.

11.4.7 In some cases, scaffolding, cranes and hoarding would marginally increase the size of the Proposed Scheme's maximum massing, however this would be temporary and is unlikely to result in additional noticeable effects due to the scale of these structures and their transient nature.

Methodology for completed development effects

11.4.8 The following scenarios have been assessed and are reported within this chapter of the ES and are discussed further below.

- Baseline;
- Proposed Scheme; and
- Cumulative.

Baseline

11.4.9 The existing baseline conditions are depicted in drawings 13794/09/01/01-03 found in Appendix 11-1 and shown below in Figure 11-1.

Proposed Scheme

- 11.4.10 The Proposed Scheme scenario is depicted in drawings 13794/09/01/04-06 found in Appendix 11-1.
- 11.4.11 This scenario consists of the completed Proposed Scheme in the context of the surrounding environment. This scenario assesses the potential daylight, sunlight, overshadowing, solar glare and light pollution effects of the Proposed Scheme on the surrounding properties, amenity spaces and viewpoints.
- 11.4.12 In ascertaining the potential daylight, sunlight and overshadowing effects to surrounding sensitive receptors, comparisons are made with the Baseline scenario.
- 11.4.13 Solar glare is not a comparative assessment and is therefore carried out in absolute terms for the Proposed Scheme (Site A Only). In order to provide a worst-case scenario, only the detailed residential blocks are assessed.

Cumulative

- 11.4.14 The Cumulative scenario is depicted in drawings 13794/09/03/04-06 found in Appendix 11-1.
- 11.4.15 This scenario consists of the Proposed Scheme in conjunction with surrounding consented cumulative schemes in the context of the surrounding environment. This scenario assesses the potential daylight, sunlight and overshadowing effects of the Proposed Scheme in conjunction with surrounding consented cumulative schemes on the surrounding residential receptors and amenity spaces. The following recently refused scheme has been included in the cumulative scenario assessment as a worst case scenario:
- Paddington Green Police Station (WCC Ref: 21/02193/FULL).
- 11.4.16 In ascertaining the potential daylight, sunlight and overshadowing effects, comparisons are made with the baseline scenario.
- 11.4.17 For the solar glare assessment, the Proposed Scheme is considered to represent the worst-case scenario, as the addition of cumulative schemes may serve to shield instances of solar reflection. Therefore, this assessment does not consider solar glare in the Cumulative scenario.

Methodology

Daylight

- 11.4.18 The BRE Guidelines specify two primary methods for assessing daylight within an existing sensitive receptor:
- Vertical Sky Component (VSC); and
 - No Sky Line (NSL).
- 11.4.19 These methods of daylight assessment are described in further detail below.

Vertical Sky Component (VSC) Method

- 11.4.20 VSC is a 'spot' measure of the skylight reaching the mid-point of a window from an overcast sky. It represents the amount of visible sky that can be seen from that reference point, from over and around an obstruction in front of the window. That area of visible sky is expressed as a percentage of an unobstructed hemisphere of sky, and, therefore, represents the amount of daylight available for that particular window.
- 11.4.21 The 3D model uses Waldram Diagrams (used to calculate the percentage of sky that a building allows to the street below) to establish the VSC and 3D geometric calculations for daylight distribution.
- 11.4.22 Only those surrounding properties which have windows facing towards the Site were included in the assessment. If a nearby property has no windows facing the Site, these properties would not be affected by the Proposed Scheme in terms of daylight.

11.4.23 The assessment is calculated from the centre of a window on the outward face and measures the amount of light available on a vertical wall or window following the introduction of visible barriers, such as buildings.

11.4.24 The maximum VSC value is 39.9% for a completely unobstructed vertical wall or window. In terms of assessment criteria, the BRE Guidelines state:

“If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

The VSC measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value; or

The area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.”

No Sky Line (NSL) Method

11.4.25 The NSL method is a measure of the distribution of daylight at the ‘working plane’ within a room. The ‘working plane’ is a horizontal plane 0.85m above the Finished Floor Level (FFL) for the residential properties. The NSL divides those areas of the working plane that can receive direct sky light from those that cannot. If a significant area of the working plane lies beyond the NSL (i.e. it receives no direct sky light), then the distribution of daylight in the room may be poor and supplementary electric lighting may be required. Floor levels were assumed for surrounding properties where access or detailed planning drawings were not obtained, these are listed below. With the working plane located 850mm above the FFL, this would have the potential to affect the assessment of the NSL.

11.4.26 Where actual room layouts were available in the public domain, these were considered in the modelling of the internal layouts within the surrounding properties. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL.

11.4.27 Where layout information was not available, assumptions were made as to the use and internal configuration of the rooms (from external observations) behind the fenestration observed. In such cases a standard 4.2m (14 ft) room depth was assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable.

11.4.28 The potential effects of daylighting distribution in an existing building can be found by plotting the NSL in each of the main rooms. For houses, this would include living rooms, dining rooms and kitchens. Bedrooms should also be analysed, although they are less important. The BRE Guidelines identify that if the area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

Sunlight

Annual Probable Sunlight Hours

11.4.29 The Annual Probable Sunlight Hours (APSH) is a measure of sunlight that a given window may expect over a year period, and where there is no obstruction, equates to a maximum of 1,486 hours. The BRE Guidelines recognise that sunlight is less important than daylight in the amenity of a room and is heavily influenced by orientation. North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will only receive sunlight for some of the day. The BRE Guidelines states that only windows with an orientation within 90 degrees of south need to be assessed. Therefore, in terms of sunlight, only rooms facing within 90 degrees of due south are assessed for APSH as north facing rooms will not receive direct sunlight.

11.4.30 The baseline condition of both total APSH and winter PSH are assessed. The APSH and winter PSH have different BRE Guidelines criteria. For the assessment of the Proposed Scheme, the total APSH and winter PSH were reported separately, to provide a more detailed assessment reflecting the different sunlight conditions.

11.4.31 The BRE Guidelines provide that a window may be adversely affected if a point at the centre of the window receives for the whole year, less than 25% of the APSH, or less than 5% of the APSH during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period, and if there is a reduction in APSH which is greater than 4%.

Overshadowing

11.4.32 The following methodologies are used to assess overshadowing:

- Transient Overshadowing; and
- Sun Hours on Ground.

11.4.33 Both transient overshadowing and Sun Hours on Ground assessments determine the extent of overshadowing on surrounding public and private amenity areas. Transient Overshadowing is initially used as a screening exercise to determine the approximate hours of the day an amenity area is cast in shadow from the Proposed Scheme. Where significant effects are expected to occur on an amenity area with distinct boundaries, a Sun Hours on Ground assessment is undertaken to quantify the hours of any additional overshadowing owing to the Proposed Scheme.

Transient Overshadowing

11.4.34 The BRE Guidelines suggest that where large buildings are proposed that may affect open spaces, it is useful to plot a shadow plan to illustrate the location of shadows at different times of the day and year. For the purpose of this assessment, the hourly shadows were mapped for the following three key dates:

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

11.4.35 21st September (Autumn Equinox) provides the same overshadowing images as March 21st (Spring Equinox) as the sun follows the same path at these corresponding times of year. Therefore, 21st March is used within the overshadowing assessment.

11.4.36 Transient overshadowing was calculated at hourly intervals from sunrise, throughout the day, until sunset. On December 21st, the sun would be at its lowest point causing long shadows to be cast and represents the worst-case scenario in terms of overshadowing.

Sun Hours on Ground

11.4.37 The BRE Guidelines suggest that 'sun hours on ground' assessment should be undertaken on the Equinox (21st March and 21st September). Using specialist software, Radiance, the path of the sun was tracked to determine where the sun would reach the ground and where it would not on these dates.

11.4.38 The BRE Guidelines recommend that at least half of an amenity area should receive at least 2 hours of sunlight on March 21st or the area which receives 2 hours of direct sunlight should not be reduced to less than 0.8 times its former value (i.e. there should be no more than a 20% reduction).

Summary of BRE Guidelines Criteria for Daylight, Sunlight and Overshadowing

11.4.39 The criteria set out within the BRE Guidelines for daylight, sunlight and overshadowing summarised in Table 11-2 are used as guidance for the assessments. Numerical analysis and professional judgement have also been used to determine the scale and nature of the likely effects.

Table 11-2: Percentage Alterations from the Existing Baseline (VSC and NSL)

Topic	Method	BRE Guidelines
Daylight	Vertical Sky Component (VSC)	A window may be adversely affected if the VSC measured at the centre of the window is less than 27% and less than 0.8 times its former value.
	No Sky Line (NSL)	A room may be adversely affected if the daylight distribution (no sky line) is reduced beyond 0.8 times its existing area.

Topic	Method	BRE Guidelines
Sunlight	Annual Probable Sunlight Hours (APSH)	A room may be adversely affected if a point at the centre of its window(s) receives for the whole year, less than 25% of the APSH including at least 5% of the PSH during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period, and (for existing neighbouring buildings), if there is a reduction in APSH which is greater than 4%.
Overshadowing	Sun Hours on Ground	An area of amenity space or garden may be adversely affected if less than half (50%) of the area is prevented by buildings from receiving two hours of sunlight on the 21st March (as suggested by the BRE Guidelines ¹²) and the area which can receive some sun on the 21st March is less than 0.8 times its former value.

Solar Glare

11.4.40 Solar glare is particularly important at pedestrian crossings and road junctions, where glare can cause temporary blinding of drivers. Typically, elements considered to be reflective are either glazed apertures or specular metal cladding.

11.4.41 The BRE Guidelines includes the following statement in regard to the potential for reflected solar glare from a new development:

“Glare or solar dazzle can occur when sunlight is reflected from a glazed façade. This can affect road users outside and the occupants of adjoining buildings. The problem can occur either when there are large areas of reflective glass or cladding on the façade, or when there are areas of glass or cladding which slope back so that high altitude sunlight can be reflected along the ground. Thus, solar dazzle is only a long term problem for some heavily glazed (or mirror clad) buildings...”

11.4.42 Solar Glare effects can only be quantitatively assessed where the façade details of a proposed building are known. Typically, only highly glazed buildings are considered, which are visible from sensitive receptors such as road junctions. As such, the solar glare assessment only considers the potential effects of the Proposed Scheme.

Solar Glare Technical Assessment

11.4.43 The potential for reflected solar glare or dazzle from glazed or reflective façades from the Proposed Scheme (Site A Only) has been assessed using specialist lighting software, Radiance, showing the path of the sun for the entire year. From this, two computer generated angular images have been produced for each selected viewpoint, indicating the area which sees the reflection of the sun path at any point during the year. A modified diagram portraying a standardised extent of human vision is then overlaid onto the image.

11.4.44 The methodology for solar glare is not aimed at addressing the intensity of an instance of reflected solar glare, but rather its occurrence, duration throughout the year and the location of this occurrence in respect of an individual’s line of sight. It is also to be noted that the hours presented reflect solar time and therefore do not take Daylight Saving Hours into account.

11.4.45 The outline element of the Proposed Scheme are not taken into account, as the façade details are not yet known at this stage. Therefore, the solar glare assessment represents the worst-case as the view of parts of the detailed elements has the potential to be obstructed, once the outline element comes forward. The outline components of the Proposed Scheme will be fully assessed at the reserved matters stage, when the height, massing, elevation and façade details would be fully developed.

11.4.46 It must be noted that the solar glare assessments undertaken assume a worst-case scenario whereby the sun will shine every day during daylight hours which is not the case within the UK.

¹² Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice, Second Edition, 2011

- 11.4.47 For this purpose of the solar glare assessment the glazed and metal elements of the facades of the Proposed Scheme is assumed to have the same properties of a mirror i.e. it is fully reflective, and all of its reflected component is specular. This therefore portrays a worst-case scenario.
- 11.4.48 Potentially sensitive viewpoints around the Site are selected. These viewpoints represent locations where reflected solar glare may cause adverse impacts to those travelling towards the development, such as car drivers. The viewpoints are generally located at the minimum stopping distance and at the driver's eye height. The focal point is where the Proposed Scheme is closest to the line of sight.
- 11.4.49 Identifying the road viewpoints based on the stopping distance is calculated as the combination of thinking and braking distances.

Significance criteria

Receptors and Receptor Sensitivity

- 11.4.50 Existing surrounding residential properties are considered highly sensitive to daylight and sunlight levels, and specifically habitable rooms within the properties such as living rooms, kitchens and bedrooms, in accordance with the BRE Guidelines. All existing residential receptors assessed within this chapter are considered of high sensitivity due to the expectation of natural light and are given equal weighting.
- 11.4.51 It should be noted that paragraph 2.2.8 within the BRE Guidelines considers bedrooms to be less important, given that the primary use of the room is for sleeping and therefore have a lower requirement for daylight. However, it is stated that care should be taken not to block too much sunlight.
- 11.4.52 Commercial spaces such as offices and retail areas are not considered sensitive receptors and are therefore not assessed as industry standard and as recommended in section 2.2 of the BRE Guidelines.
- 11.4.53 In relation to overshadowing, all public and private areas of open space and areas considered within this ES chapter are given equal weighting and therefore considered highly sensitive.
- 11.4.54 All road viewpoints considered in terms of solar glare are of high sensitivity.

Magnitude of Impact

- 11.4.55 The key terminology used to describe the magnitude of impacts are as follows and is determined with reference to the BRE Guidelines criteria presented within Table 10-1 and the scale and nature of effect sections of this chapter:
- High;
 - Medium;
 - Low; and
 - No impact.

Daylight

Defining the Effect Significance

- 11.4.56 For daylight, the BRE Guidelines outline the approach within the accompanying Appendix I, in terms of assigning criteria to assess the effects:

“Adverse impacts occur when there is a significant decrease in the amount of skylight [...] reaching an existing building where it is required [...]. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

“Where the loss of skylight [...] fully meets the guidelines, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows [...] lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines and a larger number of windows [...] are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight [...] in the affected building [...].”

“Where the loss of skylight [...] does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:

- Only a small number of windows [...] are affected;
- The loss of light is only marginally outside the guidelines;
- An affected room has other sources of skylight [...]; and/or
- The affected building [...] has a low level of requirement for skylight [...].”

11.4.57 The classification of major adverse is documented within Paragraph 7 of the BRE Guidelines as:

“Factors tending towards a major adverse impact include:

- a large number of windows [...] are affected;
- the loss of light is substantially outside the guidelines;
- all the windows in a particular property are affected; and
- the affected indoor [...] spaces have a particular strong requirement for skylight [...], e.g. a living room in a dwelling [...].”

11.4.58 Where the BRE Guidelines criteria are met, the effects will be considered negligible.

11.4.59 In addition to the BRE criteria, professional judgement has been used to determine the nature and scale of effect to the sensitive receptors. The numerical criteria for determining the category of effect for VSC and NSL is based on percentage alterations from the baseline, as seen in Table 11-3.

Table 11-3 Daylight criteria for scale of effects

Scale of Effect	Daylight Criteria
Negligible	0-19.9% alteration
Minor	20-29.9% alteration
Moderate	30-39.9% alteration
Major	≥ 40% alteration

11.4.60 If the retained VSC levels are ≥27% and the NSL levels are >80%, the effects are considered negligible, regardless of the alteration from the baseline.

11.4.61 When assigning significance per property, consideration has been given to the proportion of rooms / windows affected, as well as the percentage alterations, absolute changes, existing levels, retained levels and any other relevant factors, such as orientation, balconies, overhangs or design features. As such, the criteria are not applied mechanistically.

11.4.62 It should be noted that further discussion of the retained levels of daylight in the context of the surrounding and local and regional planning policy is provided in the Context Report. Where significant effects are identified to surrounding properties in this ES Chapter, reference is made to the Context Report, supplementing potential of likely significant effects with the daylight performance of comparable buildings in the surrounding environment.

Sunlight

11.4.63 For sunlight, BRE Guidelines outlines the approach of assigning criteria to assess the effects:

“Adverse impacts occur when there is a significant decrease in the amount of [...] sunlight reaching an existing building where it is required [...]. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

“Where the loss of sunlight [...] fully meets the guidelines, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows [...] lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines and a larger number of windows or open space are affected, a

minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for [...] sunlight in the affected building [...].”

11.4.64 *“Where the loss of [...] sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:*

- Only a small number of windows [...] are affected;
- The loss of light is only marginally outside the guidelines;
- An affected room has other sources of [...] sunlight; and/or
- The affected building [...] only has a low level of requirement for [...] sunlight.”

11.4.65 The classification of major adverse is documented within Paragraph 7 of BRE Guidelines :

“Factors tending towards a major adverse impact include:

- a large number of windows [...] are affected;
- the loss of light is substantially outside the guidelines;
- all the windows in a particular property are affected; and
- the affected indoor [...] spaces have a particular strong requirement for skylight [...], e.g. a living room in a dwelling [...].”

11.4.66 With regard to BRE Guidelines, the initial numerical criteria for determining the scale of effect is based on percentage alterations from the existing baseline, as seen in Table 11-4. Using the criteria, professional judgement has then been used to determine the extent of sunlight effects per building.

Table 11-4 Sunlight criteria for scale of effects

Scale of Effect	Sunlight Criteria
Negligible	0-19.9% alteration
Minor	20-29.9% alteration
Moderate	30-39.9% alteration
Major	≥ 40% alteration

11.4.67 It should be noted that further discussion of the retained levels of sunlight in the context of the surrounding and local and regional planning policy is provided in the Daylight and Sunlight Context Report.

Solar Glare

11.4.68 Solar Glare is not a comparative assessment; the fact it may occur in the baseline does not necessarily justify its occurrence as a result of a Proposed Scheme. Therefore, the assessment considers the effect of the Proposed Scheme in absolute terms and not against a baseline condition.

11.4.69 There are no quantitative criteria within BRE Guidelines or elsewhere regarding acceptable levels of solar glare.

11.4.70 Professional judgement has therefore been applied to assign the significance of solar glare arising from the Proposed Scheme and to determine the criteria for assessing the scale and nature of solar glare effects.

11.4.71 Multiple viewpoints are chosen for each of the traffic lanes or signals affected from a location. If for example, one location has multiple lanes or traffic signals, multiple viewpoints will be assessed from this single location to ensure that all effects are fully understood.

11.4.72 Whilst multiple viewpoints may be identified, professional judgement has been used to determine the effect at the location, rather than the individual perspectives at a signal traffic junction. Factors that could influence the nature, scale and resultant significance of effect may include:

- Sunlight availability probability;
 - Area of façade off which reflections are visible;
 - Period of time when reflections are visible;
 - Angle at which reflections are visible from line of sight;
 - Views of the development being obscured for example by trees; and/or
 - The time of day at which the solar reflection will occur, for example during peak traffic times.
- 11.4.73 The factors in Table 11-5 will be used to ascertain the scale of effect for each view and the factors listed above will then be taken into consideration to determine the overall significance for the designated viewpoint.
- 11.4.74 It is considered that no effect would occur at a viewpoint when the Proposed Scheme is either not visible, or the Proposed Scheme is visible, but no solar reflections occur.

Table 11-5 Criteria for significant effects for Solar Glare

Scale of Effect	Description
Negligible	No reflections are visible or if visible all occur at angles greater than 30° from the driver's line of sight and so, as stated by the Commission Internationale de l'eclairage (CIE), will be of "little significance".
Minor	Solar reflections are visible within 30° to 10° or between 10° to 5° of the driver's line of sight for a short period of time
Moderate	Solar reflections are visible within 10° and 5° of the driver's line of sight occurring for a long period of time.
Major	Solar reflections are visible within 5° of a driver's line of sight.

Limitations and assumptions

- 11.4.75 No assumptions are made in relation to demolition and construction as no technical assessments are undertaken. It is, however, assumed that the completed Proposed Scheme is the worst-case scenario for daylight, sunlight and overshadowing and therefore, the construction phase is not quantitatively assessed within this chapter.
- 11.4.76 For the existing surrounding sensitive receptors where layout information was not available, assumptions have been made as to the use and internal configuration of the rooms (from external observations) behind the fenestration observed. In such cases, a standard 4.3m (14ft) room depth has been assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL method. Layouts have been obtained for the following buildings:
- 376 Edgware Road;
 - 374 Edgware Road – first floor only;
 - West End Gate Development – Lawrence Mansions, Garrett Mansions, Bond Mansions;
 - 123 Broadley Street;
 - 121 Broadley Street – Ground floor only;
 - Elmer House – partial floor plans;
 - Portman Day Nursery;
 - 60 Penfold Street;
 - 63 Penfold Street;
 - Unit 2 Boscobel Street;
 - Unit 3 Boscobel Street – first floor only;
 - The Old Aeroworks, Hatton Street;

- The Wallis Building, 65 Penfold Street;
- 418 Edgware Road;
- 416 Edgware Road – first floor only;
- 402 Edgware Road;
- 9 Venables Street;
- 138 Church Street;
- 359 Edgware Road;
- 363 Edgware Road;
- 365 Edgware Road;
- 367 Edgware Road;
- 424 Edgware Road;
- 430 Edgware Road; and
- Imps Pre-school.
- In line with common methodology, floor levels have been assumed for surrounding properties where access has not been obtained, with the working plane located 850mm above the finished floor level.

11.4.77 For the solar glare assessment, although great care has been taken in identifying typical viewpoints, this does not guarantee that there are no additional sensitive locations where reflected solar glare could present a particular risk. For practical reasons, the area of the assessment has been limited to the area surrounding the Proposed Scheme. This area extends to a distance of approximately 600m around the Site in all directions. At greater distances, the likelihood of solar reflections causing significant glare is reduced as the time that buildings will reflect is reduced and the area of façade visible constitutes a reduced angle and so reduces the possibility of the whole sun disk being reflected. The assessment is undertaken by reference to Commission Internationale de l'éclairage (CIE)¹³ and using professional judgement. This is the standard approach adopted to solar glare assessment within EIA.

11.5 Baseline conditions

Summary of sensitive receptors

Table 11-6 Receptor Sensitivity

Receptor	Sensitivity
Daylight and Sunlight	
West End Gate- Lawrence Mansions	High
West End Gate- Garrett Mansions	High
West End Gate Bond Mansions	High
Whitfield House	High
1-12 Wytham House	High
Imps Pre School (educational)	High
Hailsham Court	High
33 Mulready Street	High
20-30a Salisbury Street	High
Portman Day Nursery (community use)	High
52 Church Street	High
44 Church Street	High

¹³ International Commission on Illumination (CIE) CIE Collection on Glare (CIE 146:2002)

Receptor	Sensitivity
46 Church Street	High
48 Church Street	High
50 Church Street	High
133 Broadley Street	High
352 Edgware Road	High
131 Broadley Street	High
129 Broadley Street	High
127 Broadley Street	High
125 Broadley Street	High
123 Broadley Street	High
121 Broadley Street	High
119 Broadley Street	High
117 Broadley Street	High
115 Broadley Street	High
Elmer House	High
103-113 Broadley Street	High
33-40 Gilbert Sheldon House	High
1-32 Gilbert Sheldon House	High
361 Edgware Road	High
379 Edgware Road	High
377 Edgware Road	High
375 Edgware Road	High
371-373 Edgware Road	High
369 Edgware Road	High
367 Edgware Road	High
365 Edgware Road	High
363 Edgware Road	High
359 Edgware Road	High
355-357 Edgware Road	High
353 Edgware Road	High
349-351 Edgware Road	High
King Solomon Academy (educational)	High
Westmacott House	High
422 Edgware Road	High
424 Edgware Road	High
430 Edgware Road	High
428 Edgware Road	High
432 Edgware Road	High
426 Edgware Road	High
74-88 Cherwell House	High
1-53 Cherwell House	High
54-72 Cherwell House	High

Receptor	Sensitivity
Devonshire House	High
358 Edgware Road	High
354-356 Edgware Road	High
360 Edgware Road	High
364 Edgware Road	High
372 Edgware Road	High
374 Edgware Road	High
376 Edgware Road	High
378 Edgware Road	High
380 Edgware Road	High
362 Edgware Road	High
9 Venables Street	High
392 Edgware Road	High
388 Edgware Road	High
404-406 Edgware Road	High
414 Edgware Road	High
418 Edgware Road	High
410 Edgware Road	High
390 Edgware Road	High
138 Church Street	High
5 Venables Street	High
402 Edgware Road	High
9a Venables Street	High
416 Edgware Road	High
408 Edgware Road	High
125 Boscobel Street	High
123 Boscobel Street	High
142 Church Street	High
140 Church Street	High
Kennet House	High
Wallis Building-65 Penfold Street	High
The Old Aeroworks-17-19 Hatton Street	High
60 Penfold Street	High
Wey House	High
Miles Place	High
Cotes House	High
Overshadowing	
1 - Open space between Tadema House and Eastlake House	High
2 - 60 Penfold Street- Open space	High
3 - 60 Penfold Street- Open space	High
4 - Church Street Market Infrastructure	High
5 - Church Street Market Infrastructure	High

Receptor	Sensitivity
6 - Church Street Market Infrastructure	High
7 - Church Street Market Infrastructure	High
8 - Cotes House - Open space	High
9 - Portman Day Nursery	High
10 - Broadley Street Gardens	High
11 - Gilbert Sheldon House - Open space	High
12 - Gilbert Sheldon House - Open space	High
13 - Westmacott House - Open space	High
14 - 424-428 Edgware Rd - Open space	High

Solar Glare

Viewpoints 1 to 23 High

11.5.1 NB: Although they may be considered to have a lower requirement for daylight than residential properties, educational and community uses are assessed as high sensitivity receptors, as BRE Guidelines suggests that *“The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools”*.

11.5.2 The sensitive receptors assessed in the existing baseline are shown below in Figure 11-1 to Figure 11-3.

Figure 11-1: Sensitive Receptors (Daylight and Sunlight)



Figure 11-2: Sensitive Receptors (Overshadowing)



Figure 11-3: Sensitive Receptors (Solar Glare)



Baseline Conditions

- 11.5.3 The full daylight and sunlight existing baseline assessment results are presented in in Appendix 11-2.
- 11.5.4 Of the 90 existing buildings considered as sensitive receptors, a total of 1883 windows serving 1326 rooms were assessed for daylight. Of the 39 buildings assessed for sunlight, 541 rooms were assessed.
- 11.5.5 Prior to the implementation of the Proposed Development, the baseline conditions of these sensitive buildings are considered below.
- 11.5.6 In terms of daylight, for VSC, 1137 of the 1883 windows (60.4%) meet the BRE Guidelines criteria and for NSL, 1203 of the 1326 (90.7%) rooms meet the BRE Guidelines criteria.
- 11.5.7 In terms of sunlight, for APSH and WPSH, 468 of the 541 (86.5%) rooms meet the BRE Guidelines criteria.
- 11.5.8 Low existing daylight and sunlight levels can be attributed to the dense urban location and architectural features such as balconies, large roof overhangs and recessed windows. These reasons may reduce a property's daylight availability, resulting in low existing daylight and sunlight levels. Owing to these low existing levels, any development on the site would lead to disproportionate adverse effects. Whilst baseline obstructions are referenced in the discussion of effects for context, these are not used to downgrade the significance of effects as a result of the Proposed Scheme.
- 11.5.9 The baseline overshadowing condition can be found within Appendix 11-4.
- 11.5.10 The images presented in the transient overshadowing annex depict the time of day when overshadowing occurs in the baseline condition on the three key dates, 21st March, 21st June and 21st December. Five areas are assessed by means of BRE Guidelines criteria. The sun hours on ground show that all 13 areas would achieve at least two hours of sun on 50% of the total area on 21st March.

11.6 Environmental design and management

- 11.6.1 During the design process expert advice was given on the massing and design of the Proposed Scheme, which were technically assessed to understand how the daylight, sunlight and overshadowing effects could be reduced and mitigated.
- 11.6.2 Technical light pollution and solar glare assessments of Sites B and C cannot be undertaken at this stage, given this element is proposed in outline. However, the potential for likely effects will be reviewed and mitigated, if necessary, during detailed design stage and technical light pollution and solar glare assessments for Sites B and C will be undertaken.

11.7 Assessment of effects

Effects during demolition and construction

- 11.7.1 The magnitude of impact and resultant potential effect in relation to the daylight, sunlight, overshadowing and solar glare on the surrounding receptors would vary throughout the demolition and construction phase, depending on the level of obstruction caused.
- 11.7.2 During the construction phase, a number of tall temporary structures are likely to be present on-site. In some cases, scaffolding, cranes and hoarding would marginally increase the size of the Proposed Scheme's maximum massing, however this would be temporary and is unlikely to result in additional noticeable effects due to the scale of these structures and their transient nature.
- 11.7.3 The construction of the new buildings on the Site would have a gradual effect upon the levels of daylight, sunlight and overshadowing as the massing of the Proposed Scheme increases over time. It is therefore considered that the completed Proposed Scheme represents the worst-case assessment in terms of likely resultant effects. The effects during the demolition and construction works would almost certainly be less than that of the Proposed Scheme, given that the extent of permanent massing would increase throughout the construction programme, until the Proposed Scheme is complete.

- 11.7.4 The effect in terms of solar glare would range from being negligible effects during demolition, gradually increasing as construction works progress and the facades of the Proposed Scheme are installed.
- 11.7.5 The effects have the potential to be adverse on neighbouring residential receptors. It is considered that the effects would be temporary and not be any worse than those presented by the completed Proposed Scheme without mitigation.
- 11.7.6 Therefore, the effects would range from Temporary, Direct, Short Term and **Negligible to Major Adverse** as per the completed Proposed Scheme in relation to potential daylight, sunlight, overshadowing and solar glare effects which are discussed in the sections below.

Effects for Completed Development

Daylight

- 11.7.7 The full daylight assessment for the Completed Development can be found within Appendix 11-4 and is summarised in below in Table 11-7.
- 11.7.8 Of the 90 existing buildings assessed, the 27 buildings highlighted in blue in Table 11-7 would experience little to no impact (less than 20% alteration) in VSC and NSL and are therefore considered to experience a Permanent, Direct, Long Term and **Negligible** effect (not significant). These are:
- West End Gate Bond Mansions;
 - 52 Church Street;
 - 44 Church Street;
 - 46 Church Street;
 - 48 Church Street;
 - 50 Church Street;
 - 361 Edgware Road;
 - 379 Edgware Road;
 - 377 Edgware Road;
 - 375 Edgware Road;
 - 371-373 Edgware Road;
 - 369 Edgware Road;
 - 367 Edgware Road;
 - 365 Edgware Road;
 - 363 Edgware Road;
 - 359 Edgware Road;
 - 353 Edgware Road;
 - 349-351 Edgware Road;
 - 422 Edgware Road;
 - 424 Edgware Road;
 - 430 Edgware Road;
 - 428 Edgware Road;
 - 432 Edgware Road;
 - 426 Edgware Road;
 - Devonshire House;
 - Miles Place; and

- Cotes House.

11.7.9 The remaining 63 buildings are discussed below in further detail. The discussion of effects to these buildings should be read in conjunction with the Contextual Report submitted as part of this Application. The Contextual Report outlines that retained levels of daylight are similar to the levels of daylight at comparable residential sites in the vicinity and are prevalent in this part of London. By comparing the retained daylight levels arising from the Proposed Development, it is demonstrated that they are not out of character with what exists in the surrounding context.

Table 11-7: Daylight effects of the Proposed Scheme

Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria			Total	Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			Total
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction				20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	
West End Gate- Lawrence Mansions	106	85	4	7	10	21	69	65	2	1	1	4
West End Gate- Garrett Mansions	156	136	15	2	3	20	124	113	6	3	2	11
West End Gate Bond Mansions	138	138	0	0	0	0	80	80	0	0	0	0
Whitfield House	53	52	1	0	0	1	53	53	0	0	0	0
1-12 Wytham House	47	18	13	10	6	29	41	29	7	5	0	12
Imps Pre School	1	0	0	1	0	1	1	0	1	0	0	1
Hailsham Court	45	19	8	1	17	26	33	24	1	0	8	9
33 Mulready Street	27	5	2	4	16	22	14	3	2	0	9	11
20-30a Salisbury Street	6	0	2	1	3	6	4	4	0	0	0	0
Portman Day Nursery	38	11	4	1	22	27	12	8	0	0	4	4
52 Church Street	8	8	0	0	0	0	8	8	0	0	0	0
44 Church Street	6	6	0	0	0	0	3	3	0	0	0	0
46 Church Street	6	6	0	0	0	0	3	3	0	0	0	0
48 Church Street	4	4	0	0	0	0	2	2	0	0	0	0
50 Church Street	4	4	0	0	0	0	2	2	0	0	0	0
133 Broadley Street	4	0	4	0	0	4	4	1	1	0	2	3
352 Edgware Road	18	18	0	0	0	0	14	12	1	1	0	2

VSC

NSL

Address	Below BRE Guidelines criteria						Below BRE Guidelines criteria					
	Total No. of Windows	No. Windows that meet BRE criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
131 Broadley Street	5	0	0	5	0	5	5	3	1	1	0	2
129 Broadley Street	5	0	0	3	2	5	5	1	2	2	0	4
127 Broadley Street	5	0	0	0	5	5	5	0	0	1	4	5
125 Broadley Street	5	0	0	0	5	5	5	0	1	0	4	5
123 Broadley Street	5	0	0	0	5	5	4	1	3	0	0	3
121 Broadley Street	5	0	0	0	5	5	5	3	0	2	0	2
119 Broadley Street	5	0	0	0	5	5	5	3	0	2	0	2
117 Broadley Street	5	0	0	0	5	5	5	3	0	2	0	2
115 Broadley Street	5	0	0	0	5	5	5	1	2	1	1	4
Elmer House	36	0	0	0	36	36	30	0	0	2	28	30
103-113 Broadley Street	18	2	0	0	16	16	11	0	1	0	10	11
33-40 Gilbert Sheldon House	30	20	2	0	8	10	24	23	1	0	0	1
1-32 Gilbert Sheldon House	24	24	0	0	0	0	24	22	1	1	0	2
361 Edgware Road	4	4	0	0	0	0	4	4	0	0	0	0
379 Edgware Road	6	6	0	0	0	0	6	6	0	0	0	0
377 Edgware Road	2	2	0	0	0	0	2	2	0	0	0	0
375 Edgware Road	8	8	0	0	0	0	6	6	0	0	0	0
371-373 Edgware Road	7	7	0	0	0	0	6	6	0	0	0	0

VSC

NSL

Address	Below BRE Guidelines criteria						Below BRE Guidelines criteria					
	Total No. of Windows	No. Windows that meet BRE criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
369 Edgware Road	7	7	0	0	0	0	4	4	0	0	0	0
367 Edgware Road	6	6	0	0	0	0	4	4	0	0	0	0
365 Edgware Road	3	3	0	0	0	0	3	3	0	0	0	0
363 Edgware Road	9	9	0	0	0	0	4	4	0	0	0	0
359 Edgware Road	6	6	0	0	0	0	6	6	0	0	0	0
355-357 Edgware Road	16	16	0	0	0	0	16	15	1	0	0	1
353 Edgware Road	3	3	0	0	0	0	3	3	0	0	0	0
349-351 Edgware Road	9	9	0	0	0	0	9	9	0	0	0	0
King Solomon Academy	137	117	11	9	0	20	34	29	3	2	0	5
Westmacott House	37	22	4	5	6	15	19	19	0	0	0	0
422 Edgware Road	21	21	0	0	0	0	18	18	0	0	0	0
424 Edgware Road	3	3	0	0	0	0	3	3	0	0	0	0
430 Edgware Road	4	4	0	0	0	0	4	4	0	0	0	0
428 Edgware Road	8	8	0	0	0	0	8	8	0	0	0	0
432 Edgware Road	2	2	0	0	0	0	2	2	0	0	0	0
426 Edgware Road	3	3	0	0	0	0	3	3	0	0	0	0
74-88 Cherwell House	119	8	19	22	70	111	93	32	9	10	42	61
1-53 Cherwell House	29	0	0	0	29	29	23	0	4	8	11	23

VSC

NSL

Address	Below BRE Guidelines criteria						Below BRE Guidelines criteria					
	Total No. of Windows	No. Windows that meet BRE criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
54-72 Cherwell House	43	13	8	6	16	30	43	22	4	6	11	21
Devonshire House	5	5	0	0	0	0	3	3	0	0	0	0
358 Edgware Road	8	1	0	0	7	7	6	0	0	1	5	6
354-356 Edgware Road	21	0	3	15	3	21	18	6	5	4	3	12
360 Edgware Road	8	0	0	1	7	8	6	0	0	0	6	6
364 Edgware Road	8	0	0	0	8	8	6	0	0	0	6	6
372 Edgware Road	14	0	0	0	14	14	9	0	0	0	9	9
374 Edgware Road	7	0	0	0	7	7	6	0	0	0	6	6
376 Edgware Road	5	0	1	0	4	5	4	0	1	0	3	4
378 Edgware Road	8	0	0	0	8	8	6	0	0	0	6	6
380 Edgware Road	7	0	2	0	5	7	6	0	1	0	5	6
362 Edgware Road	8	0	1	1	6	8	6	0	0	0	6	6
9 Venables Street	12	2	0	0	10	10	8	0	0	0	8	8
392 Edgware Road	7	1	0	0	6	6	7	1	0	0	6	6
388 Edgware Road	3	0	0	0	3	3	3	0	0	1	2	3
404-406 Edgware Road	6	0	0	0	6	6	6	0	0	0	6	6
414 Edgware Road	3	0	0	3	0	3	3	1	1	1	0	2
418 Edgware Road	2	0	0	2	0	2	2	0	1	0	1	2

VSC

NSL

Address	Below BRE Guidelines criteria						Below BRE Guidelines criteria					
	Total No. of Windows	No. Windows that meet BRE criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
410 Edgware Road	6	0	0	2	4	6	6	0	0	1	5	6
390 Edgware Road	7	0	2	0	5	7	6	1	0	1	4	5
138 Church Street	4	0	0	0	4	4	4	0	1	0	3	4
5 Venables Street	15	0	0	0	15	15	14	0	0	0	14	14
402 Edgware Road	3	0	0	1	2	3	3	1	0	1	1	2
9a Venables Street	3	0	0	0	3	3	1	0	0	0	1	1
416 Edgware Road	3	0	0	2	1	3	3	0	0	0	3	3
408 Edgware Road	9	1	0	4	4	8	6	1	0	0	5	5
125 Boscobel Street	4	0	2	1	1	4	4	2	0	0	2	2
123 Boscobel Street	2	1	1	0	0	1	2	2	0	0	0	0
142 Church Street	2	0	0	0	2	2	2	0	0	0	2	2
140 Church Street	2	0	0	0	2	2	2	0	0	0	2	2
Kennet House	237	131	13	20	73	106	173	144	9	10	10	29
Wallis Building-65 Penfold Street	11	9	2	0	0	2	4	4	0	0	0	0
The Old Aeroworks-17-19 Hatton Street	38	17	7	11	3	21	18	16	1	1	0	2
60 Penfold Street	58	43	1	6	8	15	32	30	2	0	0	2
Wey House	21	17	1	1	2	4	11	11	0	0	0	0
Miles Place	2	2	0	0	0	0	1	1	0	0	0	0

VSC

NSL

Address	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
Cotes House	12	12	0	0	0	0	6	6	0	0	0	0
TOTAL	1883	1085	133	147	518	798	1326	912	76	71	267	414

West End Gate- Lawrence Mansions

- 11.7.10 This ten storey apartment block is located south west of the Site, opposite Site A. The façade is defined by recessed balconies.
- 11.7.11 A total of 106 windows serving 69 rooms were assessed for daylight within this building.
- 11.7.12 For VSC, 85 of the 106 (80.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.13 Of the 21 affected windows, four would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and seven would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 10 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.14 All affected windows serve living-kitchen-diners (LKDs) or living-dining rooms (LDs) of which eight are dual aspect, with at least one mitigating windows and overall retain levels of daylight which may be considered acceptable (mid teen VSC). The remaining affected windows, which serve single aspect rooms, have low baseline levels of VSC and rely on daylight from across the Site in its current undeveloped form.
- 11.7.15 For NSL, 65 of the 69 (94.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.16 Of the four affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining room would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.17 Three bedrooms, which are less important in relation to sky visibility and one LKD which retains good levels of NSL (61.5%) are affected.
- 11.7.18 Overall, given the number of primary living spaces affected, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.19 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.20 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

West End Gate- Garrett Mansions

- 11.7.21 This ten storey apartment block is located south west of the Site, opposite Site A. The façade is defined by recessed balconies.
- 11.7.22 A total of 156 windows serving 124 rooms were assessed for daylight within this building.
- 11.7.23 For VSC, 136 of the 156 (87.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.24 Of the 20 affected windows, 15 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.25 All affected windows serve LKDs, of which six serve dual aspect rooms. The remaining 14 are single aspect and therefore rely on daylight from across the Site in its current undeveloped form. Six of the single aspect windows retain levels of daylight which may be considered acceptable (mid teen VSC).

- 11.7.26 For NSL, 113 of the 124 (91.1%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.27 Of the 11 affected rooms, six would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and three would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining two rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.28 Three bedrooms, which are less important in relation to sky visibility and eight LKDs which mostly retain good levels of NSL (46.7% to 70.45%) are affected.
- 11.7.29 Overall, although primary living spaces are affected, the majority of the impacts are minor and occur partially as a function of the recessed balconies which inherently limits daylight availability and therefore the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Whitfield House

- 11.7.30 This five storey building is located west of the Site B.
- 11.7.31 A total of 53 windows serving 53 rooms were assessed for daylight within this building.
- 11.7.32 For VSC, 52 of the 53 (98.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.33 The affected window would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.34 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.35 Overall, the effect is considered **Negligible**.

1-12 Wytham House

- 11.7.36 This four storey building is located to the north of the Site, between Sites B and C. It was not possible to obtain layouts for this building and the room uses are therefore not known.
- 11.7.37 A total of 47 windows serving 41 rooms were assessed for daylight within this building.
- 11.7.38 For VSC, 18 of the 47 (38.3%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.39 Of the 29 affected windows, 13 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 10 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining six windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.40 Of the windows seeing reductions in VSC, the majority would retain good levels of daylight, above 20% in most cases. Only seven windows which are affected on the upper levels of would retain levels between 10% to 15% VSC. These windows are situated beneath an overhang and are therefore already inherently obstructed.
- 11.7.41 For NSL, 29 of the 41 (70.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.42 Of the 12 affected rooms, seven would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst five would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.43 All affected rooms would retain levels of NSL above 60%.
- 11.7.44 Overall, although a number of impacts can be seen to occur, as the windows and rooms retain good levels of daylight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Imps Pre School

- 11.7.45 This educational building is located west of the Site. One window serving one room was assessed for daylight within this building.
- 11.7.46 For VSC, the single window assessed sees losses greater than recommended by BRE.
- 11.7.47 The affected window would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.48 For NSL, the single room assessed see losses greater than recommended by BRE.
- 11.7.49 The affected room would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.50 The affected window would retain 15% VSC, with the room retaining 72% NSL.
- 11.7.51 Overall, although impacts of moderate adverse significance can be seen to occur, as the windows and rooms retain good levels of daylight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Hailsham Court

- 11.7.52 This three storey residential building is located north east of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown. The façade is defined by cantilevered balconies. A total of 45 windows serving 33 rooms were assessed for daylight within this building.
- 11.7.53 For VSC, 19 of the 45 (42.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.54 Of the 26 affected windows, eight would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 17 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.55 Six affected windows continue to see between 15% to 23% VSC and therefore may be considered to retain adequate levels of daylight. A further three windows continue to see approximately 13% VSC. All other windows are significantly affected, however the presence of balconies above and below these windows exacerbate the scale of impact.
- 11.7.56 For NSL, 24 of the 33 (72.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.57 Of the nine affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst eight would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.58 All rooms which experience NSL alterations are located on the ground and first storey, therefore may expect to have lower levels of sky visibility. These rooms are served by windows located beneath balconies, which inherently obstruct daylight availability.
- 11.7.59 Overall, owing to the magnitude of impact, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.60 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.61 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

33 Mulready Street

- 11.7.62 This two storey residential building is located north east of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown. The façade is defined by bay windows.
- 11.7.63 A total of 27 windows serving 14 rooms were assessed for daylight within this building.
- 11.7.64 For VSC, five of the 27 (18.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.65 Of the 22 affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and four would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 16 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.66 Eighteen of the affected windows serve rooms conserved by multiple windows or bay windows, where at least one window retains good levels of daylight or is not affected by the Proposed Development beyond BRE Guidelines recommendations. Therefore, despite the alterations, the overall retains levels of VSC to the rooms as a whole may be considered acceptable.
- 11.7.67 For NSL, three of the 14 (21.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.68 Of the 11 affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst nine would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.69 Two of the affected rooms retain 56.6% and 74.1% NSL, which is considered to be a good level of sky visibility. The remaining affected rooms are served by located beneath balconies, which inherently limit view of the sky.
- 11.7.70 Overall, owing to the magnitude of impact, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.71 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.72 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

20-30a Salisbury Street

- 11.7.73 This two storey residential building is located north of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown.
- 11.7.74 A total of six windows serving four rooms were assessed for daylight within this building.
- 11.7.75 For VSC, all six windows assessed see losses greater than recommended by BRE.
- 11.7.76 Of the six affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.77 All windows but one would retain between 17-22% and therefore may be considered to remain well daylight. The remaining first storey window would retain 12.9% which may be considered adequate.
- 11.7.78 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

- 11.7.79 Overall, owing to the levels of VSC retained, and no NSL impact occurring, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Portman Day Nursery

- 11.7.80 This three storey community use building is located north east of Site B, comprising a Children's Centre and Adult Education location. This property is subject to redevelopment under WCC Ref: 19/03927/COFUL. Layouts have been modelled from plans obtained under the planning reference. The façade is defined by a balcony across the first storey and set back windows. A total of 38 windows serving 12 rooms were assessed for daylight within this building.
- 11.7.81 For VSC, 11 of the 38 (28.9%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.82 Of the 27 affected windows, four would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 22 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.83 Three of the affected windows serve office and kitchen uses which may be considered less important to alterations in daylight compared to the educational/classroom uses. A further 12 windows, serving classrooms, would retain between 13-16%, which may be considered adequate. The remaining windows would see greater alterations, however, serve classrooms which have multiple windows and thereby retain levels of daylight overall which may be considered to be adequate.
- 11.7.84 For NSL, eight of the 12 (66.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.85 Of the four affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.86 Two of the affected classrooms would retain 50-57% NSL, which may be considered adequate sky visibility. Of the two remaining affected rooms, one is a classroom and one is a kitchen which may be considered less important in terms of NSL.
- 11.7.87 Overall, owing to the retained levels of daylight, the office and kitchen uses affected being less important and to the magnitude of impact to the classrooms, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**. However, owing to its non-residential use, it may be considered to have a lower requirement for daylight.

133 Broadley Street

- 11.7.88 This three storey residential building is located east of Site A. The room uses of this building are unknown. A total of four windows serving four rooms were assessed for daylight within this building.
- 11.7.89 For VSC, all four windows assessed see losses greater than recommended by BRE.
- 11.7.90 Of the four affected windows, all would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.91 However, all four windows would retain between 17.5-25%.
- 11.7.92 For NSL, one of the four (25%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.93 Of the three affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst two would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.94 Overall, owing to the retained levels of daylight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

352 Edgware Road

- 11.7.95 This three storey residential building is located south east of Site A. The room uses of this building are unknown.
- 11.7.96 A total of 18 windows serving 14 rooms were assessed for daylight within this building.
- 11.7.97 For VSC, all windows assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.98 For NSL, 12 of the 14 (85.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.99 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.100 Both rooms would retain 47-62% NSL, which may be considered a good level of sky visibility.
- 11.7.101 Overall, owing to the level of VSC compliance and only two rooms seeing alterations beyond BRE recommendations in sky visibility which retain levels of NSL which may be considered adequate, the effect is considered **Permanent, Direct, Long Term Negligible**.

131 Broadley Street

- 11.7.102 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.103 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.104 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.105 Of the five affected windows, all would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.106 The affected windows would retain between 13-18.5%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.107 For NSL, three of the five (60%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.108 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.109 Both rooms are single aspect located on the ground, which sees the moderate adverse impact, and first storey which sees a minor adverse impact.
- 11.7.110 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with only two rooms affected for NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.
- 11.7.111 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.112 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

129 Broadley Street

- 11.7.113 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.114 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.115 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.116 Of the five affected windows, three would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst two would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.117 The affected windows would retain between 12.5-17.3%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.118 For NSL, one of the five (20%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.119 Of the four affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.120 The affected ground floor room retains 30.8% NSL, which has a low level of sky visibility in the baseline. On the first and second storey, the affected rooms retain 44-64% NSL.
- 11.7.121 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with three rooms affected for NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.122 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.123 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

127 Broadley Street

- 11.7.124 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.125 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.126 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.127 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.128 The affected windows would retain between 9.3-15.2%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.129 For NSL, all five rooms assessed see losses greater than recommended by BRE.
- 11.7.130 Of the five affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst four would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.131 The affected ground floor room retains 28.5% NSL, which has a low level of sky visibility in the baseline. On the first and second storey, the affected rooms retain 38-48% NSL.

- 11.7.132 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with all rooms affected for NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.133 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.134 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

125 Broadley Street

- 11.7.135 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.136 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.137 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.138 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.139 The affected windows would retain between 10.5-13.7%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.140 For NSL, all five rooms assessed see losses greater than recommended by BRE.
- 11.7.141 Of the five affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst four would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.142 The affected ground floor room retains 37.5% NSL, which has a low level of sky visibility in the baseline. On the first and second storey, the affected rooms retain 31.6-34% NSL.
- 11.7.143 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with all rooms affected for NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.144 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.145 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

123 Broadley Street

- 11.7.146 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.147 A total of five windows serving four rooms were assessed for daylight within this building.
- 11.7.148 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.149 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.150 The affected windows would retain between.11.3-14%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.

- 11.7.151 For NSL, one of the four (25%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.152 Of the three affected rooms, all would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.153 The affected ground floor room retains 31.3% NSL, which has a low level of sky visibility in the baseline. On the first and second storey, the affected rooms retain 54.3-72.2% NSL.
- 11.7.154 Overall, all windows are affected for VSC, however retain levels which may be considered adequate, with all rooms affected for NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.155 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.156 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

121 Broadley Street

- 11.7.157 This three storey residential building is located southeast of Site A. The front façade of this building has been assessed. The room uses of this building are unknown with the exception of the ground floor bedroom.
- 11.7.158 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.159 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.160 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.161 The affected windows would retain between 11-14.7%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey. The ground floor window serves a bedroom, which may be considered less important in relation to daylight alterations.
- 11.7.162 For NSL, three of the five (60%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.163 Of the two affected rooms, both would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.164 Both affected rooms are located on the second storey and retain 61-63% NSL.
- 11.7.165 Overall, all windows are affected for VSC, however retain levels which may be considered adequate, with only two rooms affected for NSL, which retain good levels of sky visibility. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.166 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.167 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

119 Broadley Street

- 11.7.168 This three storey residential building is located southeast of Site A. The front façade of this building has been assessed. The room uses of this building are unknown.

- 11.7.169 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.170 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.171 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.172 The affected windows would retain between 10.8-14.6%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.173 For NSL, three of the five (60%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.174 Of the two affected rooms, both would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.175 Both affected rooms are located on the second storey and retain 61-62% NSL.
- 11.7.176 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with only two rooms affected for NSL, which retain good levels of sky visibility. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.177 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.178 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

117 Broadley Street

- 11.7.179 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.
- 11.7.180 A total of five windows serving five rooms were assessed for daylight within this building.
- 11.7.181 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.182 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.183 The affected windows would retain between 10.5-14%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.184 For NSL, three of the five (60%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.185 Of the two affected rooms, both would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.186 Both affected rooms are located on the second storey and retain 58% NSL.
- 11.7.187 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with only two rooms affected for NSL, which retain good levels of sky visibility. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.188 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.189 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

115 Broadley Street

11.7.190 This three storey residential building is located southeast of Site A. The front façade of this buildings has been assessed. The room uses of this building are unknown.

11.7.191 A total of five windows serving five rooms were assessed for daylight within this building.

11.7.192 For VSC, all five windows assessed see losses greater than recommended by BRE.

11.7.193 Of the five affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.194 The affected windows would retain between 9.3-12.5%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.

11.7.195 For NSL, one of the five (20%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.196 Of the four affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining room would experience an alteration in excess of 40% which is considered a Major Adverse effect.

11.7.197 The affected ground floor room retains 34.3% NSL, which has a low level of sky visibility in the baseline. On the first and second storey, the affected rooms retain 50-55% NSL.

11.7.198 Overall, all windows are affected for VSC, however retain levels which may considered adequate, with three rooms affected for NSL, which retain good levels of sky visibility. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**

11.7.199 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.200 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

Elmer House

11.7.201 This five storey residential building is located east of Site A. The front façade of this buildings test is defined by a setback elevation. The room uses of this building are unknown.

11.7.202 A total of 36 windows serving 30 rooms were assessed for daylight within this building.

11.7.203 For VSC, all 36 windows assessed see losses greater than recommended by BRE.

11.7.204 Of the 36 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.205 The affected windows would retain between 7.9-13.9%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.

11.7.206 For NSL, all 30 rooms assessed see losses greater than recommended by BRE.

11.7.207 Of the 30 affected rooms, two would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst 28 would experience an alteration in excess of 40% which is considered a Major Adverse effect.

- 11.7.208 The affected rooms continue to see between 27-60% NSL, with the retained sky visibility increasing at the upper storeys.
- 11.7.209 Overall, all windows and rooms are affected for VSC and NSL, however some retain levels which may be considered adequate. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.210 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.211 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

103-113 Broadley Street

- 11.7.212 The ground and first storey of this residential building, which is located east of Site A, has been assessed. The room uses of this building are unknown.
- 11.7.213 A total of 18 windows serving 11 rooms were assessed for daylight within this building.
- 11.7.214 For VSC, two of the 18 (11.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.215 Of the 16 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.216 The affected windows would retain between 8.1-9.3%, which may be considered an adequate level of daylight. The higher retained levels are achieved on the upper storey.
- 11.7.217 For NSL, all 11 rooms assessed see losses greater than recommended by BRE.
- 11.7.218 Of the 11 affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst 10 would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.219 The affected rooms continue to see between 27-60% NSL, with the retained sky visibility increasing at the upper storeys.
- 11.7.220 Overall, all windows and rooms are affected for VSC and NSL, however some retain levels which may be considered adequate. Therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.221 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.222 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

33-40 Gilbert Sheldon House

- 11.7.223 This three storey building is located west of Site A. The ground and second level are set back behind access decks, which inherently limit daylight availability. The room uses of this building are unknown. A total of 30 windows serving 24 rooms were assessed for daylight within this building.
- 11.7.224 For VSC, 20 of the 30 (66.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.225 Of the 10 affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst eight would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.226 Eight of the affected windows are located on the ground and second storey behind access decks and therefore have low baseline levels of VSC. These windows retain between 4-8% VSC. The two remaining affected window on the first and third storey retain 19% VSC.
- 11.7.227 For NSL, 23 of the 24 (95.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.228 The affected room would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect but retains 71.7% NSL
- 11.7.229 Overall, only windows already obstructed owing to their location behind access decks are affected for VSC, with all other windows retaining very good levels of daylight. No significant impacts occur in relation to NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**
- 11.7.230 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.231 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

1-32 Gilbert Sheldon House

- 11.7.232 This seven storey building is located south west of Site A, behind 33-40 Gilbert Sheldon House. The room uses of this building are unknown.
- 11.7.233 A total of 24 windows serving 24 rooms were assessed for daylight within this building.
- 11.7.234 For VSC, all windows assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.235 For NSL, 22 of the 24 (91.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.236 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.237 These rooms are located on the ground and first storey and retain 60-71% NSL respectively.
- 11.7.238 Overall, no windows are affected for VSC and no significant impacts occur in relation to NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Negligible**.

355-357 Edgware Road

- 11.7.239 This building is located south west of Site C
- 11.7.240 A total of 16 windows serving 16 rooms were assessed for daylight within this building.
- 11.7.241 For VSC, all windows assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.242 For NSL, 15 of the 16 (93.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.243 The affected room would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and would retain 71.6% NSL..

11.7.244 Overall, no windows are affected for VSC and no significant impacts occur in relation to NSL. Therefore, the effect is considered **Permanent, Direct, Long Term Negligible**.

King Solomon Academy

11.7.245 This educational building is located south east of Site B. The room uses of this building are unknown. A total of 137 windows serving 34 rooms were assessed for daylight within this building.

11.7.246 For VSC, 117 of the 137 (85.4%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.247 Of the 20 affected windows, 11 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst nine would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

11.7.248 All affected windows would retain between 20-27% VSC, which is considered a good level of daylight.

11.7.249 For NSL, 29 of the 34 (85.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.250 Of the five affected rooms, three would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

11.7.251 The affected rooms retain between 65-70% NSL, which is considered a good level of sky visibility.

11.7.252 Overall, although windows and rooms are affected for VSC and NSL each of these retain very good levels of daylight and therefore would not experience a noticeable change. Therefore, the effect is considered **Permanent, Direct, Long Term Negligible**.

Westmacott House

11.7.253 This building is located north west of Site C. A total of 37 windows serving 19 rooms were assessed for daylight within this building.

11.7.254 For VSC, 22 of the 37 (59.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.255 Of the 15 affected windows, four would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and five would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining six windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

11.7.256 All affected windows would retain between 13.5-22.5% VSC on the upper levels, which may be considered adequate. Each of these windows serve rooms with more than one window.

11.7.257 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

11.7.258 Overall, although windows affected for VSC each of these retain very good levels and no alterations in NSL beyond BRE Guidelines recommendations would occur. Therefore, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

74-88 Cherwell House

11.7.259 This six storey building is located to the north of the Site, between Sites B and C. The front and rear elevations are defined by cantilevered balconies. The room uses of this building are unknown.

11.7.260 A total of 119 windows serving 93 rooms were assessed for daylight within this building.

11.7.261 For VSC, eight of the 119 (6.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.262 Of the 111 affected windows, 19 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 22 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 70 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.263 Twenty six of the affected windows would retain between 15-23.3% VSC, which may be considered adequate. The remaining windows would retain levels of VSC below 15%, however, a number of these have low baseline levels of daylight, owing to the balcony obstruction.
- 11.7.264 For NSL, 32 of the 93 (34.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.265 Of the 61 affected rooms, nine would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and 10 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 42 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.266 Twenty six of the affected rooms would retain sky visibility within 50% of the room, which may be considered adequate. The remaining rooms would retain below 50%, however, a number of these are already obstructed by the presence of balconies.
- 11.7.267 Overall, despite the magnitude of VSC impacts, a portion of these retain very levels of daylight which may be considered adequate. Approximately half of the affected rooms for NSL would retain sky visibility within 50% of the room. However, owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.268 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.269 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

1-53 Cherwell House

- 11.7.270 This four storey building is located to the north of the Site, between Sites B and C. The front elevation assessed is defined by cantilevered balconies. The room uses of this building are unknown.
- 11.7.271 A total of 29 windows serving 23 rooms were assessed for daylight within this building.
- 11.7.272 For VSC, all 29 windows assessed see losses greater than recommended by BRE.
- 11.7.273 Of the 29 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.274 For NSL, all 23 rooms assessed see losses greater than recommended by BRE.
- 11.7.275 Of the 23 affected rooms, four would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and eight would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 11 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.276 All the affected windows and rooms would retain below 15% VSC, and the rooms they serve would retain between 25-69% NSL.
- 11.7.277 Overall, despite the magnitude of VSC impacts, six would retain levels of VSC in the mid teen range, which may be considered adequate. All rooms would see NSL losses, however a number of these would retain sky visibility within over half of the room. However, owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.278 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values

are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

- 11.7.279 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

54-72 Cherwell House

- 11.7.280 This four storey building is located to the north of the Site, between Sites B and C. The front and flank elevations are defined by cantilevered balconies. The room uses of this building are unknown.

- 11.7.281 A total of 43 windows serving 43 rooms were assessed for daylight within this building.

- 11.7.282 For VSC, 13 of the 43 (30.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.283 Of the 30 affected windows, eight would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 16 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

- 11.7.284 Seventeen of the affected windows would retain between 15-26% VSC, which may be considered adequate. A further four would retain marginally below 15%.

- 11.7.285 For NSL, 22 of the 43 (51.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.286 Of the 21 affected rooms, four would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 11 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.

- 11.7.287 All affected rooms would retain between 35-75%, with high levels seen on the upper storeys.

- 11.7.288 Overall, despite the magnitude of VSC impacts, the majority of windows would retain good levels of VSC. Half of the rooms assessed would see NSL alterations, of which a portion would retain sky visibility within over half of the room. However, owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

- 11.7.289 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

- 11.7.290 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

358 Edgware Road

- 11.7.291 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear. A total of eight windows serving six rooms were assessed for daylight within this building.

- 11.7.292 For VSC, one of the eight (12.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.293 Of the seven affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

- 11.7.294 The first and second storey windows would retain between 5.6-10.6% VSC, with the three third storey windows retaining 15% VSC.
- 11.7.295 For NSL, all six rooms assessed see losses greater than recommended by BRE.
- 11.7.296 Of the six affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst five would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.297 The two first storey rooms would retain 17.5-20% NSL. The second and third storey windows would retain between 33.5-64.5% NSL.
- 11.7.298 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, retaining levels which may be considered adequate on the upper storeys. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.299 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.300 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

354-356 Edgware Road

- 11.7.301 This three storey residential building is located at the corner of Edgware Road and Broadley Street adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.302 A total of 21 windows serving 18 rooms were assessed for daylight within this building.
- 11.7.303 For VSC, all 21 windows assessed see losses greater than recommended by BRE.
- 11.7.304 Of the 21 affected windows, three would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 15 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.305 Sixteen of the windows would retain between 15-24%, which may be considered adequate. The remaining five windows are obstructed in the existing condition, with comparatively lower baseline levels of VSC. Therefore, the lower levels of retained VSC (8-13% VSC) can partially be attributed to the baseline obstructions.
- 11.7.306 For NSL, six of the 18 (33.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.307 Of the 12 affected rooms, five would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and four would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.308 Except for four rooms, all would retain 60-80% NSL. The remaining four are obstructed in the existing condition as shown by their comparatively lower baseline levels of NSL, which partially cause the lower retained levels of sky visibility between 22-28% NSL.
- 11.7.309 Overall, all the rear facing windows would see reductions in VSC, however the majority would retain levels which may be considered adequate. Only four rooms would experience significant NSL reductions, however, these can partially be attributed to the lower baseline levels of sky visibility. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

11.7.310 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.311 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

360 Edgware Road

11.7.312 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.313 A total of eight windows serving six rooms were assessed for daylight within this building.

11.7.314 For VSC, all eight windows assessed see losses greater than recommended by BRE.

11.7.315 Of the eight affected windows, one would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst seven would experience an alteration in excess of 40% which is considered a Major Adverse effect.

11.7.316 The first and second storey windows would retain between 9.9-12.4% VSC, with the two third storey windows retaining 14.9-16.8% VSC.

11.7.317 For NSL, all six rooms assessed see losses greater than recommended by BRE.

11.7.318 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.

11.7.319 The affected rooms would retain between 21.7-45.5% NSL, on the upper levels.

11.7.320 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, however the top storey would retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

11.7.321 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.322 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

364 Edgware Road

11.7.323 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.324 A total of eight windows serving six rooms were assessed for daylight within this building.

11.7.325 For VSC, all eight windows assessed see losses greater than recommended by BRE.

11.7.326 Of the eight affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.327 The first and second storey windows would retain between 5-10% VSC, with the two third storey windows retaining 14.9-15.9% VSC.

11.7.328 For NSL, all six rooms assessed see losses greater than recommended by BRE.

- 11.7.329 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.330 The affected rooms would retain between 17.1-47.3% NSL, on the upper levels.
- 11.7.331 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, however the top storey would retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.332 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.333 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

372 Edgware Road

- 11.7.334 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.335 A total of 14 windows serving nine rooms were assessed for daylight within this building.
- 11.7.336 For VSC, all 14 windows assessed see losses greater than recommended by BRE.
- 11.7.337 Of the 14 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.338 The first and second storey windows would retain between 9-12.5% VSC, with the two third storey windows retaining 14.8-15.9% VSC.
- 11.7.339 For NSL, all nine rooms assessed see losses greater than recommended by BRE.
- 11.7.340 Of the nine affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.341 The affected rooms would retain between 8-38.8% NSL, on the upper levels.
- 11.7.342 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, however the top storey would retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.343 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.344 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

374 Edgware Road

- 11.7.345 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.346 A total of seven windows serving six rooms were assessed for daylight within this building.
- 11.7.347 For VSC, all seven windows assessed see losses greater than recommended by BRE.

- 11.7.348 Of the seven affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.349 The first and second storey windows would retain between 9-12.5% VSC, with the two third storey windows retaining 14.8-15.9% VSC.
- 11.7.350 For NSL, all six rooms assessed see losses greater than recommended by BRE.
- 11.7.351 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.352 The affected rooms would retain between 4-45.8% NSL, on the upper levels.
- 11.7.353 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, however the top storey would retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.354 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.355 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

376 Edgware Road

- 11.7.356 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. Layouts obtained for this building show that the ground, second and third storey windows each serve a single aspect bedroom. The two second storey windows serve a kitchen.
- 11.7.357 A total of five windows serving four rooms were assessed for daylight within this building.
- 11.7.358 For VSC, all five windows assessed see losses greater than recommended by BRE.
- 11.7.359 Of the five affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst four would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.360 The first and second storey windows would retain between 8.1-11.5% VSC, with the two third storey windows retaining 14.8-15.9% VSC.
- 11.7.361 For NSL, all four rooms assessed see losses greater than recommended by BRE.
- 11.7.362 Of the four affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst three would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.363 These rooms retain between 24.7-74.5% NSL.
- 11.7.364 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL, however the top storey would retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**. However, it should be noted that no primary living spaces are affected, which are located on the front facing elevation.
- 11.7.365 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.366 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

378 Edgware Road

11.7.367 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.368 A total of eight windows serving six rooms were assessed for daylight within this building.

11.7.369 For VSC, all eight windows assessed see losses greater than recommended by BRE.

11.7.370 Of the eight affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.371 The first and second storey windows would retain between 1.4-7.7% VSC, with the two third storey windows retaining 10.6-10.9% VSC.

11.7.372 For NSL, all six rooms assessed see losses greater than recommended by BRE.

11.7.373 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.

11.7.374 The first and second storey rooms would experience significant alterations, retaining between 2-15% NSL. The two third storey rooms would retain 38% NSL.

11.7.375 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

11.7.376 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.377 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

380 Edgware Road

11.7.378 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.379 A total of seven windows serving six rooms were assessed for daylight within this building.

11.7.380 For VSC, all seven windows assessed see losses greater than recommended by BRE.

11.7.381 Of the seven affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst five would experience an alteration greater than 40% which is considered a Major Adverse Effect.

11.7.382 All the affected windows would retain between 5.4-14.6% VSC.

11.7.383 For NSL, all six rooms assessed see losses greater than recommended by BRE.

11.7.384 Of the six affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst five would experience an alteration greater than 40% which is considered a Major Adverse Effect.

11.7.385 The affected rooms retain between 16.5-63.5% NSL.

- 11.7.386 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL. Two of the rooms retain sky visibility in more than half of the room. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.387 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.388 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

362 Edgware Road

- 11.7.389 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.390 A total of eight windows serving six rooms were assessed for daylight within this building.
- 11.7.391 For VSC, all eight windows assessed see losses greater than recommended by BRE.
- 11.7.392 Of the eight affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining six windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.393 The first and second storey windows would retain between 7.2-13.3% VSC, with the two third storey windows retaining 16.7-18.8% VSC.
- 11.7.394 For NSL, all six rooms assessed see losses greater than recommended by BRE.
- 11.7.395 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.396 The affected rooms retain between 23-46.9% NSL.
- 11.7.397 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.398 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.399 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

9 Venables Street

- 11.7.400 This two storey residential building is located south west of Site C. The Site facing façade is defined by recessed balconies. A total of 12 windows serving eight rooms were assessed for daylight within this building.
- 11.7.401 For VSC, two of the 12 (16.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.402 Of the 10 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.403 Six of the affected windows have very low baseline levels of VSC owing to their location behind a recessed balcony and therefore the absolute loss of light is disproportionate to what the occupant is

likely to experience. The remaining four affected windows serve bedrooms, which may be considered less important in relation to daylight alterations.

- 11.7.404 For NSL, all eight rooms assessed see losses greater than recommended by BRE.
- 11.7.405 Of the eight affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.406 All rooms would experience reductions in sky visibility in the majority of the room. However, this can partially a result of the recessed balconies.
- 11.7.407 Overall, all the rear facing windows and rooms would see reductions in VSC and NSL. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.408 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.409 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

392 Edgware Road

- 11.7.410 This three storey residential building is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.411 A total of seven windows serving seven rooms were assessed for daylight within this building.
- 11.7.412 For VSC, one of the seven (14.3%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.413 Of the six affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.414 The ground floor window is unaffected, with the first to third storey windows retaining 12.1-16.3% VSC.
- 11.7.415 For NSL, one of the seven (14.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.416 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.417 The ground floor room is unaffected, with the second and third storey rooms retaining 33-40% NSL. The first floor room would retain 17% NSL.
- 11.7.418 Overall, all but one of the Site facing windows and rooms would see reductions in VSC and NSL. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.419 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.420 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

388 Edgware Road

- 11.7.421 Two residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this

building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

- 11.7.422 A total of three windows serving three rooms were assessed for daylight within this building.
- 11.7.423 For VSC, all three windows assessed see losses greater than recommended by BRE.
- 11.7.424 Of the three affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.425 All three windows retain 14.7-16.6% VSC, which may be considered adequate.
- 11.7.426 For NSL, all three rooms assessed see losses greater than recommended by BRE.
- 11.7.427 Of the three affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst two would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.428 All three rooms retain 48--60% NSL, which may be considered adequate.
- 11.7.429 Overall, all three site facing windows and rooms would see reductions in VSC and NSL, however, retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**. These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.430 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

404-406 Edgeware Road

- 11.7.431 Three residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.432 A total of six windows serving six rooms were assessed for daylight within this building.
- 11.7.433 For VSC, all six windows assessed see losses greater than recommended by BRE.
- 11.7.434 Of the six affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.435 All three windows retain 14.1-19.4% VSC, which may be considered adequate.
- 11.7.436 For NSL, all six rooms assessed see losses greater than recommended by BRE.
- 11.7.437 Of the six affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.438 All three rooms retain 31-37% NSL, which may be considered adequate.
- 11.7.439 Overall, all site facing windows and rooms would see reductions in VSC and NSL, however, retain levels which may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.440 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.441 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

414 Edgware Road

11.7.442 Three residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. All three rooms assessed are bedrooms, which may be considered less sensitive.

11.7.443 A total of three windows serving three rooms were assessed for daylight within this building.

11.7.444 For VSC, all three windows assessed see losses greater than recommended by BRE.

11.7.445 Of the three affected windows, all would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect.

11.7.446 All three bedrooms windows would retain 16.7-22.6% VSC which may be considered adequate.

11.7.447 For NSL, one of the three (33.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.448 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

11.7.449 Both bedrooms would retain 62-70% NSL.

11.7.450 Overall, all site facing windows would see reductions in VSC, with two of the bedrooms these serve seeing NSL reductions. However, owing to the retained levels, and only bedrooms being affected which may be considered less important to daylight alterations, the effect is considered **Permanent, Direct, Long Term Minor Adverse.**

418 Edgware Road

11.7.451 Two residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. Both rooms assessed are bedrooms, which may be considered less sensitive.

11.7.452 A total of two windows serving two rooms were assessed for daylight within this building.

11.7.453 For VSC, both windows assessed see losses greater than recommended by BRE.

11.7.454 Of the two affected windows, both would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect.

11.7.455 All three bedrooms windows would retain 16.2-21.1% VSC which may be considered adequate.

11.7.456 For NSL, both rooms assessed see losses greater than recommended by BRE.

11.7.457 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration greater than 40% which is considered a Major Adverse Effect.

11.7.458 Both bedrooms would retain 52-69% NSL.

11.7.459 Overall, all site facing windows would see reductions in VSC, with the two bedrooms seeing NSL reductions. However, owing to the retained levels, and only bedrooms being affected which may be considered less important to daylight alterations, the effect is considered **Permanent, Direct, Long Term Minor Adverse.**

410 Edgware Road

- 11.7.460 Three residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.461 A total of six windows serving six rooms were assessed for daylight within this building.
- 11.7.462 For VSC, all six windows assessed see losses greater than recommended by BRE.
- 11.7.463 Of the six affected windows, two would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst four would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.464 The affected windows would retain between 14.9-21% on the upper storeys, which may be considered adequate.
- 11.7.465 For NSL, all six rooms assessed see losses greater than recommended by BRE.
- 11.7.466 Of the six affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst five would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.467 All affected rooms would retain 11.4-45.3% NSL.
- 11.7.468 Overall, all site facing windows would see reductions in VSC, however, owing to the retained levels, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

390 Edgware Road

- 11.7.469 Three residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.470 A total of seven windows serving six rooms were assessed for daylight within this building.
- 11.7.471 For VSC, all seven windows assessed see losses greater than recommended by BRE.
- 11.7.472 Of the seven affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst five would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.473 The affected windows would retain between 11.1-16.2% VSC on the upper storeys, which may be considered adequate.
- 11.7.474 For NSL, one of the six (16.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.475 Of the five affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst four would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.476 These rooms would retain 33-60% NSL.
- 11.7.477 Overall, all site facing windows and rooms would see reductions in VSC and NSL, however, the retained levels on the upper levels may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.478 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.479 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

138 Church Street

11.7.480 This two storey residential building is located south of the Site C, with the rear facing the Proposed Scheme. Layouts obtained show that the first storey comprise a living room and kitchen with two bedrooms on the second storey. A total of four windows serving four rooms were assessed for daylight within this building.

11.7.481 For VSC, all four windows assessed see losses greater than recommended by BRE.

11.7.482 Of the four affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.483 The two living rooms windows and kitchen retain 10.3-10.5% VSC and the bedrooms retain 11.9-12.1% VSC,

11.7.484 For NSL, all four rooms assessed see losses greater than recommended by BRE.

11.7.485 Of the four affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst three would experience an alteration greater than 40% which is considered a Major Adverse Effect.

11.7.486 All rooms retain between 29-53% NSL.

11.7.487 Overall, all site facing windows and rooms would see reductions in VSC and NSL, however, the retained levels on the upper levels may be considered adequate. Owing to the scale of impacts, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

11.7.488 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

11.7.489 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

5 Venables Street

11.7.490 This two storey residential building is located south west of Site C. Room uses are not known at this building.

11.7.491 A total of 15 windows serving 14 rooms were assessed for daylight within this building.

11.7.492 For VSC, all 15 windows assessed see losses greater than recommended by BRE.

11.7.493 Of the 15 affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.

11.7.494 These windows would retain 3-3.5% VSC.

11.7.495 For NSL, all 14 rooms assessed see losses greater than recommended by BRE.

11.7.496 Of the 14 affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.

11.7.497 These rooms would retain between 10-37% NSL.

11.7.498 Overall, all site facing windows and rooms would see reductions in VSC and NSL, therefore, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

- 11.7.499 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.500 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

402 Edgware Road

- 11.7.501 This three storey residential building is located south of Site C. The Site facing windows assessed comprise three bedrooms.
- 11.7.502 A total of three windows serving three rooms were assessed for daylight within this building.
- 11.7.503 For VSC, all three windows assessed see losses greater than recommended by BRE.
- 11.7.504 Of the three affected windows, one would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst two would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.505 These bedroom windows, which are considered less sensitive to daylight alterations retain 13.2-17.4% VSC, which may be considered adequate.
- 11.7.506 For NSL, one of the three (33.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.507 Of the two affected rooms, one would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect whilst one would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.508 Both rooms would retain 54-66% NSL.
- 11.7.509 Overall, only bedrooms are affected which retain levels of daylight which may be considered adequate; therefore, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

9a Venables Street

- 11.7.510 This one storey residential building is located south west of Site C. Room uses are not known at this building.
- 11.7.511 A total of three windows serving one room were assessed for daylight within this building.
- 11.7.512 For VSC, all three windows assessed see losses greater than recommended by BRE.
- 11.7.513 Of the three affected windows, all would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.514 These windows retain 3.8-3.9% VSC, which may be considered adequate.
- 11.7.515 For NSL, the single room assessed see losses greater than recommended by BRE.
- 11.7.516 The affected room would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.517 These rooms retain 37-52% NSL.
- 11.7.518 Overall, owing to the loss of daylight the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.519 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values

are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

- 11.7.520 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

416 Edgware Road

- 11.7.521 Two residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. All rooms assessed are bedrooms, which may be considered less important in relation to daylight alterations.
- 11.7.522 A total of three windows serving three rooms were assessed for daylight within this building.
- 11.7.523 For VSC, all three windows assessed see losses greater than recommended by BRE.
- 11.7.524 Of the three affected windows, two would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst one would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.525 These windows would retain 15-23.3% VSC, which may be considered adequate.
- 11.7.526 For NSL, all three rooms assessed see losses greater than recommended by BRE.
- 11.7.527 Of the three affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.528 These rooms retain 37-52% NSL, which may be considered adequate.
- 11.7.529 Overall, owing to the retained levels of daylight and only bedrooms being affected, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

408 Edgware Road

- 11.7.530 Three residential storeys of this building are considered, which is located adjacent to the south west boundary at Site C, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.
- 11.7.531 A total of nine windows serving six rooms were assessed for daylight within this building.
- 11.7.532 For VSC, one of the nine (11.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.533 Of the eight affected windows, four would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst four would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.534 These windows retain 12.2-19.7%, which may be considered adequate.
- 11.7.535 For NSL, one of the six (16.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.536 Of the five affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.537 These rooms retain 16.2-34% NSL.
- 11.7.538 Overall, owing to the retained levels of daylight on the upper storeys and scale of impacts occurring, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.539 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values

are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)

- 11.7.540 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

125 Boscobel Street

- 11.7.541 This two storey residential building is located south west of Site C. Room uses of this building are unknown and the rear of the building face the Proposed Scheme. A total of four windows serving four rooms were assessed for daylight within this building.
- 11.7.542 For VSC, all four windows assessed see losses greater than recommended by BRE.
- 11.7.543 Of the four affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining window would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.544 With the exception of one first storey window, which retains 10% VSC, the windows on the first and second storey retain 15-23.8% VSC., which may be considered adequate. .
- 11.7.545 For NSL, two of the four (50%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.546 Of the two affected rooms, both would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.547 These windows retain 26.8% and 39.8% NSL.
- 11.7.548 Overall, owing to the retained levels of daylight on the upper storeys and scale of impacts occurring, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.
- 11.7.549 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.550 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

123 Boscobel Street

- 11.7.551 This two storey residential building is located south west of Site C. Room uses of this building are unknown and the rear of the building face the Proposed Scheme.
- 11.7.552 A total of two windows serving two rooms were assessed for daylight within this building.
- 11.7.553 For VSC, one of the two (50%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.554 The affected window would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect. This window retains 24.7% VSC,
- 11.7.555 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.556 Overall, owing to the retained levels of daylight on the upper storeys and scale of impacts occurring, the effect is considered **Negligible**.

142 Church Street

- 11.7.557 This two storey residential building is located south of the Site C. A total of two windows serving two rooms were assessed for daylight within this building.
- 11.7.558 For VSC, both windows assessed see losses greater than recommended by BRE.
- 11.7.559 Of the two affected windows, both would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.560 These windows retain 11-12.6% VSC.
- 11.7.561 For NSL, both rooms assessed see losses greater than recommended by BRE.
- 11.7.562 Of the two affected rooms, both would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.563 These rooms retain 40-46% NSL.
- 11.7.564 Overall, owing to scale of impacts occurring, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.565 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.566 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

140 Church Street

- 11.7.567 This two storey residential building is located south of the Site C. A total of two windows serving two rooms were assessed for daylight within this building.
- 11.7.568 For VSC, both windows assessed see losses greater than recommended by BRE.
- 11.7.569 Of the two affected windows, both would experience an alteration in VSC greater than 40% which is considered a Major Adverse effect.
- 11.7.570 These windows retain 10-12% VSC.
- 11.7.571 For NSL, both rooms assessed see losses greater than recommended by BRE.
- 11.7.572 Of the two affected rooms, both would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.
- 11.7.573 These rooms retain 43-47% NSL.
- 11.7.574 Overall, owing to scale of impacts occurring, the effect is considered **Permanent, Direct, Long Term Major Adverse**.
- 11.7.575 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.576 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

Kennet House

- 11.7.577 This 16 storey building is being retained as part of Site C. Room uses within this building are unknown and the façade is defined by recessed balconies.
- 11.7.578 A total of 237 windows serving 173 rooms were assessed for daylight within this building.
- 11.7.579 For VSC, 131 of the 237 (55.3%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.580 Of the 106 affected windows, 13 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 20 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 73 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.581 A total of 43 affected windows would retain between 15-26% VSC, which is considered a good level of daylight within an inner city urban location. A further 25 would retain 10-15% VSC. At the remaining windows, where levels below 10% VSC are retained, this can be attributed to windows being obstructed by recessed balconies which inherently limit daylight availability.
- 11.7.582 For NSL, 144 of the 173 (83.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.583 Of the 29 affected rooms, nine would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and 10 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 10 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.584 With the exception of a ground floor rooms, the rooms affected would retain between 52-79% NSL, which may be considered adequate.
- 11.7.585 Overall, although significant reductions would occur, these partially occur as a result of balconies. Therefore, owing to the retained levels of daylight, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.
- 11.7.586 These impacts should be considered within the appropriate context for the site as outlined in the accompanying GIA context report. The contextual analysis shows that similar and low daylight values are prevalent in the immediate vicinity of the site, in line with expectations for an urban grain (Section 5, pg.11-16)
- 11.7.587 An extensive review of accepted retained VSC values for neighbouring properties of comparable schemes, demonstrate that the Proposed Scheme will result in commensurate average retained VSC values on a floor by floor basis (Section 6, pg.17-27).

Wallis Building-65 Penfold Street

- 11.7.588 This three storey building is located north west of Site C. A total of 11 windows serving four rooms were assessed for daylight within this building.
- 11.7.589 For VSC, nine of the 11 (81.8%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.590 Of the two affected windows, both would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.591 Both windows would retain 19.7-21.2% VSC
- 11.7.592 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.593 Overall, the effect is considered **Negligible**.

The Old Aeroworks-17-19 Hatton Street

- 11.7.594 This five storey residential building is located north west of Site C. A total of 38 windows serving 18 rooms were assessed for daylight within this building.
- 11.7.595 For VSC, 17 of the 38 (44.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.596 Of the 21 affected windows, seven would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 11 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.597 All windows would retain 10-26% VSC. The lower retained levels occur to only two rooms on the first and second storey, are served by a second window and therefore may be considered to remain adequately daylighted overall.
- 11.7.598 For NSL, 16 of the 18 (88.9%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.599 Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.600 These rooms retain 60-73% NSL overall, which may be considered adequate.
- 11.7.601 Overall, although significant reductions would occur, owing to the retained levels of daylight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

60 Penfold Street

- 11.7.602 This five storey residential building is located north west of Site C. A total of 58 windows serving 32 rooms were assessed for daylight within this building.
- 11.7.603 For VSC, 43 of the 58 (74.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.604 Of the 15 affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining eight windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.605 Eleven LKDs are affected, however, each are double aspect and therefore retain good levels of VSC overall. The remaining four windows serve offices and bedrooms retaining between 11-17% VSC,
- 11.7.606 For NSL, 30 of the 32 (93.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.607 Of the two affected rooms, both would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect.
- 11.7.608 Both rooms retain between 70-74% NSL.
- 11.7.609 Overall, although significant reductions would occur, owing to the retained levels of daylight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Wey House

- 11.7.610 This building is located north of the Proposed Scheme between Site B and Site C. A total of 21 windows serving 11 rooms were assessed for daylight within this building.
- 11.7.611 For VSC, 17 of the 21 (81%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

11.7.612 Of the four affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining two windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

11.7.613 All four windows have very low existing levels of VSC below 4% and therefore the alteration is unlikely to be noticeable.

For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

11.7.614 Overall, the effect is considered **Negligible**.

Sunlight

11.7.615 The full sunlight assessment for the Proposed Scheme can be found within Appendix 11-4 and is summarised in below in Table 11-8.

11.7.616 Of the 39 existing buildings assessed, the 20 buildings highlighted in blue in Table 11-8 would experience little to no impact (less than 20% alteration) in APSH and WPSH and are therefore considered to experience a Permanent, Direct, Long Term and **Negligible** effect (not significant). These are:

- West End Gate- Lawrence Mansions;
- West End Gate- Garrett Mansions;
- West End Gate Bond Mansions;
- Whitfield House;
- 1-12 Wytham House;
- 52 Church Street;
- 44 Church Street;
- 46 Church Street;
- 48 Church Street;
- 50 Church Street;
- 352 Edgware Road;
- 363 Edgware Road;
- King Solomon Academy;
- Westmacott House;
- 422 Edgware Road;
- 392 Edgware Road;
- 125 Boscobel Street;
- 123 Boscobel Street;
- Wallis Building-65 Penfold Street; and
- Cotes House.

11.7.617 The remaining 19 buildings are discussed below in further detail.

Table 11-8: Sunlight effects of the Proposed Scheme

Address	Total	Pass	APSH			WPSH		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
West End Gate-Lawrence Mansions	11	11	0	0	0	0	0	0
West End Gate-Garrett Mansions	10	10	0	0	0	0	0	0
West End Gate Bond Mansions	10	10	0	0	0	0	0	0
Whitfield House	53	53	0	0	0	0	0	0
1-12 Wytham House	2	2	0	0	0	0	0	0
Hailsham Court	21	8	1	0	9	0	0	12
33 Mulready Street	14	3	0	0	9	0	0	10
20-30a Salisbury Street	4	3	0	0	0	0	0	1
Portman Day Nursery	12	7	0	0	5	0	0	1
52 Church Street	8	8	0	0	0	0	0	0
44 Church Street	3	3	0	0	0	0	0	0
46 Church Street	3	3	0	0	0	0	0	0
48 Church Street	2	2	0	0	0	0	0	0
50 Church Street	2	2	0	0	0	0	0	0
352 Edgware Road	5	5	0	0	0	0	0	0
103-113 Broadley Street	1	0	0	0	1	0	0	0
363 Edgware Road	2	2	0	0	0	0	0	0
King Solomon Academy	12	12	0	0	0	0	0	0
Westmacott House	19	19	0	0	0	0	0	0
422 Edgware Road	18	18	0	0	0	0	0	0
74-88 Cherwell House	81	20	2	1	55	0	0	54
1-53 Cherwell House	23	0	0	0	17	0	0	20
54-72 Cherwell House	39	5	2	2	23	0	0	34
376 Edgware Road	1	0	0	1	0	0	0	1
380 Edgware Road	2	0	1	1	0	0	0	2
362 Edgware Road	2	0	0	2	0	0	0	0
9 Venables Street	2	0	0	0	2	0	0	2
392 Edgware Road	1	1	0	0	0	0	0	0
138 Church Street	4	1	0	0	1	0	0	3
125 Boscobel Street	2	2	0	0	0	0	0	0
123 Boscobel Street	2	2	0	0	0	0	0	0
142 Church Street	2	0	0	0	2	0	0	2

Address	Total	Pass	APSH			WPSH		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
140 Church Street	2	0	0	0	1	0	0	2
Kennet House	95	64	1	1	15	0	1	30
Wallis Building-65 Penfold Street	4	4	0	0	0	0	0	0
The Old Aeroworks- 17-19 Hatton Street	18	14	0	0	2	0	0	4
60 Penfold Street	32	28	0	0	0	0	0	4
Wey House	11	9	1	1	0	0	0	2
Cotes House	6	6	0	0	0	0	0	0
Total	541	337	8	9	142	0	1	184

Hailsham Court

- 11.7.618 This three storey residential building is located north east of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown. The façade is defined by cantilevered balconies.
- 11.7.619 A total of 21 rooms were assessed for sunlight within this building of which 8 (38.1%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.620 For Annual PSH, 11 of the 21 (52.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.621 Of the 10 rooms affected annually, one would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect whilst nine would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 11.7.622 Seven of the windows would retain 13-16% APSH.
- 11.7.623 For Winter PSH, nine of the 21 (42.9%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 12 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.624 Overall, owing to the magnitude of impact and retained levels of APSH at half the windows, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.

33 Mulready Street

- 11.7.625 This two storey residential building is located north east of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown. The façade is defined by bay windows.
- 11.7.626 A total of 14 rooms were assessed for sunlight within this building of which 3 (21.4%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.627 For Annual PSH, five of the 14 (35.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining nine see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.628 Nine of the windows would retain 16-22% APSH.
- 11.7.629 For Winter PSH, four of the 14 (28.6%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 10 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.630 Overall, despite the magnitude of impact and retained levels of APSH, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

20-30a Salisbury Street

- 11.7.631 This two storey residential building is located north of Site B. It was not possible to obtain layouts for this building and therefore room uses are unknown. The ground floor is of commercial usage and therefore not assessed.
- 11.7.632 A total of four rooms were assessed for sunlight within this building of which 3 (75%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.633 For Annual PSH, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.634 For Winter PSH, three of the four (75%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining room sees a loss greater than 40% which is considered a Major Adverse effect.
- 11.7.635 Overall, owing to the APSH compliance, the effect is considered **Negligible**.

Portman Day Nursery

- 11.7.636 This two storey educational building is located north east of Site B. The façade is defined by a balcony across the first storey and set back windows. A total of 12 rooms were assessed for sunlight within this building of which 7 (58.3%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.637 For Annual PSH, seven of the 12 (58.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining five see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.638 For Winter PSH, 11 of the 12 (91.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining room sees a loss greater than 40% which is considered a Major Adverse effect.
- 11.7.639 Overall, owing to level of impact, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.

103-113 Broadley Street

- 11.7.640 The ground and first storey of this residential building, which is located east of Site A, has been assessed. The front façade of this buildings test is defined by a setback elevation. The room uses of this building are unknown.
- 11.7.641 One room was assessed for sunlight within this building.
- 11.7.642 For Annual PSH, the single room assessed sees a loss greater than 40% which is considered a Major Adverse effect.
- 11.7.643 This rooms sees a reduction from 15% to 9% APSH. No other rooms at this building are affected.
- 11.7.644 For Winter PSH, the single room assessed would meet BRE's criteria and so is considered to experience a Negligible effect.
- 11.7.645 Overall, owing to level of impact occurring only to one room, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

74-88 Cherwell House

- 11.7.646 This six storey building is located to the north of the Site, between Sites B and C. The front and rear elevations are defined by cantilevered balconies. The room uses of this building are unknown.
- 11.7.647 A total of 81 rooms were assessed for sunlight within this building of which 20 (24.7%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.648 For Annual PSH, 23 of the 81 (28.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 11.7.649 Of the 58 rooms affected annually, two would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 55 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.650 For Winter PSH, 27 of the 81 (33.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 54 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.651 Overall, owing to level of impact occurring only to one room, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

1-53 Cherwell House

- 11.7.652 This four storey residential building is located to the north of the Site, between Sites B and C. The front elevation assessed is defined by cantilevered balconies. The room uses of this building are unknown.
- 11.7.653 A total of 23 rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.654 For Annual PSH, six of the 23 (26.1%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 17 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.655 14 rooms would retain 15-25% APSH. The remaining three are shaded in the baseline condition.
- 11.7.656 For Winter PSH, three of the 23 (13%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 20 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.657 Overall, owing to the retained levels of sunlight, the effect is considered **Permanent, Direct, Long Term Moderate Adverse**.

54-72 Cherwell House

- 11.7.658 This four storey building is located to the north of the Site, between Sites B and C. The front and flank elevations are defined by cantilevered balconies. The room uses of this building are unknown.
- 11.7.659 A total of 39 rooms were assessed for sunlight within this building of which 5 (12.8%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.660 For Annual PSH, 12 of the 39 (30.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.661 Of the 27 rooms affected annually, two would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 23 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.662 For Winter PSH, five of the 39 (12.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining 34 see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.663 Overall, owing to the scale of impact, the effect is considered **Permanent, Direct, Long Term Major Adverse**.

376 Egrave Road

- 11.7.664 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. Layouts obtained for this building show that the two second storey windows serve a kitchen, which was assessed for sunlight within this building.
- 11.7.665 For Annual PSH, the single room assessed sees a loss between 30-39.9% which is considered a Moderate Adverse effect.
- 11.7.666 This room retains 16% APSH.

11.7.667 For Winter PSH, the single room assessed sees a loss greater than 40% which is considered a Major Adverse effect.

11.7.668 Overall, owing to the retained levels of APSH, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

380 Edgware Road

11.7.669 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.670 A total of two rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.

11.7.671 For Annual PSH, both rooms assessed see losses greater than recommended by BRE.

11.7.672 Of the two rooms affected annually, one would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

11.7.673 These rooms would retain 12-20% APSH.

11.7.674 For Winter PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.675 Overall, owing to the retained levels of APSH, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

362 Edgware Road

11.7.676 This three storey residential building is located adjacent to the south west boundary at Site A, with the rear facing windows and rooms facing the Site. The room uses of this building are unknown, however, it is common for this typology that rooms of secondary usage are located to the rear.

11.7.677 A total of two rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.

11.7.678 For Annual PSH, both rooms assessed see losses between 30-39.9% which is considered a Moderate Adverse effect.

11.7.679 These rooms would retain 14-18% APSH.

11.7.680 For Winter PSH, both rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

11.7.681 Overall, owing to the retained levels of APSH, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

9 Venables Street

11.7.682 This two storey residential building is located south west of Site C. The Site facing façade is defined by recessed balconies. A total of 12 windows serving eight rooms were assessed for daylight within this building.

11.7.683 A total of two rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.

11.7.684 For Annual PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.685 For Winter PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.686 Both rooms affected for APSH and WPSH are bedrooms, which are considered less important in relation to sunlight reductions.

11.7.687 Overall, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

138 Church Street

11.7.688 This two storey residential building is located south of the Site C, with the rear facing the Proposed Scheme. Layouts obtained show that the first storey comprise a living room and kitchen with two bedrooms on the second storey. A total of four windows serving four rooms were assessed for daylight within this building.

11.7.689 A total of four rooms were assessed for sunlight within this building of which 1 (25%) would meet the BRE's criteria for both Annual and Winter PSH.

11.7.690 For Annual PSH, three of the four (75%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining room sees a loss greater than 40% which is considered a Major Adverse effect.

11.7.691 For Winter PSH, one of the four (25%) rooms assessed would meet BRE's criteria and is therefore considered to experience a Negligible effect. The remaining three see losses greater than 40% which is considered a Major Adverse effect.

11.7.692 The kitchen, living room and bedroom affected retain between 24-26% APSH.

11.7.693 Overall, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

142 Church Street

11.7.694 This two storey residential building is located south of the Site C, with the rear facing the Proposed Scheme. A total of two windows serving two rooms were assessed for daylight within this building.

11.7.695 A total of two rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.

11.7.696 For Annual PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.697 For Winter PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.698 Both rooms affected retain between 22-24% APSH.

11.7.699 Overall, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

140 Church Street

11.7.700 This two storey residential building is located south of the Site C, with the rear facing the Proposed Scheme. A total of two windows serving two rooms were assessed for daylight within this building.

11.7.701 A total of two rooms were assessed for sunlight within this building of which none would meet the BRE's criteria for both Annual and Winter PSH.

11.7.702 For Annual PSH, one of the two (50%) rooms assessed would meet BRE's criteria and is therefore considered to experience a Negligible effect. The remaining room sees a loss greater than 40% which is considered a Major Adverse effect.

11.7.703 For Winter PSH, both rooms assessed see losses greater than 40% which is considered a Major Adverse effect.

11.7.704 Both rooms affected retain between 24-26% APSH.

11.7.705 Overall, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Kennet House

11.7.706 This 16 storey building is being retained as part of Site C. Room uses within this building are unknown and the façade is defined by recessed balconies.

- 11.7.707 A total of 95 rooms were assessed for sunlight within this building of which 64 (67.4%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.708 For Annual PSH, 78 of the 95 (82.1%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.709 Of the 17 rooms affected annually, one would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 15 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.710 With the exception of six rooms located beneath balconies, all rooms retain between 15-25% APSH.
- 11.7.711 For Winter PSH, 64 of the 95 (67.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.712 Of the 31 rooms affected in the winter, one would experience an alteration in Winter PSH between 30-39.9% which is considered a Moderate Adverse effect whilst 30 would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 11.7.713 Overall, owing to the retained levels of sunlight and presence of balconies resulting in lower baseline levels, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

The Old Aeroworks-17-19 Hatton Street

- 11.7.714 This five storey residential building is located north west of Site C.
- 11.7.715 A total of 18 rooms were assessed for sunlight within this building of which 14 (77.8%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.716 For Annual PSH, 16 of the 18 (88.9%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining two see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.717 These rooms retain 24% APSH.
- 11.7.718 For Winter PSH, 14 of the 18 (77.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining four see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.719 Overall, owing to the retained levels of sunlight and presence of balconies resulting in lower baseline levels, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

60 Penfold Street

- 11.7.720 This five storey residential building is located north west of Site C.
- 11.7.721 A total of 32 rooms were assessed for sunlight within this building of which 28 (87.5%) would meet the BRE's criteria for both Annual and Winter PSH.
- 11.7.722 For Annual PSH, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 11.7.723 For Winter PSH, 28 of the 32 (87.5%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining four see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.724 Overall, owing to the retained levels of sunlight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Wey House

- 11.7.725 This building is located north of the Proposed Scheme between Site B and Site C.
- 11.7.726 A total of 11 rooms were assessed for sunlight within this building of which 9 (81.8%) would meet the BRE's criteria for both Annual and Winter PSH.

- 11.7.727 For Annual PSH, nine of the 11 (81.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 11.7.728 Of the two rooms affected annually, one would experience an alteration in Annual PSH between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 11.7.729 For Winter PSH, nine of the 11 (81.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining two see losses greater than 40% which is considered a Major Adverse effect.
- 11.7.730 Overall, owing to the retained levels of sunlight, the effect is considered **Permanent, Direct, Long Term Minor Adverse**.

Overshadowing

- 11.7.731 The full overshadowing assessment for the Proposed Scheme to surrounding amenity and ecological areas can be found within Appendix 11-4 and is summarised below.
- 11.7.732 A list of the public and private areas (and their corresponding area number) is provided below for ease of reference.
- 1 - Open space between Tadema House and Eastlake House
 - 2 - 60 Penfold Street- Open space
 - 3 - 60 Penfold Street- Open space
 - 4 - Church Street Market Infrastructure
 - 5 - Church Street Market Infrastructure
 - 6 - Church Street Market Infrastructure
 - 7 - Church Street Market Infrastructure
 - 8 - Cotes House - Open space
 - 9 - Portman Day Nursery
 - 10 - Broadley Street Gardens
 - 11 - Gilbert Sheldon House - Open space
 - 12 - Gilbert Sheldon House - Open space
 - 13 - Westmacott House - Open space
 - 14 - 424-428 Edgware Rd - Open space

Transient Overshadowing

March 21st

- 11.7.733 On this day, shadows are cast from the Proposed Scheme from 08:00 GMT in a north westerly direction.
- 11.7.734 At this time, area 13, 4, 5, 6 and 7 are overshadowed by the Proposed Development. The shadow traverses across these areas throughout the morning, clearing from area 13 and 14 by 10:00 GMT. At 12:00 GMT, shadow is cast from the Proposed Development to areas 2 and 3. By 14:00 GMT, areas 4, 5 and 6 are no longer affected by the Proposed Development, however, shadow begins to encroach on area 8. The Proposed Development shadow clears from area 2 by 16:00 GMT and area 3, 8 and 9 remains overshadowed for the remainder of the day.
- 11.7.735 Areas 1, 10, 11 and 12 are unaffected by shadow cast from the Proposed Development.
- 11.7.736 These areas are quantitatively assessed in the following Sun Hours on Ground section, where they are ascribed a significance of effect.

June 21st

On this day, shadows are cast from the Proposed Scheme from 06:00 BST in a south westerly direction, passing over areas 3 to 7 throughout the middle of the day.

11.7.737 At this time, strips of areas 4, 5 and 6 are overshadowed. Additionally, a small strip of shadow is cast over areas 11 and 12, which clears by 07:00 BST. At this time, shadow from the Proposed Development is cast over a very small section of area 13, which clears by 11:00 BST. Throughout the morning, the shadows reduce in size to areas 4, 5 and 6, clearing completely by 14:00 GMT for the remainder of the day. Between 14:00 BST and 16:00 BST, areas 4, 5 and 6 are in direct sunlight, before seeing a period of overshadowing from the Proposed Development. At 14:00 BST, areas 2, 3 and 9 becomes partially overshadowed by the Proposed Development. The shadow clears from areas 2 and 3 by 17:00 BST and area 9 remains overshadowed for the rest of the day. At 18:00 BST, the Proposed Development overshadows area 10 for the remainder of the day.

11.7.738 Only areas 1 is unaffected by shadow cast from the Proposed Development on this day.

December 21st

11.7.739 On this day, shadows are cast from the Proposed Scheme from 09:00 GMT in a north westerly direction.

11.7.740 At this time, area 13 is overshadowed by the Proposed Development, which clears by 11:00 GMT. Between 10:00 GMT to 14:00 GMT, areas 2 and 3 see intermittent period of overshadowing from the Proposed Development. Area 6 is overshadowed throughout the day.

11.7.741 Areas 4, 5, 8, 9, 10, 11 and 12 are unaffected by shadow cast from the Proposed Development on this day.

11.7.742 Sun Hours on Ground

11.7.743 A detailed Sun Hours on Ground assessment has been carried out for the most affected open spaces to understand the scale and nature of the impacts.

11.7.744 The receptors listed below would experience **Local, Direct, Long Term and Negligible** effects (not significant) as a result of the Proposed Scheme. As described in the Transient Overshadowing assessment these areas would either retain at 2 hours on sun on least 50% of their total area or not experience a reduction in the total amount of sunlight by more than 0.8 as a result of the Proposed Scheme as per BRE Guidelines recommendations. These areas are:

- Area 1 – Open space between Tadema House and Eastlake House;
- Area 2 – 60 Penfold Street – Open space;
- Area 8 – Cotes House – Open space;
- Area 9 – Portman Day Nursery;
- Area 10 – Broadly Street Garden;
- Area 11 – Gilbert Sheldon House – Open space;
- Area 12 - Gilbert Sheldon House – Open space;
- Area 13 – Westmacott House – Open space; and
- Area 14 – 424-428 Edgware Road

11.7.745 Of the remaining receptors, Areas 3 (60 Penfold Street) and 4, 5, 6 and 7 (Church Street Market Infrastructure), each would see a reduction greater than 40% in the total area seeing at least 2 hours of sun, which is considered a considered **Permanent, Direct, Long Term Major Adverse** effect.

11.7.746 Significant effects on the Church Street Market Infrastructure are to be expected, given the low-rise nature of the baseline context and the central location of these areas in relation to the Proposed Development.

11.7.747 Further assessments on the sun exposure, presented in Appendix 10-3, show that most of the Church Street Market Infrastructure will receive at least 1.5 hours of direct sunlight in March and over 3 hours in the summer solstice (June). Therefore, this area still has the potential to receive periods of direct sunlight.

11.7.748 In addition to this, it is worth noting that these assessments present a worst-case scenario with the maximum parameters for Sites B and C.

Solar Glare

- 11.7.749 The full solar glare assessment is provided in Appendix 11-4.
- 11.7.750 The assessment has been undertaken from road junctions and pedestrian crossings nearby which are considered sensitive in terms of solar glare (noted by the reference 1 to 23).
- 11.7.751 Only the detailed elements of the Proposed Scheme (Site A) have been assessed, as this represents a worst case scenario.
- 11.7.752 From view 1 to 6, 11 to 14, 18, 19 and 22 no reflections from Site A are visible within 30° and therefore **No Impact** would occur.
- 11.7.753 In accordance with the solar glare significance criteria highlighted in the methodology section, solar reflections occurring at angles greater than 30° from the driver's line of sight will not affect the driver's responsiveness and therefore the effects of solar glare can be considered Local, Direct, Long Term and **Negligible** (not significant). In addition, based on professional judgement, viewpoints where the portion of the façade of the Proposed Scheme visible is very small and the distance is greater than 10° of a driver's line of sight are also considered Negligible. The list of locations which fall into this category and therefore are considered to have Negligible effects are 7, 8, 15, 16, 20, 21 and 23.
- 11.7.754 For the remaining viewpoints, solar reflections are visible within 30° to 10° or between 10° to 5° of the driver's line of sight for a short period of time can be considered Local, Direct, Long Term and **Minor Adverse** (not significant). The viewpoints which fall into this category and therefore are considered to have Minor Adverse effects are:

Viewpoints 9 and 10

11.7.755 Two viewpoints travelling south along Church Street are considered. Solar reflections are visible at 05:00 to 07:00 during the summer months from 7° of a road user's line of sight. These instances of solar reflection are very small and therefore unlikely to affect a road user's responsiveness. All reflections occur above the 5° visor line which would mitigate any impacts when deployed.

Viewpoint 17

11.7.756 One viewpoint travelling south along Mulready Street is considered. Solar reflections are visible at 05:00 to 07:00 during the summer months from 7° of a road user's line of sight. These instances are very small and therefore unlikely to affect a road user's responsiveness. Most reflections occur above the 5° visor line which would mitigate any impacts when deployed.

11.8 Further mitigation and monitoring

Demolition and Construction Effects and Mitigation

- 11.8.1 No technical analysis of the likely significant effects on the surrounding properties and amenity spaces during the demolition and construction phases were carried out. However, general comments on the likely effects are discussed below. These are based on professional judgement and are set out as follows.
- 11.8.2 The effects during demolition and construction would gradually increase and vary until they reach the effects reported in the Proposed Scheme scenario. Therefore, once complete and operational, the Proposed Scheme scenario would represent the worst-case scenario for daylight, sunlight, overshadowing, solar glare and light pollution.
- 11.8.3 Given that any effects during the demolition and construction are not anticipated to be worse than when the buildings are complete and operational, no mitigation measures are required.

- 11.8.4 Given that mitigation measures are not applicable, the residual effect on daylight, sunlight, overshadowing and solar glare during the demolition and construction stage will gradually increase from negligible effects up to those outlined above in respect of the completed Proposed Scheme.

Completed Development Effects and Mitigation

- 11.8.5 During the design process expert advice was given on alternative massing options, which were technically assessed to understand how the daylight, sunlight and overshadowing effects could be reduced and mitigated.
- 11.8.6 As discussed within the methodology, the daylight, sunlight and overshadowing assessment is based on the detailed elements of Site A of the Proposed Development as well as the outline elements of Sites B and C, representing the full extents of the maximum parameters.
- 11.8.7 The significant daylight, sunlight and overshadowing effects of the Completed Development assessment is summarised in Table 11-9 below.
- 11.8.8 These results represent a worst case assessment for Sites B and C, disregarding the restrictions set out in the Design Guidelines. As such, the effects of the Proposed Development, once designed in detail at reserved matters, will be less than those reported here. Further daylight, sunlight and overshadowing assessments will be undertaken once the detailed design comes forward.
- 11.8.9 Furthermore, the effects to daylight reported in the ES Chapter should be read in conjunction with the Contextual Report submitted as part of this Application. The Contextual Report outlines that retained levels of daylight are similar to those at comparable residential sites in the vicinity and are prevalent in this part of London. By comparing the retained daylight levels at surrounding receptors arising from the Proposed Development, it is demonstrated that they are not out of character with what exists in the surrounding context.
- 11.8.10 The potential for solar glare has been considered throughout the design process and as such solar glare mitigation is embedded within the design. This includes considerations such as orientation of the reflective elements on the façade, reducing large areas of glazing or reflective cladding and façade features such as fins. For the element proposed in outline, once the design is articulated at RMA stage, the façades will be reviewed to consider the potential for solar reflections.
- 11.8.11 Therefore, the Proposed Scheme has daylight, sunlight and overshadowing, solar glare and light pollution mitigation embedded within the design and the residual effects would remain the same as presented in the Assessment of Effects section.

11.9 Residual effects and conclusion

Table 11-9 Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Daylight, Sunlight, Overshadowing and Solar Glare	High	Temporary, Direct, short term	High	N/A	Negligible gradually increasing to Effects reported in the Complete and Operation section	N/A	Negligible gradually increasing to Effects reported in the Complete and Operation section
Complete and Operational							
Daylight							
West End Gate Bond Mansions 52 Church Street 44 Church Street 46 Church Street 48 Church Street 50 Church Street 361 Edgware Road 379 Edgware Road 377 Edgware Road 375 Edgware Road 371-373 Edgware Road 369 Edgware Road 367 Edgware Road 365 Edgware Road 363 Edgware Road 359 Edgware Road 353 Edgware Road 349-351 Edgware Road 422 Edgware Road 424 Edgware Road 430 Edgware Road 428 Edgware Road	High	Permanent, Direct, long term	High	N/A	Negligible	N/A	Negligible

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
432 Edgware Road 426 Edgware Road Devonshire House Miles Place Cotes House Whitfield House 352 Edgware Road 1-32 Gilbert Sheldon House 355-357 Edgware Road King Solomon Academy 123 Boscobel Street Wallis Building-65 Penfold Street Wey House							
West End Gate- Garrett Mansions 1-12 Wytham House Imps Pre School 20-30a Salisbury Street 133 Broadley Street Westmacott House 414 Edgware Road 418 Edgware Road 410 Edgware Road 402 Edgware Road 416 Edgware Road The Old Aeroworks-17-19 Hatton Street 60 Penfold Street	High	Permanent, Direct, long term	High	N/A	Minor Adverse	N/A	Minor Adverse
Portman Day Nursery 33-40 Gilbert Sheldon House 125 Boscobel Street Kennet House 131 Broadley Street	High	Permanent, Direct, long term	High	N/A	Moderate Adverse	N/A	Moderate Adverse
West End Gate- Lawrence Mansions Hailsham Court 33 Mulready Street 129 Broadley Street	High	Permanent, Direct, long term	High	N/A	Major Adverse	N/A	Major Adverse

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
127 Broadley Street							
125 Broadley Street							
123 Broadley Street							
121 Broadley Street							
119 Broadley Street							
117 Broadley Street							
115 Broadley Street							
Elmer House							
103-113 Broadley Street							
74-88 Cherwell House							
1-53 Cherwell House							
54-72 Cherwell House							
358 Edgware Road							
354-356 Edgware Road							
360 Edgware Road							
364 Edgware Road							
372 Edgware Road							
374 Edgware Road							
376 Edgware Road							
378 Edgware Road							
380 Edgware Road							
362 Edgware Road							
9 Venables Street							
392 Edgware Road							
388 Edgware Road							
404-406 Edgware Road							
390 Edgware Road							
138 Church Street							
5 Venables Street							
9a Venables Street							
408 Edgware Road							
142 Church Street							
140 Church Street							
Sunlight							
West End Gate- Lawrence Mansions	High	Permanent, Direct, long term	High	N/A	Negligible	N/A	Negligible

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
West End Gate- Garrett Mansions West End Gate Bond Mansions Whitfield House 1-12 Wytham House 52 Church Street 44 Church Street 46 Church Street 48 Church Street 50 Church Street 352 Edgware Road 103-113 Broadley Street 363 Edgware Road King Solomon Academy Westmacott House 422 Edgware Road Wallis Building-65 Penfold Street Cotes House 20-30a Salisbury Street							
33 Mulready Street 103-113 Broadley Street 2736 Edgware Road 380 Edgware Road 362 Edgware Road 9 Venables Street 138 Church Street 142 Church Street 140 Church Street Kennet House The Old Aeroworks-17-19 Hatton Street 60 Penfold Street Wey House	High	Permanent, Direct, long term	High	N/A	Minor Adverse	N/A	Minor Adverse
Hailsham Court Portman Day Nursery 1-53 Cherwell House	High	Permanent, Direct, long term	High	N/A	Moderate Adverse	N/A	Moderate Adverse

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
74-88 Cherwell House 54-72 Cherwell House	High	Permanent, Direct, long term	High	N/A	Major Adverse	N/A	Major Adverse
Overshadowing							
Area 1 - Open space between Tadema House and Eastlake House Area 2 - 60 Penfold Street – Open space Area 8 – Cotes House – Open space; Area 9 – Portman Day Nursery; Area 10 – Broadly Street Garden; Area 11 – Gilbert Sheldon House – Open space; Area 12 - Gilbert Sheldon House – Open space; Area 13 – Westmacott House – Open space; and Area 14 – 424-428 Edgware Road	High	Permanent, Direct, long term	High	N/A	Negligible	N/A	Negligible
Area 3 - 60 Penfold Street Area 4 - Church Street Market Infrastructure Area 5 - Church Street Market Infrastructure Area 6 - Church Street Market Infrastructure Area 7 - Church Street Market Infrastructure	High	Permanent, Direct, long term	High	N/A	Major Adverse	N/A	Major Adverse
Solar Glare							
Viewpoints 1 to 6 Viewpoints 11 to 14 Viewpoints 18 and 19 Viewpoint 22	High	Permanent, Direct, long term	High	N/A	No Impact	N/A	No Impact
Viewpoints 7 and 8 Viewpoints 15 and 16 Viewpoints 20 and 21 Viewpoints 23	High	Permanent, Direct, long term	High	N/A	Negligible	N/A	Negligible
Viewpoints 9 and 10 Viewpoint 17	High	Permanent, Direct, long term	High	N/A	Minor Adverse	N/A	Minor Adverse

11.10 Cumulative effects assessment

11.10.1 This section of the chapter assesses the potential effects of the Proposed Scheme in combination with the potential effects of other development schemes (referred to as 'cumulative developments') within the surrounding area, as listed within Chapter 2: EIA Methodology of this ES. The following cumulative scheme is considered:

- Paddington Green Police Station (WCC Ref: 21/02193/FULL).

Cumulative effects during demolition and construction

11.10.2 There is no change in the cumulative methodology for the demolition and construction phase. The magnitude of impact and resultant potential effect in relation to the daylight, sunlight, overshadowing and solar glare on the surrounding receptors would vary throughout the demolition and construction phase, depending on the level of obstruction caused.

11.10.3 During the construction phase, a number of tall temporary structures are likely to be present on-site. In some cases, scaffolding, cranes and hoarding would marginally increase the size of the Proposed Scheme's and cumulative schemes maximum massing, however this would be temporary and is unlikely to result in additional noticeable effects due to the scale of these structures and their transient nature.

11.10.4 The construction of the new buildings on the Site and cumulative schemes would have a gradual effect upon the levels of daylight, sunlight and overshadowing as the massing of the Proposed Scheme and cumulative schemes increase over time. It is therefore considered that the completed Proposed Scheme and cumulative scheme represents the worst-case assessment in terms of likely resultant effects. The effects during the demolition and construction works would almost certainly be less than that of the Proposed Scheme in conjunction with cumulative schemes, given that the extent of permanent massing would increase throughout the construction programme, until the Proposed Scheme and cumulative scheme is complete.

11.10.5 The effect in terms of solar glare would range from being negligible effects during demolition, gradually increasing as construction works progress and the facades of the Proposed Scheme are installed. Solar glare is not assessed cumulatively.

11.10.6 The effects have the potential to be adverse on neighbouring residential receptors. It is considered that the effects would be temporary and not be any worse than those presented by the completed Proposed Scheme and cumulative scheme without mitigation.

11.10.7 Therefore, the effects would range from Temporary, Direct, Short Term and **Negligible to Major Adverse** as per the completed Proposed Scheme and cumulative scheme in relation to potential daylight, sunlight and overshadowing which are discussed in the sections below.

Cumulative effects for completed development

Daylight

11.10.8 The full cumulative daylight assessment results are presented in Appendix 11-2.

11.10.9 The daylight results of the Proposed Development in conjunction with Paddington Green Police Station coming forward remain unchanged from the Proposed Development scenario in isolation. Therefore, please refer to the previous section for a full discussion of the affected properties.

Sunlight

11.10.10 The full cumulative sunlight assessment results are presented in Appendix 11-2.

11.10.11 With the exception of one building, the sunlight results of the Proposed Development in conjunction with Paddington Green Police Station coming forward remain unchanged from the Proposed Development scenario in isolation. Therefore, please refer to the previous section for a full discussion of the affected properties.

11.10.12 The building which experiences a sunlight effect in the cumulative scenario is:

- 352 Edgware Road - This building is located on the corner of Broadley Street and Edgware Road and is not assessed for sunlight in the Proposed Development scenario owing to its location south of the Site. However, in the cumulative scenario of the five rooms assessed for sunlight, all five would experience an alteration between 29.9-39.9% in APSH, which is considered a Moderate Adverse effect and alterations beyond 40% in WPSH, which is considered a Major Adverse effect. Given that this property is not affected beyond BRE Guidelines criteria in the Proposed Development scenario, the cumulative effects occur as a result of Paddington Green Police Station coming forward and not the Proposed Development. Overall, the sunlight effect in the cumulative scenario is considered **Permanent, Direct, Long Term Moderate Adverse**.

Overshadowing

- 11.10.13 The full cumulative overshadowing assessment for the Proposed Scheme and Paddington Green Police Station to surrounding amenity can be found within Appendix 11-4 and is summarised below.

Transient Overshadowing

March 21st

- 11.10.14 No additional overshadowing of sensitive amenity areas occurs in the cumulative scenario. Therefore, refer to the previous section for an assessment of results.

June 21st

- 11.10.15 No additional overshadowing of sensitive amenity areas occurs in the cumulative scenario. Therefore, refer to the previous section for an assessment of results.

December 21st

- 11.10.16 In addition to the overshadowing of the Proposed Development in isolation, Paddington Green Police Station would overshadow area 13 for a short period at 10:00 GMT. At 12:00 GMT to 13:00 GMT, areas 2, 3 and 6 are briefly overshadowed by Paddington Green Police Station. At 14:00 GMT, areas 8 and 9 experience a short period of overshadowing from the Proposed Development.

- 11.10.17 Sun Hours on Ground

- 11.10.18 There is no change in the sun hours on ground assessment when compared to the Proposed Development scenario. Therefore, please refer to previous section for an assessment of overshadowing results.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 12: Noise and Vibration

Westminster City Council

November 2021

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12. Noise and Vibration

12.1 Introduction

12.1.1 This chapter reports the findings of the Noise and Vibration assessment and has been completed by Max Fordham LLP Acoustics Team. Max Fordham LLP Acoustics Team are corporate members of the ANC (Association of Noise Consultants), with the majority of individuals being members of the Institute of Acoustics (MIOA).

12.2 Legislation, policy and guidance

12.2.1 This assessment has been undertaken taking into account relevant legislation and guidance set out in national, regional and local planning policy.

12.2.2 A brief overview of guidance, policy and legislation which is relevant to the consideration of environmental effects of noise and vibration is presented below.

Legislation

- Environmental Protection Act¹;
- Environment Noise (England) Regulations²;

Planning Policy

- National Planning Policy Framework³;
- Noise Policy Statement for England⁴;
- National Planning Practice Guidance⁵;
- The London Plan⁶;
- The Mayor's Ambient Noise Strategy⁷;
- Sustainable Design and Construction – Supplementary Planning Guidance⁸;
- Westminster City Plan (2019-2040)⁹;
- Westminster Noise Strategy (2010-2015)¹⁰;
- Westminster Draft Noise Technical Guidance Note (2020)¹¹;
- Westminster Code of Construction Practice (2016)¹²;

Guidance

- World Health Organisation Community Noise Guidelines¹³;
- Night Noise Guidelines for Europe¹⁴;
- BS 8233:2014 – Guidance on sound insulation and noise reduction for buildings¹⁵;

¹ Environmental Protection Act, 1990

² Environmental Noise (England) Regulations, 2006 (as amended)

³ Department for Communities and Local Government – National Planning Policy Framework, 2012

⁴ Department for Environment, Food and Rural Affairs – Noise Policy Statement for England, 2010

⁵ Ministry of Housing, Communities & Local Government – National Planning Practice Guidance, 2014

⁶ Greater London Authority – The London Plan (consolidated with alterations up to March 2016)

⁷ Greater London Authority – The Mayor's Ambient Noise Strategy, 2004

⁸ Greater London Authority – Sustainable Design and Construction – Supplementary Planning Guidance, 2014

⁹ Westminster City Plan 2019-2040

¹⁰ Westminster Noise Strategy 2010-2015

¹¹ Westminster Draft Noise Technical Guidance Note 2020

¹² Westminster Code of Construction Practice July 2016

¹³ World Health Organisation Community Noise Guidelines, 1999

¹⁴ World Health Organisation (WHO) document 'Night Noise Guidelines for Europe', 2009

¹⁵ BSI Group – BS 8233:2014 – Guidance on sound insulation and noise reduction for buildings

- BS 4142:2014 - Method for rating and assessing industrial and commercial sound¹⁶;
- BS 7445 (1991) – Description and Measurement of Environmental Noise¹⁷;
- IEMA Guidelines for Environmental Noise Impact Assessment¹⁸;
- ProPG: Planning and Noise: Professional Practice Guidance on Planning & Noise – New Residential Development (ProPG)¹⁹;
- Acoustics, Ventilation and Overheating Residential Design Guide (AVO Guide)²⁰;
- BS 5228-1:2009 ‘Code of practice for noise and vibration control on construction and open sites – Part 1: Noise’²¹ and ‘Part 2: Vibration’²²;
- BS 6472-1:2008 ‘Guide to evaluation of human exposure to vibration in buildings Part 1: Vibration sources other than blasting’²³;
- The Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3, Part 7 ‘Noise and Vibration’ HD 213/11²⁴;
- The Calculation of Road Traffic Noise (CRTN), Department for the Transport and the Welsh Office²⁵;
- Building Bulletin 93 ‘Acoustic Design of Schools: Performance Standards’ (BB93)²⁶;
- Advisory Leaflet AL72 (AL72)²⁷; and
- Approved Document F: Ventilation (2010 edition incorporating 2010 and 2013 amendments)²⁸.

12.3 Consultation

12.3.1 The EIA Scoping Opinion was received on 3rd September 2021. A summary of the noise and vibration related responses are set out in Table 12-1.

Table 12-1: Scoping Opinion Responses

Reference within the Scoping report	Independent Review Comments/Observations	Additional Information/Clarification Request	EIA Team Response
Paragraph 7.5.2 bullet point 3	Does this mean construction only or operational noise as well from later phases will be assessed at earlier phases?	Confirm that early phases will be treated as receptors to later phase construction and operational noise.	Confirmed that completed earlier phases will be included as new receptors for construction noise assessment with Sites A, B and C taken as three separate construction phases. For operational noise (which primarily includes traffic data), we propose the assessment is aligned with the overall assessment dates proposed below, i.e. completion of Site A (2026) which provides a predicted future baseline as Site A is first occupied, and the full

¹⁶ BSI Group – BS 4142:2014 Method for rating and assessing industrial and commercial sound

¹⁷ BSI Group – BS 7445:1991 – Description and Measurement of Environmental Noise

¹⁸ IEMA (2014) Guidelines for Environmental Noise Impact Assessment

¹⁹ Institute of Acoustics, Association of Noise Consultants, Chartered Institute of Environmental Health – ProPG: Planning and Noise: Professional Practice Guidance on Planning & Noise – New Residential Development, 2017

²⁰ Association of Noise Consultants – Acoustics, Ventilation and Overheating Residential Design Guide – Version 1.1 January 2020

²¹ BSI Group – BS 5228-1:2009 ‘Code of practice for noise and vibration control on construction and open sites – Part 1: Noise’

²² BSI Group – BS 5228-2:2009 ‘Code of practice for noise and vibration control on construction and open sites – Part 2:

Vibration’

²³ BSI Group – BS 6472-1:2008 ‘Guide to evaluation of human exposure to vibration in buildings Part 1: Vibration sources other than blasting’

²⁴ Highways Agency – The Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 7 ‘Noise and Vibration’ HD 213/11 (2011)

²⁵ Department of Transport Welsh Office – The Calculation of Road Traffic Noise (CRTN), Department for the Transport and the Welsh Office, 1988

²⁶ Department for Education – Building Bulletin 93 Acoustic design of schools: performance standards, 2015

²⁷ Department of the Environment (now the Department for Environment, Food and Rural Affairs (Defra) – Advisory Leaflet AL72, 1976

²⁸ Ministry of Housing, Communities & Local Government – Approved Document F: Ventilation (2010 edition incorporating 2010 and 2013 amendments)

Reference within the Scoping report	Independent Review Comments/Observations	Additional Information/Clarification Request	EIA Team Response
			outline scheme completion (2036).
Paragraph 7.5.7	Scopes out operational vibration from the EIA. This is agreed.	It is agreed that operational vibration can be scoped out of the EIA.	Noted.
Paragraph 7.5.8	It is recommended that contact is made with Westminster EHO before fully scoping the assessment. In addition to the outline scope any impacts to both existing and future receptors from operational external noise should be considered. This may include noise from the existing market and any proposed outdoor amenity areas.	Liaise with the EHO regarding the full range of noise sources and receptors to be considered in the assessment.	Agreed. We attempted to liaise with EHO. However we obtained no response. We proceeded with the assessment are outlined in the Scoping, and what we considered to be a robust and appropriate selection of noise sources and receptors.
Paragraph 7.5.8, final bullet point	The intended scope of the noise and vibration assessment seeks to include an assessment of the Site's suitability for residential development. This is commonly scoped out of ESs on the basis that the matter can be considered as a 'design issue' and is not a true 'impact assessment'.	Clarification is sought as to whether the Applicant wishes to scope out an assessment of the Site's suitability for residential development in terms of noise and provide this by way of a separate stand-alone document in support of the detailed planning application.	Site suitability will be assessed and included in the Site A Acoustic Statement report.
Paragraph 7.5.30 bullet point 2	Has set out three scenarios baseline, future baseline with cumulative schemes and future baseline with cumulative schemes and Proposed Scheme. It doesn't appear to address earlier phases of the Proposed Scheme as receptors as per paragraph 7.5.2.	Clarify that operational traffic noise will be assessed in relation to early phases.	We can confirm that new occupants of Sites A and B when completed will be included as new sensitive receptors and assessed with respect to construction noise, construction traffic and operational noise.
Paragraph 7.5.54	We are concerned that by this measure a greater than 10 dBA change would be assessed as not significant and therefore not require mitigation.	We would prefer moderate effects to be considered significant for both construction and operation.	As noted in 7.5.53, a permanent moderate effect, produced by medium magnitude of impact on a residential (high sensitivity) receptor, would be considered significant. In 7.5.54, we are stating that a non-permanent moderate effect resulting from an increase of between 5-10 dB (i.e. medium magnitude of impact) would be considered not-significant – (rather than the ">10 dBA"). In response to the comment, we will consider non-permanent (short term) effects produced by >10dBA (high magnitude of impact) changes, to be significant. For the assessment, medium and long term 'moderate' non-permanent resultant effects have been classed as significant.

12.4 Assessment methodology

Determining baseline conditions and sensitive receptors

- 12.4.1 The study area for the noise and vibration assessment is defined by the extent of the Proposed Scheme, the locations of surrounding/nearby noise sensitive receptors and the extent of the Transport Assessment, which determines those surrounding/nearby roads that are predicted to experience changes in road traffic flows as a result of the Proposed Scheme.
- 12.4.2 The critical acoustic parameters (as reflected in BS8233 and BS4142) with respect to establishing the baseline noise environment in and around the Site are:
- Average noise level (in terms of $L_{Aeq,T}$) during the daytime (07.00-23.00) and night-time (23.00-07.00);
 - Background noise level (in terms of $LA_{90,T}$) during the daytime (07.00-19.00), evening (19.00-23.00) and night-time (23.00-07.00); and
 - Maximum noise level ($L_{AFmax,T}$) for single noise events during the night-time (23.00-07.00) and statistical data concerning frequency of single noise events.
- 12.4.3 The assessment uses a reasonable number of key noise survey locations, and based on these, a software based 3D environmental noise model of the Application Site and adjacencies was constructed and calibrated. The model includes the existing buildings and dominant noise sources (in this case, the local highway network) and the source emission levels were adjusted in order to match as closely as practical the noise survey results.
- 12.4.4 The environmental noise model represents the baseline noise environment, and allows a nominal baseline modelled noise value to be determined anywhere in the baseline model, and also in the future scenario models (with appropriate building massing changes).
- 12.4.5 As the key assessments are focussed on the modelled demolition/construction noise, and the changes in modelled traffic noise, the baseline noise model approach is considered the most useful and appropriate to the assessment methodology.

Effects of COVID-19 pandemic

- 12.4.6 It is clear that the COVID-19 pandemic has had an influence on road, rail and air traffic trips and congestion levels, as well on personal behaviour and commercial work patterns, during 2020 and 2021. It is desirable that the completed future scenario, which is more than a decade away and will presumably represent a return to 'normal' conditions, is compared to a baseline that itself is not unduly affected by the unusual 2020/21 pandemic conditions.
- 12.4.7 Pre-pandemic noise baseline data has been used to represent an effective 2021 baseline. This was in line with the strategy proposed by the *Chapter 8: Air Quality* and *Chapter 14: Traffic and Transport*.
- 12.4.8 This is possible because the Application Site was surveyed in mid-2019. Various noise surveys were undertaken at the Application Site of the Proposed Scheme between 23 and 30 May 2019. Figure 12-1 shows the locations of the long term (between 2-5 days) unattended surveys (L1 - L3), and short term attended 'spot' measurements (S1 - S10). Recent additional 'spot' measurements were also undertaken specifically along Church Street during the market operation, shown as locations C1-C5, on 27 August 2021. The approximate footprint of Sites A, B and C of the Proposed Scheme is highlighted in green.
- 12.4.9 The WCC has been consulted regarding this proposal and methodology via the EIA Scoping exercise.
- 12.4.10 The noise data is used to calibrate the software 3D environmental noise model of the Application Site and adjacencies. This forms the baseline model. The future scenario(s) are considered by modifying the building massing and source emissions as appropriate. Firstly, to include the effect of Cumulative Developments in the absence of the Proposed Scheme (i.e. future baseline, 'do nothing' scenarios), and secondly, including the Proposed Scheme to represent the future 'do something' scenarios.

Figure 12-1: Aerial image of the Site showing noise survey locations (Google Maps)



Methodology for demolition and construction assessment

Sensitivity of Receptors to Noise and Vibration Impacts:

- 12.4.11 The sensitivity of residential, religious and educational properties surrounding the Proposed Scheme are classed as “High”. Hotels are also classed as “High”. Nearby commercial premises are classed as “Medium”.

Magnitude of Impact Scale:

- 12.4.12 Where noise and vibration impacts have been identified, the magnitude of impact will be described using the following semantic scale:
- No Change/Very Low – slight (or no) change in level, often imperceptible;
 - Low – slight change in level, generally lowest noticeable change, unlikely to lead to more than moderate effect;
 - Medium – a moderate change in level, and could lead to moderate or major effect depending on the receptor; and
 - High – a relatively large change in level, and likely to give rise to major effect.

Demolition and Construction Vibration

- 12.4.13 Vibration (in terms of Peak Particle Velocity, PPV), is assessed according to guidance contained in BS 5228-2 concerning the effect of PPV vibration on individuals and on building response.
- 12.4.14 The criteria used to determine the potential magnitude of impact of demolition and construction vibration are presented in Table 12-2 and Table 12-3.

Table 12-2: Magnitude of Construction Vibration Impacts (Human Responses)

Peak particle Velocity (mm/s)	Description of Effect	Magnitude of Impact
< 0.3	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.	Very Low
0.3 to < 1.0	Vibration might be just perceptible in residential environments.	Low
1.0 to < 5.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.	Medium
> 5.0	Vibration is likely to be intolerable for any more than a very brief exposure to this level.	High

Table 12-3: Magnitude of Construction Vibration Impacts (Building Responses)

Peak particle Velocity (mm/s)	Description of Effect	Magnitude of Impact
< 12.5	Probability of damage to buildings by transient vibration tends to zero at 12.5 mm/s PPV.	Very Low
12.5 to < 15.0	Cosmetic damage to buildings is unlikely.	Low
15.0 to < 30.0	Cosmetic damage to buildings could occur. Minor damage to building structure is unlikely.	Medium
> 30.0	Minor damage to building structure is possible.	High

Demolition and Construction Noise

- 12.4.15 There are no current national standards or guidelines that define noise limits for construction sites. However, Annex E of BS 5228-1 provides some guidance on acceptable levels of construction noise and example criteria for the assessment of the significance of construction noise effects. One of the criteria within BS 5228 refers to the Department of the Environment (now the Department for Environment, Food and Rural Affairs (Defra) Advisory Leaflet AL72, 1976.
- 12.4.16 AL72 states that, during the daytime period, the noise level outside the nearest occupied room of a residential property or office should not exceed 75 dB $L_{Aeq,T}$ in urban areas close to main roads, and 70 dB $L_{Aeq,T}$ in rural, suburban and urban areas away from main traffic and industrial noise sources. The Westminster Code of Construction Practice (CoCP) requires hours of operation are limited to 08.00-18.00 Mon-Fri, 08.00-13.00 Sat.
- 12.4.17 The Westminster CoCP references BS 5228, as well as giving guidance on normal hours of working for construction sites – the CoCP requires that hours of operation are limited to 08.00-18.00 Mon-Fri, 08.00-13.00 Sat.
- 12.4.18 Also set out in BS 5228-1 annex E is the ‘ABC’ method for assessing the impact from construction noise on residential receptors by comparing it to the existing ambient noise level at different periods (i.e. daytime 07:00-19:00 and Saturday 07:00-13:00; evenings and weekend; night-time). Based on the guidance in BS 5228-1, it is proposed that the adopted criterion for assessing the effects of demolition and construction noise will be set in line with the ABC thresholds.
- 12.4.19 Noise predictions of demolition and construction noise will be undertaken via a desktop study, applying the methodologies described within BS 5228-1. The calculation method is based on the anticipated number and type of equipment operating, the associated sound power level (L_w) and the distance between the equipment and noise-sensitive receptors. Sound power levels are sourced from BS 5228-1.

- 12.4.20 The criteria that will be used to determine the potential magnitude of impact of demolition and construction noise are presented in Table 12-4. The absolute threshold values vary depending on existing ambient noise levels as per BS 5228-1 annex E 'ABC' method.

Table 12-4: Magnitude of Construction Noise Impacts

Exceedance of Construction Noise, over Threshold Value	Magnitude of Impact
< 1 dB	Very Low
1 dB to 5 dB	Low
5 dB to 10 dB	Medium
> 10 dB	High

Construction Traffic Noise

- 12.4.21 Anticipated changes to traffic noise on roads surrounding the Proposed Scheme, due to additional construction traffic, is predicted based on construction traffic (and operational traffic) flow data for various years and scenarios, provided by the traffic consultant.
- 12.4.22 Changes in traffic noise levels will be calculated with reference to methodology within the CRTN guidance. Estimated baseline noise levels are established in relation to the current baseline noise levels predicted at the identified noise sensitive receptors, and the predicted change in noise levels due to traffic flow changes are determined by CRTN calculations.
- 12.4.23 The magnitude of noise impact due to changes in road traffic noise levels from construction traffic will be assessed with reference to criteria outlined in Table 3.1 of the DMRB; the criteria used to determine the potential magnitude of impact of construction and operational traffic noise are presented in Table 12-5. This method is also used for operational traffic, discussed below.

Table 12-5: Magnitude of Road Traffic Noise Impacts

Noise Change ($L_{A10,18hr}$)	Magnitude of Impact
0 dB	No Change
0.1 - 0.9 dB	Very Low
1 - 2.9 dB	Low
3 - 4.9 dB	Medium
5 dB or more	High

Methodology for completed development effects

Operational Traffic Noise

- 12.4.24 Anticipated changes to traffic noise on roads surrounding the Proposed Scheme, due to changes in operational traffic, is predicted based on traffic flow data for various years and scenarios, provided by the traffic consultant.
- 12.4.25 In considering the operational effects of the Proposed Scheme, a number of scenarios in line with the transport modelling scenarios are defined as follows:
- 2021 existing baseline (based on pre-pandemic noise data);
 - 2026 future baseline without the Proposed Scheme but with cumulative developments complete; and
 - 2026 future baseline with the Proposed Scheme Site A completed and with cumulative developments complete; and
 - 2036 future baseline without the Proposed Scheme but with cumulative developments complete; and

- 2036 future baseline with the Proposed Scheme Sites A, B and C completed and with cumulative developments complete.
- 12.4.26 From these scenarios, the following operational traffic assessments are undertaken:
- 2026 future baseline with the Proposed Scheme Site A completed (do something) compared to 2026 baseline (do nothing) with only cumulative developments complete; and
 - 2036 future baseline with the Proposed Scheme Sites A, B and C completed (do something) compared to 2036 baseline (do nothing) with only cumulative developments complete.
- 12.4.27 These assessments show the effect of introducing the Proposed Scheme, against the corresponding do-nothing scenarios (which includes cumulative development).
- 12.4.28 Changes in operational traffic noise levels will be calculated with reference to methodology within the CRTN guidance. Estimated baseline noise levels are established in relation to the current baseline noise levels predicted at the identified noise sensitive receptors, and the predicted change in noise levels due to traffic flow changes are determined by CRTN calculations.
- 12.4.29 The magnitude of noise impact due to changes in road traffic noise levels from operational traffic associated with the Proposed Scheme will then be assessed with reference to criteria presented in Table 12-5.

External Noise Emissions from Operational Plant Equipment

- 12.4.30 The assessment of noise impacts associated with operational building services plant and equipment within the Proposed Scheme is undertaken in accordance with BS 4142. The methodology is based on a comparison between the representative background sound level in the vicinity of the noise-sensitive receptor and the 'rating level' of the noise source under consideration.
- 12.4.31 BS 4142 provides guidance as to the likely response from sensitive residential receptors to new fixed noise sources (e.g. building plant or services) through comparison of the rating level of the new noise source with the existing representative background sound level. The higher the rating noise level in comparison to the representative background sound level, the greater the magnitude of the impact. In accordance with BS 4142 separate analysis will be undertaken for day and night-time periods.
- 12.4.32 Since exact equipment specifications will not be available at the time of the planning submission, we specify noise limits which plant equipment will need to meet. It is anticipated that plant noise will be subject to a planning condition with the applicable limit corresponding to a level (in terms of L_{Aeq}) that is 5-15 dB below the minimum measured background sound level depending on prevailing ambient noise levels at the receptor and whether the plant noise is tonal or non-tonal, in line with WCC planning policy. The criteria that will be used to determine the potential magnitude of impact of operational building services plant, in relation to the adopted representative background sounds level, are presented in Table 12-6.

Table 12-6: Magnitude of Operational Plant Noise Impacts

Noise Rating Level ($L_{A,r,Tr}$)	Description	Magnitude of Impact
-5 dB (i.e. where rating level 5 dB or more below the representative background sound level)	An indication of the specific noise source having a low impact, depending on the context.	Very Low
0 dB (i.e. where rating level does not exceed the representative background sound level)	An indication of the specific noise source having a low impact, depending on the context.	Low
+5 dB above background	Likely to be an indication of an adverse impact, depending on the context.	Medium
+10 dBA or more above background	Likely to be an indication of a significant adverse impact, depending on the context.	High

Noise from Operational Activity

- 12.4.33 It is anticipated that the most significant noise-generating operational activity elements of the Proposed Scheme will be the existing market on Church Street; although the general usage of the market is not expected to change.
- 12.4.34 There is no specific methodology by which the impact of internal or external operational activity can be assessed. Should any new significant sources be identified as part of the assessment, it is proposed that the potential impact of noise produced by the sources are assessed with respect to the change in ambient level at the noise sensitive receptors during periods of maximum usage. Assessing the period of maximum usage represents a conservative approach (as opposed to assessing change in $L_{Aeq,16hr}$).
- 12.4.35 The criteria that will be used to determine the potential magnitude of impact of new operational activity (if any are identified) are presented in Table 12-7.

Table 12-7: Magnitude of Operational Outdoor Noise Impacts

Increase of $L_{Aeq,1hr}$ at identified receptor during maximum operation	Magnitude of Impact
< 1 dB	Very Low
1 dB to 5 dB	Low
5 dB to 10 dB	Medium
> 10 dB	High

Operational vibration

- 12.4.36 The nearest source of significant ground-borne vibration to the Proposed Scheme is the Bakerloo underground line, >50m to the south east of the nearest Site boundary on Broadley Street; furthermore no significant vibration sources (e.g. heavy industrial) are known on-site. As such, the baseline vibration is considered insignificant, and was scoped out of the assessment.

Site Suitability

- 12.4.37 The assessments presented in this ES chapter considers the impact of the Proposed Scheme on the wider existing environment. Issues of site suitability are considered in detail in the *Acoustic Statement* as part of the Site A detailed planning application. This includes consideration of expected façade noise levels to the Site A proposed buildings, the resulting required sound insulation ratings of the façade (and glazing elements) to deliver BS8233 internal ambient noise levels, and issues related to acceptable external amenity space.

Significance criteria

- 12.4.38 Table 12-8 provides a matrix showing the resultant effects categories which will be applied depending on the determined magnitude of impact and the sensitivity of the receptor. (As will be seen below, the only Noise Sensitive Receptors assessed are either residential or educational, which have a sensitivity of High).

Table 12-8: Classification of Effects Matrix for Noise and Vibration assessments

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

- 12.4.39 Generally, 'moderate' or 'major' permanent resultant effects are deemed to be 'significant', whereas 'minor' permanent resultant effects are deemed to be 'not significant', although they may be a matter of local concern. 'Negligible' permanent resultant effects are deemed to be 'not significant' and not a matter of local concern.
- 12.4.40 'Major' non-permanent resultant effects shall also be deemed to be 'significant', whether short, medium or long term duration. Medium and long term 'moderate' non-permanent resultant effects shall also be classed as significant, however short term 'moderate' non-permanent effects shall be deemed 'not significant', due to the activity being limited to days rather than weeks/months. All 'minor' and 'negligible', effects shall be considered 'not significant'.

Limitations and assumptions

- 12.4.41 General assumptions regarding the noise survey methodology and assessments are provided in *ES Volume III: Appendix 12 - 1 Noise and Vibration*.
- 12.4.42 Noise measurements were used to construct/calibrate the baseline noise model. The baseline model is assumed to be representative of the typical noise environment of the site. Clearly there is an element of uncertainty in the repeatability of survey measurements, and accuracy of the noise model. However, as the assessments are generally considering expected change in level due to traffic, construction etc., these uncertainties/repeatability issues are likely not to affect greatly the outcomes of the assessments.
- 12.4.43 Construction noise predictions have been undertaken using typical items of plant that might be expected to be found on construction sites for this type of development. These may not be exactly representative of the plant that is used during the construction process. In addition, the exact time periods and programme is not fully known at the time of assessment. The construction noise assessment therefore assesses a conservative representative scenario where all plant is operational simultaneously. Noise predictions may therefore overestimate noise levels for the majority of the construction phase, and is therefore considered a reasonable worst case.
- 12.4.44 Construction vibration is also difficult to predict given the unknown parameters such as construction methods, pile dimensions soil conditions and pile locations. A conservative assessment was undertaken based on available data in BS 5228-2.

12.5 Baseline conditions

Noise survey results

- 12.5.1 With respect to baseline environmental noise and vibration conditions in and around the Application Site, the key features considered in surveying the site were:
- Edgware Road (A5) – the dominant traffic noise source near the Site;
 - Boscobel Street, Penfold Street, Church Street, Salisbury Street and Broadley Street – lower and/or intermittent traffic flows in and around the Site adding to the baseline noise environment;
 - Intermittent over-passing aircraft (helicopters, and relatively distant arriving and departing aircraft from London Heathrow (LHR) and/or London City Airport (LCY));
 - More distant general traffic noise and 'city noise' (traffic, construction etc);
 - There are no rail or tube tunnels passing under or immediately adjacent to the Site. As the nearest London Underground tunnels are Bakerloo Line at >50 m from the south east boundary at Broadley Street, and no significant vibration sources (e.g. heavy industrial) are known on-site, the baseline vibration is considered insignificant; and
 - Overline train noise is not significant at the Site, with the closest train lines being those into Marylebone Station (>400 m to north east) and those into Paddington Station (>500 m to the south west).
- 12.5.2 Figure 12-1 above showed the selected locations of the long term (between 2-5 days) unattended surveys (L1 - L3), and short term attended 'spot' measurements (S1 - S10). Recent additional 'spot' measurements were also undertaken specifically along Church Street during the market operation, shown as locations C1-C5, on 27 August 2021.

- 12.5.3 Survey L1 comprised 120hrs of data starting 10 am on 23 May 2019. Survey L2 comprised 96hrs of data starting 10 am on 24 May 2019. Survey L3 comprised 48hrs of data starting 12 am (noon) on 28 May 2019.
- 12.5.4 Table 12-9 summarises the results from L1, L2 and L3 long term survey locations, relating to mean noise levels for 16h day (07:00-23:00) and 8h night periods (23:00-07:00). Mean $L_{Aeq,T}$ values and minimum recorded $L_{AF90,15min}$ values are noted, and also the typical maximum night-time level, defined as the level not normally exceeded on more than 10 occasions per night.
- 12.5.5 Table 12-10 and Table 12-11 present short term measurement data obtained at locations S1 - S10 and C1 - C5 respectively.

Table 12-9: Noise levels obtained at locations L1-L3

Location	Period	Mean $L_{Aeq,T}$ (dBA)	Min $L_{AF90,15min}$ (dBA)	Max L_{AFmax} (dBA)
L1	Day 12 hours (07:00-23:00)	61 [60 ^[1]]	56	-
L1	Night 8 hours (23:00-07:00)	59	54	75*
L2	Day 12 hours (07:00-23:00)	54	48	-
L2	Night 8 hours (23:00-07:00)	52	47	64*
L3	Day 12 hours (07:00-23:00)	54	42	-
L3	Night 8 hours (23:00-07:00)	49	39	74*

^[1]Days when construction noise not present. *Noise level exceeded in up to 10 'events' a night.

Table 12-10: Noise levels obtained at locations S1-S10

Location	Date	Approx. time	Period T	$L_{Aeq,T}$ (dBA)	$L_{AFmax,T}$ (dBA)
S1	21 st May 2019	11:45 - 12:00	15 min	68	79
S2	21 st May 2019	12:05 - 12:20	15 min	66	78
S3	21 st May 2019	12:25 - 12:40	15 min	63	75
S4	21 st May 2019	12:45 - 13:00	15 min	59	70
S5	21 st May 2019	13:15 - 13:30	15 min	60	74
S6	21 st May 2019	13:35 - 13:50	15 min	58	69
S7	21 st May 2019	13:55 - 14:10	15 min	57	68
S8	21 st May 2019	14:15 - 14:30	15 min	57	68
S9	30 th May 2019	13:30 - 13:45	15 min	54	62
S10	30 th May 2019	14:00 - 14:15	15 min	52	67

Table 12-11: Short term noise surveys at locations C1 – C5.

Location	Date	Approx. time	Period T	$L_{Aeq,T}$ (dBA)	$L_{AFmax,T}$ (dBA)
C1	27 th August 2021	14:20 – 14:35	15 min	61	80
C2	27 th August 2021	12:50 – 13:05	15 min	59	77
C3	27 th August 2021	12:50 – 13:05	15 min	60	81
C4	27 th August 2021	14:00 – 14:15	15 min	60	76
C5	27 th August 2021	13:15 – 13:30	15 min	67	87

- 12.5.6 Further details of the survey data, including graphs of the L1-L3 long term location noise time history, is included in the *ES Volume III: Appendix 12 - 1 Noise and Vibration*.
- 12.5.7 As noted above, the noise survey locations were used to adjust and calibrate noise sources in the software 3D environmental model (developed in an industry standard software package, SoundPlan v8.1).

Sensitive receptors

- 12.5.8 The key receptors sensitive to changes in noise and vibration levels that could potentially be affected by the impacts of the Proposed Scheme are considered to be:
- Existing residential properties adjacent to Sites A, B and C, along Boscobel Street, Penfold Street, Church Street, Salisbury Street, Broadley Street and Edgware Road; and
 - Educational/school sites, including Portman Nursery School, Imps Pre-School and King Solomon Academy, and a small educational property at 9 Boscobel Street; and
 - Assuming consecutive, but separate build-out periods for Sites A, B and C respectively, then while one Site is cleared and built upon, existing or newly occupied properties in the other two Sites will represent 'new' sensitive receptors (when occupied).
- 12.5.9 Figure 12-2 shows the location of the existing selected NSRs, with residential buildings highlighted in purple, and educational buildings highlighted in green. Where commercial properties are located below residential properties, the receptor building is shown as residential (this occurs for all the commercial selected NSRs, and thus none are commercial category in the assessment).
- 12.5.10 Figure 12-3 shows the new receptors introduced to the Sites A, B, and C as they are built out. Table 12-12 and Table 12-13 lists the approximate locations and sensitivities for the NSRs.

Figure 12-2: Existing noise sensitive receptors (NSRs) included in the assessments

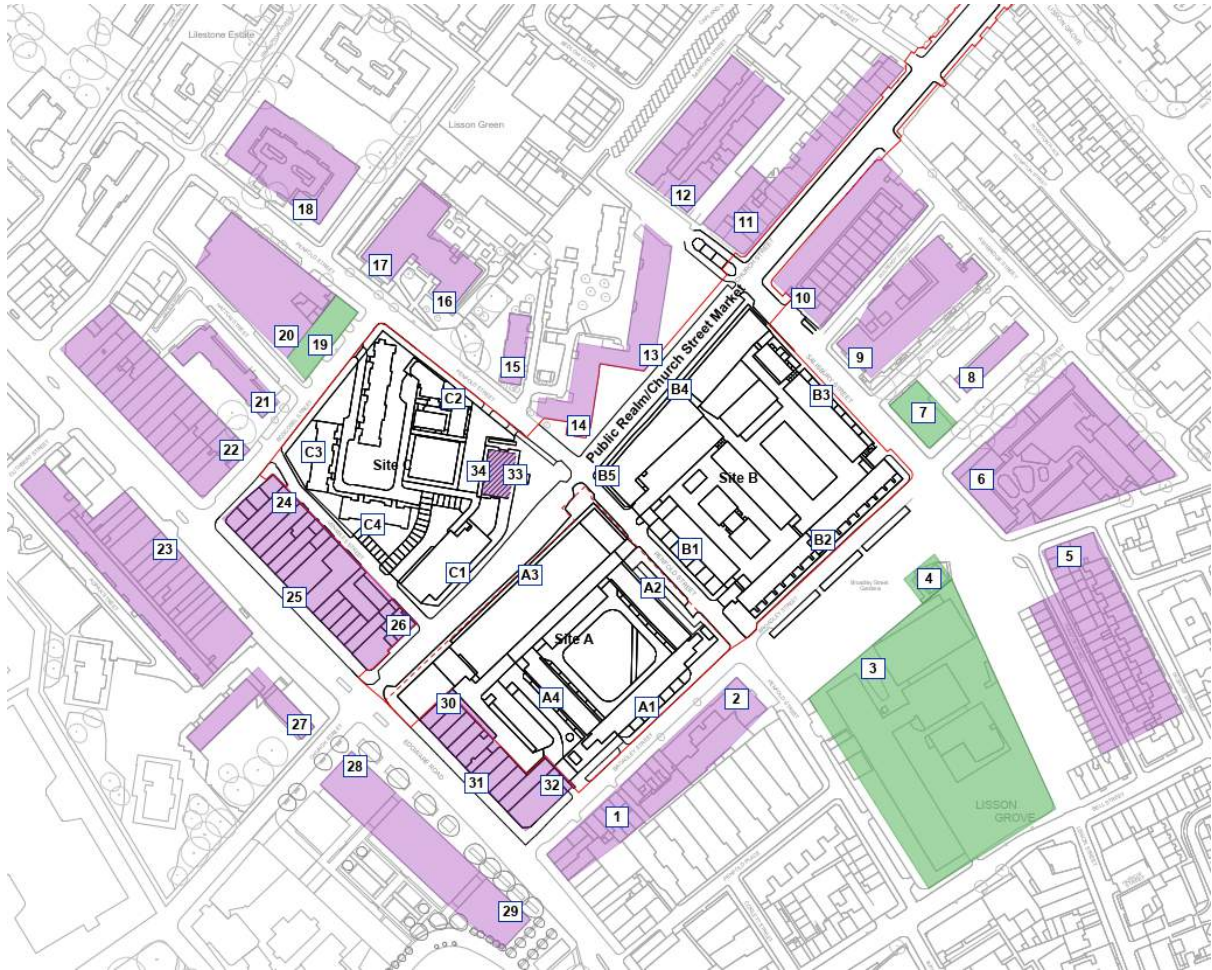


Figure 12-3: Existing and/or new NSRs on the Sites A, B and C

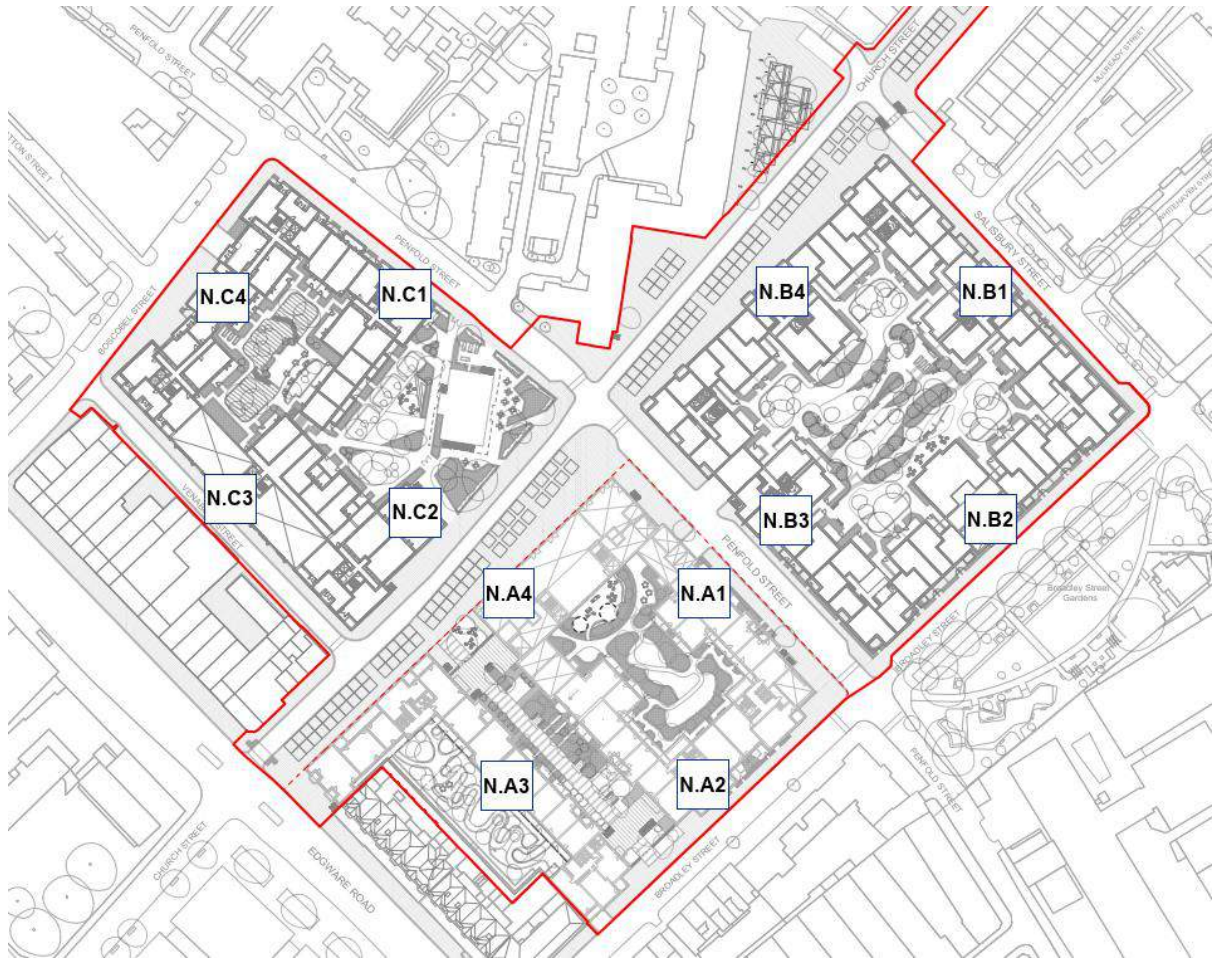


Table 12-12: Existing surrounding NSRs and receptor sensitivity

NSR ID	Approximate Location	Category	Sensitivity
1	Façade around 125 Broadley St	Residential	High
2	Broadley / Penfold St	Residential	High
3	King Solomon Academy	Education	High
4	Imps Pre-school	Education	High
5	Façade around 20 Ranston St	Residential	High
6	Whitfield House, Salisbury St	Residential	High
7	Portman Nursery, Salisbury St	Education	High
8	Cotes House, Whitehaven St	Residential	High
9	Hailsham Court, Salisbury St	Residential	High
10	Façade around 20-30 Salisbury St	Residential	High
11	Salisbury / Church St Corner	Residential	High
12	Morris House, Salisbury St	Residential	High
13	Church St Estate, Church St	Residential	High
14	Church St Estate, Church St	Residential	High
15	Church St Estate, Penfold St	Residential	High
16	Façade around 60 Penfold St	Residential	High
17	Façade around 60 Penfold St	Residential	High
18	Tadema House, Penfold St	Residential	High
19	Façade around 9 Boscobel St	Education	High
20	The Old Aeroworks, Halton St	Residential	High
21	Westmacott House, Boscobel St	Residential	High
22	Façade around rear of 422 Edgware Rd	Residential	High
23	Façade around 365 Edgware Rd	Residential	High
24	Façade around rear of 420 Edgware Rd	Residential	High
25	Façade around 400 Edgware Rd	Residential	High
26	Façade around rear of 390 Edgware Rd	Residential	High
27	Gilbert Sheldon House, Edgware Rd	Residential	High
28	West End Gate, Edgware Rd	Residential	High
29	West End Gate, Edgware Rd	Residential	High
30	Façade around rear of 380 Edgware Rd	Residential	High
31	Façade around 374 Edgware Rd	Residential	High
32	Façade at rear / side of 126 Broadley St	Residential	High
33	Façade to East of Kennet House	Residential	High
34	Façade to West of Kennet House	Residential	High

Table 12-13: Existing and new NSRs on Sites A, B and C

NSR ID	Approximate Location	Category	Sensitivity
B1	Existing Site B receptor, SW façade	Residential	High
B2	Existing Site B receptor, SE façade	Residential	High
B3	Existing Site B receptor, NE façade	Residential	High
B4	Existing Site B receptor, NW façade	Residential	High
B5	Existing Site B receptor, NW façade (SW corner)	Residential	High
C1	Existing Site C receptor, SE façade	Residential	High
C2	Existing Site C receptor, NE façade	Residential	High
C3	Existing Site C receptor, NW façade	Residential	High
C4	Existing Site C receptor, SW façade	Residential	High
N.A1	New Site A receptor, SE façade	Residential	High
N.A2	New Site A receptor, NE façade	Residential	High
N.A3	New Site A receptor, NW façade	Residential	High
N.A4	New Site A receptor, SW façade	Residential	High
N.B1	New Site B receptor, SW façade	Residential	High
N.B2	New Site B receptor, SE façade	Residential	High
N.B3	New Site B receptor, NE façade	Residential	High
N.B4	New Site B receptor, NW façade	Residential	High
N.B5	New Site B receptor, NW façade (SW corner)	Residential	High

12.6 Environmental design and management

- 12.6.1 The main area where environmental design and management relates to noise, concerns operational fixed plant. All plant serving the Proposed Scheme shall be designed with appropriate attenuation and mitigation measures to comply with WCC plant noise conditions, with respect to noise sensitive receptors external to the Proposed Scheme.
- 12.6.2 Design for plant with respect to local residents and amenity within the Proposed Scheme shall be designed to ensure a reasonable noise control – for example air inlet/exhaust for MVHR units. The large Air Source Heat Pumps on the roof of one of the Site A buildings will be provided with a noise screen comprising chevron style acoustic louvres, such that local noise levels on the terraces of the flat(s) immediately below will likely be 40-45 dBA when the ASHPs are in maximum use. As this is about 10 dB below the typical mean ambient noise levels due to traffic, this is considered acceptable as part of the Proposed Scheme.

12.7 Assessment of effects

Effects during demolition and construction

Demolition and Construction Noise

- 12.7.1 The demolition and construction assessments are undertaken separately for Sites A, B and C, where Site A is assumed to complete in 2026, Site B in 2032, and Site C in 2036. Each site assumes three phases to be assessed: demolition, piling and groundworks, and construction (above ground super structure etc.). Table 12-14 sets out for each site, the phase and the baseline scenario used to define the ambient noise levels which set thresholds in the BS 5228-1 'ABC' method.
- 12.7.2 When Site A is in construction, there are existing receptors in Site B and C to be considered. When Site B is in construction, there are new receptors in Site A (established in 2026) and existing receptors in Site C. When Site C is in construction, there are the new receptors in Site A and Site B (assumed established in 2032).

12.7.3 The details of the assumed noise emitting equipment assumed for the various construction activities are given in the *Chapter 6: Demolition and Construction* and *ES Volume III: Appendix 12 - 1 Noise and Vibration*.

Table 12-14: The phases of demolition and construction being assessed

Site	Phase	Baseline Used
Site A	Demolition	2021 Baseline
	Piling and Groundworks	2021 Baseline
	Construction	2021 Baseline
Site B	Demolition	2026 Site A Completed
	Piling and Groundworks	2026 Site A Completed
	Construction	2026 Site A Completed
Site C	Demolition	2032 Site A & B Completed
	Piling and Groundworks	2032 Site A & B Completed
	Construction	2032 Site A & B Completed

12.7.4 The predicted, unmitigated noise levels ($L_{Aeq,10hr}$) during the demolition and construction programme for Site A are presented for existing surrounding receptors, and existing/new receptors within Sites A/B/C, in Table 12-15 and Table 12-16 respectively. The tables also show the exceedance over the BS 5228-1 'ABC' method thresholds which thus defines the magnitude of impact, from which the resultant effect is deduced; indicated in the tables as negligible (neg), minor (minor), moderate (mod) or major (major).

12.7.5 Similarly, results for Site B construction are shown in Table 12-17 and Table 12-18 respectively. Results for Site C construction are shown in Table 12-19 and Table 12-20 respectively.

12.7.6 In all these results, the following can be assumed:

- The effects are temporary (non-permanent) and can be considered medium-long term, as the construction periods will last a number of years;
- The effects are direct effects; and
- The resultant effects (negligible / minor / moderate / major) noted, are all adverse effects.

Table 12-15: Site A construction assessment results, for existing NSRs.

NSR	Site A								
	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
1	74.1	9.1	Mod	72.1	7.1	Mod	71.1	6.1	Mod
2	74.5	9.5	Mod	72.5	7.5	Mod	71.5	6.5	Mod
3	61.5	0.0	Neg	59.5	0.0	Neg	58.5	0.0	Neg
4	59.8	0.0	Neg	57.8	0.0	Neg	56.8	0.0	Neg
5	55.8	0.0	Neg	53.8	0.0	Neg	52.8	0.0	Neg
6	57.5	0.0	Neg	55.5	0.0	Neg	54.5	0.0	Neg
7	57.2	0.0	Neg	55.2	0.0	Neg	54.2	0.0	Neg
8	56.7	0.0	Neg	54.7	0.0	Neg	53.7	0.0	Neg
9	60.5	0.0	Neg	58.5	0.0	Neg	57.5	0.0	Neg
10	51.2	0.0	Neg	49.2	0.0	Neg	48.2	0.0	Neg
11	54.8	0.0	Neg	52.8	0.0	Neg	51.8	0.0	Neg
12	55.5	0.0	Neg	53.5	0.0	Neg	52.5	0.0	Neg
13	62.7	0.0	Neg	60.7	0.0	Neg	59.7	0.0	Neg

Site A									
NSR	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
14	68.9	3.9	Minor	66.9	1.9	Minor	65.9	0.9	Neg
15	63.0	0.0	Neg	61.0	0.0	Neg	60.0	0.0	Neg
16	61.1	0.0	Neg	59.1	0.0	Neg	58.1	0.0	Neg
17	56.6	0.0	Neg	54.6	0.0	Neg	53.6	0.0	Neg
18	51.8	0.0	Neg	49.8	0.0	Neg	48.8	0.0	Neg
19	50.8	0.0	Neg	48.8	0.0	Neg	47.8	0.0	Neg
20	59.2	0.0	Neg	57.2	0.0	Neg	56.2	0.0	Neg
21	56.8	0.0	Neg	54.8	0.0	Neg	53.8	0.0	Neg
22	55.4	0.0	Neg	53.4	0.0	Neg	52.4	0.0	Neg
23	55.0	0.0	Neg	53.0	0.0	Neg	52.0	0.0	Neg
24	59.2	0.0	Neg	57.2	0.0	Neg	56.2	0.0	Neg
25	62.5	0.0	Neg	60.5	0.0	Neg	59.5	0.0	Neg
26	71.5	6.5	Mod	69.5	4.5	Minor	68.5	3.5	Minor
27	67.0	2.0	Minor	65.0	0.0	Neg	64.0	0.0	Neg
28	69.0	0.0	Neg	67.0	0.0	Neg	66.0	0.0	Neg
29	64.1	0.0	Neg	62.1	0.0	Neg	61.1	0.0	Neg
30	78.8	13.8	Major	76.8	11.8	Major	75.8	10.8	Major
31	65.9	0.0	Neg	63.9	0.0	Neg	62.9	0.0	Neg
32	78.1	13.1	Major	76.1	11.1	Major	75.1	10.1	Major
33	73.0	8.0	Mod	71.0	6.0	Mod	70.0	5.0	Minor
34	62.3	0.0	Neg	60.3	0.0	Neg	59.3	0.0	Neg

Table 12-16: Site A construction assessment results, for existing Site B and Site C NSRs

Site A									
NSR	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
B1	75.4	10.4	Major	73.4	8.4	Mod	72.4	7.4	Mod
B2	54.4	0.0	Neg	52.4	0.0	Neg	51.4	0.0	Neg
B3	55.0	0.0	Neg	53.0	0.0	Neg	52.0	0.0	Neg
B4	59.8	0.0	Neg	57.8	0.0	Neg	56.8	0.0	Neg
B5	74.4	9.4	Mod	72.4	7.4	Mod	71.4	6.4	Mod
C1	75.2	10.2	Major	73.2	8.2	Mod	72.2	7.2	Mod
C2	59.3	0.0	Neg	57.3	0.0	Neg	56.3	0.0	Neg
C3	56.4	0.0	Neg	54.4	0.0	Neg	53.4	0.0	Neg
C4	67.4	2.4	Minor	65.4	0.4	Neg	64.4	0.0	Neg

Table 12-17: Site B construction assessment results, for existing NSRs.

NSR	Site B								
	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
1	53.7	0.0	Neg	51.7	0.0	Neg	50.7	0.0	Neg
2	66.7	1.7	Minor	64.7	0.0	Neg	63.7	0.0	Neg
3	68.8	3.8	Minor	66.8	1.8	Minor	65.8	0.8	Neg
4	67.1	2.1	Minor	65.1	0.1	Neg	64.1	0.0	Neg
5	63.8	0.0	Neg	61.8	0.0	Neg	60.8	0.0	Neg
6	69.0	4.0	Minor	67.0	2.0	Minor	66.0	1.0	Neg
7	74.1	9.1	Mod	72.1	7.1	Mod	71.1	6.1	Mod
8	67.1	2.1	Minor	65.1	0.1	Neg	64.1	0.0	Neg
9	75.4	10.4	Major	73.4	8.4	Mod	72.4	7.4	Mod
10	74.1	9.1	Mod	72.1	7.1	Mod	71.1	6.1	Mod
11	69.7	4.7	Minor	67.7	2.7	Minor	66.7	1.7	Minor
12	66.6	1.6	Minor	64.6	0.0	Neg	63.6	0.0	Neg
13	76.0	11.0	Major	74.0	9.0	Mod	73.0	8.0	Mod
14	74.8	9.8	Mod	72.8	7.8	Mod	71.8	6.8	Mod
15	59.2	0.0	Neg	57.2	0.0	Neg	56.2	0.0	Neg
16	52.3	0.0	Neg	50.3	0.0	Neg	49.3	0.0	Neg
17	51.7	0.0	Neg	49.7	0.0	Neg	48.7	0.0	Neg
18	46.3	0.0	Neg	44.3	0.0	Neg	43.3	0.0	Neg
19	47.2	0.0	Neg	45.2	0.0	Neg	44.2	0.0	Neg
20	54.7	0.0	Neg	52.7	0.0	Neg	51.7	0.0	Neg
21	52.4	0.0	Neg	50.4	0.0	Neg	49.4	0.0	Neg
22	45.3	0.0	Neg	43.3	0.0	Neg	42.3	0.0	Neg
23	47.1	0.0	Neg	45.1	0.0	Neg	44.1	0.0	Neg
24	43.8	0.0	Neg	41.8	0.0	Neg	40.8	0.0	Neg
25	52.1	0.0	Neg	50.1	0.0	Neg	49.1	0.0	Neg
26	56.7	0.0	Neg	54.7	0.0	Neg	53.7	0.0	Neg
27	52.9	0.0	Neg	50.9	0.0	Neg	49.9	0.0	Neg
28	50.6	0.0	Neg	48.6	0.0	Neg	47.6	0.0	Neg
29	51.5	0.0	Neg	49.5	0.0	Neg	48.5	0.0	Neg
30	44.0	0.0	Neg	42.0	0.0	Neg	41.0	0.0	Neg
31	42.6	0.0	Neg	40.6	0.0	Neg	39.6	0.0	Neg
32	43.5	0.0	Neg	41.5	0.0	Neg	40.5	0.0	Neg
33	69.8	4.8	Minor	67.8	2.8	Minor	66.8	1.8	Minor
34	49.1	0.0	Neg	47.1	0.0	Neg	46.1	0.0	Neg

Table 12-18: Site B construction assessment results, for new Site A and existing Site C NSRs.

NSR	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
C1	60.6	0.0	Neg	58.6	0.0	Neg	57.6	0.0	Neg
C2	59.9	0.0	Neg	57.9	0.0	Neg	56.9	0.0	Neg
C3	47.0	0.0	Neg	45.0	0.0	Neg	44.0	0.0	Neg
C4	51.5	0.0	Neg	49.5	0.0	Neg	48.5	0.0	Neg
N.A1	75.9	10.9	Major	73.9	8.9	Mod	72.9	7.9	Mod
N.A2	57.3	0.0	Neg	55.3	0.0	Neg	54.3	0.0	Neg
N.A3	44.4	0.0	Neg	42.4	0.0	Neg	41.4	0.0	Neg
N.A4	61.0	0.0	Neg	59.0	0.0	Neg	58.0	0.0	Neg

Table 12-19: Site C construction assessment results, for existing NSRs.

NSR	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
1	46.6	0.0	Neg	44.6	0.0	Neg	43.6	0.0	Neg
2	46.2	0.0	Neg	44.2	0.0	Neg	43.2	0.0	Neg
3	40.0	0.0	Neg	38.0	0.0	Neg	37.0	0.0	Neg
4	38.3	0.0	Neg	36.3	0.0	Neg	35.3	0.0	Neg
5	35.8	0.0	Neg	33.8	0.0	Neg	32.8	0.0	Neg
6	37.6	0.0	Neg	35.6	0.0	Neg	34.6	0.0	Neg
7	38.7	0.0	Neg	36.7	0.0	Neg	35.7	0.0	Neg
8	38.4	0.0	Neg	36.4	0.0	Neg	35.4	0.0	Neg
9	43.3	0.0	Neg	41.3	0.0	Neg	40.3	0.0	Neg
10	43.7	0.0	Neg	41.7	0.0	Neg	40.7	0.0	Neg
11	49.4	0.0	Neg	47.4	0.0	Neg	46.4	0.0	Neg
12	57.6	0.0	Neg	55.6	0.0	Neg	54.6	0.0	Neg
13	57.4	0.0	Neg	55.4	0.0	Neg	54.4	0.0	Neg
14	65.1	0.1	Neg	63.1	0.0	Neg	62.1	0.0	Neg
15	74.1	9.1	Mod	72.1	7.1	Mod	71.1	6.1	Mod
16	74.0	9.0	Mod	72.0	7.0	Mod	71.0	6.0	Mod
17	72.4	7.4	Mod	70.4	5.4	Mod	69.4	4.4	Minor
18	63.2	0.0	Neg	61.2	0.0	Neg	60.2	0.0	Neg
19	75.1	10.1	Major	73.1	8.1	Mod	72.1	7.1	Mod
20	75.0	10.0	Mod	73.0	8.0	Mod	72.0	7.0	Mod
21	76.1	11.1	Major	74.1	9.1	Mod	73.1	8.1	Mod
22	67.9	2.9	Minor	65.9	0.9	Neg	64.9	0.0	Neg
23	60.4	0.0	Neg	58.4	0.0	Neg	57.4	0.0	Neg
24	77.3	12.3	Major	75.3	10.3	Major	74.3	9.3	Mod
25	62.1	0.0	Neg	60.1	0.0	Neg	59.1	0.0	Neg
26	77.5	12.5	Major	75.5	10.5	Major	74.5	9.5	Mod
27	55.7	0.0	Neg	53.7	0.0	Neg	52.7	0.0	Neg

NSR	Site C								
	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
28	61.9	0.0	Neg	59.9	0.0	Neg	58.9	0.0	Neg
29	48.1	0.0	Neg	46.1	0.0	Neg	45.1	0.0	Neg
30	48.7	0.0	Neg	46.7	0.0	Neg	45.7	0.0	Neg
31	51.9	0.0	Neg	49.9	0.0	Neg	48.9	0.0	Neg
32	52.7	0.0	Neg	50.7	0.0	Neg	49.7	0.0	Neg
33	68.7	3.7	Minor	66.7	1.7	Minor	65.7	0.7	Neg
34	78.4	13.4	Major	76.4	11.4	Major	75.4	10.4	Major

Table 12-20: Site C construction assessment results, for new Site A and new Site B NSRs.

NSR	Site C								
	Demolition			Piling and Groundworks			Construction		
	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect	Noise Level	Exceed. Over Thresh.	Res. Effect
N.A1	57.9	0.0	Neg	55.9	0.0	Neg	54.9	0.0	Neg
N.A2	45.8	0.0	Neg	43.8	0.0	Neg	42.8	0.0	Neg
N.A3	53.9	0.0	Neg	51.9	0.0	Neg	50.9	0.0	Neg
N.A4	75.6	10.6	Major	73.6	8.6	Mod	72.6	7.6	Mod
N.B1	40.4	0.0	Neg	38.4	0.0	Neg	37.4	0.0	Neg
N.B2	40.0	0.0	Neg	38.0	0.0	Neg	37.0	0.0	Neg
N.B3	58.8	0.0	Neg	56.8	0.0	Neg	55.8	0.0	Neg
N.B4	58.8	0.0	Neg	56.8	0.0	Neg	55.8	0.0	Neg

12.7.7 If left unmitigated, major adverse effects, resulting from $L_{Aeq,10hr}$ noise levels exceeding 75 dBA, are likely to be experienced at a number of NSRs:

- Site A demolition/construction: NSRs 30, 32, B1, C1.
- Site B demolition/construction: NSRs 9, 13, N.A1.
- Site C demolition/construction: NSRs 19, 21, 24, 26, 34, N.A4.

12.7.8 All reasonable steps should be taken to mitigate and minimise the effects through the adoption of Best Practicable Means (BPM). Noise mitigation measures and noise management plans will be put in place to ensure that demolition and construction noise is minimised at all times. Noise mitigation measures representing BPM (as defined in section 72 of CPA) are described in the Mitigation and Monitoring section.

12.7.9 Such mitigation can be expected to ensure that noise levels are kept below 75 dBA, such that the major effects NSRs would be limited to moderate effects. However as the duration is medium-long term (albeit temporary), the moderate adverse residual effects would be considered significant.

Construction Traffic

12.7.10 Construction traffic flows were provided by Stantec – for details of traffic flows used see *ES Volume III: Appendix 12 - 1 Noise and Vibration*. Details of conversions to $L_{A10,18hr}$ levels are also provided. To be conservative, construction traffic flows have been added to all roads being considered.

- 12.7.11 The predicted, unmitigated noise levels ($L_{A10,18hr}$) during the demolition and construction of Site A are presented for existing surrounding receptors, and existing receptors within Sites B/C, in Table 12-21 and Table 12-22 respectively. The tables show the change in level that the additional construction traffic introduces, over the baseline at the start of construction; this change defining the magnitude of impact, from which the resultant effect is deduced. These resultant effects are included in the tables.
- 12.7.12 Similarly, results for Site B construction are shown in Table 12-23 and Table 12-24 respectively. Results for Site C construction are shown in Table 12-25 and Table 12-26 respectively.

Table 12-21: Site A construction traffic assessment, existing NSRs

NSR ID	2021 Baseline ($L_{A10,18hr}$ dB)	Plus Site A Constr. Traffic ($L_{A10,18hr}$ dB)	Change in level (dB)	Resultant Effect
1	64.8	65.4	0.6	Negligible (Adverse)
2	62.7	63.3	0.6	Negligible (Adverse)
3	58.0	58.6	0.6	Negligible (Adverse)
4	58.5	59.4	0.9	Minor (Adverse)
5	61.7	63.4	1.7	Minor (Adverse)
6	62.5	64.0	1.6	Minor (Adverse)
7	62.2	63.9	1.8	Minor (Adverse)
8	58.7	59.5	0.8	Negligible (Adverse)
9	61.1	62.5	1.4	Minor (Adverse)
10	61.8	63.6	1.8	Minor (Adverse)
11	59.6	60.6	0.9	Minor (Adverse)
12	57.9	58.2	0.3	Negligible (Adverse)
13	60.7	61.4	0.7	Negligible (Adverse)
14	60.9	61.4	0.5	Negligible (Adverse)
15	59.3	59.6	0.3	Negligible (Adverse)
16	58.9	59.2	0.3	Negligible (Adverse)
17	59.7	60.2	0.4	Negligible (Adverse)
18	60.2	60.5	0.3	Negligible (Adverse)
19	60.9	61.4	0.5	Negligible (Adverse)
20	59.3	59.4	0.1	Negligible (Adverse)
21	61.8	62.2	0.3	Negligible (Adverse)
22	67.2	67.5	0.3	Negligible (Adverse)
23	73.1	73.2	0.1	Negligible (Adverse)
24	61.3	61.4	0.1	Negligible (Adverse)
25	72.0	72.1	0.1	Negligible (Adverse)
26	62.2	62.2	0.0	No Change
27	69.8	69.8	0.0	No Change
28	70.4	70.4	0.0	No Change
29	69.8	70.0	0.2	Negligible (Adverse)
30	60.5	60.2	0.0	No Change
31	72.0	72.1	0.1	Negligible (Adverse)
32	59.1	59.4	0.3	Negligible (Adverse)

NSR ID	2021 Baseline (L _{A10,18hr} dB)	Plus Site A Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
33	60.0	60.3	0.3	Negligible (Adverse)
34	57.3	57.4	0.1	Negligible (Adverse)

Table 12-22: Site A construction traffic assessment, NSRs on Sites A/B/C

NSR ID	2021 Baseline (L _{A10,18hr} dB)	Plus Site A Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
B1	60.2	61.1	0.9	Minor (Adverse)
B2	60.1	61.2	1.2	Minor (Adverse)
B3	61.3	63.0	1.7	Minor (Adverse)
B4	60.8	61.5	0.7	Negligible (Adverse)
B5	61.9	62.5	0.5	Negligible (Adverse)
C1	62.7	62.7	0.0	No Change
C2	59.2	59.6	0.4	Negligible (Adverse)
C3	60.7	60.9	0.2	Negligible (Adverse)
C4	60.6	60.7	0.1	Negligible (Adverse)

Table 12-23: Site B construction traffic assessment, existing NSRs

NSR ID	2026 with Site A complete (L _{A10,18hr} dB)	Plus Site B Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
1	65.0	66.1	1.2	Minor (Adverse)
2	62.7	64.2	1.5	Minor (Adverse)
3	58.1	58.9	0.8	Negligible (Adverse)
4	58.6	59.5	0.9	Minor (Adverse)
5	62.1	63.6	1.6	Minor (Adverse)
6	62.7	64.3	1.6	Minor (Adverse)
7	62.6	63.6	1.0	Minor (Adverse)
8	58.8	59.5	0.7	Negligible (Adverse)
9	61.3	61.8	0.5	Negligible (Adverse)
10	62.3	63.2	0.9	Minor (Adverse)
11	59.7	60.4	0.6	Negligible (Adverse)
12	57.9	58.1	0.2	Negligible (Adverse)
13	60.7	60.9	0.2	Negligible (Adverse)
14	60.9	61.1	0.2	Negligible (Adverse)
15	59.3	59.7	0.4	Negligible (Adverse)
16	59.0	59.3	0.3	Negligible (Adverse)
17	59.8	60.3	0.4	Negligible (Adverse)
18	60.3	60.5	0.2	Negligible (Adverse)
19	61.0	61.5	0.5	Negligible (Adverse)
20	59.4	59.5	0.1	Negligible (Adverse)
21	61.9	62.2	0.2	Negligible (Adverse)

NSR ID	2026 with Site A complete (L _{A10,18hr} dB)	Plus Site B Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
22	67.4	67.5	0.1	Negligible (Adverse)
23	73.2	73.2	0.0	No Change
24	61.3	61.4	0.1	Negligible (Adverse)
25	72.1	72.1	0.0	No Change
26	62.2	62.3	0.1	Negligible (Adverse)
27	69.9	70.0	0.1	Negligible (Adverse)
28	70.6	70.7	0.1	Negligible (Adverse)
29	69.9	70.0	0.1	Negligible (Adverse)
30	58.0	58.0	0.0	No Change
31	72.1	72.1	0.0	No Change
32	58.8	58.8	0.0	No Change
33	60.1	60.5	0.4	Negligible (Adverse)
34	57.3	57.3	0.0	No Change

Table 12-24: Site B construction traffic assessment, NSRs on Sites A/B/C

NSR ID	2026 with Site A complete (L _{A10,18hr} dB)	Plus Site B Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
C1	62.8	63.3	0.5	Negligible (Adverse)
C2	59.3	59.7	0.4	Negligible (Adverse)
C3	60.8	61.0	0.2	Negligible (Adverse)
C4	60.6	60.7	0.1	Negligible (Adverse)
N.A1	60.5	60.8	0.3	Negligible (Adverse)
N.A2	63.0	64.6	1.6	Minor (Adverse)
N.A3	57.3	57.4	0.1	Negligible (Adverse)
N.A4	61.3	61.8	0.5	Negligible (Adverse)

Table 12-25: Site C construction traffic assessment, existing NSRs

NSR ID	2032 with Site A + B complete (L _{A10,18hr} dB)	Plus Site C Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
1	65.1	66.2	1.2	Minor (Adverse)
2	62.9	64.3	1.4	Minor (Adverse)
3	58.4	59.1	0.7	Negligible (Adverse)
4	58.9	59.8	0.9	Minor (Adverse)
5	62.3	63.8	1.6	Minor (Adverse)
6	62.9	64.5	1.6	Minor (Adverse)
7	62.8	64.5	1.7	Minor (Adverse)
8	58.9	59.7	0.8	Negligible (Adverse)
9	61.4	62.9	1.5	Minor (Adverse)

NSR ID	2032 with Site A + B complete (L _{A10,18hr} dB)	Plus Site C Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
10	62.3	63.9	1.7	Minor (Adverse)
11	59.7	60.7	0.9	Minor (Adverse)
12	57.9	58.2	0.3	Negligible (Adverse)
13	60.6	61.3	0.7	Negligible (Adverse)
14	60.7	61.3	0.6	Negligible (Adverse)
15	59.4	60.0	0.5	Negligible (Adverse)
16	59.0	59.7	0.7	Negligible (Adverse)
17	60.0	60.4	0.4	Negligible (Adverse)
18	60.3	60.6	0.3	Negligible (Adverse)
19	61.1	61.6	0.5	Negligible (Adverse)
20	59.4	59.7	0.3	Negligible (Adverse)
21	62.1	62.2	0.1	Negligible (Adverse)
22	67.5	67.6	0.1	Negligible (Adverse)
23	73.3	73.4	0.1	Negligible (Adverse)
24	61.3	61.1	0.0	No Change
25	72.2	72.3	0.1	Negligible (Adverse)
26	62.2	61.8	0.0	No Change
27	70.0	70.2	0.2	Negligible (Adverse)
28	70.7	70.8	0.1	Negligible (Adverse)
29	70.0	70.2	0.2	Negligible (Adverse)
30	58.0	58.1	0.1	Negligible (Adverse)
31	72.2	72.3	0.1	Negligible (Adverse)
32	58.9	58.9	0.0	No Change
33	60.1	60.6	0.5	Negligible (Adverse)
34	57.3	57.9	0.5	Negligible (Adverse)

Table 12-26: Site C construction traffic assessment, NSRs on Sites A/B/C

NSR ID	2032 with Site A + B complete (L _{A10,18hr} dB)	Plus Site C Constr. Traffic (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
N.A1	60.9	61.4	0.5	Negligible (Adverse)
N.A2	63.1	64.7	1.6	Minor (Adverse)
N.A3	57.4	57.4	0.0	No Change
N.A4	61.3	61.7	0.4	Negligible (Adverse)
N.B1	61.4	63.1	1.7	Minor (Adverse)
N.B2	60.2	61.5	1.4	Minor (Adverse)
N.B3	60.7	61.3	0.6	Negligible (Adverse)
N.B4	60.1	60.8	0.7	Negligible (Adverse)

Construction Vibration

- 12.7.13 It is understood that the piling methodology for the Proposed Scheme will predominantly be continuous flight auger piling, as is common for construction sites in the London area.
- 12.7.14 BS 5228-2 presents over 35 cases of different types of piling and PPV measurements which can give a reasonable overview of what upper limit PPV values can be expected. See *ES Volume III: Appendix 12 - 1 Noise and Vibration* for details. PPV values of no more than 1.0 mm s⁻¹ can be expected when piling occurs at 20 m or more, and when distances are between 5-20 m PPV values of 1.0- 2.0 mm s⁻¹ could be expected. PPV values of no more than 5 mm s⁻¹ are unlikely even of distances of <5 m.
- 12.7.15 We first consider human response to the vibration. Of the identified noise sensitive receptors, most are >10 m from the foundations of the Proposed Scheme buildings (as the sites are generally at least about 10 m from existing buildings). As such, the PPV values can generally be expected to be <2 mm s⁻¹ (with most likely <0.3 mm s⁻¹) resulting in a magnitude of impact generally being 'very low' or 'low', with only the closest piling at the building boundaries possibly falling into the 'medium' magnitude of impact band.
- 12.7.16 The most vulnerable receptors are NSRs 30 and 32, which will lie within several meters of the SW Site A construction. In these cases, PPV values between 2 and 5 mm s⁻¹ may be possible. However, this still falls in the 'medium' magnitude of impact (from Table 12-2).
- 12.7.17 With respect to human response to vibration, receptors can be expected to have magnitude of impacts between 'very low' and 'medium', leading to the resultant effects of between negligible to moderate. As the individual vibration-inducing activities (i.e. drilling for a pile) give rise to direct adverse effects, but all temporary and short term, it is concluded that the effects are not significant.
- 12.7.18 With respect to building response to vibration, the highest expected PPV of 5 mm s⁻¹ implies a very low magnitude of impact (see Table 12-3), and thus a **negligible** resultant effect; it is concluded that the effects are not significant.

Effects for completed development.

Operational Traffic

Table 12-27 shows the results for the 2021 Site A completion operational traffic assessment. For the existing NSRs.

- 12.7.19 Table 12-28 shows the results for existing NSRs within the Application Site. All effects are considered 'direct' and permanent.

Table 12-27: 2026 Site A completion operational traffic assessment, existing NSRs

NSR ID	2026 Baseline (L _{A10,18hr} dB)	2026 Site A Completed (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
1	65.1	65.0	-0.1	Negligible (Beneficial)
2	63.0	62.7	-0.3	Negligible (Beneficial)
3	58.1	58.1	0.0	No Change
4	58.7	58.6	-0.1	Negligible (Beneficial)
5	62.1	62.1	0.0	No Change
6	62.8	62.7	-0.1	Negligible (Beneficial)
7	62.6	62.6	0.0	No Change
8	58.9	58.8	-0.1	Negligible (Beneficial)
9	61.3	61.3	0.0	No Change
10	62.3	62.3	0.0	No Change
11	59.7	59.7	0.0	No Change
12	57.9	57.9	0.0	No Change
13	60.8	60.7	-0.1	Negligible (Beneficial)

NSR ID	2026 Baseline (L _{A10,18hr} dB)	2026 Site A Completed (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
14	61.0	60.9	-0.1	Negligible (Beneficial)
15	59.4	59.3	-0.1	Negligible (Beneficial)
16	59.0	59.0	0.0	No Change
17	59.8	59.8	0.0	No Change
18	60.3	60.3	0.0	No Change
19	61.0	61.0	0.0	No Change
20	59.3	59.4	0.1	Negligible (Adverse)
21	61.9	61.9	0.0	No Change
22	67.4	67.4	0.0	No Change
23	73.2	73.2	0.0	No Change
24	61.3	61.3	0.0	No Change
25	72.1	72.1	0.0	No Change
26	62.2	62.2	0.0	No Change
27	69.9	69.9	0.0	No Change
28	70.6	70.6	0.0	No Change
29	69.9	69.9	0.0	No Change
30	60.5	58.0	-2.5	Minor (Beneficial)
31	72.1	72.1	0.0	No Change
32	59.2	58.8	-0.4	Negligible (Beneficial)
33	60.1	60.1	0.0	No Change
34	57.3	57.3	0.0	No Change

Table 12-28: 2026 Site A completion operational traffic assessment, existing NSRs on Sites B/C

NSR ID	2026 Baseline (L _{A10,18hr} dB)	2026 Site A Completed (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
B1	60.3	60.4	0.1	Negligible (Adverse)
B2	60.3	60.2	-0.1	Negligible (Beneficial)
B3	61.6	61.6	0.0	No Change
B4	60.8	60.8	0.0	No Change
B5	62.2	62.1	-0.1	Negligible (Beneficial)
C1	62.8	62.8	0.0	No Change
C2	59.3	59.3	0.0	No Change
C3	60.8	60.8	0.0	No Change
C4	60.7	60.6	-0.1	Negligible (Beneficial)

12.7.20 Table 12-29 shows the results for the 2036 Sites A, B and C full completion of the Proposed Scheme operational traffic assessment, for the existing NSRs. All effects are considered 'direct' and permanent.

Table 12-29: 2036 Site A+B+C completion operational traffic assessment, existing NSRs

NSR ID	2036 Baseline (L _{A10,18hr} dB)	2036 Site A+B+C Completed (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
1	65.4	65.2	-0.2	Negligible (Beneficial)

NSR ID	2036 Baseline (L _{A10,18hr} dB)	2036 Site A+B+C Completed (L _{A10,18hr} dB)	Change in level (dB)	Resultant Effect
2	63.4	63.1	-0.3	Negligible (Beneficial)
3	58.3	58.5	0.2	Negligible (Adverse)
4	58.9	59.0	0.1	Negligible (Adverse)
5	62.5	62.4	-0.1	Negligible (Beneficial)
6	63.1	63.0	-0.1	Negligible (Beneficial)
7	62.9	62.9	0.0	No Change
8	59.1	59.0	-0.1	Negligible (Beneficial)
9	61.6	61.6	0.0	No Change
10	62.6	62.4	-0.2	Negligible (Beneficial)
11	59.8	59.7	-0.1	Negligible (Beneficial)
12	58.0	57.9	-0.1	Negligible (Beneficial)
13	60.9	60.6	-0.3	Negligible (Beneficial)
14	61.0	60.7	-0.3	Negligible (Beneficial)
15	59.5	59.4	-0.1	Negligible (Beneficial)
16	59.1	59.1	0.0	No Change
17	60.1	60.1	0.0	No Change
18	60.4	60.4	0.0	No Change
19	61.3	61.1	-0.2	Negligible (Beneficial)
20	59.4	59.6	0.2	Negligible (Adverse)
21	62.2	61.9	-0.2	Negligible (Beneficial)
22	67.6	67.6	0.0	No Change
23	73.5	73.4	-0.1	Negligible (Beneficial)
24	61.4	61.9	0.5	Negligible (Adverse)
25	72.4	72.3	-0.1	Negligible (Beneficial)
26	62.3	62.7	0.4	Negligible (Adverse)
27	70.2	70.1	-0.1	Negligible (Beneficial)
28	70.9	70.8	-0.1	Negligible (Beneficial)
29	70.2	70.1	-0.1	Negligible (Beneficial)
30	60.7	58.0	-2.7	Minor (Beneficial)
31	72.4	72.3	-0.1	Negligible (Beneficial)
32	59.3	58.9	-0.4	Negligible (Beneficial)
33	60.2	60.1	-0.1	Negligible (Beneficial)
34	57.5	56.6	-0.9	Negligible (Beneficial)

Fixed Plant

12.7.21 Fixed plant noise limits are anticipated to be subject to a planning condition that reflects the guidance provide in the Westminster Draft Noise Technical Guidance Note (2020). These are reproduced from the guidance note in Figure 12-4.

- 12.7.22 As plant noise limits will thus be at least 5 dB below background for non-tonal sources, and at least 10 dB below minimum background for tonal sources, this suggests that the plant noise rating (as per BS 4142) will likely be at least 5 dB below a 'representative background sound' level.
- 12.7.23 Table 12-6 noted the magnitude of impact of plant noise in relation to BS 4142 plant noise ratings, and if 5 dB below background, a 'very low' magnitude of impact resulted, which gives a 'negligible' resultant effect (permanent, long term, direct effect). This is considered not significant.

Figure 12-4: WCC guidance for plant noise limits

Existing External Ambient Noise Level	Tonal or Intermittent Noise/ Noise Source	Sound Emission Level that should not be Exceeded at the nearest Noise Sensitive Receptor ³
Exceed WHO Guideline levels. L _{Aeq} 55 dB over periods of daytime (07.00-23.00hrs) and L _{Aeq} 45 dB at night-time (23.00-07.00hrs).	Does not contain tones or intermittent noise sufficient to attract attention.	10 dB below the minimum external background noise level
	Contains tones or be intermittent noise sufficient to attract attention.	15 dB below the minimum external background noise level.
Does not exceed WHO Guideline levels. L _{Aeq} 55 dB over periods of daytime (07.00-23.00hrs) and L _{Aeq} 45 dB night-time (23.00-07.00hrs).	Noise emitted from emergency plant or an emergency life supporting generators. ⁴	10 dB above the lowest background noise level within a 24-hour period.
	Does not contain tones or intermittent noise sufficient to attract attention.	5 dB below the minimum external background noise level.
	Contains tones or be intermittent noise sufficient to attract attention.	10 dB below the minimum external background noise level.
Below 30 dB L _{A90,15min} at the nearest noise sensitive receptors Both daytime (07.00-23.00hrs) and night-time (23.00-07.00hrs).	Noise emitted from emergency plant or an emergency life supporting generators. ⁵	10 dB above the lowest background noise level within a 24-hour period.
	Noise contains and/or does not contain tones or intermittent noise	Site specific standards that avoid noise disturbance to nearest noise sensitive receptors may be considered.

Church Street Market

- 12.7.24 The operation of Church Street Market contributes a noise source along Church Street, when in session. Noise levels in and around the market operations are typically 60-65 dBA (based on the noise survey data, particularly those in Table 12-11).
- 12.7.25 While the market landscape will be renovated, we are informed by the design team that the overall market activities are expected to remain largely unchanged. As such, the noise produced can be expected to be essentially unchanged.
- 12.7.26 If however the re-vamped market attracted more traders/customers, some increase in activity noise might be expected. To be conservative, we might consider a worst case to be a doubling of people and/or vehicles/equipment, which would be expected to raise the noise level by 3 dB. Table 12-7 indicates that a 3 dB increase in outdoor operational noise would be considered a 'low' magnitude of impact and thus a 'minor' resultant effect (permanent, long term, direct effect). This is considered not significant.

12.8 Further mitigation and monitoring

Demolition and Construction

- 12.8.1 The assessment of potential construction noise and vibration does not, in general, include prescriptive measures for mitigating noise, as the method and programme of construction at the current design stage is not sufficiently developed.
- 12.8.2 The local authority should expect that, in accordance with Section 60 of COPA, best practicable means are employed to minimise noise. The means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery; and the design, construction and maintenance of buildings and acoustic structures.
- 12.8.3 Measures taken to mitigate potential noise and vibration effects on nearby noise sensitive receptors will be documented in a Construction Environmental Management Plan (CEMP).
- 12.8.4 The mitigation measures will be reviewed at the detailed demolition and construction planning stage, to ensure that the mitigation measures and management controls and/or procedures adopted as part of the CEMP are sufficient to meet the commitments made throughout the assessments.
- 12.8.5 BS 5228-1 provides general guidance on mitigating noise from construction sites, which are to be included in the CEMP. Mitigation measures will include (but not be limited to):
- Appropriate hours of work will be defined and adhered to;
 - Adoption of appropriate noise control targets and monitoring where required;
 - Site layout will be planned – where possible machinery will be located away from sensitive receptors;
 - Use of hoarding. Erecting hoarding around the perimeter of the active demolition or construction sites will assist in the screening of low-level sources;
 - Use of enclosures around equipment as appropriate;
 - Hydraulic construction to be used in preference to impact techniques where practical;
 - Use of low impact techniques, such as demolition munchers and bored or hydraulically jacked piling rigs;
 - All plant and equipment to be used for the works will be modern, quiet and properly maintained, silenced where appropriate, operated to prevent excessive noise, and switched off when not in use and where practicable. All equipment will comply with the EC Directives and UK Regulations set out in BS 5228;
 - Plant will be certified to meet relevant current legislation and standards;
 - All trade contractors will be required to demonstrate familiarisation with current noise legislation and standards, such as BS 5228 which will form a prerequisite of their appointment;
 - Loading and unloading of vehicles, dismantling of equipment (such as scaffolding), or moving equipment or materials around site will be conducted in such a manner as to minimise noise generation and, where practical, will be conducted away from noise sensitive areas;
 - Careful handling of materials and waste, such as lowering rather than dropping items;
 - Avoidance of unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) by effective site management;
 - Permission for deviation from approved method statements, only with prior approval from the Principal Contractor and other relevant parties. This will be facilitated by formal review before any deviation is undertaken;
 - Adoption of appropriate noise control targets and monitoring where required; and
 - Complaints about noise, or incidences where target levels are exceeded, will be reported to the Principal Contractor and immediately investigated.

- 12.8.6 With the various mitigation measures, the construction and demolition noise levels are expected to be controlled to below 75 dB ($L_{Aeq,10h}$) at all sensitive receptors and as such represent no more than a medium magnitude of impact, and thus moderate adverse residual effect (to high sensitivity receptors). While these activities are temporary, they are medium or long term, and thus the environmental effect is considered of **moderate adverse** significance..
- 12.8.7 Vibration mitigation measures will include (but not be limited to):
- Work will be undertaken with due regard to guidance provided in BS 5228-2;
 - Continuous flight auger piling will be used in preference to impact techniques where practical;
 - Times of vibration inducing activity (e.g. piling) is managed;
 - A 'Piling Method Statement' will be provided and agreed prior to the commencement. The statement will include any agreed vibration and noise monitoring and action levels;
 - Local residents will be kept informed;
 - Complaints about vibration will be reported to the Principal Contractor and immediately investigated.
- 12.8.8 The vibration-inducing activities of demolition and construction represent a **negligible to minor adverse** residual effect for the majority of receptors and piling locations away from the site boundaries, and thus considered not significant.
- 12.8.9 Where distances from piling locations are less than 20m (and particularly <5 m), a moderate adverse residual effect could result. However, the duration of these activities (i.e. the closest piles) giving rise to these effects are short term in nature (i.e. hours/days). As such, the effects are considered not significant.
- 12.8.10 Mitigation measures applied to construction traffic will include (but not be limited to):
- Vehicles employed for activity related to the construction works will, where reasonably practicable, be fitted with exhaust silencers and will be maintained in good working order and operated in a manner such that noise emissions are minimised as far as is reasonable possible; and
 - Time slots will be allocated for deliveries to ensure that convoys of vehicles do not arrive simultaneously, and avoid unnecessary idling on site;
 - All vehicles will switch off engines – no idling vehicles;
 - Movement of construction traffic around site will be minimised; and
 - Appropriate speed limit around site will be enforced.
- 12.8.11 The construction traffic noise represents no more than a **negligible** effect.

Completed Development

- 12.8.12 The changes in operational traffic associated with the Proposed Scheme give rise to residual effects ranging between **minor beneficial** and **negligible** adverse. The long term environmental impact is considered not significant. Further mitigation is not practical, nor required.
- 12.8.13 The noise emission from fixed plant associated with the Proposed Scheme represents residual effects of **negligible** adverse. The long term environmental impact is considered not significant. Further mitigation is not required.
- 12.8.14 The noise emission from the renovated market along Church Street was generally expected to remain unchanged, although to be conservative a potential increase in usage was considered, resulting in a worst case **minor adverse** effect. The long term environmental effect is considered not significant. Further mitigation is likely not required.

12.9 Residual effects and conclusion

Table 12-30: Noise and Vibration Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Demolition and construction noise	High	Temporary, medium-long term	Very Low to High	Site management measures set out in BS5228-1 and CEMP, and Code of Construction Practice	Negligible (adverse) to Major (adverse)	Monitoring noise and reacting to real time issues and modifying activities/mitigation	Negligible (adverse) to Moderate (adverse)
Demolition and construction vibration (humans)	High	Temporary, short term	Very Low to Medium	Site management measures set out in BS5228-2 and CEMP, and Code of Construction Practice	Negligible (adverse) to Moderate (adverse)	Monitoring vibration when piling is close to existing receptor buildings; informing residents when work will happen	Negligible (adverse) to Moderate (adverse)
Demolition and construction vibration (buildings)	High	Temporary, short term	Very Low	Site management measures set out in BS5228-2 and CEMP, and Code of Construction Practice	Negligible (adverse)	Monitoring vibration when piling is close to existing receptor buildings; informing residents when work will happen	Negligible (adverse)
Demolition and construction traffic	High	Temporary, medium-long term	No Change to Low	Site management measures set out in BS5228-2 and CEMP, and Code of Construction Practice	No change to Minor (adverse)	Routing of traffic, traffic management	No change to Minor (adverse)
Completed Development							
Effect of operational traffic changes due to Site A completion (2026)	High	Permanent	Very Low (beneficial) to Very Low (adverse)	None	Negligible (beneficial) to Negligible (adverse)	Not applicable	Negligible (beneficial) to Negligible (adverse)
Effect of operational traffic changes on completion of whole site (2036)	High	Permanent	Low (beneficial) to Very Low (adverse)	None	Minor (beneficial) to Negligible (adverse)	Not applicable	Minor (beneficial) to Negligible (adverse)
Effect of fixed plant and machinery	High	Permanent	Very Low (adverse)	Setting plant noise planning conditions	Negligible (adverse)	Not applicable	Negligible (adverse)
Effect of Church Street Market (potential increased usage)	High	Permanent	Very Low (adverse) to Low (adverse)	None	Negligible (adverse) to Minor (adverse)	Not applicable	Negligible (adverse) to Minor (adverse)

12.10 Cumulative effects assessment

- 12.10.1 This section of the chapter assesses the potential effects of the Proposed Scheme in combination with the potential effects of other development schemes (referred to as 'cumulative developments') within the surrounding area, as listed within *Chapter 7: EIA Methodology* of this ES.

Cumulative effects during demolition and construction

- 12.10.2 The construction noise assessments have been undertaken for the Proposed Scheme only. The only other cumulative schemes that may feasibly add to the Proposed Scheme construction noise impacts, are likely the two nearest schemes; Luton Street/Capland Street/Bedlow Close site to the north, and Paddington Green Police Station (4 Harrow Road) site to the south. However, these sites are about 150m away from the Proposed Scheme (and in opposite directions). As such the noise contribution at receptors surrounding the Proposed Scheme will typically be not significant in comparison to the Proposed Scheme construction noise. At receptors mid-way between the schemes, then the contributions may be nearer equal, however the absolute levels will have fallen significantly due to distance. In conclusion, we assess that the cumulative schemes will not affect the outcomes of this assessment.

Cumulative effects for completed development

- 12.10.3 The traffic noise assessments isolated the effects of Site A completion, and Sites A, B and C completed, compared to the do nothing future baselines. Although not included here, for brevity, if assessing the cumulative growth plus the Proposed Scheme, the residual cumulative effects are found to be between minor (beneficial) to negligible (adverse). As such, the cumulative traffic noise changes are found to be not significant.
- 12.10.4 Fixed plant noise emissions for the cumulative developments will also be subject to WCC plant noise planning conditions, as with the Proposed Scheme. Furthermore, the two nearest cumulative developments are about 150 m from the Proposed Scheme buildings (and in opposite directions). As plant noise limits are generally 5-15 dB below background, depending on the local ambient noise level and tonality of the plant sources, then even a doubling of plant noise (i.e. 3 dB increase) by additional contributions of surrounding schemes would still lead to the total plant noise being below background. This would still represent a negligible adverse residual effect; and thus not significant.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 13: Socio-Economics

Westminster City Council

November 2021

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13. Socio-economics

13.1 Introduction

- 13.1.1 This chapter of the Environmental Statement (ES) reports the findings of an assessment of the likely significant effects on socio-economics as a result of Proposed Scheme.
- 13.1.2 The National Planning Policy Framework (NPPF) defines sustainable development as having not just an environmental role, but an economic and social role. Development therefore needs to consider the impacts on the community and local economy. The Socio-economics chapter of the ES will therefore assess the impact of the Proposed Scheme on the baseline socio-economic conditions.
- 13.1.3 To demonstrate the likely socio-economic impacts of the Proposed Scheme, assumptions have been made regarding the residential tenure mix for the Proposed Scheme, specifically for Site B and Site C. The socio-economic assessment has therefore, where appropriate, applied the Illustrative Masterplan for the purposes of this assessment. The final residential tenure mix for these Sites, commercial floorspace uses, open space and play space areas will be designed at the Reserved Matters stage.

13.2 Legislation, Policy and Guidance

- 13.2.1 This assessment has been undertaken taking into account relevant legislation and guidance set out in national, regional and local planning policy.

Planning Policy

National Planning Policy Framework (2021)

- 13.2.2 The revised National Planning Policy Framework (NPPF)¹ was published in July 2021 (with minor revisions in July 2018, and February and June 2019) and sets out the Government's economic, social and environmental planning policies for England into a single document and describes how it expects these to be applied. The revised Framework replaces the first NPPF published in March 2012.
- 13.2.3 The key themes relating to economic development place an emphasis on achieving sustainable development and economic growth as a continuing priority. More widely, in order to achieve sustainable development, local authorities need to support the Government's key objectives to: ensure that a sufficient number and range of homes can be provided to meet the needs of present and future generations, significantly boosting the supply of homes; and support strong, vibrant and healthy communities by fostering well-designed, beautiful and safe places, with accessible local services that reflect current and future needs and support communities' well-being.
- 13.2.4 Chapter 2: 'Achieving Sustainable Development' outlines the NPPF's vision of sustainable development, which the Government states should be seen as a common theme running through plan-making and decision-taking. The NPPF outlines that there are three dimensions to achieving sustainable development: economic, social, and environmental. To address the economic aspects of development, there is an emphasis on building a strong, responsive and flexible economy by ensuring sufficient supply of land is available to support growth, innovation and improved productivity. For the social dimension, importance is placed on encouraging strong, vibrant and healthy communities by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' well-being. With regard to environmental sustainability, priority is given to protecting and enhancing the natural, built and historic environment.
- 13.2.5 Paragraph 9 of the NPPF states that in guiding development towards sustainable growth, planning policies and decisions should "*take local circumstances into account, to reflect the character, needs and opportunities of each area.*"
- 13.2.6 Chapter 5: 'Delivering a sufficient supply of homes' outlines the key role that planning policy has in ensuring that suitable housing land comes forward and that the needs of groups with specific housing

¹ Ministry of Housing, Communities and Local Government, 2021; National Planning Policy Framework.

requirements are addressed, including “those who require affordable housing, families with children, older people, students, people with disabilities, service families, travellers, people who rent their homes and people wishing to commission or build their own homes” (para. 62). Where major housing development is proposed, local planning authorities should expect at least 10% of homes to be available for affordable home ownership.

13.2.7 Chapter 6: ‘Building a Strong Competitive Economy’ identifies that with respect to economic development, conditions in which businesses can invest, expand and adapt should be created to support economic growth and increase productivity. Planning policies should ensure that they:

- Clearly set out an economic vision and strategy which positively and proactively encourages sustainable economic growth, having regard to Local Industrial Strategies and local policies for economic development and regeneration;
- Identify strategic sites or set criteria for sites which match the strategy to attract inward investment and meet anticipated needs;
- Address barriers to investment including “inadequate infrastructure, services or housing, or a poor environment” (para. 82); and
- “Enable a rapid response to changes in economic circumstances” by flexibly accommodating needs not anticipated (para. 82).

13.2.8 Chapter 7: ‘Ensuring the vitality of town centres’ promotes town centre diversification and emphasises the important role of residential development and its potential in encouraging the growth of town centres alongside management and adaptation of town centres.

13.2.9 Chapter 8: ‘Promoting healthy and safe communities’ outlines the key role that planning policy has in ensuring the health and wellbeing of communities through considerations such as the availability of school places, public safety and security, and the promotion of social interaction and community cohesion. The NPPF sets out that local authorities should:

- Improve opportunities for social interaction through mixed-use developments and strong neighbourhood centres (para. 92);
- Deliver high quality public spaces which enable community cohesion (para. 92);
- Provide social, recreational, and cultural facilities and services the community needs by considering the location of housing and economic uses (para.93); and
- Ensure there is sufficient choice of school places available to meet the needs of existing and new communities (para. 95).

National Planning Practice Guidance (2019)

13.2.10 The Government’s national Planning Practice Guidance (PPG)² is a web-based resource introduced in 2014 in support of the NPPF. This was accompanied by a Written Ministerial Statement which includes a list of the previous planning practice guidance documents cancelled when the website was launched.

13.2.11 The purpose of this guidance is to give simplicity and clarity to the planning system. The contents of the guidance and the subsequent update are not materially relevant to this assessment of socio-economic effects. The PPG is continually updated and informs councils on the appropriate way to access their housing and economic development needs.

The London Plan

13.2.12 The latest London Plan was published in March 2021³. It provides the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The London Plan is legally part of each of London’s Local Planning Authorities’ Development Plan and must be taken into account when planning decisions are taken in any part of Greater London.

² Ministry of Housing, Communities and Local Government, 2018; Planning Practice Guidance.

³ Greater London Authority, 2021; The London Plan.

- 13.2.13 The London Plan sets out the Mayor's vision for the sustainable development of London over the period covered by the plan: *"My vision has always been for a city with an economy that supports more and better paid jobs – spread across the capital. A city where people can spend less time commuting because we have so many thriving parts of London, with good affordable housing, combined with exciting, cutting-edge career opportunities. And a city where access to great culture is built into the fabric of every part of London, with our rich heritage and cultural offer supporting our growing world-class creative industries"*.
- 13.2.14 The London Plan deals with matters of strategic importance to Greater London, taking account of the principal purposes of the Greater London Authority which are:
- promoting economic development and wealth creation in Greater London;
 - promoting social development in Greater London; and
 - promoting the importance of the environment in Greater London.
- 13.2.15 In developing the London Plan, in accordance with the GLA Act 1999, the Mayor has had regard to:
- the principle that there should be equality of opportunity for all people;
 - reducing health inequality and promoting Londoners' health;
 - achieving sustainable development in the United Kingdom;
 - climate change and the consequences of climate change;
 - the desirability of promoting and encouraging the use of the Thames, particularly for passenger and freight transportation; and
 - the resources available to implement the Mayor's strategies.
- 13.2.16 Policies from the London Plan of relevance to the Proposed Scheme are set out below:
- **'GG1 Building strong and inclusive communities'** sets out the principles of delivering strong and inclusive communities which build upon London's tradition of openness, diversity and equality. This includes the provision of good quality community spaces, services, amenities and infrastructure that accommodate, encourage and strengthen communities, increasing active participation and social integration, and addressing social isolation.
 - **'GG2 Making the best use of land'** promotes the creation of successful sustainable mixed-use places that make the best use of land, including the enabling of development on brownfield land, particularly in Opportunity Areas and on surplus public sector land.
 - **'GG3 Creating a healthy city'** seeks to improve Londoners' health and reduce health inequalities through encouraging more active and healthy lives as well as ensuring that there is adequate provision of health and social care infrastructure to support London's changing and growing population.
 - **'GG4 Delivering the homes Londoners need'** seeks to deliver more homes, particularly affordable homes, to create a housing market that works better for all Londoners.
 - **'GG5 Growing a good economy'** seeks to conserve and enhance London's global economic competitiveness and ensure that economic success is shared amongst all Londoners. This includes planning for sufficient employment and industrial space in the right locations to support economic development and regeneration and ensuring that sufficient high-quality and affordable housing, as well as physical and social infrastructure is provided to support London's growth.
 - **'SD1 Opportunity Areas'** seeks to ensure that Opportunity Areas fully realise their growth and regeneration potential. This includes bringing forward a range of investments and interventions needed to deliver the vision and ambition for the area. Within the London Plan, the Olympic Legacy Opportunity Area has an indicative capacity for 39,000 new homes and 65,000 new jobs.
 - **'SD6 Town centres and high streets'** seeks to promote and enhance the vitality and viability of London's varied town centres through identifying locations for mixed-use or housing-led intensification to optimise residential growth potential, securing a high-quality environment.

- **‘D2 Infrastructure requirements for sustainable densities’** sets out how development proposals should consider the provision of future planned levels of infrastructure rather than existing levels. The policy also states that where there is currently insufficient capacity of existing infrastructure to support proposed densities (including the impact of cumulative development), boroughs should work with applicants and infrastructure providers to ensure that sufficient capacity will exist at the appropriate time.
- **‘D8 Public realm’** seeks to encourage the provision of new public realm which is well-designed, safe, accessible, inclusive, attractive, well-connected and good quality.
- **‘H1 Increasing housing supply’** sets the ten-year targets for net housing completions that each local planning authority should plan for. It states how Boroughs should optimise the potential for housing delivery on all suitable and available brownfield sites through their planning decisions. The ten-year housing target for net housing completions for the CoW is 9,850.
- **‘H4 Delivering affordable housing’** sets out the strategic target for 50% of all new homes delivered across London to be genuinely affordable.
- **‘H13 Specialist older persons housing’** seeks to work positively and collaboratively with providers to deliver specialist older person housing.
- **‘S1 Developing London’s social infrastructure’** seeks to ensure proposals deliver social infrastructure that meets the needs of London’s diverse communities. Development proposals should seek to provide high quality, inclusive social infrastructure that addresses a local or strategic need and supports service delivery strategies.
- **‘S2 Health and social care facilities’** seeks to work with Clinical Commissioning Groups (CCGs) and other NHS organisations to support development proposals that deliver high-quality new and enhanced health and social care facilities.
- **‘S4 Play and informal recreation’** seeks to increase opportunities for play and informal recreation space as part of development proposals. For residential developments, at least 10sqm of play space should be provided per child.
- **‘E9 Retail, markets and hot food takeaways’** seeks to support development proposals that provide convenience retails in all town centres.
- **‘G4 Open space’** supports development proposals which do not result in the loss of protected open and, where possible, create areas of publicly accessible open space.
- **‘G5 Urban greening’** supports development proposals that contribute to the greening of London by including urban greening as a fundamental element of the site.
- **‘T5 Cycling’** supports development proposals that help to remove barriers to cycling and create a healthy environment in which people choose to cycle. This policy sets out the minimum cycle parking standards required for new developments.

13.2.17 The London Plan sets out a public open space hierarchy that provides boroughs with benchmarks to assess their provision of open space, allowing for improved future management and provision of open space. Table 13-1 presents this hierarchy.

Table 13-1 Open Space Hierarchy in London

Open Space Categorisation	Guidelines in Size of Site (ha)	Distances from Homes to Open Spaces (km)
Regional Parks	400	3.2 – 8
Metropolitan Parks	60	3.2
District Parks	20	1.2
Local Parks and Open Spaces	2	0.4
Small Open Spaces	<2	<0.4

Open Space Categorisation	Guidelines in Size of Site (ha)	Distances from Homes to Open Spaces (km)
Pocket Parks	<0.4	<0.4
Linear Open Spaces	Variable	Variable

Source: Greater London Authority, 2021; The London Plan.

The Mayor's Economic Development Strategy

13.2.18 In December 2018, the Mayor of London published 'The Mayor's Economic Development Strategy for London'⁴ which replaces The Mayor's Economic Development Strategy for London 2010. The Strategy sets out the Mayor's vision for the economy in order to promote fairer and inclusive economic development.

13.2.19 The London Plan⁵ provides the planning framework to complement the Mayor's Economic Development Strategy for London (EDSfL) to ensure that the varied innovation and workspace requirements of London's businesses are met.

13.2.20 The overarching vision for the EDSfL to 2041 is to create a fairer, more inclusive city with an economy that works for all Londoners. The EDSfL identifies a series of ambitions for London's economy in 2041:

- Londoners are living healthier and happier lives;
- Living standards are improving with real incomes growing year-on-year;
- London has a fairer and more inclusive economy;
- London is a more affordable city to live and work;
- Londoners who want to work, and are able to, have access to quality employment and training opportunities;
- London has the most skilled and talented workforce in the world;
- London is a global leader in innovation and creativity;
- London remains the world capital for business, trade and investment;
- London is the best city in which to start and grow a business;
- More people are walking, cycling and using public transport to travel, helping London to grow sustainably;
- London is cleaner, greener and ready for the future;
- London plays a leading role in the global transition to a low carbon circular economy;
- London has higher productivity relative to other global cities; and
- London continues to contribute to the UK economy so that London and the UK grow together.

13.2.21 The EDSfL identifies a series of actions for the Mayor and relevant actions are summarised below:

- To increase the supply of housing including affordable homes and help make private renting more affordable;
- To enable access to more affordable and accessible, high-quality early years education and childcare;
- To promote the importance of well-designed, inclusive and high-quality public spaces, buildings and housing;
- To work with local authorities, the voluntary, community and social enterprise sector to enable the creation of more socially integrated places;

⁴ Greater London Authority, 2018; The Mayor's Economic Development Strategy.

⁵ Greater London Authority, 2021; The London Plan.

- To protect London's role as a global hub for business, ensuring there is sufficient supply of office accommodation and investment in transport and infrastructure;
- To work with communities to create vibrant local economies outside central London, including successful town centres, markets, high streets and industrial areas, providing funding opportunities to support innovative approaches;
- To support the retention of low cost and affordable workspace using planning policy and enable the creation of new flexible space through the Good Growth Fund; and
- To implement the Healthy Streets Approach to create a healthy street environment, where people choose to walk, cycle and use public transport.

City of Westminster City Plan

13.2.22 CoW's City Plan⁶ was adopted in April 2021. It sets out the vision for the future development of the borough between 2019 and 2040 and provides policies and guidance to assist with decision making regarding proposed new developments. The relevant policies to the assessment of socio-economics are outlined below:

- **Policy 1 Westminster's spatial strategy** points to growth through supporting "intensification and optimising densities in high quality new developments that integrate with their surroundings and make the most efficient use of land".
- **Policy 6 Spatial Development Priorities: Church Street / Edgware Road and Ebury Bridge Estate Housing Renewal Areas** makes specific reference to the area comprising the proposed development and sets out specific targets for the delivery of new homes, jobs and community facilities.
- **Policy 9 Affordable housing** specifies that at least 35% of all new homes will be affordable.
- **Policy 12 Housing quality** sets out that all new homes will provide a well-designed, energy efficient and high quality living environment, recognising in Section 12.1 that housing plays an important role in the safety, health and well-being of individuals and communities.
- **Policy 14 Town centres, high streets and the CAZ** specifies that proposals in existing town centres and high streets will enhance and diversify their offer as places to shop, work and spend leisure time.
- **Policy 25 Walking and cycling** promotes sustainable transport by specifying development must prioritise and improve the pedestrian environment, and should contribute to improvements to deliver a first-class public realm which supports cycling.

Guidance

GLA Social Infrastructure Supplementary Planning Guidance

13.2.23 The Social Infrastructure Supplementary Planning Guidance (SPG)⁷ provides guidance on how to implement social infrastructure. It is informed by the Government's NPPF and the London Plan. The SPG encourages that social infrastructure should be designed to meet peoples' needs at all stages of their lives, in order to create lifetime neighbourhoods, while encouraging social interaction. Growth should be accompanied by new, appropriate and enhanced social infrastructure if its full social and economic benefits are to be realised.

GLA Housing Supplementary Planning Guidance

13.2.24 The GLA's Housing Supplementary Planning Guidance (SPG)⁸ was adopted in May 2018 and provides guidance on the implementation of housing policies outlined in the London Plan 2016. The SPG aims to promote housing supply, quality and choice for Londoners.

⁶ City of Westminster, 2021; City Plan 2019-2040.

⁷ Greater London Authority, 2015; Social Infrastructure Supplementary Planning Guidance.

⁸ Greater London Authority, 2016; Housing Supplementary Planning Guidance.

- 13.2.25 The SPG sets out the Mayor’s strategy and vision for housing. The SPG outlines the Mayor’s five key housing priorities:
- Building homes for Londoners
 - Delivering genuinely affordable homes – the strategy includes over £4.6 billion of affordable housing investment through to 2020.
 - High quality homes and inclusive neighbourhoods
 - Tackling homelessness and helping rough sleepers
- 13.2.26 The SPG emphasises the need to provide community and transport infrastructure to serve residents, with mixed use developments encouraged in suitable locations. Development proposals which co-locate community facilities such as education, healthcare, and community centres, should be encouraged by local authorities.

GLA Shaping Neighbourhoods: Play and Informal Recreation Planning Guidance

- 13.2.27 The 2012 GLA Supplementary Planning Guidance (SPG) ‘Shaping Neighbourhoods: Children and Young People’s Play and Informal Recreation’⁹ was published in September 2012. Although these policies relate to the 2011 Local Plan, they are still relevant to the 2021 Local Plan.
- 13.2.28 The SPG guides the implementation of London Plan Policy 3.6, which states that “planners, developers, designers and architects should promote approaches accommodating the presence of children in the built environment (such as shared public and communal space) and encouraging playable spaces where appropriate in order to make London a child friendly city”. Though these policies relate to the London Plan 2011 and London Plan, they are relevant to later versions as well.
- 13.2.29 The SPG states a recommended benchmark standard of 10 sqm of play space per child (any space to be accessible to the new resident children and young people living within new developments). Existing play space provision can contribute towards this requirement. Where private gardens are to be provided as part of a development, this may count towards provision for children below the age of five. For developments expected to accommodate over 80 children, provision for children of all ages must be on-site. However, this provision may include landscaped open space and is not limited to designated play spaces.
- 13.2.30 The SPG sets levels of accessibility to play space for new developments according to age groups. This breakdown is presented in Table 13-2.

Table 13-2 Accessibility to Play Space (Future Provision)

Age Group (years)	Maximum Walking Distance from Residential Unit (accounting for barriers) (m)
Under 5	100
5-11	400
12+	800

Source: Greater London Authority, 2012; *Shaping Neighbourhoods: Children and Young People’s Play and Informal Recreation*.

Homes and Communities Agency Guidance

- 13.2.31 In addition to the policy documents outlined above the following other relevant standards and guidance have informed this assessment and have been referenced in where appropriate throughout this ES chapter:

⁹ Greater London Authority, 2012; *Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance*.

- Homes and Communities Agency (HCA) Additionality Guidance (2014)¹⁰ has been used to inform our assessment of economic impacts and additionality effects. The guidance sets out how to assess the additional impact or additionality of local economic growth and housing interventions and includes benchmark assumptions on the scale of additionality factors. The assumptions drawn upon as part of this assessment are outlined further in Section 13.4; and
- HCA Employment Densities Guidance (2015)¹¹ has been used to inform our assessment of potential operational employment generation. These assumptions are outlined further in Section 13.4.

13.3 Consultation

13.3.1 The EIA Scoping Opinion was received on 3rd September 2021. A summary of the socio-economics related responses are set out in Table 13-3.

Table 13-3 Comments raised in EIA Scoping Opinion

WCC Review Comment/Observation	Clarification request from WCC	EIA Team Response	Further information
No reference to the effects of a decant strategy in social and economic terms	Need to address how any decant strategy will be assessed or explain why it is scoped out of the assessment.	The decant strategy will be referenced within the socio-economic assessment	See Paragraph 13.4.18 for assumptions on decant strategy and how future resident population has been estimated (please see the Estate Regeneration Statement ¹² submitted with this application).
We would expect the following to be reviewed to understand capacity at local facilities: https://www.nhs.uk/service-search/find-a-GP https://www.nhs.uk/services-search/find-a-dentist https://get-informationsschools.service.gov.uk	Confirm what sources are to be used to determine existing current capacity at local social infrastructure.		Further information, including sources used, on the process of reporting and assessing current capacity of local social infrastructure is detailed in Section 13.5.

13.4 Assessment methodology

13.4.1 This section of this ES chapter presents the following:

- Information sources that have been consulted throughout the preparation of this chapter;
- The methodology behind the assessment of socio-economic effects, including the criteria for the determination of sensitivity of receptor and magnitude of change from the existing 'baseline' condition;
- An explanation as to how the identification and assessment of potential socio-economic effects has been reached; and
- The significance criteria and terminology for the assessment of socio-economic residual effects.

13.4.2 The following sources of information that define the Proposed Scheme have been reviewed and form the basis of the assessment of the likely significant socio-economic effects:

- Existing use of the Application Site;

¹⁰ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition.

¹¹ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

¹² Savills, 2021; Church Street Estate Regeneration Statement.

- Total Proposed Scheme floorspace by land use;
- Proposed Scheme illustrative Masterplan residential accommodation schedule;
- Design and Access Statement (DAS);
- Access to open space;
- Access to play space; and
- Indicative demolition and construction costs and programme.

Determining baseline conditions and sensitive receptors

- 13.4.3 The following assessment seeks to establish the potential social and economic effects of the Proposed Scheme and assesses these against the current baseline conditions at the Application Site and in the surrounding area.
- 13.4.4 The impacts of the Proposed Scheme are considered at varying spatial levels according to the nature of the impact considered. This is consistent with the Homes and Communities Agency's (HCA) 'Additionality Guide, A Standard Approach to Assessing the Additional Impacts of Projects, 4th Edition'¹³. The geographical effect areas are informed by the most up-to-date and recent socio-economic data or policy available, as shown in Table 13-4.
- 13.4.5 The economic impact of the Proposed Scheme is considered relative to Greater London as this represents the principal labour catchment area and Functional Economic Market Area (FEMA). The CoW is highly accessible from all areas of Greater London and is likely to be served from all boroughs across Greater London. Therefore, the labour market catchment incorporates the population that may reasonably be expected to travel to, and benefit from, the Proposed Scheme.

Table 13-4 Socio-economic Effects by Geographical Area

Effect	Geographical Area of Effect	Rationale for Area Effect
Employment generation during the demolition and construction phases (direct, indirect, and induced effects)	Greater London	Census 2011 Origin-Destination Statistics
Employment generation during the operational phase (direct, indirect, and induced effects)	Greater London	Census 2011 Origin-Destination Statistics
Additional local spend	Greater London	Office for National Statistics
Provision of housing	Borough level City of Westminster	London Plan 2021 and CoW City Plan
Provision of affordable housing	Borough level City of Westminster	London Plan 2021 and CoW City Plan
Demand for primary school	Average travel-to-school area (2km)	Department for Education 2019, National Travel Survey 2017-18
Demand for secondary school	Average travel-to-school area (4.5km)	Department for Education 2019, National Travel Survey 2017-18
Demand for primary healthcare	1km radius from the Site	NHS Digital General Practice Workforce March 2021, National Travel Survey 2017-18, NAO Guidance

¹³ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition.

Effect	Geographical Area of Effect	Rationale for Area Effect
The provision of publicly accessible open space	Local level (varies by open space size)	London Plan 2021
The provision of publicly accessible play space	Local Level 0.1km, 0.4km, and 0.8km	GLA SPG (Providing for Children and Young People's Play and Informal Recreation, 2012)

Methodology for Incorporating Additionality

- 13.4.6 Additionality has been calculated by considering the overall impact of job gains to the area, considering the level of leakage, number of displaced jobs, and multiplier effects such as supply chains and worker spending related jobs. These assumptions have been informed by the Homes and Communities Agency (HCA) Additionality Guide¹⁴.
- 13.4.7 Table 13-5 outlines the assumptions made for the leakage, displacement, and multiplier effects for both the demolition and construction, and the operational phases. This enables a tailored calculation of the net additional employment impacts. Justifications for the assigned values are summarised in the right-hand column of the table.

Table 13-5 Economic Additionality Assumptions

Additionality Factor	Value	Justification
Leakage (% of jobs that benefit those residents outside the scheme's identified target area)	21.4%	An appropriate leakage rate of 21.4% from Census 2011 origin-destination guidance, corresponding to a low to medium leakage rate as set out by HCA Additionality Guidance, was applied to calculate the employment within Greater London and outside of Greater London.
Displacement (% of jobs that account for a reduction in related jobs elsewhere in the scheme's identified target areas)	25%	For the purpose of this assessment, the level of displacement (25%) has been assumed to be in line with the HCA Additionality Guide for low level of displacement, since the expected displacement effects within the CoW are expected to be limited.
Multiplier (further economic activity associated with the additional local income, supplier purchase, and longer term development effects)	1.7	A 'high' appropriate multiplier effect of 1.7 from HCA guidance, considered likely due to the strong supply linkages and induced effects within an economy the scale of London's, has been applied to calculate the total net employment (including indirect and induced effects).

Significance Criteria

Effect and Significance Terminology Overview

- 13.4.8 The assessment of potential socio-economic effects uses the effect significance terms and definitions described within *Chapter 2: EIA Methodology* of this ES and accords with the relevant British standards and guidance. For the assessment of socio-economics, policy thresholds and professional judgement

¹⁴ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition.

are used to assess the scale and nature of the effects of the Proposed Scheme against baseline conditions.

13.4.9 For socio-economics, there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that 'significance' reflects the relationship between the scale of effect and the sensitivity (or value) of the affected resource or receptor. As such, the significance of socio-economic effects has been assessed based on the professional judgement and relevant experience of the authoring team, and relies on the following considerations:

- **Consideration of sensitivity to effects:** specific values in terms of sensitivity are not attributed to socio-economic resources/receptors due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor.
- **Scale of effect:** this entails consideration of the size of the effect on people or business in the context of the area in which effects will be experienced.
- **Scope for adjustment or mitigation:** the socio-economic study is concerned in part with economies. These adjust themselves continually to changes in supply and demand, and the scope for the changes brought about by the project to be accommodated by market adjustment will therefore be a criterion in assessing significance.

13.4.10 The assessment aims to be objective and quantifies effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects are defined as follows:

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

13.4.11 Based on the consideration of the above, where an effect is assessed as being beneficial or adverse, the scale of the effect has been assigned using the below criteria, with the significance of these classifications described in the 'Assessment Significance Conclusion' section below:

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

13.4.12 Duration of effect is also considered, with more weight given to permanent changes than to temporary ones. Permanent effects are generally those associated with the completed development. Temporary effects are considered to be those associated with the construction works, with the effects captured during the 151 month (12 years 7 months) construction phase. For the purposes of this assessment, short term effects are considered to be of one year or less, and the medium term effects of one to two years.

Assessment Significance Conclusion

13.4.13 Specific values in terms of sensitivity of receptors are not attributed due to their diverse nature but instead have been assessed based on professional judgement and previous relevant experience of the Assessment Team.

13.4.14 In accordance with the methodology set out within *Chapter 2: EIA Methodology*, the following criteria are applied:

- 'Moderate' or 'major' impacts are deemed to be '**significant**';

- 'Minor' impacts are considered to be '**not significant**', although they may be a matter of local concern; and
- 'Negligible' impacts are considered to be '**not significant**'.

Cumulative Assessment Scenarios

- 13.4.15 Cumulative effects (both effect interactions and from other relevant developments) have also been considered. The approach to the cumulative effect assessment is in accordance with best practice guidelines and the approach stated in *Chapter 2: EIA Methodology of this ES*.

Limitations and assumptions

- 13.4.16 Part of the application for the Proposed Scheme is at outline stage; therefore, maximum parameters have been submitted for approval, as detailed within the Development Specification, Design Code and Parameter Plans which accompany the planning application. The parameters have been established through a robust and thorough masterplanning process (as detailed in *Chapter 7 EIA Methodology of this ES*), which has included site surveys. Given this, and the Applicant's desire to build out the maximum, these parameters are considered a reasonable scenario to form the basis of the socio-economic assessment.
- 13.4.17 The assessment of the significance of effects has been carried out against a benchmark of current socio-economic baseline conditions prevailing around the Application Site, as far as is possible within the limitations of such a dataset. Baseline data are also subject to a time lag between collection and publication. As with any dataset, these conditions may be subject to change over time which may influence the findings of the assessment.
- 13.4.18 The future resident population is estimated to inform the assessment of effects on local spending and social infrastructure during the operational phase. The GLA's Population Yield Calculator¹⁵ is used, applying the indicative unit mix provided in the Illustrative Masterplan. The decant strategy determines that all existing residents have the right to come back to a new property within the Proposed Scheme, and any such returning residents are likely to already be using local existing social infrastructure. However, at this stage, it is not known how many existing residents will return. This assessment assumes within the assessment of social infrastructure effects that the resident population on site is entirely new, as this represents a 'worst-case' scenario. In the instance that current residents return to the site, the net additional demand for social infrastructure would be lower than estimated here.

13.5 Baseline conditions

- 13.5.1 In order to assess the potential effects of the Proposed Scheme, it is necessary to determine the environmental conditions, resources, and sensitive receptors that currently exist on the Application Site and in the surrounding area. These are known as 'baseline conditions' and should be considered in the context of each assessment.
- 13.5.2 This section establishes the current baseline with regards to the following characteristics relevant to the Proposed Scheme:
- The local economy;
 - Population and labour force;
 - Housing profile, deprivation, and housing needs;
 - Education (primary and secondary);
 - Primary healthcare;
 - Open space; and
 - Child play space.

¹⁵ Greater London Authority, 2019; Population Yield Calculator (v3.2).

Existing Site

- 13.5.3 The Proposed Scheme is located in the City of Westminster (CoW), adjacent to the Edgware Road (postcode NW8 8HA, National Grid Reference TQ 26951 81975) and is comprised of Sites A, B, and C. The Proposed Scheme is bound by Broadley Street to the south east, Edgware Road to the south west, Salisbury Street, Boscombe Street and Penfold Street to the north, and extends north east along Church Street to Lisson Grove.
- 13.5.4 The Application Site also has a number of existing residential properties and car parking facilities. The Application Site is currently occupied by a range of retail, commercial and health care outlets, including a Tesco supermarket, discount stores and food outlets. The Application Site extends along Church Street which has a number of retail premises, a library, and hosts a temporary market known as the Church Street Market.

Local Economy

- 13.5.5 In 2020, the workforce of Greater London comprised just fewer than 6 million people. This is forecast to decrease in 2021 by 3.6% due to the effects of the ongoing Covid-19 pandemic, although this is expected to rise again in 2022 and 2023¹⁶. According to the 2011 Census¹⁷, 21.4% of the Greater London workforce live outside of the capital. In the CoW, 54.0% of its residents who are employed in workplaces also work there, with most of the remaining 46.0% commuting to other parts of London.
- 13.5.6 The professional, scientific and technical sector (16.6%) and accommodation and food sector (12.7%) each account for a greater proportion of employment within the CoW than they do across London, and England and Wales as a whole¹⁸.
- 13.5.7 Based on the most recently available data, it can be seen that London's economy, in terms of employment, is dominated by the professional, scientific and technical (13.4%), business administration and support (10.8%), and health (9.9%) sectors. Table 13-6 presents a detailed breakdown of employment by broad industrial group in the CoW, Greater London, and England and Wales.

Table 13-6 Proportion of Employment by Broad Industrial Group

Sector	CoW (%)	Greater London (%)	England and Wales (%)
Agriculture, Forestry and Fishing	0.1	0.0	1.4
Mining and Quarrying	0.4	0.6	1.1
Manufacturing	1.1	2.3	7.9
Construction	2.0	3.8	5.0
Motor Trades	0.2	1.0	1.9
Wholesale	2.5	3.1	3.9
Retail	7.4	7.5	9.2
Transport and Storage	1.6	4.9	4.9
Accommodation and Food Services	12.7	8.1	7.6

¹⁶ Greater London Authority (GLA), 2021; London's Economic Outlook: Spring 2021. [Online]. Available: <https://www.london.gov.uk/business-and-economy-publications/londons-economic-outlook-spring-2021>

¹⁷ Office for National Statistics, 2012; Census 2011.

¹⁸ Office for National Statistics, 2020; Business Register and Employment Survey (2019).

Sector	CoW (%)	Greater London (%)	England and Wales (%)
Information and Communication	9.3	8.3	4.3
Financial and Insurance	7.6	7.3	3.4
Property	5.1	2.7	2.0
Professional, Scientific and Technical	16.6	13.4	9.0
Business Administration and Support Services	8.3	10.8	8.8
Public Administration and Defence	9.6	4.3	4.1
Education	4.2	7.0	8.4
Health	4.5	9.9	12.5
Arts, Entertainment, Recreation and Other Services	6.8	5.1	4.6

Source: Office for National Statistics, 2020; Business Register and Employment Survey (2019).

Population

- 13.5.8 According to the Office for National Statistics (ONS) Mid-Year Population Estimates¹⁹, the resident population of CoW increased from 217,187 in 2010 to 269,848 in 2020, representing a 24.2% increase over the ten-year period. This is higher than the increase experienced across Greater London over the same time period (11.7%). On the basis of current trends in life expectancy and migration, the population of the CoW is projected to exceed 298,302 by 2040, representing a growth of 13.0% on 2020 levels, which is marginally greater than Greater London's projected growth of 7.6% in this time period²⁰.
- 13.5.9 In 2020, 190,345 (70.5%) of the CoW's residents were of working age (defined by ONS as men and women aged 16 to 64). This proportion is higher than the rate recorded for Greater London (67.2%), and England and Wales as a whole (62.2%). The CoW has a less youthful population, with 16.9% of residents aged between 0 and 16, when compared with Greater London (20.6%), and England and Wales as a whole (19.1%)²¹.
- 13.5.10 According to the 2011 Census, 61.7 of the population in the CoW is of white ethnicity, compared to 59.8% in Greater London, and 86.0% across England and Wales as a whole. There are a larger proportion of residents considered to be Other White in the CoW (24.1%), than across Greater London (12.6%), and England and Wales as a whole (4.4%)²².

Employment and Qualifications

- 13.5.11 Unemployment is higher in the CoW than across Greater London, and England and Wales as a whole. According to the latest Annual Population Survey²³, the unemployment rate among working age residents in the CoW between January and December 2020 was 12.3%, which is higher than recorded in Greater London (6.0%), and across England and Wales as a whole (4.7%). The economic activity rate

¹⁹ Office for National Statistics, 2021; Mid-Year Population Estimates (2020).

²⁰ Office for National Statistics, 2020; Sub-National Population Projections (2018).

²¹ Office for National Statistics, 2021; Mid-Year Population Estimates (2020).

²² Office for National Statistics, 2012; Census 2011.

²³ Office for National Statistics, 2021; Annual Population Survey (January to December 2020).

for the CoW (76.6%) was also slightly lower than recorded in Greater London (80.1%), and across England and Wales as a whole (79.3%).

- 13.5.12 The workforce of the CoW is highly qualified. In 2020, 95.2% of working age residents had some form of qualification, marginally higher than Greater London (94.9%), and across England and Wales (93.8%)²⁴. The proportion of working age residents with a degree level qualification or higher (National Vocational Qualification [NVQ] Level 4+) was higher in the CoW (65.3%) than in Greater London (58.5%), and across England and Wales as a whole (42.6%).

Household Profile, Deprivation, and Housing Needs

- 13.5.13 In 2020, there were 126,422 dwellings in the CoW out of a total of 3,634,497 dwellings in Greater London²⁵. Around 78.5% were privately owned or rented in the CoW, which is marginally higher than the level recorded for Greater London (77.7%), and slightly lower than is recorded across England and Wales as a whole (83.0%). Therefore, 21.3% of the CoW's population is living in socially rented or intermediate dwellings. The distribution across each form of tenure is detailed in Table 13-7.

Table 13-7 Tenure of Households

Housing Tenure	CoW (%)	Greater London (%)	England and Wales (%)
Private Sector	78.5%	77.7%	83.0%
Private Registered Provider	12.0%	11.4%	10.5%
Local Authority (inc. owned by other LAs)	9.3%	10.7%	6.4%
Other Public Sector	0.2%	0.1%	0.1%

Source: Ministry of Housing, Communities and Local Government, 2021; Number of Dwellings by Tenure (2020).

- 13.5.14 The London Plan²⁶ sets a target for net housing completions in the period 2019/20 to 2028/29 in the CoW of 9,850. In addition, the CoW City Plan²⁷ places importance on achieving Westminster's housing targets to meet growing and diversifying housing need, equivalent to 985 new homes per year over the ten year period.
- 13.5.15 Based upon the 2019 Indices of Multiple Deprivation (IMD)²⁸, the CoW is ranked as the 137th most deprived borough out of 326 local authorities in England (where 1st is the most deprived), and the 24th most deprived of all 33 London boroughs. Only three Lower Super Output Areas²⁹ (LSOAs) in the CoW (or 2.3% of the LSOAs in the borough) were classified as being in the top 10% most deprived areas in the country and 18 LSOAs (or 14.0% of LSOAs in the borough) were classified as being in the top 20% most deprived areas.
- 13.5.16 Within the Health Deprivation and Disability domain of IMD, 5.5% of LSOAs within the CoW were classified as being within the top 30% most deprived areas in the country. 24.2% of LSOAs were ranked within the top 50% most deprived areas in the country in relation to health deprivation.

Education

- 13.5.17 The baseline for education provision relevant to the Application Site has been assessed considering the National Audit Office (NAO) Guidance³⁰. In terms of the availability of education places, the National Audit Office states that "it considered that on average 5 per cent was the bare minimum needed for

²⁴ Office for National Statistics, 2021; Annual Population Survey (January to December 2020).

²⁵ Ministry of Housing, Communities and Local Government, 2021; Number of Dwellings by Tenure.

²⁶ Greater London Authority, 2021; The London Plan.

²⁷ City of Westminster, 2021; City Plan 2019-2040.

²⁸ Ministry of Housing, Communities and Local Government, 2019; Indices of Multiple Deprivation.

²⁹ A Lower Super Output Area (LSOA) is a small geographical unit used for the reporting of statistics.

³⁰ National Audit Office (NAO), 2013; Capital funding for new school places 2013.

authorities to meet their statutory duty with operational flexibility, while enabling parents to have some choice of schools”.

- 13.5.18 In 2019, 88.2% of primary school children in the City of Westminster (CoW) were living and studying in the borough, with 11.8% studying elsewhere, mostly within the bordering London Boroughs of Brent (LBB) (2.1%), and Camden (LBC) (0.9%), and the Royal Borough of Kensington and Chelsea (7.8%) (RBKC)³¹. The National Travel Survey 2019³² states that, on average, primary school children in London travel 2.0km to school. Thus, the baseline for primary school provision considers schools within 2.0km radius of the Application Site within the boroughs of CoW, LBB, LBC and RBKC.
- 13.5.19 Travel statistics show that secondary school children travel further and therefore it is appropriate to consider education provision on a wider geographical basis. According to the National Travel Survey³³, the average distance secondary school children travel to school in London is 4.5km. Some pupils could therefore choose to attend schools that lie within 4.5km of the Proposed Scheme, but outside the CoW, including RBKC, LBB and LBC. Transport links to the London Underground network are strong in the CoW, and are more accessible to secondary school students, compared with younger primary school students, and are likely to facilitate greater movement of school age children. As more than 10% of secondary pupils travel outside of the borough, places in secondary in neighbouring boroughs within 4.5km have been considered. In 2019, 79.3% of secondary school children in the CoW were living and studying in the borough, with 20.7% studying elsewhere, mostly within the bordering RBKC (8.0%), LBC (3.4%), and LBB (1.5%)³⁴. Although 3.8% of secondary school-aged children in the CoW were studying in the London Borough of Hammersmith and Fulham (LBHF), this borough does not neighbour the CoW and hence schools within LBHF have been excluded from the analysis.

Primary Education

- 13.5.20 As shown in Table 13-8, there are 23 primary schools within 2km of the site. Of these, six are community schools, 14 are voluntary aided schools, one is academy sponsor led, one is a free school, and one is an academy converter.
- 13.5.21 According to the latest data available, in total there is a surplus of 1,099 school places. If it is assumed that 95% occupancy levels should be planned for, as per the National Audit Office guidance³⁵, and therefore that a 95% occupancy rate means that a school has no further capacity, the schools detailed have a surplus of 797 school places.

Table 13-8 Primary Schools within 2km of the Site

Primary School	Number of Pupils	Number of School Places	Surplus/Deficit	Surplus/Deficit at 95% Capacity
Barrow Hill Junior School	221	240	19	7
Edward Wilson Primary School	324	448	124	102
Essendine Primary School	371	454	83	60
George Eliot Primary School	293	420	127	106
Hallfield Primary School	374	496	122	97

³¹ Department for Children, Schools and Families, 2019; Cross-Border Movement Matrix Tables: SFR28/2019 (2019).

³² Department for Transport (DfT), 2020; National Travel Survey (2019).

³³ Department for Transport (DfT), 2020; National Travel Survey (2019).

³⁴ Department for Children, Schools and Families, 2019; Cross-Border Movement Matrix Tables: SFR28/2019 (2019).

³⁵ National Audit Office (NAO), 2013; Capital funding for new school places 2013.

Primary School		Number of Pupils	Number of School Places	Surplus/Deficit	Surplus/Deficit at 95% Capacity
Robinsfield School	Infant	182	180	-2	-2
Hampden Primary School	Gurney CofE	222	240	18	6
Our Lady of Dolours Catholic Primary		185	315	130	114
AME Federated CofE Primary School	St Augustines Schools:	224	236	12	0
St Edward's Primary School	Catholic	248	420	172	151
St James & St John Church of England Primary School		186	195	9	0
St Joseph's RC Primary School		278	210	-68	-68
St Mary Magdalene CofE Primary School		180	236	56	44
St Mary's Bryanston Square CofE School		168	240	72	60
St. Mary of the Angels Catholic Primary School		236	322	86	70
St Peter's CofE School		189	210	21	11
St Saviour's Primary School	CofE	212	210	-2	-2
St Stephen's Primary School	CofE	138	235	97	85
St Vincent's Primary School	Catholic	231	236	5	0
Christ Church Bentinck CofE Primary School		208	420	212	191
Ark King Academy	Solomon	1,184	900	-284	-284
Ark Atwood Academy	Primary	444	450	6	0
Gateway Academy		626	710	84	49
Total		6,924	8,023	1,099	797

Source: Department for Education, 2021; Schools in England.

Secondary Education

13.5.22 As shown in Table 13-9, there are 26 secondary schools within 4.5km of the site. Of the schools detailed, five are community schools, seven are voluntary aided schools, seven are academy sponsor led, seven are academy converters, and one is a free school.

13.5.23 According to the latest data provided by the Department for Education³⁶, within the detailed schools there is a surplus of 1,126 secondary school places. Assuming a 95% capacity, there is a surplus of 424 school places.

Table 13-9 Secondary Schools within 4.5km of the Site

Secondary School	Number of Pupils	Number of School Places	Surplus/Deficit	Surplus/Deficit at 95% Capacity
Haverstock School	883	1,336	453	386
Parliament Hill School	1,184	1,164	-20	-20
Regent High School	1,040	1,550	510	433
Hampstead School	1,326	1,302	-24	-24
Acland Burghley School	1,135	1,200	65	5
The Camden School for Girls	1,045	1,040	-5	-5
Maria Fidelis Catholic School FCJ	769	917	148	102
William Ellis School	853	895	42	0
La Sainte Union Catholic Secondary School	991	1,219	228	167
Saint Thomas More Language College	641	592	-49	-49
All Saints Catholic College	588	750	162	125
St Augustine's Federated Schools: CE High School	1,024	1,000	-24	-24
Paddington Academy	1,235	1,200	-35	-35
Westminster Academy	1,127	1,300	173	108
Ark King Solomon Academy	1,184	900	-284	-284
Pimlico Academy	1,206	1,250	44	0

³⁶ Department for Education, 2021; Schools in England.

Secondary School	Number of Pupils	Number of School Places	Surplus/Deficit	Surplus/Deficit at 95% Capacity
The UCL Academy	1,134	1,150	16	0
The St Marylebone CofE School	1,154	1,080	-74	-74
Westminster City School	795	890	95	51
The Grey Coat Hospital	1,100	1,082	-18	-18
Queens Park Community School	1,333	1,250	-83	-83
St George's Catholic School	1,062	750	-312	-312
Holland Park School	1,398	1,430	32	0
Kensington Aldridge Academy	1,226	1,140	-86	-86
Marylebone Boys' School	661	720	59	23
The Cardinal Vaughan Memorial RC School	1,008	922	-86	-86
Sir Simon Milton Westminster University Technical College*	202*	550*	348*	321*
Harris Academy St John's Wood	1,301	1,500	199	124
Total	28,403	28,579	1,126	424

* Although the school lies within the accessibility range, data for Sir Simon Milton University Technical College has been omitted from the totals shown and excluded from this analysis as admissions have ceased while the future of the school is being determined.

Source: Department for Education, 2021; Schools in England.

Primary Healthcare

- 13.5.24 The reporting of the baseline primary healthcare provision is made with reference to guidance from the Royal College of General Practitioners³⁷ which recommends a GP:Patient ratio of 1:1,800.
- 13.5.25 The Application Site is located within the NHS North West London Clinical Commissioning Group (CCG) area which, as of March 2021 has 350 General Practitioner (GP) practices, a total of 2,662,730 registered patients, and 1,297 full time equivalent general practitioners (FTE GPs). This equates to an average patient list size of 2,053 patients per FTE GP. This average list size for CCG is notably higher than the target list size detailed above³⁸.
- 13.5.26 GP surgeries within 1km of the Application Site are reported in Table 13-10. A radius of this size represents a typical walking distance to access this service. There are 6 GP surgeries within a 1km

³⁷ Royal College of General Practitioners, 2005; Information Note 20.

³⁸ NHS Digital, 2021; General Practice Workforce 31 March 2021.

radius of the Application Site. For the identified GP surgeries, the recorded GP:Patient ratio is 1:1,695, which would suggest the provision of GPs in the area is both better than the recommended/target provision and the average within the CCG.

Table 13-10 GP Surgeries within 1km of the Site

GP Surgery	GPs (FTE)	Patient List	GP:Patient Ratio
Lisson Grove Health Centre	7.0	6,995	994
Paddington Green Health Centre	7.9	9,761	1,243
Crompton Medical Centre	1.3	3,753	2,872
Little Venice Medical Centre	2.1	4,861	2,352
Crawford Street Surgery	2.0	6,371	3,186
The Wellington Health Centre	2.6	7,002	2,700
Total*	22.9	38,743	1,695

**Note: Figures do not always sum due to rounding.*

Source: NHS Digital, 2021; General Practice Workforce (31 March 2021).

13.5.27 In addition, there are 27 dental surgeries within 2km of the Site³⁹, including one dentist surgery within Site B. There are a number of hospitals within 5km of the Application Site. In particular, St. Mary's Hospital, Paddington, is approximately 400m south of the Application Site.

Open Space

13.5.28 CoW's City Plan⁴⁰ notes that the almost a quarter of the CoW is open and green space yet notes there is still a deficiency of open space within the City. Significant contributions to the total area of open space within the CoW are made by Hyde Park and Regent's Park, two of London's largest open spaces. According to the draft Open Spaces and Biodiversity Strategy⁴¹, there are over 200 identified parks and open spaces. The Strategy also illustrates that although the site of the Proposed Scheme is not within an area identified as having a deficiency in open space, the surrounds of the Proposed Scheme are.

13.5.29 Policy G4 of the London Plan⁴² categorises and allots distance thresholds from residences from which the parks are accessible. The guideline provides a benchmark for boroughs to assess their own provision for the different categories of open space found throughout London and facilitates the cross-borough planning and management open space.

13.5.30 Table 13-11 presents these guidelines, and the existing open space that is considered accessible to the Proposed Scheme, in line with GLA guidance.

13.5.31 There are a number of metropolitan parks within the relevant catchment from the Site and therefore the provision of open space in the vicinity of the Proposed Scheme is considered to be good, as those residing in the Proposed Scheme would not have to travel far to reach open spaces.

³⁹ NHS, 2021; Find a Dentist. Accessed online: <https://www.nhs.uk/service-search/find-a-dentist/>

⁴⁰ City of Westminster, 2021; City Plan 2019-2040.

⁴¹ City of Westminster, 2018; City for All: Westminster Open Spaces and Biodiversity Strategy - Draft for Consultation.

⁴² Greater London Authority, 2021; The London Plan.

Table 13-11 Open Spaces Accessible from the Site

Open Space Categorisation (GLA Guidance)	Guidelines on Size of Open Space (ha)	Guidelines on Distances from Site (km)	Name of Open Space	Approximate Size (ha)
Regional Parks	400	3.2-8	-	-
Metropolitan Parks	60	3.2	Hyde Park	142
			Regents Park	166
District Parks	20	1.2		
Local Parks and Open Spaces	2	0.4	-	-
Small Open Spaces	<2	<0.4	Paddington Green	0.62
			St. Mary's Churchyard	1.31
Pocket Parks	<0.4	<0.4	Broadley Street Gardens	0.34
			Orange Park	0.40
			Floating Pocket Park	0.05
			Greenside Community Space	0.10

Source: Greater London Authority, 2021; The London Plan.

Play Space

- 13.5.32 As set out in the London Plan, safe and stimulating options for play are 'essential for children and young people's mental and physical health'⁴³. The City of Westminster's City Plan 2019-2041⁴⁴, sets out in paragraph 34.7 that 'there is a deficiency of play space in the city which will increase if we do not ensure that future developments provide sufficient opportunities for children and young people. We are committed to providing accessible and active play space that caters for the needs of all children and young people in the city as well as their parents and carers. Major residential development should provide the quantum of play space in accordance with the Mayor of London's Shaping Neighbourhoods: Play and Informal Recreation SPG'.
- 13.5.33 According to Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Document, 'the provision of good quality places to play is an integral part of the creation of lifetime neighbourhoods'⁴⁵. The provision of play space should be appropriate to the needs of different age groups. This includes the expected distance, taken into consideration physical barriers, of travel to access these facilities. Indicatively, types of suitable play space and expected distance of travel by age are given in Table 13-12 below.
- 13.5.34 The current provision of existing play space is given in Table 13-12 below. There are two play spaces appropriate for the age 0-4 group; six play spaces appropriate for the age 5-11 group; and four play spaces appropriate for ages 12 and above, with the largest contribution made by the nearby Regent's Park.

⁴³ Greater London Authority, 2021; The London Plan.

⁴⁴ City of Westminster, 2021; City Plan 2019-2040.

⁴⁵ Greater London Authority, 2012; Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance.

Table 13-12 Existing Play Space Provision

Maximum Walking Distance from Homes (taking barriers into account) (m)	Age Group	Name of Space	Indicative Distance from Site (m)	Approximate Size (ha)
100m	0-4	Hall Tower Playground	75m	0.07
		Broadley Street Gardens Playground	25m	0.05
400m	5-11	Broadley Street Gardens	25m	0.16
		St. Mary's Churchyard Playground	200m	0.04
		Orange Park	160m	0.10
		Lisson Green Sports Pitches and Playground	400m	0.44
		Greenside Community Basketball Court	400m	0.05
		Greenside Community Centre Outdoor Gym	400m	0.05
800m	12+	Kennet House Pitch	0m	0.04
		John Aird Court Pitch	420m	0.05
		Regent's Park	800m	148
		St. John's Wood Church Gardens and Outdoor Gym	780m	0.37
Total				149.4

Source: Greater London Authority, 2020; *Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance*.

Future Baseline

13.5.35 As identified in the Legislation and Planning Policy Context section of this chapter, the Church Street / Edgware Road and Ebury Bridge Estate Housing Renewal Areas in which the Proposed Scheme is located will change considerably. The CoW City Plan outlines plans to provide housing and jobs in the renewal areas, contributing to the CoW's aspirations to deliver 20,685 new homes in the period to 2040.

13.6 Environmental design and management

13.6.1 There are no adverse potential effects that have been avoided, prevented, reduced or off-set through design and/or management of the demolition and construction or operational phases of the Proposed Scheme that relate to socio-economics.

13.6.2 The Proposed Scheme includes various additional measures that are designed to reduce any potential adverse effects upon the local community and economy once operational. These include:

- The provision of up to 9,574 sqm of employment land which will help to offset some 'deadweight' loss of employment land, and consist of a mixture of use class E,F1, and B8 space;
- The Illustrative Masterplan indicates the Application Site can provide up to 16,043 sqm of publicly accessible open space; and
- The Illustrative Masterplan indicates the Application Site can provide up to 5,664 sqm of play space provided for children and young people.

13.7 Assessment of effects

13.7.1 This section presents the potential effects arising from the Proposed Scheme and analyses the scale, duration (short, medium, long term, and permanent) and the significance of socio-economic effects relative to the baseline socio-economic conditions, described in the previous sections of this chapter. The following effects are assessed:

- Direct, indirect, and induced employment as a result of the enabling works, demolition, and construction phase, and on completion and occupation of the Proposed Scheme;
- Direct, indirect, and induced spending resulting from residents within the completed and occupied Proposed Scheme; and
- Broader social and community effects of the Proposed Scheme.

Effects during demolition and construction

13.7.2 Construction employment represents a positive economic effect that can be estimated as a function of the scale and type of construction (infrastructure and buildings). The following sections estimate gross employment arisen from the Proposed Scheme during the demolition and construction phase. They then consider leakage, displacement, and multiplier effects in order to assess the net effects on the Greater London economy.

Gross Direct Demolition and Construction Employment.

13.7.3 The estimated demolition and construction period is approximately 151 months. The construction work is not permanent and therefore the effect on employment will be temporary in nature. It is likely that the capital and revenue expenditure involved in the construction period will lead to increased output in the Greater London economy.

13.7.4 The employment resulting from the temporary construction phase can be estimated by applying an average gross output⁴⁶ per construction industry employee in London to the estimated total construction cost. This indicates that gross there are likely to be 197 full time equivalent (FTE) construction workers per annum on the Site during the demolition and construction phase.

Leakage

13.7.5 Leakage effects are the benefits to those outside the effect area. Analysis carried out on Census 2011 data indicates that 21.4% of people working in Greater London live outside the area⁴⁷. This corresponds to a low to medium leakage rate as set out by HCA Additionality Guidance⁴⁸, and implies that the majority of employment opportunities will go to people living within Greater London. An adjustment of 21.4% has been applied to the total 197 gross construction jobs. It is therefore estimated that 155 employees from within Greater London and 42 employees from outside Greater London will be working per annum at the Proposed Scheme during the enabling works, demolition, and construction period.

Displacement

13.7.6 Displacement measures the extent to which the benefits of a project are offset by reduction of output or employment elsewhere. An additional demand for labour cannot simply be treated as a net benefit – it

⁴⁶ Office for National Statistics, 2020; Construction Output: Value Non-Seasonally Adjusted Current Prices by Region.

⁴⁷ Office for National Statistics, 2012; Census 2011.

⁴⁸ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition

has the potential to remove workers from other positions. Consequently, the net benefit is reduced by the extent that this occurs.

- 13.7.7 Construction workers are typically to move between construction projects in Greater London when delays occur or to help the workforce meet particular construction deadlines. Overall, it is assumed that due to the flexibility of the labour market and the fact that construction workers at the Proposed Scheme represent such a small proportion of the Greater London construction labour force, displacement of the direct construction employment will be low.
- 13.7.8 The HCA Additionality Guidance⁴⁹ provides ‘ready reckoners’ for displacement. Within the context of a Greater London construction project, a low displacement of 25% is judged to be appropriate. This is considered to be a best practice approach in the absence of specific local information that might provide a defensible justification for another level of displacement being used, either above or below 25%. Applying this level of displacement to the total gross direct employment figure results in a net direct employment figure of 117 jobs per annum during the enabling works, demolition and construction period.

Multiplier Effect

- 13.7.9 In addition to the direct employment generated by the Proposed Scheme itself, there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth will arise locally through manufacturing services and suppliers to the construction process (indirect or supply linkage multipliers). Additionally, part of the income of the construction workers and suppliers will be spent in Greater London, generating further employment (in terms of induced or income multipliers).
- 13.7.10 The effects of the multiplier depend on the size of the geographical area that is being considered, the local supply linkages, and income leakage from the area. The HCA Additionality Guidance⁵⁰ provides a ‘ready reckoner’ of composite multipliers – the combined effect of indirect and induced multiplier effects. This is considered to be a best practice approach in the absence of specific information that might provide a defensible justification for another multiplier effect level being used, appropriate to the sectors concerned. Applying the 1.7 multiplier to the figure for total net direct employment of 148 results in a net indirect employment of 104 during the enabling works, demolition and construction period.

Net Additional Construction Employment

- 13.7.11 Table 13-13 presents the temporary employment generated by the Proposed Scheme taking leakage, displacement, and multiplier effects into account. For the Proposed Scheme, the total net additional employment created within Greater London is estimated to be 199 while 53 jobs will be created outside of London. The Proposed Scheme will therefore support overall a total of 252 net jobs on average per year during the enabling works, demolition, and construction period.

Table 13-13 Net Additional Construction Employment Per Year

	Greater London	Outside Greater London	Total
Gross Direct Employment	155	42	197
Displacement	-38	-11	-49
Net Direct Employment	117	31	148
Indirect and Induced Employment	82	22	104
Total Net Employment	199	53	252

Source: AECOM Calculations.

⁴⁹ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition

⁵⁰ Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition

- 13.7.12 In the context of a large labour pool of construction workers in Greater London, the direct, indirect, and induced employment, expenditure, and upskilling created by the demolition and construction phase of the Proposed Scheme is likely to have a **minor beneficial (not significant), temporary** effect on the Greater London economy.

Effects for completed development phase

- 13.7.13 The Proposed Scheme will generate permanent jobs once it is complete and operational. In estimating operational job generation, it is importance to consider not just the gross effects of the Proposed Scheme, but also the net effects. This is achieved by considering the leakage, displacement, and multiplier effects, as well as any loss of jobs associated with the existing site activities.

Employment

Existing Employment ('Deadweight')

- 13.7.14 'Deadweight' refers to outcomes which would have occurred without intervention, such as if the Proposed Scheme were to result in disruption to any existing economic activity currently occurring in relation to the Application Site.
- 13.7.15 The following employment-generating uses are located on the existing site:
- 4,804 sqm retail (high street) floorspace area (GIA) which comprises discount stores, a chemist, and a hardware store;
 - 454 sqm retail (food store) floorspace area (GIA) which comprises a bakery and grocer's;
 - 642 sqm general office (corporate) floorspace area (GIA);
 - 2,736 sqm of storage and distribution floorspace area (GIA);
 - 120 sqm of medical or health services floorspace area (GIA);
 - 174 sqm of sui generis floorspace area (GIA), which comprises the Lord High Admiral pub;
 - 159 sqm of sui generis floorspace area (GIA), which comprises a Ladbrokes bookmakers; and
 - 848 sqm of learning and non-residential institution floorspace area (GIA), which comprises Church Street Library.
- 13.7.16 In terms of employment-generating space, it is estimated that there are 408 gross direct employees associated with the existing operational employment space on-site. This figure has been estimated by applying the average employment density provided in the HCA Employment Densities Guidance⁵¹ to the floorspace figures listed above. The employment density for general office (corporate)⁵² floorspace has been used as it most closely approximates to the current use of offices on site. It has been assumed that the employment density of the medical and health services floorspace approximates to that of retail (high street)⁵³ floorspace, as this most closely resembles the use on site. It has been assumed that the employment density of the sui generis floorspace comprising Ladbrokes bookmakers approximates to the density of retail (high street)⁵⁴. It has been assumed that the employment density of the sui generis floorspace comprising the Lord High Admiral pub approximates to the density of restaurants and cafes⁵⁵. It has been assumed that the learning and non-residential institution floorspace comprising Church Street library approximates to the density of visitor and cultural attractions (mixed use venue)⁵⁶.
- 13.7.17 Assuming a leakage of 21.4% outside Greater London, a low level of displacement, and a 1.7 multiplier, it is estimated that the total net deadweight employment relating to the existing Site is 520 employees, of which 409 are from the Greater London area. This is presented in Table 13-14.

⁵¹ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

⁵² Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

⁵³ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

⁵⁴ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

⁵⁵ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

⁵⁶ Homes and Communities Agency, 2015; Employment Densities Guide: Third Edition.

Table 13-14 Net Additional 'Deadweight' Employment

	Greater London	Outside Greater London	Total
Gross Direct Employment	321	87	408
Displacement	-80	-22	-102
Net Direct Employment	241	65	306
Indirect and Induced Employment	168	46	214
Total Net Employment	409	111	520

Source: AECOM Calculations 2021. Homes and Communities Agency, 2015; Employment Densities Guide.

Total Net Operational Employment

- 13.7.18 The Applicant is seeking to provide approximately 3,500 sqm Gross Internal Area (GIA) flexible commercial floorspace (Use Class E), alongside 1000 sqm GIA of local community and learning space (Use Class F1), and 4,900 sqm GIA of storage and distribution space (Use Class B8). The Applicant is also seeking to provide approximately 5,500 sqm of plant and service space, and 8,500 sqm of parking and deliveries space, but these uses are not considered to significantly contribute to employment generation, and have therefore not been included in calculations of employment generation. The Applicant is also seeking to provide 174 sqm of sui generis floorspace equivalent to the floorspace lost in the demolition stage at the Lord High Admiral pub. The outline planning application maximum parameters allows for the pub to be re-provided at the same floorspace once the Proposed Scheme is operational as part of a future RMA, although as this is not guaranteed, and the sui generis use class is too broad to ensure that it will be used for employment-generating purposes, the possible employment that this space could generate has been excluded from the following calculations. The commercial (Use Class E) floorspace is assumed to be comprised entirely of retail (high street) space, as this most closely represents the current usage of employment-generating space. However, possible uses under this use class designation may involve higher or lower employment densities; it should therefore be noted that the gross employment that could actually be generated by the Proposed Scheme may differ from the estimate made here.
- 13.7.19 The GLA London Employment Sites Database⁵⁷ provides default employment density assumptions for different types of floorspace based on evidence from the GLA Industrial Land Survey. The density assumptions applied here are for: retail (high street) space approximating to Use Class E provision in the Illustrative Masterplan; visitor and cultural attractions (mixed use venue) space approximating to Use Class F1 provision in the Illustrative Masterplan. When complete and operational, the Proposed Scheme thus is estimated to support 355 gross jobs on-site, as presented in Table 13-15.

⁵⁷ Greater London Authority, 2017; London Employment Sites Database.

Table 13-15 Gross Direct Employment arising from the Proposed Scheme

	Floorspace (sqm GIA)	Employment Density (per sqm GIA)	Gross Direct Employment
Storage or Distribution (Use Class B8)	4,900	70	76
Commercial, Business and Service (Use Class E)	3,500	15	195
Local Community and Learning (Use Class F1)	1,000	125	8
Total	9,400		279

Source: AECOM Calculations 2021. GLA, 2017; London Employment Sites Database.

13.7.20 As previously stated, this gross employment figure reflects an assumption that the commercial (Use Class E) space is comprised entirely of retail (high street) space; other possible uses under this use class designation could generate a higher number of jobs. Therefore, more jobs could be generated than is reported below.

13.7.21 The decant strategy outlines that WCC are unable to offer existing businesses the right to return or the right of first refusal. Existing businesses are being assisted to find alternative accommodation. Businesses will be invited to review the new units on completion, but the application process is as standard. Further information on the decant strategy for existing businesses is given in the Estate Regeneration Statement⁵⁸.

13.7.22 Taking account of the existing net 'deadweight' employment lost on-site and assuming a leakage of 21.4% outside Greater London, a low level of displacement and a 1.7 multiplier, it is estimated in a worst case scenario that the Proposed Scheme could result in the net loss of 165 jobs, of which 131 are estimated to be of residents of Greater London. This calculation can be seen in Table 13-16.

Table 13-16 Net Additional Employment

	Greater London	Outside Greater London	Total
Gross Direct Employment	219	60	279
Displacement	-55	-15	-70
Indirect and Induced Employment	114	32	146
Total Employment Created	278	77	355
Deadweight Employment	409	111	520
Total Net Employment	-131	-34	-165

Source: AECOM Calculations 2021. HCA, (2015); Additionality Guide.

13.7.23 It should be noted that, in line with the Estate Regeneration Statement⁵⁹, existing retailers and traders will be supported in finding, and relocating to, new premises in the local area in order to minimise the likelihood that their businesses will be affected by the Proposed Scheme.

⁵⁸ Savills, 2021; Church Street Estate Regeneration Statement.

⁵⁹ Savills, 2021; Church Street Estate Regeneration Statement.

13.7.24 Considering the additional net direct, indirect, induced, and ‘deadweight’ employment created or displaced by the permanent employment of the Proposed Scheme, it is assessed that the Proposed Scheme will have a **minor adverse (not significant), permanent** effect on the Greater London economy.

Value of Local Spending by Residents

13.7.25 To estimate the effect of the Proposed Scheme in terms of additional local expenditure, average weekly spending figures for residents in Greater London have been applied to the estimated number of residents arising from the Proposed Scheme. This has been calculated using the Population Yield Calculator published by the GLA⁶⁰ using the accommodation unit mix.

13.7.26 The Illustrative Masterplan for the Proposed Scheme is based on 1,121 homes and the socio-economic assessment considers the potential impacts arising from this assumed maximum number of homes. As such, the accommodation schedule for the Proposed Scheme, shown in Table 13-17, is indicative; it is however considered representative of likely mix of homes by size and by tenure, including with respect to provision of affordable homes.

Table 13-17 Illustrative Accommodation Unit Mix

Number of Bedrooms	Market Sale (includes leaseholder reversion)	Social Reversion	New Social	New Intermediate	Total
1	268	134	29	80	511
2	242	42	55	95	434
3	57	39	42	22	160
4	0	13	3	0	16
5	0	2	0	0	2
Total	567	228	129	197	1,121

13.7.27 Applying the above accommodation unit mix to the GLA Population Yield Calculator gives a total estimated population yield of 2,331 residents, of which 401 will be children between the ages of 0 and 15.

13.7.28 The ONS provides estimates of household spending by region⁶¹, which may be adjusted using 2011 Census data to provide an estimate of annual spending per resident. To ensure a conservative estimate of new local spending arising from the Proposed Scheme, it is assumed that some of those moving to the new market and intermediate tenure homes would already be residents in the local area (Greater London) and would thus not generate new net expenditure. To account for this, a displacement rate of 25% has been applied based on HCA ready reckoners. This discount also accounts for the potential for additional spending to occur at the Proposed Scheme itself, therefore removing the potential to ‘double count’ the employment benefits.

13.7.29 Further, it is assumed when estimating local spending that social tenure residents are not new to the local area and would not generate new expenditure.

⁶⁰ Greater London Authority, 2019; Population Yield Calculator (v3.2).

⁶¹ Office for National Statistics, 2019; Family Spending: Household expenditure by UK countries and regions, 2016 to 2018: Table A33.

13.7.30 Leakage takes into account the level of expenditure that is likely to take place outside of Greater London. As London is a large urban economy with a strong retail and services offer, it is anticipated that 90% of household expenditure will be retained within the metropolitan area⁶².

13.7.31 The application of these assumptions results in a total net expenditure of £8,775 per person per annum in Greater London, as shown in Table 13-18.

Table 13-18 Direct, Indirect, and Induced Spending per Person Per Annum in Greater London

	Gross Direct Expenditure	Net Direct Expenditure (Displacement)	Net Direct Expenditure (Displacement and Leakage)
Total Spending (£)	£13,000	£9,750	£8,775

Source: Office for National Statistics, 2017; Family Spending (Financial Year 2014 to Financial Year 2016).⁶³

13.7.32 Applying the average expenditure figures to the estimated number of residents of the Proposed Scheme (based on the population of 1,396 residents in market rate and intermediate homes) results in a total net benefit in Greater London of approximately £12,248,802 per annum. Further information is shown in Table 13-19.

Table 13-19 Direct, Indirect, and Induced Spending for the Proposed Scheme Per Annum in Greater London

	Gross Direct Expenditure	Net Direct Expenditure (After Displacement)	Net Direct Expenditure (After Displacement and Leakage)
Total Spending (£)	£18,146,373	£13,609,779	£12,248,802

Source: Office for National Statistics, 2019; Family Spending: Household expenditure by UK countries and regions, 2016 to 2018.⁶⁴

13.7.33 The additional expenditure created by the residents of the Proposed Scheme is likely to have a **minor beneficial (not significant) permanent** effect on the Greater London economy.

Broader Social and Community Effects

13.7.34 Expected broader social and community effects of the Proposed Scheme are the:

- Increase in the stock of housing;
- Increase in the stock of affordable housing;
- Increased demand for places at local schools;
- Increased demand for primary health services;
- Increased usage of open space; and
- Increased demand for child play space.

Housing

13.7.35 CoW's City Plan adopted in 2021 sets a target for 20,685 additional homes within the CoW by 2040, or on average 1,034 new homes per year. The current adopted London Plan (2021) sets out a similar housing target for CoW, with 9,850 new homes between 2019-2029, equivalent to 985 net new homes per year.

⁶² Homes and Communities Agency, 2014; Additionality Guide: A Standard Approach to Assessing the Additional Effect of Projects: 4th Edition.

⁶³ Office for National Statistics, 2017; Family Spending (Financial Year 2014 to Financial Year 2016).

⁶⁴ Office for National Statistics, 2019; Family Spending: Household Expenditure by UK countries and regions, 2016 to 2018.

- 13.7.36 The Proposed Scheme will contribute to meeting this new target by contributing up to 1,121 new homes to the stock of housing in the CoW, which represents 5.4% of CoW's City Plan target and 11.4% of the London Plan's 10-year target.
- 13.7.37 The decant strategy is to enable the full right of return for existing residents who elect to move temporarily and outlines that any redevelopment proposal would include the replacement of all existing council properties. Secure tenants can elect to relocate permanently from the site, or temporarily if they wish to return. A dedicated Relocations team has been established to assist each secure tenant household in their temporary relocation. Secure council tenants are provided the highest bidding priority in the choice-based lettings system. Further information on the decant strategy for the reprovision of housing for existing residents is given in the Estate Regeneration Statement⁶⁵.
- 13.7.38 Taking into account the number of homes lost during the demolition phase results in a net total of 721 additional homes. This net additional provision of housing is therefore considered to have a **moderate beneficial (significant) permanent** effect on meeting the target for new housing provision in CoW.

Affordable Housing

- 13.7.39 Affordable housing consists of both homes subsidised below market values ('intermediate' homes) and socially rented homes. The London Plan sets out a strategic target for "50 per cent of all new homes delivered across London to be genuinely affordable" and major developments to provide affordable housing at the threshold level of a "minimum of 35 per cent".
- 13.7.40 The CoW City Plan requires that "at least 35% of all new homes will be affordable across Westminster". Of these affordable homes, the CoW aims for 60% of the affordable units to be 'intermediate' affordable housing for rent or sale, and 40% to be socially rented.
- 13.7.41 The Proposed Development seeks to deliver 50% affordable housing via habitable rooms across the Illustrative Masterplan (Site A, B and C), subject to viability discussions and GLA Grant Funding.
- 13.7.42 It is proposed that Site A would comprise 214 affordable residential units. This would equate to a 50% affordable housing offer as part of Site A via Habitable Rooms, and 50% when calculated on a unit basis. This would also include the reprovision of 98 social rented units.
- 13.7.43 In Site B and C (outline elements) the affordable housing offer is dependent on the number of units and habitable rooms coming forward at reserved matters stage. However, it is envisaged that the later Phases will also deliver 50% affordable housing.
- 13.7.44 Overall, the indicative masterplan could deliver up to 554 affordable units, equating to a 50% affordable housing offer.
- 13.7.45 The decant strategy is to enable the full right of return for existing residents who elect to move temporarily and outlines that any redevelopment proposal would include the replacement of all existing council properties, with commitments to enhance the number of affordable housing. There is also the option of a new home on the estate for all existing resident leaseholders, if it is their preference. Further information on the decant strategy for the reprovision of housing for existing residents is given in the Estate Regeneration Statement⁶⁶.
- 13.7.46 CoW's City Plan sets a target for 20,685 additional homes within the CoW by 2040; applying CoW's 35% affordable housing target implies that 7,234 of these homes would be affordable. The Proposed Scheme is therefore considered to have a **minor beneficial (not significant), permanent** effect on affordable housing provision in the CoW on that basis.

Provision of Education

- 13.7.47 For this assessment, child occupancy rates provided by the GLA's Population Yield Calculator have been applied to the accommodation schedule of the Proposed Scheme to calculate the net change in children requiring primary and secondary school places. The estimated child yields for education

⁶⁵ Savills, 2021; Church Street Estate Regeneration Statement.

⁶⁶ Savills, 2021; Church Street Estate Regeneration Statement.

associated with the Proposed Scheme (based on the provision of 1,121 homes) are presented in Table 13-20.

Table 13-20 Estimated Child Yields for Education

	Primary School	Secondary School	Total
Proposed Scheme	130	62	192

Source: GLA, 2019; Population Yield Calculator (v3.2). AECOM Calculations.

Primary School Education

13.7.48 The baseline analysis shows that there is currently a surplus of 1,099 primary school places in the CoW within 2km of the Site, or 797 surplus places if a school is deemed at capacity when 95% of their places are taken up. It is noted that the construction period for the Proposed Scheme lasts until 2036, and forecasting capacity when various phases of development are completed up to 2036 is inherently difficult. However, the currently available information indicates that the 130 primary school pupils are likely to be able to be absorbed by local primary schools; given there is currently surplus of 797 pupils at 95% capacity; this would still leave remaining capacity within the local area.

13.7.49 Overall, it is assessed that the effect on primary education provision from the increased demand generated by the Proposed Scheme will be a **negligible (not significant) permanent** effect.

Secondary School Education

13.7.50 The baseline analysis shows that there is currently a surplus of 1,126 secondary school places within 4.5km of the Application Site. If a 95% occupancy rate is assumed to indicate no spare capacity, there are a total of 424 surplus places within this distance.

13.7.51 Given the increase in demand arising for secondary school places is estimated to be fairly modest at 62 places, the large number of local secondary schools with capacity are likely to be able to easily absorb this demand. The Proposed Scheme is therefore likely to have a **negligible (not significant) permanent** effect on secondary education provision.

Primary Healthcare

13.7.52 There are currently 6 GP surgeries within 1km of the Proposed Scheme, with 22.9 FTE GPs and a total patient list size of 38,743. As explained in the Baseline section, there are on average 1,695 patients per FTE GP, which is below (better than) the 1:1,800 target ratio set by the Royal College of General Practitioners.

13.7.53 The additional 2,331 residents estimated to reside within the Proposed Scheme will place additional demand on the local health facilities. Taking a 'worst-case scenario' approach in which all residents register with local GP practices, the residents would increase the overall practice list size to 1,794 patients per GP, which does not exceed the recommended GP:patient ratio. As such, it is deemed that the Proposed Scheme will have a **negligible (not significant), permanent** effect on primary healthcare provision locally.

Open Space

13.7.54 The baseline analysis shows that the Proposed Scheme is located in proximity to several publicly accessible open spaces that fulfil the criteria of the London Plan Open Space Hierarchy, including minimum distance from Proposed Scheme⁶⁷. These include four pocket parks, two small open spaces (Paddington Green and St. Mary's Churchyard), and two Metropolitan Parks (Hyde Park and Regents Park). However, there are no local parks and open spaces, district parks, or regional parks within the relevant catchment area for the Proposed Scheme site. Moreover, the CoW Open Spaces and

⁶⁷ Greater London Authority, 2021; The London Plan.

Biodiversity Strategy⁶⁸ also notes that the area surrounding the Proposed Scheme has a deficiency of open space.

- 13.7.55 According to the Illustrative Masterplan, open space of different types will be provided around each site on the ground floor. The area of open space in the Proposed Scheme will total a minimum of 16,043 sqm of publicly accessible open space, equivalent to 41.8% of the total site area. The CoW City Plan outlines that the Church Street / Edgware Road Housing Renewal Area lies in an area of open space deficiency, and points to the Church Street Masterplan document which envisages an increase of up to 40% in publicly accessible open space in the area. Policy 34 in the CoW City Plan states that “*major developments will be required to provide new or improved public open space*”.
- 13.7.56 The provision of open space within the Proposed Scheme will help mitigate any impact the new resident population may have on existing public spaces in the local areas and will provide new space accessible to existing residents from the surrounding area. It will also make a contribution towards the CoW’s target to increase open space in the Church Street area by 40%. It is therefore assessed that the Proposed Scheme will have a **minor beneficial (not significant) permanent** effect upon the provision of open space locally.

Play Space

- 13.7.57 The GLA’s SPG⁶⁹ recommends that 10 sqm of play and recreation space per child should be provided for children and young people in new developments.

Applying the GLA’s Population Yield Calculator⁷⁰ to the residential accommodation schedule shows that 438 children are expected to reside in the Proposed Scheme that would require play space. As shown in

⁶⁸ City of Westminster, 2018; City for All: Westminster Open Spaces and Biodiversity Strategy - Draft for Consultation.

⁶⁹ Greater London Authority, 2012; Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance.

⁷⁰ Greater London Authority, 2019; Population Yield Calculator (v3.2).

- 13.7.58 Table 13-21, by applying the GLA's SPG guidance, there is an estimated requirement for 4,390 sqm of play space to serve the 438 children aged 0-17 calculated to reside within the Proposed Scheme.
- 13.7.59 The Illustrative Masterplan indicates that the Site is able to provide a total of up to 5,664 sqm of playable space as part of the Proposed Scheme. Broken down by age group, this will comprise of approximately 3,963 sqm of play space suitable for children under five years old, 1,701 sqm of play space suitable for children aged between five and 11 years old, and 8,570 sqm of play space suitable for children aged 12-18 years old (provided off-site via existing parks and play spaces). This provision exceeds the recommended amount arising from the GLA's SPG Guidance and GLA's Population Yield Calculator for all age groups. Details on the specific breakdown by age group is likely to be adjusted as the scheme develops in greater detail.
- 13.7.60 The Illustrative Masterplan has been designed such that a large portion of the play space quantum is provided on the ground floor so that it is publicly accessible and is not restricted to residents of the Proposed Scheme.
- 13.7.61 In conclusion, the play space provided as part of the Proposed Scheme will likely exceed the GLA play space requirement. Given this, and that a portion of the space is entirely publicly accessible, the Illustrative Masterplan for the Proposed Scheme is anticipated to have a **minor beneficial (not significant) permanent** effect on play space provision within the local area.

Table 13-21 Estimated Play Space Requirements

Age Group	Number of Children in Proposed Scheme	Total Play Space Recommended (sqm)	Total Play Space within Proposed Scheme
0-4	187	1,870	3,963
5-11	145	1,450	1,701
12-15	69	690	8,570*
16-17	37	370	
Total	438	4,380	5,664

Sources: Greater London Authority, 2019; Population Yield Calculator (v3.2). Greater London Authority, 2012; Shaping Neighbourhoods: Children and Young People’s Play and Informal Recreation SPG.

* off-site provision via existing parks and play spaces

13.8 Further mitigation and monitoring

13.8.1 The employment generation associated with the existing 9,937 sqm (GIA) of employment space at the Site will be somewhat replaced by the jobs provided by the new employment space, but overall the net effect on employment is considered to be **minor adverse**. In order to mitigate the scale of the deadweight job losses, the retailers currently on-site should be made aware of the redevelopment plans and given as much notice as possible. This will give them more time to locate to alternative premises, or to relocate jobs to other branches. Further information on the adopted decant strategy is given in the Estate Regeneration Statement⁷¹, which outlines the approach taken to informing existing businesses about the Proposed Scheme.

⁷¹ Savills, 2021; Church Street Estate Regeneration Statement.

13.9 Residual effects and conclusion

Table 13-22 Socio-Economics Summary of Residual Effects

Description of Effect (on receptor)	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction						
Net additional construction employment	Temporary, long term	Low	Not applicable	Minor beneficial (not significant)	Not applicable	Minor beneficial (not significant)
Complete and Operational						
Net operational employment	Permanent	Low	Not applicable	Minor adverse (not significant)	Communication to raise awareness with current commercial occupants	Minor adverse (not significant)
Local spending by residents	Permanent	Low	Not applicable	Minor beneficial (not significant)	Not applicable	Minor beneficial (not significant)
Housing	Permanent	Medium	Not applicable	Moderate beneficial (significant)	Not applicable	Moderate beneficial (significant)
Affordable Housing	Permanent	Low	Not applicable	Minor beneficial (not significant)	Not applicable	Minor beneficial (not significant)
Provision of primary school education places	Permanent	Low	Not applicable	Negligible (not significant)	Not applicable	Negligible (not significant)
Provision of secondary school education places	Permanent	Low	Not applicable	Negligible (not significant)	Not applicable	Negligible (not significant)
Provision of primary healthcare	Permanent	Low	Not applicable	Negligible (not significant)	Not applicable	Negligible (not significant)
Provision of open space	Permanent	Medium	Not applicable	Minor beneficial (not significant)	Not applicable	Minor beneficial (not significant)
Provision of play space	Permanent	Low	Not applicable	Minor beneficial (not significant)	Not applicable	Minor beneficial (not significant)

13.10 Cumulative effects assessment

- 13.10.1 Cumulative effects occur when a single receptor is affected by more than one effect at any point in time. This section of the chapter assesses the potential effects of the Proposed Scheme in combination with the potential effects of other development schemes (referred to as 'cumulative developments') within the surrounding area, as listed within *Chapter 2: EIA Methodology of this ES*.
- 13.10.2 The Proposed Scheme is expected to start construction in June 2023 and is expected to be completed by January 2036. The Proposed Scheme's location within the Church Street / Edgware Road Housing Renewal Area⁷² means that there may be substantial and fast-paced change in the local area, which could change the conditions that residents experience during the operational phase.

Cumulative effects during demolition and construction

- 13.10.3 The demolition and construction phase of the Proposed Scheme, along with the committed developments identified within *Chapter 2: EIA Methodology of this ES*, will generate additional construction-related employment within the CoW. The scale of the construction employment generated cannot be readily quantified on the basis that the information available for each scheme is commercially sensitive. In addition, the timing and phasing of the construction of these schemes, along with the Proposed Scheme, may not occur over the same time periods, therefore the temporary construction-related effects may not coincide.
- 13.10.4 However, overall the combined effects of the developments are likely to have a **moderate beneficial, long term cumulative** effect on construction employment due to the potential for the committed developments to generate a large amount of construction employment (in addition to the Proposed Scheme).
- 13.10.5 There are no additional mitigation or monitoring measures required during the demolition or construction phase with regards to socio-economics.
- 13.10.6 There are no significant adverse residual socio-economic cumulative effects relating to the construction phase.

Cumulative effects for completed development

- 13.10.7 There are several committed developments which will provide permanent employment space for local residents. In particular, there are committed developments which have specific designations for retail space which may help to offset the deadweight jobs lost as a result of the Proposed Scheme. Within the Paddington area, there will be a large amount of employment-generating floorspace developed. An example of this sort of development will be seen at the Paddington Cube site. This development will contain 50,000sqm of office/commercial uses, alongside retail and restaurant space. It is likely that the employment generated from other schemes will exceed the adverse net total effect on employment resulting from this scheme. This will represent an overall **minor beneficial, permanent cumulative effect** on the Greater London and regional economy.
- 13.10.8 The committed developments, when completed, will bring a substantial number of new residents to the CoW who will spend a large proportion of their income in Greater London. The additional spending of residents living in the combined schemes is assessed to have a **moderate beneficial, permanent cumulative** effect on the Greater London economy.
- 13.10.9 If all the committed developments and the Proposed Scheme are built, a large number of new residential units would be expected to come forward. Indicatively, for those schemes where information is available, at least 1,708 residential units are expected to be delivered; additional floorspace is designated to residential uses in schemes where no breakdown by units is available. Several of the cumulative schemes have large residential elements. For example, One Merchant Square could provide up to 436 residential units. Cumulative schemes such as this will provide a substantial contribution to the provision of open market and affordable housing within the CoW. The units will also be in a range of sizes and types of tenures for new residents. This level of provision is likely to have at least a **moderate beneficial, permanent cumulative** effect on both market and affordable housing provision within the CoW.

⁷² City of Westminster, 2021; City Plan 2019-2040.

- 13.10.10 Residents within the forthcoming residential committed developments in the surrounding area are likely to place additional demand on existing social infrastructure. 2,572 sqm (GIA) floorspace is designated for a primary school (Use Class D1) within the Paddington Exchange (North Wharf Gardens) Phase 2 East scheme. The provision of a primary or secondary school is not anticipated in any of the other cumulative development schemes. However, it is likely community infrastructure levy (CIL) or section 106 contributions will be made towards education provision by these developments, if required to mitigate potential adverse effects on local provision. Assuming that appropriate contributions are secured, and given the current surplus of primary school places identified within the Baseline, it is assessed that the committed developments will have a **negligible, permanent cumulative** effect on primary education. The smaller, but nonetheless large current surplus of secondary school places locally means that the committed developments are also assessed to have a **negligible, permanent cumulative** effect on secondary education provision.
- 13.10.11 There is the potential for additional pressure on local health services due to a number of largely residential developments in the local area. The existing ratio of GPs to patients within local practices is currently lower (i.e. better) than the national target and this will not be overwhelmed by the expected population increase as a result of the Proposed Scheme. None of the cumulative schemes listed include the provision of primary health facilities specifically. It is likely that other residential schemes will make CIL contributions to contribute towards increased capacity to deal with the demand for primary healthcare. Assuming mitigation through CIL contributions for the increased demand for primary healthcare caused by the Proposed Scheme is put in place, a **negligible, permanent cumulative** effect on primary healthcare is expected.
- 13.10.12 The Proposed Scheme and a number of the cumulative schemes is anticipated to provide new private and public open or landscaped space for use by residents and employees at the developments as well as members of the public. Therefore, the cumulative effect on open space is anticipated to result in a **permanent minor beneficial** effect on open space provision locally.
- 13.10.13 The increase in residential units arising from the cumulative schemes will increase demand for play space and put pressure on existing play space provision. However, the cumulative schemes are likely to include additional new play space and open space which is playable in nature (either on-site or off site). Assuming that this provision meets the demands of new development, the cumulative schemes are assessed to have a **permanent minor beneficial** effect on the provision of play space.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 14: Transport

Westminster City Council

November 2021

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14. Traffic and Transport

14.1 Introduction

14.1.1 This chapter reports the findings of the Traffic and Transport assessment and has been completed by Stantec.

14.2 Legislation, policy and guidance

14.2.1 This assessment has been undertaken according to relevant legislation and guidance set out in national, regional and local planning policy.

National Planning Policy

National Planning Policy Framework (2021 revision)

14.2.2 The revised National Planning Policy Framework (NPPF)¹ originally came into force in July 2018 and was updated in July 2021. The presumption in favour of sustainable development remains the core objective of the NPPF. Paragraph 10 states that, *“So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development”*.

14.2.3 To promote sustainable transport, paragraph 110 states that, *“In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- safe and suitable access to the site can be achieved for all users;
- the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46; and
- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”

14.2.4 Additionally, paragraph 113 of the NPPF states, *“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”*

14.2.5 In Section 9 ‘Promoting sustainable transport’, paragraph 104 states that, *“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*

- the potential impacts of development on transport networks can be addressed;
- opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- opportunities to promote walking, cycling and public transport use are identified and pursued;
- the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places”

14.2.6 Paragraph 111 of the NPPF states, *“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”*

¹ Ministry of Housing, Communities and Local Government. National Planning Policy Framework (NPPF), 2018 (Updated 2021)

Regional Planning Policy

14.2.7 The following regional planning policy is also relevant to the development:

- Transport for London's (TfL) 'Vision Zero' policy (2018)²;
- Greater London Authority (GLA), 'Mayor's Transport Strategy' (2018)³; and
- Greater London Authority (GLA), 'London Plan' (2021)⁴

Local Planning Policy

City of Westminster City Plan (2019 - 2040) – Adopted April 2021⁵

14.2.8 This document is the local plan for Westminster. It sets out the vision for the City of Westminster up to 2040 and puts in place a policy framework to deliver that vision.

14.2.9 Relevant to Transport are the following Policies:

- Policy 24 Sustainable transport;
- Policy 25 Walking and cycling; and
- Policy 29 Freight and servicing.

Guidance

Guidelines for the Environmental Assessment of Road Traffic (IEMA) (2004)⁶

14.2.10 This best practice guidance document forms the basis of EIA assessments, including detailed descriptions of transport related impacts. This document will be reviewed throughout the EIA process. The assessment in this ES chapter is in accordance with the guidance outlined in the IEMA document. The guidance outlines the assessment criteria, this is detailed from paragraph 14.5.41 and summarised below.

14.2.11 The IEMA guidance is used to determine a 'Significance' value for each relevant transport link/sensitive receptor (hereafter 'link') for the demolition and construction phase, as determined from 'Sensitivity' and 'Magnitude of Impact'. An assessment of the operational phase estimated trip generation has been scoped out of this ES chapter, owing to the net reduction in vehicle trips generated by the Proposed Scheme when compared to the baseline Application Site. See *ES Volume II: Technical Appendix 7-1: EIA Scoping Report and EIA Scoping Opinion*.

14.2.12 The 'Significance' criteria adopted for likely traffic and transport effects is based on the 'Magnitude of Impact' (or scale) of the change as well as the 'Sensitivity' (or importance) of the receptor affected. The magnitude of effects and receptor sensitivity will be compared to estimate the significance of the effect. The below Table 14-1 shows how the Receptor Sensitivity and Magnitude of Impact determine the Significance.

² Transport for London's (TfL) 'Vision Zero' policy (2018)

³ Greater London Authority (GLA), 'Mayor's Transport Strategy' (2018)

⁴ Greater London Authority (GLA), 'London Plan' (2021)

⁵ City of Westminster City Plan (2019 - 2040) – Adopted April 2021

⁶ Institute of Environmental Management and Assessment (IEMA). 'Guidelines for Environmental Impact Assessment' (2004)

Table 14-1: Significance as derived from Receptor Sensitivity and Magnitude of Impact

		Sensitivity of Receptor		
		High	Medium	Low
Magnitude of Impact	Large	Major	Major	Moderate
	Moderate	Major	Moderate	Minor
	Small	Moderate	Minor	Minor
	Negligible	Negligible	Negligible	Negligible

14.2.13 The 'Magnitude of Impact' value has been determined by considering Severance, Pedestrian and Cycle Delay and Amenity, Fear and Intimidation, and Accidents and Road Safety together.

14.2.14 Finally, a 'Significance' value for each link for the demolition and construction phase, as determined from 'Sensitivity' and 'Magnitude of Impact'.

LA 104 Environmental Assessment and Monitoring Revision 1 (August 2020), published by Highways England (HE) as part of the Design Manual for Roads and Bridges (DMRB)⁷

14.2.15 This document sets out the principles and purpose of an environmental assessment. The significance matrix used to assess the environmental effects with respect to transport is provided within the guidance document. The 'Reporting of environmental assessments' chapter within the LA 104 will be reviewed to ensure the reporting follows good practice and is clear for the reader.

14.3 Consultation

14.3.1 On Friday 18 June, an EIA Scoping Report was submitted to Westminster City Council with a formal request for an EIA Scoping Opinion.

14.3.2 The EIA Scoping Opinion was received on 03 September 2021. A summary of the Transport related responses is set out in Table 14-2.

Table 14-2 Comments raised in EIA Scoping Opinion

WCC review comment/observation/clarification	Response provided in the ES/Planning Application
<p>Provide clarity on the method of determining the actual trip generation, provide this for the complete development along with the cumulative schemes.</p> <p>Scoping Opinion Request Report does not provide any quantified evidence to demonstrate that the anticipated Development traffic generated by the Proposed with cumulative Schemes would not exceed the relevant thresholds set out.</p>	<p>The trip generation has been based on the proposed development proposals for Site A (429 residential units) and the person trip rates has been extracted from TRICS (the sites were filtered on similar locational characteristics to the proposed site – mixed private/affordable housing, Greater London, PTAL 5 or 6). The existing site contains 145 residential units and a net trip generation assessment has been undertaken to determine the trip generation for the proposed site A. The existing modal split has been determined from Census 2011 data for the output area E01033605 : Westminster 009K. To determine the proposed modal split, the existing was adjusted accordingly to reflect the significantly reduced parking provision when compared against existing provision and local car ownership. The resulting proposed modal split was then multiplied by the person trip rates from TRICS. The trip generation results show a net reduction in trips associated with the Site under the proposals and thus operational traffic has been scoped out of this assessment as no links exceed EIMA thresholds for consideration:</p> <ul style="list-style-type: none"> • Links with all vehicle or Heavy Vehicles traffic flow increases of over 30%.

⁷ Design Manual for Roads and Bridges (DMRB). 'LA104 - Environmental Assessment and monitoring' (2020)

WCC review comment/observation/clarification	Response provided in the ES/Planning Application
	<ul style="list-style-type: none"> Links with high sensitivity receptors with flow increases greater than 10%. <p>The modal splits and trip rates are outlined in detail in the Transport Assessment.</p>
The officer has stated that trip generation figures should include a 24-hour assessment, given the location of the site.	Trip generation has been included as a peak hour as well as 24-hour assessment.

14.4 Assessment methodology

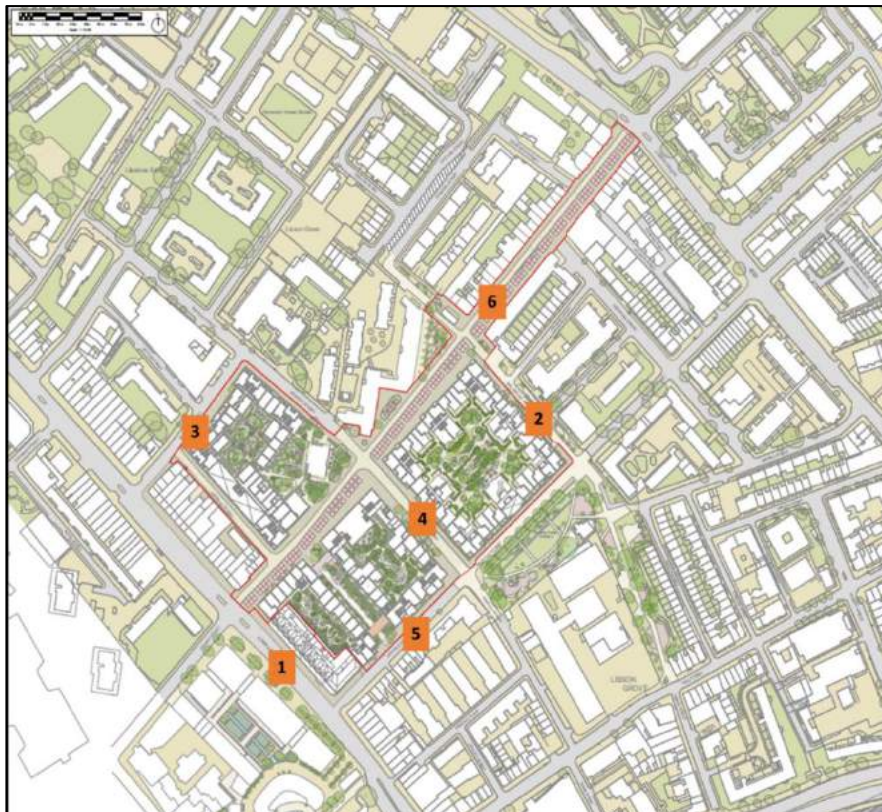
Determining baseline conditions and sensitive receptors

14.4.1 The considered links are shown below along with the source of the data:

- Link 1 – Edgware Road (DfT 2019);
- Link 2 – Salisbury Street Road (DfT 2019);
- Link 3 – Boscobel Street (Count data 2013);
- Link 4 – Penfold Street (Count data 2013);
- Link 5 – Broadley Street (Count data 2013); and
- Link 6 - Church Street (Count data 2013).

14.4.2 The considered links are shown on the below plan.

Figure 14-1: Locations of the considered links



14.4.3 As per IEMA (2004) guidelines, the scope of links includes roads which may experience higher traffic temporarily or indefinitely as a result of the Proposed Scheme.

Methodology for demolition and construction assessment

14.4.4 The demolition and construction works are proposed to begin in the 3rd quarter of 2022 and be completed during 2036. The peak construction traffic year is assumed at 2026 towards the end of the construction of Site A and commencement of works on Site B.

14.4.5 The indicative construction and delivery programme is shown in Table 14-3.

Table 14-3: Indicative demolition, construction and delivery programme

Development Activity	Anticipated Start Dates	Projected End Dates	Properties to be Completed
Site A	3rd Quarter 2022	3rd Quarter 2026	429 units
Site B	3rd Quarter 2026	3rd Quarter 2032	Up to 465 units
Site C	3rd Quarter 2032	2036	Up to 227 units
Total units to be delivered for the combined developments		Up to 1,200 units	

14.4.6 The routing of vehicle traffic is likely to occur along Edgware Road and Church Street (and possibly Broadley Street if it is able to be closed for construction vehicle access). If Broadley Street is used, access will also be required onto Penfold Street. For the purposes of a robust assessment of construction traffic, it will be assumed that all four roads are used by two-way construction traffic.

14.4.7 For this assessment, the anticipated construction traffic is to be added to the 2026 baseline as to provide a 'worst case scenario'. The uplift in the Heavy Delivery Vehicles (HDVs) traffic is assessed in accordance with IEMA Guidelines.

Methodology for completed development effects

14.4.8 The assessment of operational traffic associated the completed development has been scoped out of the EIA owing the net reduction in trips.

14.4.9 The distribution across the local road network is not proposed to change significantly thus there will be no uplift in trips across any of the considered links.

14.4.10 Nonetheless, an overview of the possible effects of the Proposed Scheme on the surrounding area is provided, predominantly regarding the uplift in active travel and public transport around the site.

Significance criteria

14.4.11 The IEMA Guidelines identify groups and special interests which should be considered in the assessment. Categories of receptor sensitivity have been defined from the principles set out in the IEMA Guidelines (2004) and these have been used to outline in broad terms the sensitivity of receptors to traffic for the categories of effect assessed in this chapter, although in detail, each receptor assessed will have a different sensitivity to each specific effect. Each link is thus given an appropriate sensitivity value.

14.4.12 A 'Magnitude of Impact' value is determined by considering Severance, Pedestrian and Cycle Delay and Amenity, Fear and Intimidation, and Accidents and Road Safety together in line with IEMA Guidelines.

14.4.13 Finally, a 'Significance' value for each link for the construction phase, as determined from 'Sensitivity' and 'Magnitude of Impact'. This assessment has been scoped out for the operational phase after completed development.

14.4.14 The sensitivity values for each considered link are detailed and justified and each of the 'Magnitude of Impacts' are defined in accordance with IEMA Guidelines.

14.4.15 The methodology and transport significance criteria utilised in this chapter reflects that contained within the 'Guidelines for Environmental Assessment of Road Traffic (1993)'.

- 14.4.16 The significance criteria adopted for likely traffic and transport effects is based on the magnitude (or scale) of the change as well as the sensitivity (or importance) of the receptor affected. The magnitude of effects and receptor sensitivity will be compared to estimate the significance of the effect.
- 14.4.17 As there are no published standard criteria, Table 14 4 includes a range of criteria to allow the specific characteristics of each effect to be considered. The assessment will set out the ‘magnitude’ using the terminology below for each receptor (in relation to each link), and then depending on the sensitivity of the receptor (i.e. high, medium or low) using the table below to determine the significance of the effect. For the purposes of this assessment a moderate or major significance of effect has been considered significant.

Table 14-4: Significance Matrix

		Sensitivity of Receptor		
		High	Medium	Low
Magnitude of Impact	Large	Major	Major	Moderate
	Moderate	Major	Moderate	Minor
	Small	Moderate	Minor	Minor
	Negligible	Negligible	Negligible	Negligible

Magnitude of Effect

- 14.4.18 The measurement criteria, as well as scale of magnitude, for each topic considered are described as in Section 15.5 Baseline Conditions. It is noted that the IEMA guidelines states, “as a guide” or approximation that an impact is greater than negligible when, “traffic flows have increased by more than 30%” unless a sensitive receptor is affected, in which case when “traffic increases of at least 10%” is predicted or when HGV flows “increase significantly”.
- 14.4.19 Therefore, whilst the highway scope area includes all links of the Application Site’s surrounding local and strategic road network that are likely to be subject to daily traffic flow changes as a result of the Proposed ’s construction or operation, a full assessment is undertaken on the links which satisfy the conditions set out in the rules above.

Limitations and assumptions

- 14.4.20 It should be noted that owing to the Covid-19 Pandemic and associated ‘Lockdown’, no traffic counts were able to be conducted in a suitable timeframe, as they would not be representative of ‘normal baseline conditions’, thus historical count data was relied on for local links.
- 14.4.21 The traffic counts were derived from Department for Transport (DfT) count data and turning count data collected to support the ‘Church Street and Paddington Green Movement Strategy’ (counts undertaken in 2013).
- 14.4.22 The 2013 count data did not count HDV traffic. The HDV proportions were therefore assumed from Salisbury Road (which is covered by a DfT counter) at 1.18% of total link flows.

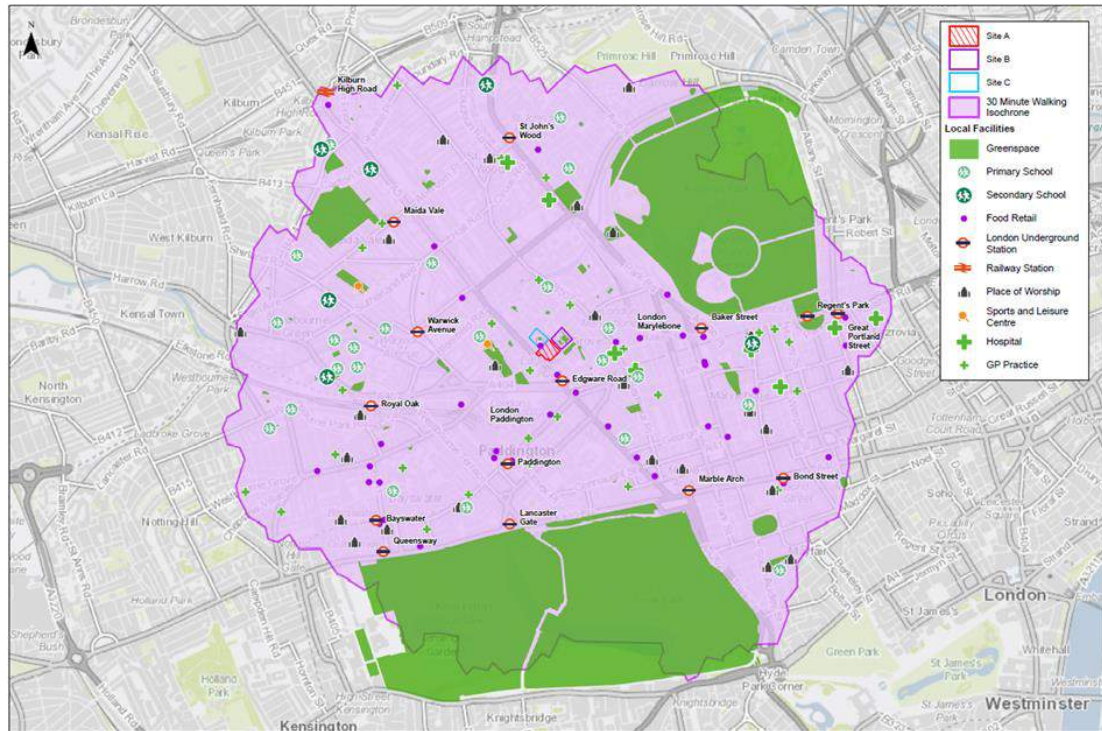
14.5 Baseline conditions

- 14.5.1 This section will outline the baseline cyclist, public transport infrastructure and provision in the vicinity of the Application Site. The Application Site is centrally located in relation to key transport hubs, which include Edgware Road Station, Paddington Station and Marylebone Station. Commercial and office space is relatively limited in the area, with a small concentration found in close proximity to the Underground Stations. In addition, the Application Site benefits from access to city centre amenities, Royal Parks and recreational activities.

Pedestrian

- 14.5.2 The Proposed Scheme has good provision and accessibility to the pedestrian network. Along Church Street, there is footway along both sides, it is well lit and operates as a pedestrianised zone Friday and Saturday for the Church Street Market. The A5 Edgware Road has footways along both sides, approximately 4.5m wide and the road is well lit. The junction of Church Street and Edgware Road is signalled with pedestrian crossing facilities provided on all arms. In addition, regular crossing points are available along Edgware Road.
- 14.5.3 Figure 14-2 illustrates a 30-minute walking isochrone from the Application Site, highlighting the local amenities in its vicinity.

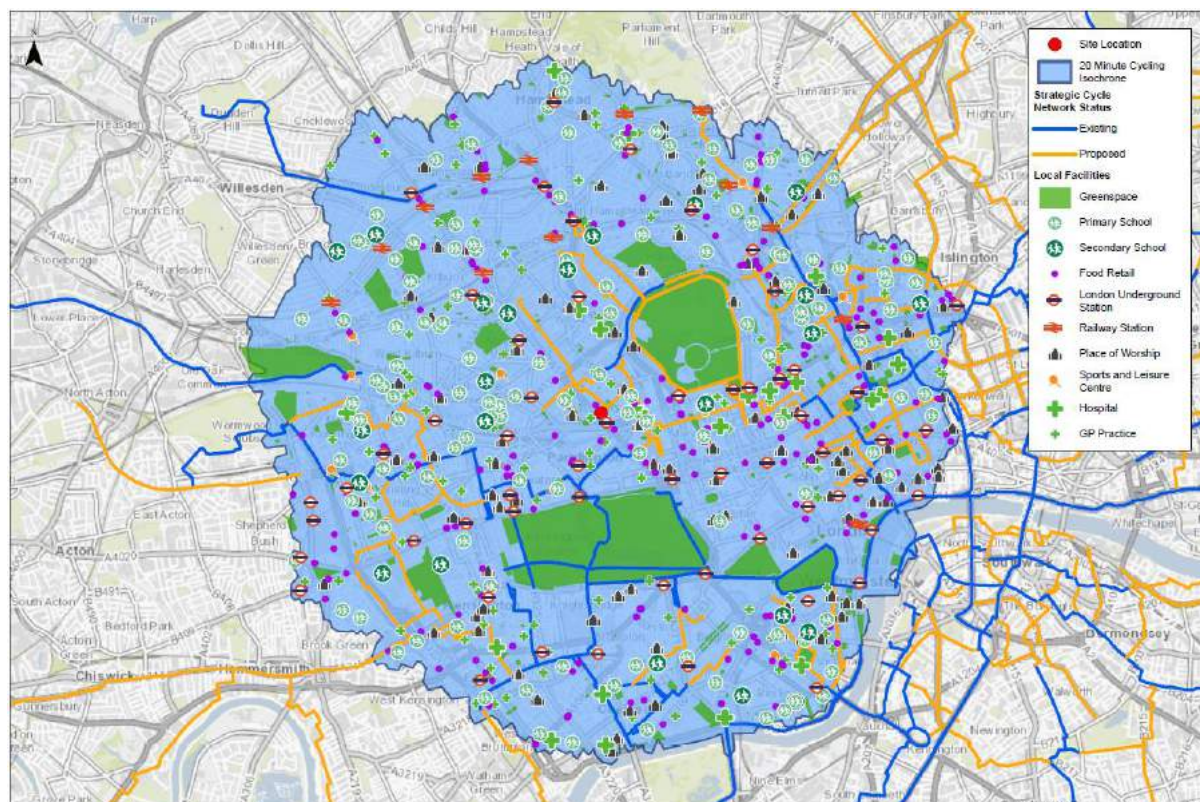
Figure 14-2: 30-minute walking isochrone



Cycle

- 14.5.4 There are no National Cycle Networks in the vicinity of the Application Site. However, the nearest Transport for London (TfL) cycle routes are Cycleways 2 and 16. Cycleway 2 can be accessed approximately 750m south of the Application Site, off the A5 Edgware Road. Cycleway 2 routes westwards from the Application Site, through Bayswater, Notting Hill and terminating in East Acton. The Cycleway 2 connects to Cycleway 3 close to Hyde Park, in turn providing access to the wider TfL cycle network. Cycleway 16 starts from Westminster City Council building, approximately 600m north of the Application Site and is along Regents' Canal, through Regent's Park, terminating at London Zoo.
- 14.5.5 Along the A5 Edgware Road, there are segregated cycle waiting areas at the signalised junctions.
- 14.5.6 Figure 14-3 illustrates a 20-minute cycling isochrone from the Application Site, highlighting the local amenities in the vicinity of the Application Site and the destinations accessible.

Figure 14-3: 20-minute cycling isochrone

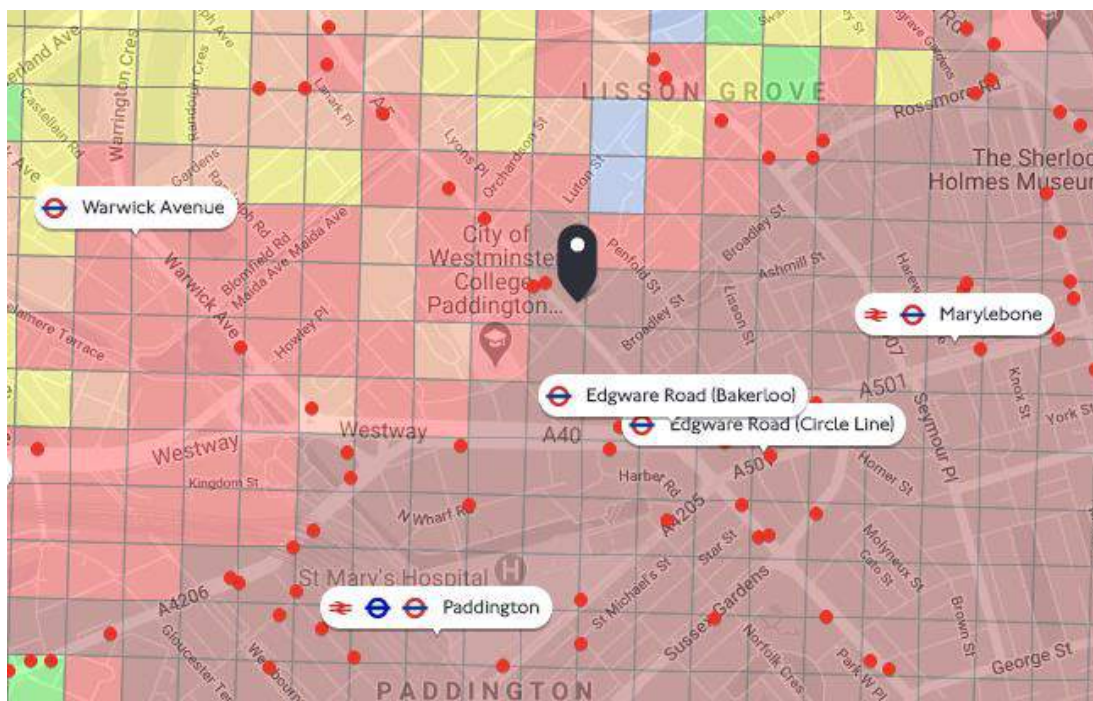


Public Transport

Public Transport Accessibility Level (PTAL)

- 14.5.7 In order to determine the existing Public Transport Accessibility Levels (PTAL), the TfL WebCAT tool was used. The PTAL is a detailed measure of the accessibility of a site to the public transport network, taking into account walk access times and service availability and frequency. A PTAL can range from 1a to 6b, where a score of 1 indicates a “very poor” level of accessibility and 6b indicates “excellent” provision.
- 14.5.8 The PTAL rating for the Application Site is 6b, indicating an excellent provision to access public transport, as illustrated in Figure 14-4. The plan illustrates the proximity of the three London Underground Stations and the extensive bus network in the vicinity of the Application Site.

Figure 14-4: PTAL plan in proximity to the Proposed Scheme



14.5.9 The closest bus stop to the Application Site is on Edgware Road (bus stop name: Church Street Market), 70m north of the junction with Church Street. The below Table provides details of the bus routes that serve the bus stop and provides information of the route description, weekday and peak hour service frequencies.

Table 14-5: Bus Frequencies (source: TfL, March 2020)

Bus No.	Route Description	Approx. Frequency (buses per hour, per direction)	
		AM Peak (08: 00 – 09:00)	PM Peak (17: 00 – 18:00)
6	Betie Road – Kensal Rise Station – Queen’s Park Station – Warwick Avenue Station – Church Street Market – Edgware Road Station – Green Park Station – Piccadilly Circus – Trafalgar Square – Aldwych	8 – 15	5 – 8
16	Mora Road – Kilburn Station – Kilburn High Road Station – Church Street Market – Edgware Road Station – Marble Arch – Hyde Park Corner – Victoria Bus Station	5 – 8	5 – 8
98	Willesden Bus Garage – Kilburn High Road Station – Church Street Market – Edgware Road Station – Marble Arch – Tottenham Court Road Station – Red Lion Square	6 – 10	6 – 10
332	Brent Park Tesco – Neasden Shopping Centre – Kilburn Station – Kilburn High Road Station – Church Street Market – Edgware Road Station – Bishops Bridge	5 – 7	5 – 7
414	Chippenham Road – Warwick Avenue Station – Church Street Market – Edgware Road Station – Marble Arch – Dorchester Hotel – Hyde Park Corner Station – V&A Museum – South Kensington Station – Fulham Broadway – Putney Bridge Station	6 – 8	6 – 8
Total		30 – 48	27 – 41
N16	Edgware Bus Station – Staples Corner – Mora Road – Kilburn Station – Kilburn High Road Station – Church Street Market – Edgware Road Station – Marble Arch – Hyde Park Corner – Victoria Bus Station	Night bus only. 00:28 – 05:28 2 – 3 service per hour	

N98	Stanmore Station – Queensbury Station – Kingsbury Station – Neasden Shopping Centre – Kilburn High Road Station – Church Street Market – Edgware Road Station – Marble Arch – Tottenham Court Road Station – Red Lion Square	Night bus only. 23:51 – 05:34 4 service per hour
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Source: Transport for London, <https://tfl.gov.uk/modes/buses/>

TfL Network

14.5.10 There are three London Underground Stations, all within Zone 1 and are within walking distance from the Application Site, which include:

- Edgware Road (Bakerloo, Circle, District, Hammersmith & City Line) – 3-minute walk, 1-minute cycle journey;
- Paddington (Bakerloo, Circle, District, Hammersmith & City Line, National Rail and TfL Rail) – 10-minute walk, 5-minute cycle journey; and
- Marylebone (Bakerloo Line and National Rail) – 10-minute walk, 3-minute cycle journey.

14.5.11 These stations benefit from regular services and interchanges to other lines, providing access to key London destinations.

Network Rail

14.5.12 As mentioned above, the nearest National Rail services are at Paddington and London Marylebone. The key services and peak hour services from these stations are provided in Table 14-6.

Table 14-6: Key National Rail Destinations (source: National Rail, March 2020)

Station	Operator	Destination	Approx. Frequency (trains per hour/ per direction)		Average Journey Time (minutes)
			AM Peak (08: 00 – 09:00)	PM Peak (17: 00 – 18:00)	
Paddington	Great Western Railway	Reading	10	10	25
	Great Western Railway and Cross Country	Oxford	6	4	60
	Great Western Railway	Bristol Temple Meads	6	6	95
	Great Western Railway	Cardiff Central	2	2	120
London Marylebone	Chiltern Railways	Aylesbury Vale Parkway	1	1	66
		Wembley Stadium	2	2	10
		High Wycombe	5	6	35
		Aylesbury	3	3	60
		Birmingham Moor Street	2	2	105
		Banbury	3	3	60
		Oxford	2	2	70

14.5.13 Paddington Station is also served by the Heathrow Express, an express link to London Heathrow Terminals. The journey time to Terminals 2 & 3 is 15-minutes, 21-minutes to Heathrow Terminal 5 and a free transfer is available to Terminal 4. The services operate approximately every 15-minutes.

Local Amenities

- 14.5.14 Given the central location of the Application Site, there are a wide range of services and amenities within close proximity and walking distance. Along Edgware Road there are a number of amenities, including restaurants, cafes and grocery stores and banks. On Church Street itself there is a Tesco Metro, Greggs, Santander, newsagent, library, and small shops. A summary of the key local amenities is provided in Table 14-7. The key amenities in the area, distance to the Application Site and walking/ cycling journey times (distances have been taken from Church Street/ Edgware Road junction) have been measured. This list includes key facilities and does not cover the full number of amenities in the area.

Table 14-7: Key Local Amenities

Amenity Type	Name	Distance (km)	Approx. Walking Time (minutes)	Approx. Cycling Time (minutes)
Supermarket	Tesco	0.01	1	1
Bank	Santander	0.08	1	1
Bakery	Greggs	0.02	1	1
Pharmacy	Market Chemist	0.09	1	1
GP Surgery	Paddington Green Health Centre	0.1	2	1
Royal Parks	Regent's Park	1.3	15	10
	Hyde Park	1.3	17	5
Primary School	St Edward's Catholic School	0.9	7	4
	Gateway Academy	0.6	7	3
Secondary School	King Solomon Academy	0.3	4	1
	St. Marylebone School	1.7	20	10
Higher Education	City of Westminster College, Paddington Green Campus	0.1	2	1
	London Business School	1.5	18	10
	Regent's University London	1.5	19	10

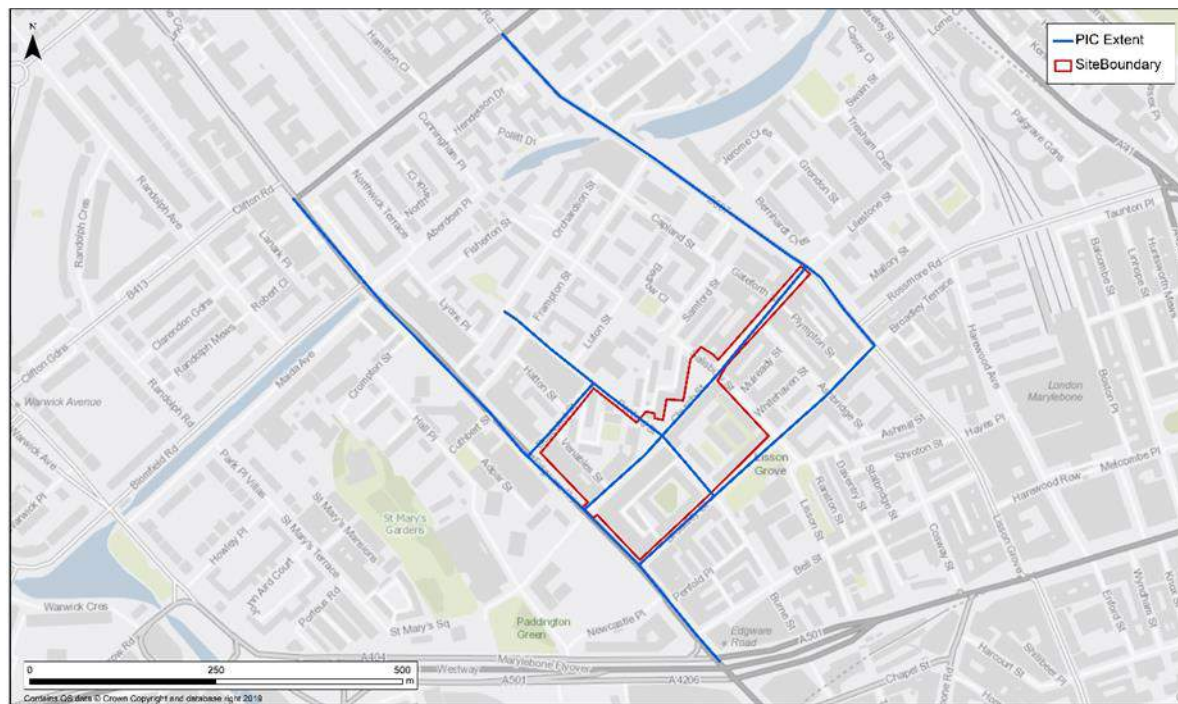
Highway Network

- 14.5.15 The majority of the roads in and surrounding the Application Site are two-way with the exception of Church Street and Broadley Street. The A5 Edgware Road, Lisson Grove, Marylebone Road and Aberdeen Place border the Church Street area and offer access to the wider highway network. It is therefore expected that only those destined for Church Street and its surrounding area would travel into the local vicinity, deviating from the strategic roads.
- 14.5.16 The Green Spine proposal is a consented scheme that will pedestrianise Lisson Street between Bell Street and Ashmill Street, and the area of Salisbury Street between its junction with Ashmill Street and Broadley Street. The remaining part of Salisbury Street is proposed to be one way for vehicular traffic and on-road parking is to be provided.

Personal Injury Collision (PIC) Review

- 14.5.17 Stantec has obtained three-year Personal Injury Collision (PIC) data for the local highway network surrounding the Application Site from TfL. The records cover a period from 1st January 2017 to 21st December 2019 and the full PIC data report is presented in the Transport Assessment.
- 14.5.18 The extent of the data requested is illustrated in Figure 14-5.

Figure 14-5 Personal Injury Collision (PIC) Map



14.5.19 The collision casualties are classified into three categories, based on severity: Slight, Serious and Fatal, definitions of which are provided below:

- Slight Injury: Injuries of a minor nature, such as sprains, bruises, or cuts not judged to be severe, or slight shock requiring only roadside attention (medical treatment is not a pre-requisite for an injury to be defined as slight);
- Serious Injury: Injuries for which a person is detained in hospital, as an in-patient, or any of the following injuries, whether or not a person is detained in hospital; fractures, concussion, internal injuries, severe cuts and lacerations, severe general shock requiring medical treatment and injuries which result in death 30 days after the accident. The serious category, therefore, covers a very broad range of injuries; and
- Fatal Injury: Injuries which cause death either immediately or any time up to 30 days after the accident.

14.5.20 A summary of the annual 12-month collision data (January to December) is provided in Table 14-8.

Table 14-8: Detailed summary of Collisions and Casualties

	Severity	Year			Total
		1 (January 2017-December 2017)	2 (January 2018-December 2018)	3 (January 2019-December 2019)	
Number of Collisions	Fatal	0	0	0	0
	Serious	4	7	5	16
	Slight	55	40	37	132
	Total	59	47	42	148
Casualties					
Car Driver	Fatal	0	0	0	0
	Serious	0	0	0	0
	Slight	9	1	9	19
	Total	9	1	9	19

	Severity	Year			Total
		1 (January 2017-December 2017)	2 (January 2018-December 2018)	3 (January 2019-December 2019)	
Car Passenger	Fatal	0	0	0	0
	Serious	0	0	0	0
	Slight	3	4	0	7
	Total	3	4	0	7
Pedestrian	Fatal	0	0	0	0
	Serious	1	1	3	5
	Slight	16	9	10	35
	Total	17	10	13	40
Cyclist	Fatal	0	0	0	0
	Serious	1	3	1	5
	Slight	13	8	4	25
	Total	14	11	5	30
Motorcycle Driver/ Passenger	Fatal	0	0	0	0
	Serious	2	2	0	4
	Slight	9	12	9	30
	Total	11	14	9	34
Bus / Coach Rider / Passenger	Fatal	0	0	0	0
	Serious	0	0	0	0
	Slight	5	12	3	20
	Total	5	12	3	20
Taxi Passenger	Fatal	0	0	0	0
	Serious	0	1	1	2
	Slight	0	0	0	0
	Total	0	1	1	2
Goods Vehicle Driver / Rider / Passenger	Fatal	0	0	0	0
	Serious	0	0	0	0
	Slight	3	1	1	5
	Total	3	1	1	5
Other	Fatal	0	0	0	0
	Serious	0	0	0	0
	Slight	4	1	4	9
	Total	4	1	4	9

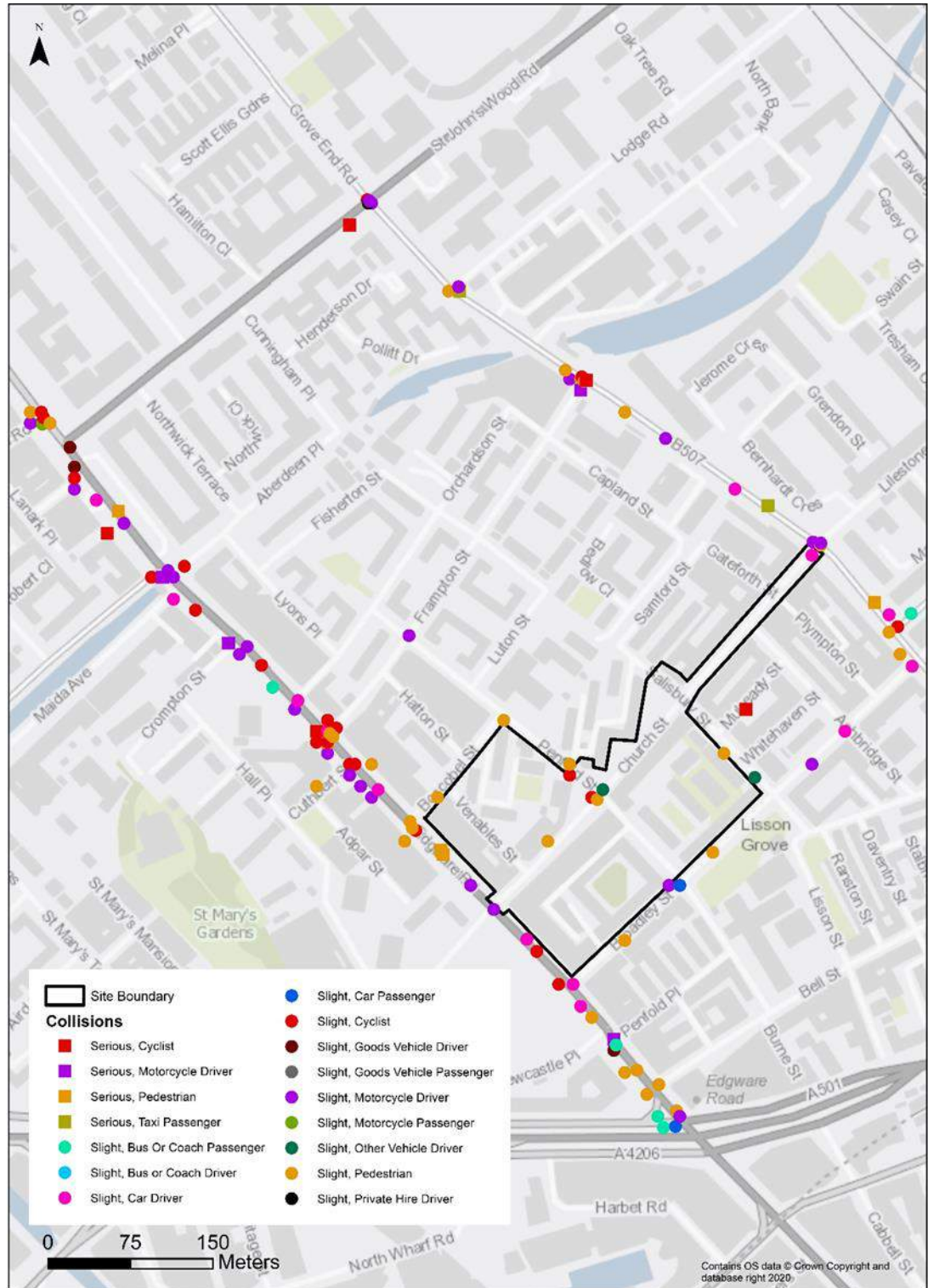
Table 14-9: Summary of Collisions and Casualties

All Casualties

	Year			Total
	1 (January 2017-December 2017)	2 (January 2018-December 2018)	3 (January 2019-December 2019)	
Fatal	0	0	0	0
Serious	4	7	5	16
Slight	62	48	40	150
Total	66	55	45	166

- 14.5.21 The results in the above Table show a total of 148 collisions occurred, of which none were fatal, 16 (11%) serious and 132 (89%) slight collisions. Of these 148 collisions it resulted in 166 casualties, of which none were fatal, 16 (10%) serious and 150 (90%) slight casualties.
- 14.5.22 Pedestrians accounted for the highest proportion of total casualties (166) with 5 (3%) serious and 35 (21%) serious casualties. A total of 34 (4 serious and 30 serious) motorcyclist casualties were observed, the second highest modal share.
- 14.5.23 Figure 14-6 illustrates the location of the collisions by severity and mode.

Figure 14-6: Collision location plan



14.5.24 A review of the serious collisions has been undertaken to identify the cause of the collision. This is included as Appendix 14-1.

14.5.25 As part of TfL's Vision Zero by 2041, all deaths and serious injuries should be eliminated from London's transport network. Whilst it is difficult to mitigate for poor driver behaviour or other bad practices as a cause, any collisions that could have been prevented, through improvements to the highway should be considered.

14.5.26 The data provided by TfL does not provide a detailed description of how the collision occurred, as they are no longer receiving a suitable, anonymised summary of the collision from the Policy since November

2016. The report also states a number of the collisions were self-reported and no cause of the collision was provided.

- 14.5.27 Along the roads that border the Site (Boscobel Street, Penfold Street, Broadley Street, Church Street, Edgware Road, Salisbury Street), the majority of collisions were of slight nature of which most resulted in pedestrian casualties. On the links, only three serious collisions resulting in casualty to pedestrians and cyclist.
- 14.5.28 Analysis of the collision records provided by TfL has not identified any hotspots of serious or fatal collisions and has not raised any specific concern with regards to the geometric design and/ or road layout of the local highway network. It is therefore considered that there is not an existing highway safety concern which would be exacerbated by the Proposed Scheme.

Baseline Traffic Surveys

- 14.5.29 The COVID-19 pandemic has not permitted vehicle counts to be undertaken and thus secondary sources of data were used to determine Annual Average Daily Trips (AADT) and Annual Average Weekday Trips (AAWT), as follows.
- 14.5.30 The AADT for the following links were derived from DfT count data:
- **Link 1** – Edgware Road (survey year: 2019); and
 - **Link 2** – Salisbury Street Road (survey year: 2019)
- 14.5.31 The AADT for the following links were derived from 2013 traffic counts undertaken as part of the Church Street and Paddington Movement Strategy⁸ which provided two-way movements for the AM and PM peak hour:
- **Link 3** – Boscobel Street;
 - **Link 4** – Penfold Street;
 - **Link 5** – Broadley Street; and
 - **Link 6** - Church Street.
- 14.5.32 It should be noted that HGV movements were not available for the 2013 surveys and thus a factor of 1.18% (derived from the Salisbury Road DfT count) was applied to the total vehicle trips.
- 14.5.33 For the links surveyed in 2013, the two-way traffic counts have been factored to the 2021 baseline using the relevant TEMPro growth factors for Westminster-9 (E02000968). These growth factors are shown in Table 14-10.

Table 14-10: TEMPro growth factors applied to derive 2021 base year (peak hour)

Link Reference	Link Name	Type of Road	Survey Year	AM	PM
				-> 2021	-> 2021
3	Boscobel Street	Minor	2013	1.126	1.120
4	Penfold Street	Minor	2013	1.126	1.120
5	Broadley Street	Minor	2013	1.126	1.120
6	Church Street	Minor	2013	1.126	1.120

- 14.5.34 The two peak hour flows have been converted to AADT/AAWT flows using DfT's 'Motor vehicle traffic distribution by time of day and day of the week on all roads, Great Britain: 2020' (Table TRA0307). The relevant factor is shown in Table 14-11.

⁸ Church Street and Paddington Movement Strategy, Appendix 4, Grant Associates, 2013. Submission to: Westminster City Council July 2013

Table 14-11: DfT factor applied to derive AADT flows

Conversion	Factor
2hr to 24hr (AADT)	6.113

14.5.35 The AADTs for the DfT count links have been factored to the baseline 2021 year using the below factors.

Table 14-12: TEMPro growth factors applied to derive 2021 base year (AADT)

Link Reference	Link Name	Type of Road	Survey Year	AADT
				-> 2021
1	Edgware Road	Principal	2019	1.027
2	Salisbury Street	Minor	2019	1.027

14.5.36 The future year scenario to be assessed are as follows:

- 2026 Future Baseline + Background Traffic + Cumulative Schemes + Proposed Site A Operational Traffic + Proposed Site A Construction Traffic
- 2036 Future Baseline + Background Traffic + Cumulative Schemes + Proposed Sites A, B and C Operational Traffic + Proposed Site C Construction Traffic'

14.5.37 TEMPro derived growth factors consider data from The National Trip End Model (NTEM) model. This considers the growth in trip origin-destinations (or productions-attractions) up to 2051 for use in transport modelling. The forecasts take into account national projections of Population, Employment, Housing, Car Ownership and Trip Rates.

14.5.38 TEMPro is specifically designed to anticipate growth in households and jobs over the short, medium and long term. Both the consent of new housing and TEMPro inputs from NTEM are closely controlled by the planning system. Future growth in housing would therefore be considered in the TEMPro growth.

14.5.39 The cumulative schemes operational traffic is therefore assumed to be included as part of the applied TEMPro growth factors and thus are not considered separately.

14.5.40 The 2021, 2026 and 2036 baseline AADTs and AAWTs (as well as the TEMPro factors used to derive them) are included as Appendix 14-2 .

Summary of sensitive receptors

14.5.41 The IEMA Guidelines identify groups and special interests which should be considered in the assessment. Categories of receptor sensitivity have been defined from the principles set out in the IEMA Guidelines and these have been used to outline in broad terms the sensitivity of receptors to traffic for the categories of effect assessed in this chapter, although in detail, each receptor assessed will have a different sensitivity to each specific effect.

Table 14-13: Sensitivity receptor classifications

Sensitivity	Description
Very High	Very high importance and rarity, international and national scale and very limited potential for substitution.
High	High importance and rarity, and limited potential for substitution. Includes receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident black spots (with reference to accident data), retirement homes, urban/residential roads without footways that are used by pedestrians
Medium	Medium importance and rarity, and limited potential for substitution. Traffic flow sensitive receptors including: congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreation facilities
Low	Low or medium importance and rarity. Receptors with some sensitivity to traffic flow: places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision

Negligible Very low importance, local scale. Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions

14.5.42 Based on the sensitive receptors relevant to traffic and transport, as defined by the IEMA guidelines, Table 14-14 outlines the sensitive receptors for this assessment.

Table 14-14: Sensitivity receptor values

Receptor	Sensitivity / Value	Justification
Edgware Road	High	Principal A Road with major traffic flows. Offers access to City of Westminster College. There is a lack of on-road cycling provision along the site frontage with the exception of ASLs at signal junctions. Generous footway provision with good crossing facilities. Bus stops along both sides of the road along the Application Site frontage with a bus lane on the eastbound side. According to journey planning web tool, the road is often congested north of the A40 junction. A major pedestrian access point to Church Street Market. 5 serious collisions in 3 years, 3 of these involved pedestrian cyclists. Edgware Road underground station is located at the south of Edgware Road thus generates a high degree of pedestrian movements during peak hours.
Salisbury Street	Low	Minor road with low traffic flows. Has a high degree of on-street parking provision. Footway provision on both sides of the road. Predominantly used to access residential on-street parking. 2 slight collisions in 3 years, one of which involved a pedestrian.
Boscobel Street	Low	20mph minor road with low traffic flows, one-way traffic onto Edgware Road for the southern portion. Has a high degree of on-street parking provision. Footway provision on both sides of the road. Predominately residential in nature but allows access to a small number of commercial buildings. 2 slight collisions in 3 years, both of which involved a pedestrian.
Penfold Street	Medium	20mph minor road with low traffic flows. Has a high degree of on-street parking provision. Footway provision on both sides of the road. Access point to King Solomon Academy is located onto Penfold Street. Predominantly used to access residential on-street parking although there are some small commercial properties access from this road to the north of Church Street. Currently allows access to a public car park within the site area. The proposals seek to remove this. 8 slight collisions in 3 years, 8 of which involved a pedestrian. Allows access to Luton Street which is a 'play street' and thus has traffic free periods where children can socialise on the street.
Broadley Street	Medium	20mph minor road with low traffic flows, one-way traffic onto Edgware Road for the southern portion. Has a high degree of on street parking provision, primarily for residential use. Broadley Street Gardens is a park / recreation facility accessed from Broadley Street. Footway provision on both sides of the road. 6 slight collisions in 3 years, 2 of which involved a pedestrian / cyclist.
Church Street	Medium	Church Street Market can be classified as having high importance and rarity, and limited potential for substitution. Shopping areas with roadside frontage. Parking restrictions implemented when market is in operation. High pedestrian flows during market operation. 8 slight collisions in 3 years concentrated at junctions with Penfold Street and Lisson Grove, half of which involved pedestrians / cyclists.

Severance

- 14.5.43 The IEMA guidance states that “*severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery.*” Furthermore, “*changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively.*” However, the guidance acknowledges that the measurement and prediction of severance is extremely difficult. The assessment of severance pays full regard to specific local conditions, in particular the location of pedestrian routes to key local facilities and whether or not crossing facilities are provided.
- 14.5.44 Volume 11, Section 3, Part 8, Chapter 6 of the Design Manual for Roads and Bridges entitled 'Pedestrians and Others and Community Effects' provides further guidance on the aspect of New Severance within a community in terms of the 2-way Annual Average Daily Traffic flow (AADT) on a link. It states that new severance should be described in terms of “*Slight*”, “*Moderate*” or “*Severe*” and that these categories “... *should be coupled with an estimate of the numbers of people affected, their location and the community facilities from which they are severed.*”
- 14.5.45 The potential effects as set out later in this chapter are based on an assessment, which takes into account the IEMA’s thresholds. The below summarises these thresholds.

Table 14-15: Severance Thresholds (IEMA Guidelines)

Magnitude	Traffic Flow (AADT) Increase
Major	>90%
Moderate	60 – 90%
Minor	30 – 60%
Negligible	<30%

Driver Delay

- 14.5.46 Delay to drivers can be estimated through capacity assessments at key points on the local highway network. The addition of new development-generated traffic could result in an increase in the number of vehicles using key junctions. This may lead to additional delays depending on the existing operation, levels of background traffic and development-generated traffic.
- 14.5.47 Assessment of junction capacity and delay is undertaken through the use of standard practice analytical tools and junction analysis programs. Driver delay is only likely to be an issue requiring consideration of mitigation where junctions are operating beyond capacity.
- 14.5.48 Table 14-16 shows the magnitude-scale applied to the category ‘driver delay’ at junctions, based on professional judgement, for the purpose of this assessment.

Table 14-16: Driver Delay at Junctions - Magnitude of Effect

Magnitude	Definition
Major	Average vehicle delay increases of more than 2 minutes as a result of the development during the peak hour periods
Moderate	Average vehicle delay increases are between 1 and 2 minutes as a result of the development during the peak hour periods
Minor	Average vehicle delay increases between 45 and 60 seconds as a result of the development during the peak hour periods
Negligible	Average vehicle delay increases are less than 45 seconds as a result of the development during the peak hour periods

Pedestrian and Cycle Delay and Amenity

- 14.5.49 Pedestrian delay for a particular walking journey can be increased by changes to traffic flows and can affect the ability of pedestrians to cross roads. This can affect an individual's desire to make a particular walking journey and may prove to be a barrier in active travel. Changes in the volume, speed or composition of traffic are most likely to affect pedestrian delay, with the level of severity dependent on the general level of pedestrian activity and the physical condition of crossing points.
- 14.5.50 It is important to note that qualitative aspects such as the quality of the pedestrian and cycle environment, and the trip generators served by these environments, also influence the propensity for individuals to walk and cycle. Sense of personal security and safety, gradient, permeability, legibility and maintenance of these infrastructures aid in encouraging their use and discouraging the use of non-car modes. These, in addition to the quantitative aspects of assessment such as changing traffic flows, are therefore an important consideration in this chapter for a number of the criteria.
- 14.5.51 An Active Travel Zone (ATZ) assessment has been undertaken at the Application Site in accordance with TfL guidance. The Transport Assessment can be referred to for greater detail on the condition of existing and proposed pedestrian and cycle provision on the considered links.
- 14.5.52 The determination of what constitutes a material impact on pedestrian delay is generally left to the judgement of the assessor and knowledge of local factors and conditions. However, the IEMA guidelines suggest *"a lower threshold of 10 seconds delay and an upper threshold of 40 seconds delay, for a link with no crossing facilities"*. It further advises that the lower threshold equates to a two-way flow of approximately 1,400 vehicles per hour where there is no crossing facility provided for pedestrians.
- 14.5.53 Table 14-17 shows the magnitude-scale applied to links with insufficient or no pedestrian facilities at desire lines and links subject to pedestrian footfall. It is noted that these thresholds apply where no crossing facility is provided. Professional judgement is to be used to determine the magnitude of impact where appropriate signalised crossing points are provided.

Table 14-17: Pedestrian and Cyclist Delay - Magnitude of Effect (where no crossing points provided)

Magnitude	Definition
Major	Link subject to a change in two-way flow of 5,600+ vehicles per hour
Moderate	Link subject to a change in two-way flow of 3,500-5,600 vehicles per hour
Minor	Link subject to a change in two-way flow of 1,400-3,500 vehicles per hour
Negligible	Link subject to a two-way flow of fewer than 1,400 vehicles per hour

- 14.5.54 Pedestrian amenity is broadly defined as the relative pleasantness of a journey, which is affected by traffic flow, traffic composition and footway width/separation from traffic. The guidance suggests a *"tentative threshold for judging the significance of changes in pedestrian amenity of where traffic flow (or its lorry component) is halved or doubled"*.

Fear and Intimidation

- 14.5.55 A further effect of traffic flows on pedestrian and cycle movements is the element of fear and intimidation individual travellers will experience with respect to vehicular movements. The impact of this factor is dependent on the volume of traffic, the HDV content, the width of footway and its proximity to the carriageway edge. As is the case with pedestrian delay, there are no commonly agreed thresholds for the measurement of this impact, with appraisal based on the judgement of the assessor.
- 14.5.56 Nevertheless, the IEMA guidelines do suggest some thresholds, based on previous research, which could be used and these are shown in Table 14-18.

Table 14-18: Suggested Threshold Guidelines for Pedestrian Fear and Intimidation

Degree of Hazard	Change in Average Traffic Flow over 18 Hours day (vehicles/hour)	Total 18-Hour HDV Flow
Extreme	1,800+	3,000+
Moderate	1,200-1,800	2,000-3,000
Slight	600-1,200	1,000-2,000

14.5.57 Notwithstanding the thresholds set out above, the IEMA guidelines suggest that they should be approached with a certain level of caution as the individual factors could be weighted by local circumstances to decide the overall value of intimidation. For example, a road may show higher speeds but lower flows; making crossing easier, or high flows but congested and constant traffic, therefore reducing total fear of passing vehicles but increasing crossing difficulties.

14.5.58 Table 14-19 shows the magnitude-scale applied to the category ‘fear and intimidation’ for the purpose of this assessment.

Table 14-19: Fear and Intimidation - Magnitude of Effect

Magnitude	Definition
Major	Increase in average traffic flow over 18 hours of 1,800+ vehicles/hr; An average 18-hour HDV flow of 3,000+
Moderate	Increase in average traffic flow over 18 hours of 1,200-1,800 vehicles/hr; An average 18-hour HDV flow of 2,000-3,000
Minor	Increase in average traffic flow over 18 hours of 600-1,200 vehicles/hr; An average 18-hour HDV flow of 1,000-2,000
Negligible	Increase in average traffic flow over 18 hours of less than 600 vehicles/hr; An average 18-hour HDV flow of less than 1,000

Accidents and Road Safety

14.5.59 The assessment of accident risk and highway safety is based upon existing accident rates and specific local circumstances to identify clusters. For example, should a particular link or junction be found to have a high existing accident rate, the addition of substantial traffic volumes generally would be expected to have an adverse effect on highway safety due to further increased opportunities for conflict. Mitigation measures may therefore be required.

14.5.60 The IEMA guidelines state that “*professional judgement will be needed to assess the implications of local circumstances, or factors, which may elevate or lessen risks of accidents, e.g. junction conflicts*”.

14.5.61 For the purpose of this assessment, a review of accidents occurring over a three-year period from January 2017 to December 2019 within the area surrounding the Application Site has been undertaken. The assessment of potential increases in accident risk due to the Proposed Scheme has focused on existing clusters.

14.6 Environmental design and management

14.6.1 There are a range of measures built-in to the design of the Proposed Scheme which help mitigate its environmental impact upon the local transport network and infrastructure. These include:

- A range of ‘green corridors’ across the Site that include segregated pedestrian and cycle links that provide direct links into the surrounding network of public rights of way;
- A speed limit of 20mph throughout the Application Site and a road hierarchy to discourage speeding and encouraging sensitive driving;

- Landscaping measures to encourage walking and cycling throughout the Application Site;
- Provision of retail, community, office, workshop, education and leisure land uses to provide for residents' day to day needs and to reduce external trips;
- Provision of electric charging points and the passive provision of electric charging to all homes to encourage the uptake of electric cars; and
- Cycle parking provision throughout the Application Site.

14.6.2 In addition to these design measures a range of management measures will be implemented including:

- Travel demand management measures as explained in the Framework Travel Plan included as an appendix to the TA;
- Parking demand and management measures as explained in the Car Parking Management Plan included as an appendix to the TA;
- Measures to mitigate and reduce delivery and service trips as explained in the Delivery and Servicing Plan included as an appendix to the TA; and
- Application of standard construction management controls through an outline Construction Logistics Plan (CLP).

14.7 Assessment of effects

Effects during demolition and construction

14.7.1 It should be noted that all the effects considered in this section are temporary and are likely to last throughout the demolition and construction period.

14.7.2 The construction works are proposed to begin in the 3rd quarter of 2022 and be completed 2036. The peak construction traffic year is assumed at 2026 towards the end of the construction of Site A.

14.7.3 It should be noted that at the time this EIA was submitted, the City of Westminster (CoW) planning portal does not indicate any impending construction works in the immediate vicinity of the Application Site or along any of the links considered in this chapter.

14.7.4 Table 14-20 shows the construction and demolition traffic during project delivery / construction peak phase of 2026.

Table 14-20: Construction trips (AADT)

Trip Type	Construction Trips AADT		
	Arr	Dep	Total
HGVs	35	16	35
Cars and LGVs	35	16	35
Total	71	31	71

14.7.5 Site A is formed of two blocks, Block A1 will be within the New Street and Penfold Street catchment with the shorter elevations on to Church and Broadley Street. Block A2 which starts from the SW Corner of the Application Site, is attached to the Edgware Road (No. 381) elevation of properties, which do not form part of the proposals.

14.7.6 A central challenge to delivering the above Proposed Scheme is the Church Street Market. Protected by a Westminster Act, the market is required to remain open and functional for the entire 14-year projected duration of the demolition and construction period. This will directly impact the transport arrangements for the works, as Church Street cannot be used for any construction-related transportation. It is also worth noting that Church Street also serves a Tesco Metro shop which is regularly supplied by a 40-foot articulator truck.

- 14.7.7 It is anticipated a physical barrier, as part of the Application Site boundary/perimeter, will be implemented along the Church Street perimeter to both maintain site security, but more importantly provide protection to the Market Traders, who will still be setting up stalls for the market daily.
- 14.7.8 Site A does have access challenges; Church Street and Broadley Street are both one-way streets in the same direction, towards Edgware Road. Broadley and Penfold Streets are also fairly small roads, and the metered parking makes them unsuitable for construction traffic without temporary measures being implemented to facilitate larger vehicles.
- 14.7.9 With regards Site A, it is envisaged construction access will be via Broadley Street and may later be expanded to include additional access from Penfold Street as well, with additional traffic management implemented, should this access route become necessary.
- 14.7.10 With the revision of Block A1 being completed ahead of Block A2, there will be changes to the demolition and construction phasing, hence the access route on to site will be Penfold Street in the first instance. A statement will be included in the Stage 3 report recommending the suspension of all parking meter bays on both roads along Site A for the project duration, to facilitate the construction process. Once this is put in place, construction traffic access will be managed.
- 14.7.11 The relevant tables showing the calculations used to determine the uplift in HDVs associated with the following future scenarios are included in Appendix 14-3.
- 2026 Future Baseline + Background Traffic + Cumulative Schemes + Proposed Site A Operational Traffic + Proposed Site A Construction Traffic; and
 - 2036 Future Baseline + Background Traffic + Cumulative Schemes + Proposed Sites A, B and C Operational Traffic + Proposed Site C Construction Traffic'.
- 14.7.12 At this stage and for the purposes of this assessment, it will be assumed that all construction traffic will use Edgware Road, Broadley Road and Penfold Road.
- 14.7.13 As demonstrated above the following links show an uplift in HDV AADT traffic from the 2026 and 2036 baselines:
- 2026**
- Edgware Road – 2297 to 2329 HDVs (1.4% uplift);
 - Penfold Street – 32 to 63 HDVs (98.3% uplift); and
 - Broadley Street – 14 to 46 HDVs (221.5% uplift).
- 2036**
- Edgware Road – 2437 to 2469 HDVs (1.3% uplift);
 - Penfold Street – 34 to 66 HDVs (91.8% uplift); and
 - Broadley Street – 15 to 47 HDVs (207.0% uplift).
- 14.7.14 The remainder of this section focuses on the impacts of these HDV movements.

Severance

- 14.7.15 The IEMA guidelines criteria for severance is concerned with the increase in AADT flows. All of the links fall into the '**Negligible**' magnitude category (<30%).

2026

- Edgware Road – 24,319 to 24,369 HDVs (0.2% uplift);
- Penfold Street – 2,717 to 2,761 HDVs (2.2% uplift); and
- Broadley Street – 1,199 to 1,237 HDVs (3.2% uplift).

2036

- Edgware Road – 25,803 to 25,797 HDVs (0.02% reduction);
- Penfold Street – 2,892 to 2,877 HDVs (0.52% reduction); and
- Broadley Street – 1,283 to 1,300 HDVs (1.4% uplift).

Driver Delay

- 14.7.16 There may be some temporary disruption during the implementation of access work, however, this will be confirmed during detailed construction planning and the temporary nature of the works mean it is unlikely to have a significant effect.
- 14.7.17 No detailed junction modelling is to be undertaken as the construction traffic will be temporary and largely outside of peak hours and there will be a net reduction in operational traffic.
- 14.7.18 The magnitude-scale applied to the category ‘driver delay’ at the considered links are based on professional judgement. Considering the effort of construction trips to avoid peak hours, it can be assumed the impact on Driver Delay at all the Edgware Road, Penfold Street and Broadley Street can all be considered ‘**Negligible**’ (average vehicle delay increases are less than 45 seconds as a result of the development during the peak hour periods).

Pedestrian and Cycle Delay and Amenity

- 14.7.19 The lower threshold for link consideration equates to a two-way flow of approximately 1,400 vehicles per hour where there is no crossing facility provided for pedestrians (See Table 14-17).
- 14.7.20 None of the links are to change by more than 1,400 vehicles per hour. The effect on pedestrian cycle delay and amenity can be considered ‘**Negligible**’.
- 14.7.21 The guidance suggests a *“tentative threshold for judging the significance of changes in pedestrian amenity of where traffic flow (or its lorry component) is halved or doubled”*.
- 14.7.22 The HDV proportion of Broadley Street is predicted to double in the peak construction year although this is due to low baseline of existing HDV flows along this link. During 2026 Baseline there is estimated to be 14 HDV vehicles per day which will increase to 46 during construction.

Fear and Intimidation

- 14.7.23 The impact of this factor is dependent on the volume of traffic, the HDV content, the width of footway and its proximity to the carriageway edge (See Table 14-18).
- 14.7.24 The impact magnitude for Edgware Road with reference to the Table 14-18 can be classified as ‘**Negligible**’ despite to the high volume of traffic, because there are wide footways on both sides of the road and there is a dedicated on-road cycleway which provides good separation from traffic for pedestrians and cyclists as well as a wide, signalised crossing point in line with clear desire lines.
- 14.7.25 The impact magnitude of construction vehicles on Broadley Street and Penfold Street can be classified ‘**Moderate**’. Despite the low traffic flows, there is a significant uplift in HDV flows. Neither of these roads are suitable for HDV traffic owing to the on-street parking creating a narrow usable carriageway. Temporary arrangements will be made to temporarily remove parking bays where necessary to facilitate construction flows. Both streets have good footway provision. Broadley Street offers a long section of footway segregated by a wide planted verge adjacent to Broadley creating good separation from any HDV traffic.
- 14.7.26 Owing to the proposed mitigation measures the impact on Fear and Intimidation for other road users will be limited. It should also be noted there are alternative routes available should pedestrians and cyclists feel intimidated despite the construction mitigation measures outlined in this report. As well as Broadly Street, Bell Street connects Lisson Grove to Edgware Road, likewise Salisbury Street, just north of Penfold Street offers connections to Church Street. It is therefore considered that the ‘Moderate’ impact on Fear and Intimidation on these links is acceptable.

Accidents and Road Safety

- 14.7.27 On Broadley Street there have been 6 slight collisions in 3 years, 2 of which involved a pedestrian / cyclist. On Penfold Street there have been 8 slight collisions in 3 years, 5 of which involved a pedestrian / cyclist. The severity and frequency of incidents on these links demonstrate they are not of concern and a temporary uplift in construction traffic is unlikely to increase accidents here if the mitigation measures outlined in the Construction Logistics Plan are followed. These links can thus be considered to have a **'Negligible'** magnitude of effect.
- 14.7.28 Edgware Road has had 5 serious collisions in 3 years, 3 of these involved a pedestrian / cyclist. The nature of Edgware as a principal route and the associated high general traffic, bus, pedestrian and on-road cyclist flow results in a higher number of accidents. The uplift in HDV traffic will only be at the southernmost portion of Edgware Road in proximity to the site. The only discernible cluster of accidents is at the junction with Frampton Street where no construction traffic will be routed. Edgware Road will not experience an uplift in general traffic from the Proposed Scheme although pedestrian and cycle trips will increase significantly, and a large proportion will be routed south along Edgware Road in the direction of local public transport hubs. Edgware Road can thus be considered to have a **'Moderate'** magnitude of effect owing to the influx of pedestrian and cycle movements and when construction is still ongoing.
- 14.7.29 The 'Moderate' impact on Road Safety during site operation is a consequence of a greater number of pedestrians and cyclists using this link to and from the site, rather than of a higher risk to individuals. The pedestrian facilities are wide and of good quality and there is on-road cycling provision. An ATZ has been conducted along this link and any substandard features and possible improvements in active transport provision here have been noted as part of this process. This is detailed in the Transport Assessment. It is therefore concluded that the moderate effect on Road Safety is acceptable.
- 14.7.30 The slight increase in HDV movements along a short section of this link is considered acceptable owing to the wide roads which already support large quantities of heavy vehicles as well as the good footway and cycle provision which segregates the modes and greatly limits interactions.

Evaluation of Significance

The significance criteria adopted for likely traffic and transport effects is based on the magnitude (or scale) of the change as well as the sensitivity (or importance) of the receptor affected. The magnitude of effects and receptor sensitivity will be compared to estimate the significance of the effect.

14.7.31 Table 14-1 shows how the Receptor Sensitivity and Magnitude of Impact determine the Significance.

14.7.32 Table 14-21 summarises the impact magnitudes across the three links as described above.

Table 14-21: Summary of all impact magnitudes

	Severance	Driver Delay	Pedestrian and Cycle Delay and Amenity	Fear and Intimidation	Accidents and Road Safety
Edgware Road	Negligible	Negligible	Negligible	Negligible	Moderate
Broadley Street	Negligible	Negligible	Negligible	Moderate	Negligible
Penfold Street	Negligible	Negligible	Negligible	Moderate	Negligible

14.7.33 The 'Magnitude of Impact' value has been determined by considering Severance, Pedestrian and Cycle Delay and Amenity, Fear and Intimidation, and Accidents and Road Safety together.

14.7.34 Table 14-22 shows the 'Significance' value for each link for the construction phase, as determined from 'Sensitivity' and 'Magnitude of Impact'.

Table 14-22: Summary of link significance

	Sensitivity of Receptor	Magnitude of Impact (general)	Significance
Edgware Road	High	Negligible	Negligible
Broadley Street	Medium	Small	Minor
Penfold Street	Medium	Small	Minor

Effects for completed development

14.7.35 An operational traffic assessment of effects has thus been scoped out of this EIA chapter (as agreed in the EIA Scoping). The justification for this is outlined in this section.

14.7.36 The 'Guidelines for the Environmental Assessment of Road Traffic (1993), published by the Institute of Environmental Assessment (now IEMA) sets out the following broad guidelines to identify the appropriate extent of the assessment areas, as follows:

- Links with all vehicle or Heavy Vehicles traffic flow increases of over 30%; and
- Links with high sensitivity receptors with flow increases greater than 10%.

14.7.37 Site A will offer 5% (of the number of units) disabled parking provision for residents as well as 5% standard residential car parking spaces. With regards to Site A, this will be 22 residential disabled parking spaces and 21 standard residential car parking spaces. The residential car parking spaces are to be provided within the basement of Site A and will be accessible via two car lifts situated on Penfold Street.

14.7.38 At this stage, details for Site B and C are submitted in outline. The proposed parking provision for these Sites is detailed in the Transport Assessment, submitted in support of this planning application.

14.7.39 There are a total of 150 existing residential parking spaces in the form of on-street parking permits and 33 off-street parking managed by CWH. Existing car parking provision on-site also includes 132 rented spaces in the Site A basement and a 146-space public car park in the basement of Site B. The Proposed Scheme will reduce the number of parking spaces in comparison to the existing provision on Site. There is a total decrease in on-site parking spaces from 311 to 196, a marked reduction which underscores the sustainable credentials of the Site. It should be further noted that the new residents will not be able to apply for on-street parking permits. This will be discussed with WCC parking and highways as appropriate and managed through the car parking management plan.

- 14.7.40 The net trip generation for the Proposed Scheme is presented in Table 14-23 showing an overall reduction in car trips that resulted from the modal shift due to the reduced parking provision.

Table 14-23: Net Trip Generation Modal Split

Modal Split	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	In	Out	Two-Way	In	Out	Two-Way
Underground, metro, light rail, tram	25	156	181	85	35	120
Train	5	32	37	17	7	24
Bus, minibus or coach	29	181	210	99	41	139
Taxi	1	6	7	3	1	4
Motorcycle, scooter or moped	1	4	4	2	1	3
Driving a car or van	0	-3	-3	-2	-1	-2
Passenger in a car or van	0	-1	-1	-1	0	-1
Bicycle	4	25	29	14	6	19
On foot	19	116	135	63	26	89
Total	84	515	598	281	115	397

- 14.7.41 . Table 14-24 and Table 14-25 show the existing, proposed and net AADT (24-hour flows) of Site A, B, C together and Site A in isolation respectively.

Table 14-24: Site A, B, C AADT (24-hour flows)

Site A, B, C	No. Dwellings	AADT (24hr flows)
Existing	400	390
Proposed	1121	356
Net	721	-34

Table 14-25: Site A AADT (24-hour flows)

Site	No. Dwellings	AADT (24hr flows)
Existing	145	141
Proposed	429	136
Net	284	-5

- 14.7.42 The net trip generation AADT for Site A has been determined by multiplying the sum of the AM and PM two-way peaks by 6.113 (the 2hr-24hr factor derived from DfT's Table TRA0307 (Motor vehicle traffic distribution by time of day and day of the week on all roads, Great Britain: 2020). The net AADT for Site A is a reduction of 5 vehicle trips. The net trip generation AADT for Sites A, B and C is a reduction of 34 vehicle trips from the existing site.
- 14.7.43 It is proposed the mode share will increase from 86.5% walking, cycling and public transport to 95.5% under the proposed arrangements, a marked increase well in excess of the Mayoral mode share target of 80%.
- 14.7.44 The non-residential aspects of the Proposed Scheme will not generate any vehicle trips. All trips associated with these land uses will either be internal to the Application Site or will be pass by trips. This is justified in the Transport Assessment.

- 14.7.45 During the operational phase, the modal shift away from the private car and the large uplift in the number of residents at the site will result in more pedestrians, and to a lesser extent, cyclists along the local links.

It is likely the majority of additional pedestrian trips from the site will be along Edgware Road between the site and Edgware Road Underground Station. An assessment of the likely impacts on public transport has been undertaken and is included in the TA.

- 14.7.46 Table 14-26 shows there will be an additional 181 and 120 trips to and from the Station in the AM peak and PM peak respectively (the large majority will be pedestrians).

Table 14-26: Net Underground Trip Generation by Underground Station (Sites A, B and C)

Underground Station	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 - 21:00)		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Edgware Road (North of A40)	17	104	121	57	23	80	435	446	881
Edgware Road (South of A40)	8	52	60	28	12	40	215	220	434

- 14.7.47 Pedestrian and cycle trips will also increase to the local train stations, Paddington and Marylebone. Table 14-27 shows the uplift overground trips at each station.

Table 14-27: Net Train Trip Generation by Train Station

Train Station	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 - 21:00)		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Paddington	4	26	30	14	6	20	109	112	221
Marylebone	1	5	6	3	1	4	22	23	45

- 14.7.48 Pedestrian and cycle trips to Paddington Station will also utilise Edgware Road south of the site. The Proposed Scheme will thus add 211 and 140 trips along Edgware Road between the Site and Edgware Road Station in the AM peak and PM peak respectively, on top of additional pedestrian trips associated with destinations along and across the A40.
- 14.7.49 An Active Travel Zone (ATZ) assessment has been undertaken at the Application Site. This examined the quality and suitability of both pedestrian and cycle provision on many links around the site. Edgware Road, particularly south of the Application Site, has high footfall in a large part owing to the location of Edgware Road Station. On the site visit it was found that Edgware Road south of the Application Site was in generally in good condition and suitable for its current level of footfall.
- 14.7.50 There are generous footways on both sides of the road, particularly the side of the site. There is a wide pedestrian crossing across Edgware Road outside of Edgware Road Station. There is good crossing provision on both sides of Edgware Road across the A40.
- 14.7.51 From the Application Site south of the site there is a segregated on-street cycling provision facilitating the likely uplift in cyclists associated with the site along this link.
- 14.7.52 The recently permitted 14-17 Paddington Green is also likely to add pedestrian movements along this link albeit mostly limited to the west side of the road.
- 14.7.53 It is foreseeable that the addition of pedestrian movements can lead to increasing crowding outside and within Edgware Road Station.
- 14.7.54 This link cannot be considered an accident hotspot although there has been a small number of slight accidents involving pedestrians in the 3-years of PIC data supplied by TfL. The increased concentration of pedestrians here will increase the likelihood of collisions here although the ATZ found no clear issues with pedestrian safety here. Greater crowding may also indirectly affect pedestrian journey times and an increased number of pedestrian calls to cross Edgware Road and the A40 may have a very slight effect

on vehicle travel times (although this should be balanced against the slight net reduction in traffic associated with the site).

14.7.55 In terms of the effect on public transport infrastructure, the TA concludes the following in relation to the bus, underground and train network:

- Assuming a 10-minute frequency, the 274 bus would have 6 buses in the peak hour, meaning just 6 to 7 additional passengers departing the site in the AM and 5 arriving during the PM (although these trips would likely be distributed across other routes connecting The Site to Camden/Islington such as 205, 18, 390 and others).
- According to Usage Statistics for London Stations, 2019 (Transport for London), both Edgware Road stations have a combined footfall of 6.74 million in 2019. Assuming net two-way trips proposed by the site, patronage at these stations may rise by 7.1%.
- A daily uplift of 221 two-way trips and 45 two-way trips at Paddington and Marylebone respectively. This is an insignificant addition when compared against existing levels of station patronage.

14.7.56 The properties fronting Edgware Road are presently serviced through the western part of the Site A. With the development proposals coming forward, it is proposed that the retail properties fronting Edgware Road will be serviced through the existing Red-Route loading bays on Broadley Street and Edgware Road.

14.8 Further mitigation and monitoring

14.8.1 The following measures will be implemented from first occupation of the Application Site. It is expected that the below measures will be secured via planning conditions.

Car Parking Management Plan

14.8.2 In order to manage car parking demand, a Car Parking Management Plan (CPMP) will be produced for the development. This will outline how the car parking across the Application Site will be managed once the Proposed Scheme is operational to ensure there is no overspill parking to neighbouring areas.

14.8.3 This document will seek to manage car parking demand and to encourage car trips to be made by other sustainable modes. It thereby assists in limiting the number of car trips generated by the proposed development, with corresponding benefits to severance, driver delay and pedestrian and cycle amenity.

Framework Travel Plan

14.8.4 A Framework Travel Plan (FTP) has been prepared and is included in the TA. This sets out how residents, visitors and employees based at the Application Site can access the Proposed Scheme by sustainable forms of transport. It addresses, amongst other things, the following:

14.8.5 The objective of the FTP is:

“To promote the use of active and sustainable transport modes amongst residents to and from the Site”.

14.8.6 To support the overarching objective, the following sub-objectives have been set out:

- Appoint a Travel Plan Co-Ordinator (TPC) for the residential units;
- Increase awareness of the FTP and its constituent measures through residents' welcome packs and regular communication;
- Encourage greater use of sustainable travel modes, particularly cycling and walking, through provision of high-quality cycle parking spaces;
- Influence the travel behaviour of residents and visitors of the Proposed Scheme;
- Reduce the need to travel by single occupancy car vehicle; and
- Improve the health of residents and visitors and minimise the Proposed Scheme impacts on the surrounding environment.

- 14.8.7 It sets targets to reduce car driver mode share, and in particular single-occupancy car trips, in Year 1, Year 3 and Year 5 of the Proposed Schemes occupation. There are a range of measures to be implemented to achieve these as well as a series of remedial measures in case these targets are not met. The FTP objectives, targets, measures as well as monitoring strategy are outlined in more detail in the Transport Assessment.

Delivery and Servicing Plan

- 14.8.8 A Delivery and Servicing Plan (DSP) is to be prepared. This document seeks to actively manage the deliveries and servicing trips to the Site specifically aims to ensure that the servicing of the development can be carried out safely, legally and efficiently, without creating any negative impacts on the local highway network, neighbouring businesses, local residents and the environment.
- 14.8.9 Regular reviews of delivery and servicing vehicle activity will be held by the site management team and as part of the FTP. Any issues identified will be raised at the Steering Group meetings and dealt with accordingly through existing processes. The DSP is outlined in further detail in the Transport Assessment.

Construction Mitigation

- 14.8.10 Measures outlined in a Construction and Logistics Plan (CLP) will be implemented to reduce the effects of HDVs and worker vehicles throughout construction. As part of this, traffic management measures specifically designed to protect vulnerable road users such as pedestrians, cyclists and scooters will be implemented; these measures include clearly delineated pedestrian routes and set hours of operation to reduce the likelihood of pedestrian / vehicle interaction. It must be additionally noted that adverse effects of construction will be temporary, and closely managed and monitored throughout the construction period.
- 14.8.11 This strategy outlined in the Construction Logistics Plan and a Construction Environmental Management Plan (CEMP) aims to reduce the volume of construction vehicle trips and sets out the following measures to reduce any adverse effects generated by construction activities of the Proposed Scheme of the sites:
- Any bulk transit trips/abnormal loads will be undertaken during off-peak periods in order to minimise road user delays;
 - If lane closures on the local highway network are deemed necessary, these will take place during off-peak periods to minimise road user delay;
 - Designated construction routes will be utilised by all vehicles associated with the construction of the Proposed Scheme;
 - Abnormal load traffic management measures will also be required for the delivery and removal of the tower cranes to be used for the construction works, as well as similar deliveries. With these deliveries, a notification will be issued to the Council and the Police, as required by the CTMP;
 - Specific unloading/loading bays will also be established for each of the sites and construction phases, to mitigate further congestion on the roads immediately surrounding the development sites. All vehicles making deliveries to or removing site waste material will be required to travel via designated routes;
 - Construction vehicle routes to site will be agreed with WCC and will seek to minimise impact on the local road network and community. Wherever possible routes will avoid local schools and where this is not possible time restrictions will be put in place to avoid school start and finish times;
 - Commitment to use a Delivery Management System (DMS) to ensure contractors and suppliers forward plan and pre-book deliveries. This will enable site managers to control deliveries and vehicle flow to site including avoiding peak network times where possible;
 - Investigate the need for a vehicle holding area to help further control vehicle flow and manage deliveries to site;

- Investigate the use of construction consolidation centre to help maximise vehicle load efficiency and reduce vehicle trips;
 - Investigate modular and pre-fabricated construction techniques to help minimise the number of deliveries to site;
 - Commitment to use contractors and suppliers that are members of best practice schemes such as Considerate Constructors Scheme (CCS), Fleet Operators Recognition Scheme (FORS) and Construction Logistics and Community Safety (CLOCS);
 - Ensure a sufficiently robust CLP management, monitoring and compliance regime is in place so that the CLP is implemented correctly and remedial actions are taken when necessary; and
 - The implementation of a physical barrier as part of the site boundary/perimeter along the Church Street site perimeter to both maintain site security, but more importantly provide protection to the Market Traders.
- 14.8.12 The Main Contractor will be required to designate a Project Community Liaison Officer (PCLO), who will take full responsibility for the projects' compliance. The construction matters under the control of the PCLO will include construction traffic management.
- 14.8.13 The above measures outlined in the CLP will help ensure the following targets can be met:
- Zero, or a cap, on the construction trips to be undertaken during the AM and PM peak hours;
 - All construction vehicles to adhere to minimum standard requirements on emissions, safety equipment, Direct Vision etc
 - All vehicle drivers to adhere to minimum driver training standards.
- 14.8.14 A Construction Staff Travel Plan (TP) will also be prepared and implemented prior to commencement of any construction activities on site. This will highlight how construction staff can access the Application Site by sustainable modes of transport. The aim of the Construction Staff TP will be to minimise the need to access the site via private car.
- 14.8.15 In terms of management, monitoring and compliance, the CLP will be owned, managed and implemented by a name individual nominated by the main contractor such as the Site Manager or Logistics manager. It will be their responsibility to ensure the objectives are met and measures stated are implemented as described.
- 14.8.16 The DMS will be the primary monitoring tool with daily and weekly schedules and monthly reports used to monitor delivery activity, compliance with requirements and targets and remedial actions taken such as warning contractors of their obligations should a breach occur.
- 14.8.17 The CLP is outlined in further detail in the Transport Assessment and the full management, monitoring and compliance regime will be developed in the detailed CLP.

14.9 Residual effects and conclusion

Table 14-28 Transport Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Potential for HDV movements to cause adverse effects along Edgware Road, Broadley Street and Penfold Street.	Edgware Road - Medium Broadley Street - Medium Penfold Street - Low	Temporary, short team	Edgware Road – Negligible Broadley Street - Minor Penfold Street - Minor	Standard protocol for construction routing will be followed that will ensure lowest impact on considered links. These will be outlined in the CEMP and CLP.	Negligible	Specific measures will be outlined in the CLP.	Negligible
Conflict with existing on-street parking provision at Broadley Street and Penfold Street.	Broadley Street - Medium Penfold Street - Low	Temporary, short team	Broadley Street - Minor Penfold Street - Minor	Parking will be temporarily suspended along these links to allow for HDV movements. This will be detailed in the CEMP and CLP.	High	Specific measures will be outlined in the CLP.	Negligible
Potential for HDVs to interact with pedestrians and cyclists increasing 'Fear and Intimidation'.	Edgware Road – High Broadley Street - Medium Penfold Street - Low	Temporary, short team	Broadley Street - Minor Penfold Street - Minor	Implementation of the CLP will ensure that HGVs operate within specific hours, and will additionally designate and ensure clear delineation of specific routes for pedestrian travel to and from the site. This will minimise the potential for interaction between pedestrians and HGVs	Negligible	Specific measures will be outlined in the CLP.	Negligible
Potential for HGVs to interact with pedestrians and cyclists	Broadley Street - Medium Penfold Street - Low	Temporary, short team	Broadley Street - Minor Penfold Street - Minor	Implementation of the CLP will ensure that pedestrian barriers are installed and that banksmen are present at the site. Additionally, the CLP will ensure that best practice is adhered to at the site. This will	Negligible	Specific measures will be outlined in the CLP.	Negligible

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
effecting 'Accidents and Safety'.				reduce the likelihood and severity of accidents			
Potential for adverse effect on the operation of Church Street Market.	Church Street	Temporary, short term	Negligible	It is anticipated a physical barrier of robust construction, as part of the site boundary/perimeter, will be required along the Church Street site perimeter to both maintain site security, but more importantly provide protection to the Market Traders. The details will be outlined in the CLP.	Negligible	Specific measures will be outlined in the CLP.	Negligible
Complete and Operational							
Change in vehicle flows associated with the site across all local links.	Varies	Permanent	Low	Reduced parking provision results in a net reduction in trips.	Negligible	The suite of further measures to reduce reliance on the private car is included in the Travel Plan.	Moderate Beneficial

14.10 Cumulative effects assessment

- 14.10.1 This section of the chapter assesses the potential effects of the Proposed Scheme in combination with the potential effects of other development schemes (referred to as 'cumulative developments') within the surrounding area, as listed within *Chapter 2: EIA Methodology* of this ES.

Cumulative effects during demolition and construction

- 14.10.2 In terms of construction traffic, at the time this EIA was submitted, the City of Westminster planning portal does not indicate any impending construction works in the immediate vicinity of the Application Site or along any of the links considered in this chapter. Thus, it may be assumed that along the links considered (other than Edgware Road which is a principal route for all traffic through the wider area) there will be no significant and protracted uplift in construction flow traffic other than that which is proposed for the Application Site.

Cumulative effects for completed development

- 14.10.3 With regards operational flows, it has been assumed that the effects of the cumulative schemes have been considered as part of the applied TEMPro Growth Factors to the future years and thus is considered as part of this assessment.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 15: Wind Microclimate

Westminster City Council

November 2021

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15. Wind Microclimate

15.1 Introduction

15.1.1 This chapter reports the findings of the wind microclimate assessment and has been completed by RWDI.

15.1.2 The chapter and its supporting appendices describe the planning policy context, the assessment methodology, the baseline conditions at the application site and surroundings, the likely significant effects, the mitigation measures required to prevent, reduce or offset any significant adverse effects, the likely residual effects after these measures have been employed, and the cumulative effects.

15.1.3 The chapter is supported by the following figures:

- Figure 15.1: Seasonal Wind Roses for London Heathrow Airport (in km/h) (Radial axis indicates the percentage of time for which the stated wind speed threshold is exceeded).
- Figure 15.2: 3D model of the existing site with the existing surrounding buildings (baseline scenario) (Configuration 1) used for CFD simulations.
- Figure 15.3: 3D model of Site A (Detailed Scheme) of the Proposed Scheme with Existing Surrounding Buildings (Configuration 2) used for CFD simulations.
- Figure 15.4: 3D model of Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Existing Surrounding Buildings (Configuration 3) used for CFD simulations.
- Figure 15.5: 3D model of Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Cumulative Surrounding Buildings (Configuration 4) used for CFD simulations.
- Figure 15.6: Expected ground level usage plot of the Proposed Scheme in the context of existing surrounding buildings.
- Figure 15.7: Proposed entrance locations around Site A of the Proposed Scheme.
- Figure 15.8: Configuration 1 – Ground level, windiest season results.
- Figure 15.9: Configuration 1 – Ground level, summer season results.
- Figure 15.10: Configuration 2 – Ground level, windiest season results.
- Figure 15.11: Configuration 2 – Elevated Walkways, windiest season results (view from south).
- Figure 15.12: Configuration 2 – Elevated Walkways, windiest season results (view from north).
- Figure 15.13: Configuration 2 – Ground level, summer season results.
- Figure 15.14: Configuration 2 – Balconies, summer season results (view from south).
- Figure 15.15: Configuration 2 – Balconies, summer season results (view from north).
- Figure 15.16: Configuration 2 – Terrace level, summer season results.
- Figure 15.17: Configuration 3 – Ground level, windiest season results.
- Figure 15.18: Configuration 3 – Elevated Walkways, windiest season results (view from south).
- Figure 15.19: Configuration 3 – Elevated Walkways, windiest season results (view from north).
- Figure 15.20: Configuration 3 – Ground level, summer season results.
- Figure 15.21: Configuration 3 – Balconies, summer season results (view from south).
- Figure 15.22: Configuration 3 – Balconies, summer season results (view from north).
- Figure 15.23: Configuration 3 – Terrace level, summer season results.
- Figure 15.24: Configuration 4 – Ground level, windiest season results.
- Figure 15.25: Configuration 4 – Elevated Walkways, windiest season results (view from south).

- Figure 15.26: Configuration 4 – Elevated Walkways, windiest season results (view from north).
- Figure 15.27: Configuration 4 – Ground level, summer season results.
- Figure 15.28: Configuration 4 – Balconies, summer season results (view from south).
- Figure 15.29: Configuration 4 – Balconies, summer season results (view from north).
- Figure 15.30: Configuration 4 – Terrace level, summer season results.

15.2 Legislation, policy and guidance

15.2.1 This assessment has been undertaken taking into account relevant legislation and guidance set out in national, regional and local planning policy.

Legislation

15.2.2 There is no legislation direction relating to wind microclimate issues relevant to the Proposed Scheme.

Planning Policy

National Planning Policy Framework (2021)¹

15.2.3 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. It states that the purpose of the planning system is to contribute to the achievement of sustainable development; and that the planning system must meet interdependent overarching objectives summarised as: an economic objective, a social objective and an environmental objective.

15.2.4 There are no policies or statements that are directly related to the wind microclimate, although the promotion of high-quality built environments was emphasised in the NPPF. For instance, paragraph 8 describes environmental objectives for sustainable development:

- c) “[...] to protect and enhance our natural, built and historic environment [...] and mitigating and adapting to climate change”.

15.2.5 Additionally, paragraph 130 states the following:

- “f) Create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users”.

The London Plan 2021 – The Spatial Development Strategy for Greater London²

15.2.6 The London Plan 2021 is the Spatial Development Strategy for Greater London. It places importance on the creation and maintenance of a high-quality environment for London.

15.2.7 Policy D3 Optimising site capacity through the design-led approach (Para 3.3.8), states that:

- “Buildings [...] massing, scale and layout [...] should complement the existing streetscape and surrounding area. Particular attention should be paid to the design of the parts of a building or public realm that people most frequently see or interact with in terms of its legibility, use, detailing, materials and location of entrances. Creating a comfortable pedestrian environment with regard to levels of [...] wind”.

15.2.8 Policy D8 Public realm, Development Plans and development proposals should, states that:

- “Consideration should also be given to the local microclimate created by buildings, and the impact of service entrances and facades on the public realm.”

¹ Department for Communities and Local Government, (2021); Revised National Planning Policy Framework. HMSO, London

² Greater London Authority, 2021. The London Plan. London. GLA

- “Ensure that appropriate shade, shelter, seating [...] with other microclimatic considerations, including temperature and wind, taken into account in order to encourage people to spend time in a place.”
- 15.2.9 Policy D9 Tall buildings: Environmental impact, states that:
- “Wind [...] around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building”;
 - “Air movement affected by the building(s) should [...] not adversely affect street-level conditions”.
- 15.2.10 Policy D9 Tall buildings: Cumulative impacts, states that:
- “The cumulative visual, functional and environmental impacts of proposed, consented and planned tall buildings in an area must be considered when assessing tall building proposals and when developing plans for an area. Mitigation measures should be identified and designed into the building as integral features from the outset to avoid retro-fitting.”

City of Westminster City Plan 2019-2040³

- 15.2.11 Design and Heritage Policy 41 Building Height states that:
- “Proposals for tall buildings will be required to: [...] 5. mitigate negative impacts on the microclimate and amenity of the site and surrounding area”

Guidance

National Planning Practice Guidance (NPPG) (2019)⁴

- 15.2.12 The NPPG was published in November 2016 to support the NPPF and was updated in October 2019.
- 15.2.13 The NPPG identifies the potential for tall and large buildings to affect the wind microclimate. The National Design Guide states in Paragraph 71 that:
- “Proposals for tall buildings (and other buildings with a significantly larger scale or bulk than their surroundings) require special consideration. This includes their [...] environmental impacts, such as [...] wind. These need to be resolved satisfactorily”

Guidance on Tall Buildings (2007)⁵

- 15.2.14 English Heritage and the Commission for Architecture and the Built Environment (CABE) produced a revised and updated version of their joint guidance on tall buildings. The final version was released in July 2007 and in section Criteria for evaluation, state that:
- “... planning permission for tall buildings should ensure therefore that the following criteria are fully addressed: [...] The effect on the local environment, including microclimate”.

Historic England Advice Note 4: Tall Buildings⁶

- 15.2.15 The Historic England Advice Note 4: Tall Buildings (2015) states in Section 4.7:
- “Planning applications for tall buildings are likely to require an environmental impact assessment (EIA), which would be expected to address matters in respect of both the proposed building and its cumulative impact, including: [...] e. Other relevant environmental issues, particularly sustainability and environmental performance, eg the street level wind environment.”

³ City of Westminster, 2021. City Plan 2019-2040. London.

⁴ Ministry of Housing, Communities & Local Government, (2019). Planning Practice Guidance

⁵ Commission for Architecture and the Built Environment and English Heritage, (2007). Guidance on tall buildings, London. CABE and English Heritage

⁶ Tall Buildings: Historic England Advice Note 4, 2015. London. CABE and English Heritage

UK Climate Projections (UKCP18) (2018)⁷

15.2.16 The UK Climate Projections (UKCP18) published by the Met Office presents a number of different predicted scenarios. The 'Climate Projects Report' published by UKCP18 presents the probable changes in wind speed for 2070 - 2099 in both the summer and winter seasons. With these predictions, the current trends in the climate change are not likely to have any significant effects on the predicted wind microclimate conditions in and around the Proposed Scheme. It is therefore not necessary to provide a quantitative analysis of the increase in storm frequency and its implication on the effect on the wind microclimate for the Proposed Scheme.

15.3 Consultation

15.3.1 The EIA Scoping Opinion was received on 3rd September 2021. A summary of the wind microclimate related responses are set out in Table 15-1.

Table 15-1 Comments raised in EIA Scoping Opinion

Section	WCC Review Comment/Observation	Clarification Request from WCC	EIA team response
Paragraph 7.9.26	From the information provided about the scheme it is difficult to understand what will be assessed. It would have been helpful for the applicant to explain what matters are being reserved and which are fixed and how this will be represented on their parameter plans. With the tallest building being identified to be up to 17 storeys there could be a need for physical modelling. This is based on guidance in the City of London and Tower Hamlets where both sets of guidance would require wind tunnel assessment for this height of building.	Further details of the parameters to be assessed is required to understand how and what the wind analysis will assess. For example, is siting to be fixed, perhaps with limits of deviation? Justification for CFD for the tallest components is required in light of guidance issued in other central London boroughs	The Proposed Scheme will be between three and 14 storeys tall. Kennet House is not included within the application boundary but is surrounded by Site C of the Proposed Scheme which is in outline as part of this hybrid scheme. A Computational Fluid Dynamics (CFD) methodology is considered appropriate as set out in Paragraphs 7.9.25 and 7.9.25 of the scoping report, which note the limited height of the development and the hybrid nature, which for the outline plots (Including Site C surrounding the 17 storey Kennet House) are encouraged to undergo further assessment at the RMA stage(s) to an appropriate assessment methodology. The City of London Wind Microclimate Guidelines apply specifically to the City's unique make-up of building uses, confined street layouts, build-up of very tall developed context and application of specific meteorological data which would not apply in the same way to this area of Westminster. That said, it should be noted that the maximum height of buildings on Site C are expected to be around 46m tall (above local surface level) which would fall into the 'CFD or Wind Tunnel' category of the City of London Wind Microclimate Guidelines requirements with regard to the type of assessment methodology, even in an area with a significantly taller building stock.

15.4 Assessment methodology

15.4.1 Computational Fluid Dynamics (CFD) is a computer modelling technique for numerically simulating wind flow in complex environments. The computational model was constructed in OpenFOAM version 4.1. The CFD simulation delivers a detailed assessment of the mean wind conditions in and around the site and the Proposed Scheme for the key wind directions tested in terms of pedestrian comfort.

15.4.2 To assess the Proposed Scheme, the following was prepared for the CFD modelling:

- A digital 3D model of the existing context of the site and the current surrounding urban context up to a 600m radius from the centre of the site (the massing of the buildings immediately surrounding the site were included as these influence the wind as it approaches the site);
- A digital 3D model of the Proposed Scheme in the context of existing surrounding buildings; and

⁷ Met Office, 2018 UKCP18 Science Overview Report

- A digital 3D model of known cumulative buildings in a 600m radius of the Site consisting of cumulative schemes.
- 15.4.3 Each configuration was solved using a Reynolds Averaged Navier-Stokes (RANS) approach with a RNG k- ϵ turbulence closure. The results of RANS based CFD modelling provide only an averaged wind result (i.e. the simulations only provide the mean wind speed and do not have the ability to predict the fluctuating or gusty nature of wind) therefore, the potential for strong winds leading to potential safety issues have been assessed using informed engineering judgement.
- 15.4.4 In total, 18 wind angles were tested, equally spaced out around a compass (equal to 20-degree intervals) per configuration. Although the strongest winds originate from the south-west, the number of wind angles tested will provide sufficient coverage to consider all aerodynamic interactions of winds from all angles.
- 15.4.5 The computational model was discretized into approximately 31 million cells with increased refinement (i.e. decreased cell size) close to the areas of expected high velocity gradients and in areas of interest.

Simulation of Atmospheric Winds

- 15.4.6 The output of the CFD modelling has been combined with 20 years' worth of meteorological data taken from London Heathrow airport, as shown in Figure 15-1, as this is deemed to provide a suitable representation of the local wind microclimate. The radial axis indicates the percentage time per season that the wind speed exceeds the particular wind speed range. The seasons are defined as spring (March, April and May), summer (June, July and August), autumn (September, October and November) and winter (December, January and February).
- 15.4.7 The meteorological data indicate that the prevailing wind throughout the year is from the south-west (i.e. 210 to 240 degrees on the compass). This is typical for many areas of southern England. There is a secondary peak from the north-east during the late spring and early summer. The winds from the north-east are not as strong as the prevailing winds from the south-west.
- 15.4.8 The inlet boundary layer profile (the shape and characteristics of the wind flowing toward the application Site based primarily on the terrain it travels over) was determined based on the area surrounding the application Site. Due to the urban nature of the surrounding buildings, which is consistent with this area of London. winds approaching the application Site would therefore be expected to have lower mean speeds and higher turbulence when compared to winds in open country terrain as they interact with the urban context.






Pedestrian Wind Comfort

- 15.4.9 The assessment of wind conditions requires a 'standard' against which to benchmark the microclimate. The Lawson Comfort Criteria have been established for over thirty years and have been widely used on building developments across the United Kingdom (UK).
- 15.4.10 Lawson devised a scale for assessing the suitability of wind conditions in the built environment. The Lawson Comfort Criteria⁸ (set out in

⁸ Building Aerodynamics, (2001); Lawson T.

- 15.4.11 Table 15-2) define a range of pedestrian activities from sitting through to more transient activities such as walking along a thoroughfare, and for each activity define a threshold wind speed and frequency of occurrence beyond which the wind environment would be unsuitable for the stated activity.
- 15.4.12 The criteria reflect the fact that sedentary activity, such as sitting, requires a low wind speed whereas for more transient activity (such as walking) pedestrians would tolerate stronger winds.
- 15.4.13 If the wind conditions exceed the threshold then the conditions are unacceptable for the stated activity. If the wind conditions are below the threshold then they are described as tolerable (or suitable) for the stated activity.

Table 15-2 Comfort Category Criteria

Colour	Comfort Category	Threshold	Description
	Sitting	0-4 m/s	Light breezes desired for outdoor restaurants and seating areas where one can read a paper or comfortably sit for long periods.
	Standing	4-6 m/s	Gentle breezes suitable for main building entrances, pick-up/drop-off points and bus stops.
	Strolling ⁹	6-8 m/s	Moderate breezes that would be appropriate for strolling along a city/town centre street, plaza or park.
	Walking	8-10 m/s	Relatively high speeds that can be tolerated if the objective is to walk, run or cycle without lingering.
	Uncomfortable	>10 m/s	Winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended.

Target Wind Conditions

- 15.4.14 For a mixed-use development, such as the Proposed Scheme, the desired wind microclimate would typically need to have areas suitable for sitting, standing and strolling use.
- 15.4.15 The walking and uncomfortable classifications may be acceptable in isolated areas, but these classifications are also associated with occasional strong winds (which are described below) and so the aim has been to avoid conditions in these categories.
- 15.4.16 Wind conditions have been assessed during the windiest season (December, January and February) and summer season (June, July and August) and the results have been compared against the intended use as appropriate depending on whether the intended use is required year-round, or whether it is considered to be a primarily summer season use.

Pedestrian Thoroughfares

- 15.4.17 A pedestrian thoroughfare should be suitable for strolling during the windiest season. The assessment for pedestrian thoroughfares therefore focuses on the assessment result from the windiest season.
- 15.4.18 Localised occurrence of walking conditions may be acceptable in areas with limited footfall, or service areas, as long as the strong wind criteria (see section 'Strong Winds') is not exceeded.

Pedestrian Crossings

- 15.4.19 Pedestrian crossings should be suitable for walking during the windiest season as pedestrians are not expected to linger in these locations

Entrances

- 15.4.20 For areas in close proximity to building entrances, a wind environment suitable for standing or calmer is desired, as pedestrians will transition from the calm indoors to the windier outdoors throughout the year. The assessment for building entrances therefore focuses on the windiest season result. This is the target criteria for both on-site and off-site entrances. However, it is only appropriate to target these conditions at off-site entrances in instances where these conditions are already met in the baseline scenario. Where wind conditions at an existing off-site entrance in the baseline scenario would be windier than suitable for standing use, the target criteria under the Proposed Scheme scenarios would be conditions no-worse than those in the Baseline Condition scenario.
- 15.4.21 Where an entrance is recessed, then the recessed zone provides a transition area for pedestrians exiting the building. If strolling conditions are observed on the pavement outside a recessed entrance, acceptable standing conditions would be expected at the recessed entrance.

⁹ The distinction between strolling and walking is that in the strolling scenario, pedestrians are more likely to take on a leisurely pace, with the intention of taking time to move through the area, whereas in the walking scenario pedestrians are intending to move through the area quickly and are therefore expected to be more tolerant of stronger winds.

- 15.4.22 It should be noted that at back of house entrances and fire exits strolling use wind conditions would be considered acceptable wind conditions as these areas are expected to be less frequently used by pedestrians.

Bus Stops

- 15.4.23 Bus stops should be suitable for standing conditions during the windiest season, the assessment for bus stops therefore focuses on the windiest season result.

Ground Level Amenity Spaces

- 15.4.24 The target condition for seating areas at ground level amenity areas is a wind microclimate that is suitable for sitting during the summer season. This is because these areas are more likely to be frequently used during the summer when pedestrians would expect to be able to sit comfortably.
- 15.4.25 Larger mixed-use amenity spaces would require a mixture of sitting use and standing use wind conditions during the summer season. This is because pedestrians can use standing use areas for more active pursuits and sitting use areas for seating.
- 15.4.26 If an area is classified as suitable for sitting in the summer, the windier conditions that occur during the winter season usually mean that the area would be classified as suitable for standing in the windiest season, unless additional shelter was provided.
- 15.4.27 Private ground level amenity spaces would require standing use wind conditions during the summer season, as residents would be expected to have more control over the shelter provided in the space and how it is utilised.

Elevated Level Amenity Spaces

- 15.4.28 Podium and roof level amenity space are assessed in a similar manner to ground level amenity spaces with designated seating areas requiring sitting use wind conditions during the summer season, and mixed-use areas requiring standing or calmer use wind conditions during the summer season.
- 15.4.29 Private podium and roof level amenity spaces in addition to balcony locations would require standing use wind conditions during the summer season, as residents would be expected to have more control over the shelter provided in the space and how it is utilised.

Off-site areas

- 15.4.30 Off-site areas are assessed in the same way as all on-site areas with regards to the wind conditions measured.
- 15.4.31 All assessed off-site areas include a comparison with wind conditions in the Baseline scenario (Configuration 1). The significance of the effect has been defined based on whether there is a material change in the wind conditions from those in the baseline e.g. a thoroughfare with strolling use wind conditions in the baseline and standing use wind conditions with the Proposed Scheme in place would be suitable for the intended use in both scenarios. This would represent no material change in conditions and therefore would represent a negligible effect (not significant).

Strong Winds

- 15.4.32 The Lawson Criteria also specifies a strong wind threshold when winds exceed 15m/s for more than 0.025% of the time (2.2 hours of the year). Exceedance of this threshold may indicate a need for remedial measures or a careful assessment of the expected use of that location; e.g. is it reasonable to expect older adults or young children to be present at the location on the windiest day of the year?
- 15.4.33 The events where winds exceed the strong wind criteria is generally comprised of a large number of individual short (less than 3 second) gusts. These gusts are often generated as the wind interacts with the Proposed Scheme (i.e. caused by large turbulent structures). The likelihood of strong winds occurring at the Proposed Scheme has been assessed using professional judgement and experience of assessing similar developments, informed by the results of the CFD modelling.

15.4.34 Strong winds are generally associated with areas which would be classified as acceptable for walking or conditions considered uncomfortable. In a mixed-use urban development scheme, walking and uncomfortable conditions would not usually form part of the 'target' wind environment and would usually require mitigation due to pedestrian comfort considerations. This mitigation would also have the impact of reducing the frequency of, or even eliminate, any strong winds.

Assessment Scenarios

15.4.35 The following four configurations (assessment scenarios) were tested in the CFD assessment:

- Configuration 1: Existing Site with Existing Surrounding Buildings;
- Configuration 2: Site A (Detailed Scheme) of the Proposed Scheme with Existing Surrounding Buildings;
- Configuration 3: Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Existing Surrounding Buildings; and
- Configuration 4: Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Cumulative Surrounding Buildings.

15.4.36 Construction of the cumulative schemes 17/08619/FULL – Luton Street and 16/11562/FULL – Paddington Green (Plots A – F) has already commenced, therefore these buildings were included as existing surrounding buildings in all assessed Configurations.

15.4.37 Landscaping has not been included in any of the four assessed scenarios in order to present a 'worst-case' scenario.

15.4.38 Further to the assessment presented within this chapter, amendments have been made to the Proposed Development. Those amendments pertinent to the wind microclimate assessment are restricted to the balconies on Block A. All other amendments would have no influence on the assessment as presented.

15.4.39 The amendments would see the transformation of all recessed balconies into winter gardens (with operable windows for occupants, but considered an internal space with regards to wind microclimate) and adjustment to the location of projecting balconies. While the location of projecting balconies would change, the level of exposure and shelter at each balcony would be expected to remain similar to those in the assessment presented below. As such, the outcomes of the assessment below would remain valid.

15.4.40 The intended usage of each area for each configuration is provided in the following tables

Table 15-3 Intended Usages of Receptors in the Baseline Scenario (Configuration 1)

Intended Usage	Area
Thoroughfares	On-Site and off-Site: All paved locations that are accessible and permit pedestrian movement
Entrances	On-Site and off-Site: Entrances along Church Street Entrances along Broadley Street Entrances along Edgware Road
Bus Stops	Off-Site: Bus stops along Edgware Road Bus stop along Harrow Road
Pedestrian Crossings	Off-Site: Pedestrian Crossings along Edgware Road
Ground Level Amenity – Mixed Use	Off-Site: Broadley Street Gardens

Table 15-3 Intended Usages of Receptors in with the Proposed Scheme in situ

Intended Usage	Area
Thoroughfares	On-Site and off-Site: All paved locations that are accessible and permit pedestrian movement
Entrances	On-Site: Entrances around the detailed scheme All elevations of the outline schemes Off-Site: Entrances along Church Street Entrances along Broadley Street Entrances along Edgware Road
Bus Stops	Off-Site: Bus stops along Edgware Road Bus stop along Harrow Road
Pedestrian Crossings	Off-Site: Pedestrian Crossings along Edgware Road
Ground Level Amenity – Mixed Use	On-Site: Courtyard within Block A1 Off-Site: Broadley Street Gardens
Balconies	On-Site: All balcony locations around the detailed scheme
Terraces	On-Site: Podium terrace within Block A2 All terrace locations of the outline schemes

Determining baseline conditions and sensitive receptors

- 15.4.41 The current baseline wind microclimate conditions in and around the site have been quantitatively assessed by modelling the existing context using a ‘Computational Fluid Dynamics’ (CFD) modelling technique.
- 15.4.42 The spatial extent of the domain considered is a 400m radius from the centre of the application site. Results have been presented for all areas within the red line boundary of the application site as well as up to 150m beyond the red line boundary.
- 15.4.43 The receptors considered within this assessment are the pedestrians/cyclists and residents who would be utilising the various areas of the application site and surrounding area.

Methodology for demolition and construction assessment

- 15.4.44 Owing to the evolving and changing nature of the Proposed Scheme during the demolition and construction works, it is not typical to model the wind microclimate effects of the scheme during this phase. The construction phase is not considered a primary consideration for the assessment of wind microclimate effects because such effects would only be temporary, and the full effects will only occur once the Proposed Scheme is completed (i.e. when the buildings have reached their maximum massing). The activity on-site during this time (i.e. construction activity) is also less sensitive to wind conditions (due to protection from site hoarding, and site access being restricted to site workers) than when the Proposed Scheme is completed and occupied (which would include new building entrances and outdoor seating with amenity spaces, for example). In addition, it is assumed that there would be appropriate health and safety measures implemented to ensure that the construction workers were adequately protected.
- 15.4.45 The potential microclimate effects during demolition and construction have therefore been qualitatively assessed, based on an assessment of the background wind climate at the existing site (the results of

the simulated configuration from CFD modelling for the baseline scenario and Proposed Scheme configurations) and using the professional judgement of an experienced wind engineer.

Methodology for completed development effects

- 15.4.46 In order to assess the local wind environment associated with the completed Proposed Scheme and the resulting pedestrian comfort within and surrounding the site, Computational Fluid Dynamics (CFD) simulations of the Proposed Scheme has been undertaken.
- 15.4.47 CFD allows the pedestrian level wind microclimate at and surrounding the site to be quantified and classified in accordance with the accepted criteria (refer to the 'Assessment Methodology' section of this ES Chapter).

Significance criteria

On-Site Receptors

- 15.4.48 For on-site receptors, the significance criteria used in the assessment of effects is based upon the relationship between the desired pedestrian use of a particular area of the Proposed Scheme, using the categories defined by the Lawson Comfort Criteria and the predicted wind conditions at that location within the Proposed Scheme. This allows for the assessment to take into account any change in pedestrian activity that might arise as a result of the Proposed Scheme.
- 15.4.49 A seven-point scale has been used within this assessment to assess the significance of effect, as shown Table 15-4.

Table 15-4 Significance Criteria for on-Site measurement areas for the wind microclimate assessment

Recorded Wind Conditions at on-Site Receptors	Significance of Effect
Wind conditions are 3 comfort categories calmer than required	Major Beneficial
Wind conditions are 2 comfort categories calmer than required	Moderate Beneficial
Wind conditions are 1 comfort category calmer than required	Minor Beneficial
Wind conditions are in the same comfort category as required	Negligible
Wind conditions are 1 comfort category windier than required	Minor Adverse
Wind conditions are 2 comfort categories windier than required	Moderate Adverse
Wind conditions are 3 comfort categories windier than required	Major Adverse

- 15.4.50 The adopted scale for the significance criteria is a logical comparison of the measured wind environment with the desired wind environment.
- 15.4.51 The minor, moderate and major categories indicate the severity of the difference between the desired microclimate and the actual microclimate. As an example, if the desired wind conditions at a particular location are required to be suitable for standing, but the predicted wind conditions are suitable for strolling, the difference between the desired and predicted wind condition is one category windier than desired. In this case, the significance of the effect would be identified as minor adverse.

Off-Site Receptors

- 15.4.52 The significance of effects criteria for off-site receptors are presented in Table 15-5. The assessment of effect significance for these receptors also takes into account any change in conditions from the baseline scenario, as described in the text beneath the table.

Table 15-5 Significance Criteria for Off-Site Measurement Areas for the Wind Microclimate Assessment

Recorded Wind Conditions at Off-Site Receptors where Wind Conditions are Currently Suitable for the Intended Use (i.e. in the Baseline Scenario)	Significance
If wind conditions were originally 3 categories windier than required but are now suitable or calmer than required	Negligible
If wind conditions were originally 2 categories windier than required but are now suitable or calmer than required	Negligible
If wind conditions were originally 1 category windier than required but are now suitable or calmer than required	Negligible
Wind conditions are in the same comfort category as required	Negligible
Wind conditions are 1 comfort category windier than required	Minor Adverse
Wind conditions are 2 comfort categories windier than required	Moderate Adverse
Wind conditions are 3 comfort categories windier than required	Major Adverse

- 15.4.53 Any off-site locations would be deemed to have an adverse effect should conditions be windier than suitable by the criteria and is also windier than in the baseline scenario. If these conditions do not occur as a direct result of the introduction of the Proposed Scheme this effect would be considered negligible (not significant). If these conditions occur due to the introduction of the Proposed Scheme the effect would be considered adverse and significant.

Receptor Sensitivity

- 15.4.54 The sensitivity of receptors is related to the intended pedestrian use at each location; there are no definitions for sensitivity, as the important consideration is whether the wind conditions experienced at a particular receptor location are suitable for the intended use (in terms of pedestrian comfort and strong winds) at that particular location. All receptors are considered to be highly sensitive to the local wind microclimate conditions and are given an equal weighting.

Significance

- 15.4.55 Any adverse effect is 'significant' because it implies that a location, or area, has a wind microclimate that is unsuitable for the desired use of that area and that this would impact the actual usage of the space by pedestrians (such as people not wanting to sit in designated seating areas or opting to use alternative entrances to buildings). On this basis, effects that are adverse would need mitigating. Beneficial effects are not considered to be significant as calmer than required wind conditions enhance the quality of a space but rarely effect the actual usage of the space by pedestrians.

Strong Winds

- 15.4.56 Strong winds (affecting pedestrian safety) are not included within this scale of effect assessment but are reported separately as any strong wind exceedance is significant and cannot be scaled to major/moderate/minor. Where strong winds occur, mitigation is required (as per adverse effects related to pedestrian comfort).

Significance Descriptors

- 15.4.57 For wind, the duration of effects has been defined as follows:
- Short term:
 - Medium term; and

- Long term.

15.4.58 Effects during the construction works are direct, local and short-term (temporary) and reversible.

15.4.59 Effects once the Proposed Scheme is completed are direct, local and long-term (permanent) and irreversible unless there is a change in the Proposed Scheme's massing on the application site or the local wind microclimate.

Limitations and assumptions

15.4.60 In undertaking the wind microclimate assessment of the application Site and the wider surrounding area, there are a number of limitations and constraints affecting the outputs from this work. These include:

- This assessment has assumed that during the demolition and construction works there will be restricted access (i.e. not accessible to the general public) within each area/phase of the Site undergoing works and therefore windier conditions would be tolerable as the area are not for typical pedestrian use where the tolerable wind speed threshold would be lower;
- This assessment is based on worst-case wind speeds, expected to be encountered during the winter season (December, January and February) in the UK. Additional consideration has been made for summer wind conditions (June, July and August) due to the presence of amenity spaces in the form of potential ground level, podium level and rooftop terraces and communal courtyards where comfort is expected to be impacted more by wind during the summer season than the windiest season. This complies with the standard methodology set out by Lawson for wind-microclimate assessments;
- Strong wind exceedances will be based upon the average results provided by the RANS simulations in combination with engineering judgement, as RANS simulations do not have the ability to predict the fluctuating or gusty nature of wind; and
- The information used to produce the 3D model used for the CFD simulations is based on the information provided to RWDI for Plot A on 25th August 2021 and for Plot B and Plot C on 18th August 2021.

15.4.61 These assumptions/limitations are not expected to affect the validity of the assessment.

15.5 Baseline conditions

Configuration 1: Existing Site with Existing Surrounding Buildings

15.5.1 Wind conditions for Configuration 1 are presented in the Figure 15.8 for the windiest season and in Figure 15.9 for the summer season.

Pedestrian Comfort

Thoroughfares

15.5.2 On-Site pedestrian thoroughfares around the Site have wind conditions suitable for sitting use or standing use during the windiest season.

15.5.3 Off-Site pedestrian thoroughfares on Newcastle Place adjacent to Westmark Tower, around the south-western corner and south of the vacant Paddington Green Police Station on Harrow Road, between Blocks A-D of the Paddington Green scheme, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corners of Braithwaite Tower and Hall Tower have walking use wind conditions during the windiest season. All other off-Site thoroughfares have sitting to strolling use wind conditions during the windiest season.

Entrances

15.5.4 On-Site entrances currently have wind conditions suitable for sitting and standing use during the windiest season.

- 15.5.5 Off-Site entrances between 340 Edgware Road and 352 Edgware Road have strolling use wind conditions during the windiest season. All other off-Site entrances have sitting and standing use wind condition during the windiest season.

Bus Stops

- 15.5.6 The bus stop fronting Harrow Road (Edgware Road (Stop EX)), south of the vacant Paddington Green Police Station, has walking use wind conditions during the windiest season. All other bus stops around the Site have sitting use and standing use wind conditions during the windiest season.

Pedestrian Crossings

- 15.5.7 Pedestrian crossings around the Site have sitting use to strolling use wind conditions during the windiest season.

Ground Level Amenity – Mixed Use

- 15.5.8 Wind conditions in Broadley Street Gardens are suitable for sitting and standing use during the summer season.

Strong Winds

- 15.5.9 Instances of strong winds would be likely to occur where walking use wind conditions occur during the windiest season. These locations being on Newcastle Place adjacent to Westmark Tower, at the south-western corner and south of the vacant Paddington Green Police Station on Harrow Road, between Blocks A-D of the Paddington Green scheme, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corners of Braithwaite Tower and Hall Tower.

15.6 Assessment of effects

Effects during demolition and construction

- 15.6.1 It is expected that the influence of the Proposed Scheme on wind conditions at the Site and in the immediate surrounding area will increase gradually as construction progresses from the Baseline scenario (Configuration 1) to reach a maximum equal to the influence of the complete operational development (Configuration 2).
- 15.6.2 The activity on-Site during this time (i.e. construction activity) is less sensitive to wind conditions (due to protection from Site hoarding, and Site access being restricted to Site workers) than when the Proposed Scheme is complete and operational (which would include new thoroughfare routes and building entrances, for example). In addition, there would be appropriate health and safety measures implemented to ensure that the construction workers were adequately protected. This would therefore represent a **negligible** effect (not significant) during the demolition and construction works of the Proposed Scheme.

Effects for completed development.

- 15.6.3 The Proposed Scheme, once complete and operational, has the potential to cause adverse wind conditions that exceed the comfort criteria for pedestrians resulting in areas being unsuitable for the intended use.
- 15.6.4 As previously stated, effects once the Proposed Scheme is completed are direct, local and long-term (permanent) and irreversible unless there is a change in the Proposed Scheme's massing on the application site or the local wind microclimate.
- 15.6.5 These effects will range from beneficial to adverse depending on location.

Configuration 2: Site A (Detailed Scheme) of the Proposed Scheme with Existing Surrounding Buildings

The assessment of the wind conditions for Configuration 2 is based on the results presented in Figure 15.10 for ground level and Figure 15.11 and Figure 15.12 for the external walkway levels during the windiest season. The summer season wind conditions are presented Figures 15.13 for ground level, Figure 15.14 and Figure 15.15 for balconies and Figure 15.16 for terraces.

Pedestrian Comfort

Thoroughfares

- 15.6.6 On-Site ground-level pedestrian thoroughfares would have wind conditions suitable for sitting to strolling use during the windiest season, acceptable conditions for the intended use, representing **moderate beneficial** to **negligible** effects (not significant).
- 15.6.7 The southern edge of the topmost south-western facing external walkway on Plot A2 would have walking use wind conditions during the windiest season, one category windier than suitable, representing **minor adverse** effects (significant) and necessitating mitigation measures as a result. All other elevated walkways around the Proposed Scheme would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the intended use, representing **moderate beneficial** to **negligible** effects (not significant).
- 15.6.8 Walking use wind conditions during the windiest season would remain at off-Site pedestrian thoroughfares on Newcastle Place adjacent to Westmark Tower, at the south-western corner and south of the vacant Paddington Green Police Station on Harrow Road, between Blocks A-D of the Paddington Green scheme, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower. Walking use wind conditions would be one category windier than suitable for thoroughfare locations, however, since the walking use conditions at these locations are present in the Baseline and would be made no worse by the introduction of the Proposed Scheme, mitigation measures would not be required, representing **negligible** effects (not significant) at these locations. All other off-Site thoroughfares would have sitting use to strolling use wind conditions during the windiest season, acceptable conditions for the continual use representing **negligible** effects (not significant).

Entrances

- 15.6.9 On-Site entrances to the detailed scheme of the Proposed Scheme (Site A) have been determined based on architectural drawing: 10527-BPA-XX-ZZ-A-DR-P6102-Proposed Ground Floor Plan Site A, as presented in Figure 15.7.
- 15.6.10 On-Site ground-level entrances would have wind conditions suitable for sitting and standing use during the windiest season, acceptable conditions for entrances, representing **minor beneficial** to **negligible** effects (not significant).
- 15.6.11 All entrance locations along the external walkways would have wind conditions suitable for sitting and standing use during the windiest season, acceptable conditions for entrances, representing **minor beneficial** to **negligible** effects (not significant).
- 15.6.12 Strolling use wind conditions would remain at the off-Site entrances between 340 Edgware Road and 348 Edgware Road during the windiest season. Strolling use wind conditions would be one category windier than suitable for entrance locations, however, since the strolling use conditions at these locations are present in the Baseline and would be made no worse by the introduction of the Proposed Scheme, mitigation measures would not be required, representing **negligible** effects (not significant) at these locations. All other off-Site entrances would have sitting use to standing use wind condition during the windiest season, acceptable conditions for their continual use representing **negligible** effects (not significant).

Bus Stops

- 15.6.13 Walking use wind conditions during the windiest season would remain at the bus stop fronting Harrow Road (Edgware Road (Stop EX)) south of the vacant Paddington Green Police Station. Walking use wind conditions would be two categories windier than suitable for bus stop locations, however, since the walking use conditions at this location are present in the Baseline and would be made no worse by the introduction of the Proposed Scheme, mitigation measures would not be required. All other bus stops around the Site have sitting use and standing use wind conditions during the windiest season representing **negligible** effects (not significant).

Pedestrian Crossings

- 15.6.14 Pedestrian crossings surrounding the Site would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the continual use representing **negligible** effects (not significant).

Ground Level Amenity – Mixed Use

- 15.6.15 The courtyard within Block A1 would have sitting use wind condition during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.6.16 Off-Site, wind conditions within Broadley Street Gardens would be suitable for sitting use during the summer season, consistent with or calmer than the conditions in the Baseline, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).

Balconies

- 15.6.17 Should the top two south-western facing external walkways of Block A2 have balconies at their southern edge where strolling use wind conditions would occur during the summer season, then this would be one category windier than suitable, representing **minor adverse** effects (significant), and mitigation would be required at these locations.
- 15.6.18 The top two north-eastern facing balconies at the northern corner of Block A1 would have strolling use wind conditions during the summer season, one category windier than suitable, representing **minor adverse** effects (significant), therefore mitigation would be required at these locations.
- 15.6.19 All other balcony locations around the Proposed Scheme would have sitting and standing use wind condition during the summer season, acceptable conditions for the intended use, representing **negligible** effects (not significant).

Terraces

- 15.6.20 The podium level terrace within Block A2 would have sitting use wind condition during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).

Strong Winds

- 15.6.21 Instances of strong winds would be likely to occur off-Site where wind conditions would be suitable for walking use during the windiest season. These locations would be the southern edge of the topmost south-western facing external walkway on Plot A2, the off-Site pedestrian throughfares on Newcastle Place adjacent to Westmark Tower, at the south-western corner and south of the vacant Paddington Green Police Station on Harrow Road, between Blocks A-D of the Paddington Green scheme, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower. The wind conditions in these areas would not be made windier by the introduction of the Proposed Scheme, therefore mitigation measures would not be required.

Configuration 3: Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Existing Surrounding Buildings

- 15.6.22 The assessment of the wind conditions for Configuration 3 is based on the results presented in Figure 15.17 for ground level and Figure 15.18 and Figure 15.19 for the external walkway levels during the windiest season. The summer season wind conditions are presented Figures 15.20 for ground level, Figure 15.21 and Figure 15.22 for balconies and Figure 15.23 for terraces.

Pedestrian Comfort

Thoroughfares

- 15.6.23 On-Site pedestrian thoroughfares around the Site would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the intended use, representing **moderate beneficial** to **negligible** effects (not significant).
- 15.6.24 As in the existing scenario, the southern edge of the topmost south-western facing external walkway on Plot A2 would have walking use wind conditions during the windiest season, one category windier than suitable, representing **minor adverse** effects (significant). Mitigation measures would be required at this location as a result. All other elevated walkways around the Proposed Scheme would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the intended use, representing **moderate beneficial** to **negligible** effects (not significant).
- 15.6.25 As in Configuration 2, walking use wind conditions would remain at off-Site pedestrian thoroughfares adjacent to Westmark Tower along Newcastle Place, south-western corner and south of the now closed Paddington Green Police Station adjacent to Harrow Road, between Blocks A-D of the Paddington Green scheme, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower during the windiest season. Since the walking use conditions at these locations are present in the Baseline and would not be made windier by the introduction of the Proposed Scheme, mitigation measures would not be required. All other off-Site thoroughfares would have wind conditions suitable for sitting to strolling use during the windiest season, acceptable conditions for the continual use representing **negligible** effects (not significant).

Entrances

- 15.6.26 The easternmost entrance to the retail unit at the northern corner of Plot A2 of the Proposed Scheme would have strolling use wind conditions during the windiest season, one category windier than suitable for an entrance location, representing a **minor adverse** effect (significant) and necessitating mitigation.
- 15.6.27 All other ground-level on-Site entrances to the Proposed Scheme would have wind conditions suitable for sitting and standing use during the windiest season, acceptable conditions for entrance locations, representing **minor beneficial** to **negligible** effects (not significant).
- 15.6.28 All entrance locations along the external walkways would have wind conditions suitable for sitting and standing use during the windiest season, acceptable conditions for the intended use, representing **minor beneficial** to **negligible** effects (not significant).
- 15.6.29 As in Configuration 2, strolling use wind conditions would remain at the off-Site entrances between 340 Edgware Road and 348 Edgware Road during the windiest season. Since the strolling use wind conditions at these locations are present in the Baseline and would not be made windier by the introduction of the Proposed Scheme, mitigation measures would not be required, representing **negligible** effects (not significant). All other off-Site entrances would have wind condition suitable for sitting use or standing use during the windiest season, acceptable conditions for their continual use representing **negligible** effects (not significant).

Bus Stops

- 15.6.30 Walking use wind conditions during the windiest season would remain at the bus stop fronting Harrow Road (Edgware Road (Stop EX)) south of the vacant Paddington Green Police Station. Since the walking

use wind conditions at this location are present in the Baseline and would be made no windier by the introduction of the Proposed Scheme, mitigation measures would not be required. All other bus stops around the Site would have sitting use and standing use wind conditions during the windiest season, acceptable condition for the intended use, representing **negligible** effects (not significant).

Pedestrian Crossings

- 15.6.31 Pedestrian crossings surrounding the Site would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the intended use representing **negligible** effects (not significant).

Ground Level Amenity – Mixed Use

- 15.6.32 The courtyard within Block A1 would have wind conditions suitable for sitting use during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.6.33 Off-Site, wind conditions within Broadley Street Gardens would be suitable for sitting use during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).

Balconies

- 15.6.34 Should the top two south-western facing external walkways of Block A2 have amenity space at their southern edge where strolling use wind conditions would occur during the summer season, then this would represent **minor adverse** effects (significant), and mitigation would be required at these locations.
- 15.6.35 The top two north-eastern facing balconies at the northern corner of Block A2 would have strolling use wind conditions during the summer season, one category windier than suitable, representing **minor adverse** effects (significant), therefore mitigation would be required at these locations.
- 15.6.36 All other balcony locations around the Proposed Scheme would have wind condition suitable for sitting and standing use during the summer season, acceptable conditions for the intended use, representing **negligible** effects (not significant).

Terraces

- 15.6.37 The podium level terrace within Block A2 would have wind condition suitable for sitting use during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.6.38 The podium terraces on both Site B and Site C would have wind conditions suitable for sitting and standing use during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.6.39 Should the roof terraces on both Site B and Site C be accessible, additional wind mitigation measures will be developed should it be necessary at the detail design stage of these buildings.

Strong Winds

- 15.6.40 Instances of strong winds would be likely to occur off-Site where walking use wind conditions would occur during the windiest season. As in Configuration 2, these locations would be off-Site pedestrian thoroughfares adjacent to Westmark Tower along Newcastle Place, south of the now closed Paddington Green Police Station adjacent to Harrow Road, between the existing buildings west of Edgware Road, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower. The wind conditions in these areas would not be made any windier by the introduction of the Proposed Scheme, therefore mitigation measures would not be required.

15.7 Environmental design and management

- 15.7.1 The wind conditions around the Site, as discussed above, would be as a result of the form, scale, orientation and location of the proposed buildings.
- 15.7.2 At this stage, there would be no inherent mitigation measures as part of the Proposed Scheme in any of the discussed assessments.

15.8 Further mitigation and monitoring

- 15.8.1 The assessment of wind conditions at the Proposed Scheme identified entrances and amenity spaces that would have windier than suitable conditions for the intended pedestrians uses. Wind conditions at the majority of the Site and at all areas surrounding the Proposed Scheme would be suitable for the intended use or no windier than in the context of the existing Site. For those areas with windier than suitable conditions, wind mitigation measures have been suggested below, the suitability of which should be assessed by an experienced wind engineer prior to occupation of the Proposed Scheme. This confirmatory assessment should be secured through an appropriately worded planning condition.
- 15.8.2 Mitigation measures would be required for the easternmost entrance to the retail unit at the northern corner of Plot A2 of the Proposed Scheme and for the top two south-western facing external walkways/balcony locations of Block A2 and the top two north-eastern facing balconies at the northern corner of both Block A1 and Block A2.
- 15.8.3 The following mitigation measures have been recommended to mitigate the areas outlined above:
- Entrance locations – the use of screens or planting extending 1.5m from the building facade and 2m tall, or through recessing the entrance by 1.5m.
 - Balcony locations – balustrades at least 50% solid and 1.5m in height or alternatively, side screens at least 1.8m in height on the upwind side of the balcony locations.
- 15.8.4 With the implementation of the wind mitigation measures outlined above it is expected that the wind conditions throughout the Proposed Scheme would be suitable for the intended pedestrian usage.

15.9 Residual effects and conclusion

Table 15-6 Wind Microclimate Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
Demolition and Construction							
Sitting to Strolling (Windiest Season) (On-Site)	High	Temporary, short term	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Sitting to Walking (Windiest Season) (Off-Site)	High	Temporary, short term	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Complete and Operational							
On-Site							
Thoroughfares with walking use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Minor adverse (Significant)	Balustrades at least 50% solid and 1.5m in height or alternatively, side screens at least 1.8m in height at the southern end of the affected elevated walkways	Negligible
Thoroughfares with strolling to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible to moderate beneficial (Not significant)	Not applicable	Negligible
Entrances with strolling use wind conditions during the windiest season	High	Permanent	Very low	Not applicable	Minor Adverse (Significant)	Use of screens or planting extending 1.5m from the building facade and 2m tall, or through recessing the entrance by 1.5m	Negligible
Entrances with standing to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible to minor beneficial (Not significant)	Not applicable	Negligible
Mixed-use ground level amenity with standing to sitting use wind	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Primary or Tertiary Mitigation	Classification of Effect	Further Mitigation	Residual Effect
conditions during the summer season							
Balconies with strolling use wind conditions during the summer season	High	Permanent	Very low	Not applicable	Minor Adverse (Significant)	Balustrades at least 50% solid and 1.5m in height or alternatively, side screens at least 1.8m in height on the upwind side of the balcony locations	Negligible
Balconies with standing to sitting use wind conditions during the summer season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Mixed-use terrace level amenity with standing to sitting use wind conditions during the summer season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Off-Site							
Thoroughfares with walking to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Entrances with strolling to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Bus Stops with walking to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Pedestrian Crossings strolling to sitting use wind conditions during the windiest season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible
Mixed-use ground level amenity with sitting use wind conditions during the summer season	High	Permanent	Negligible	Not applicable	Negligible (Not significant)	Not applicable	Negligible

15.10 Cumulative effects assessment

15.10.1 This section of the chapter assesses the potential effects of the Proposed Scheme in combination with the potential effects of other consented development schemes (referred to as 'cumulative developments') within the surrounding area, as listed within *Chapter 2: EIA Methodology* of this ES.

15.10.2 The cumulative schemes included in this scenario consisted of:

- 21/02193/FULL – Paddington Green Police Station; and
- 16/11562/FULL – Paddington Green (Plot G and Plot H).

Configuration 4: Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Cumulative Surrounding Buildings

Cumulative effects during demolition and construction

15.10.3 During the demolition and construction of the Proposed Scheme in the cumulative context, wind conditions are expected to gradually change to those of the Site A (Detailed Scheme) and Site B+C (Outline Schemes) of the Proposed Scheme with Cumulative Surrounding Buildings. Comparing the results of Configuration 3 and Configuration 4, the wind conditions on- and off-Site would remain similar to, or calmer than, those in the existing scenario and therefore wind conditions for demolition and construction work associated with the Cumulative Schemes would be suitable for the intended use which would represent a **negligible** effect (not significant).

Cumulative effects for completed development

15.10.4 The assessment of the wind conditions for Configuration 4 is based on the results presented in Figure 15.24 for ground level and Figure 15.25 and Figure 15.26 for the external walkway levels during the windiest season. The summer season wind conditions are presented Figures 15.27 for ground level, Figure 15.28 and Figure 15.29 for balconies and Figure 15.30 for terraces.

Pedestrian Comfort

Thoroughfares

15.10.5 On-Site pedestrian thoroughfares around the Site would have wind conditions suitable for sitting to strolling use during the windiest season, acceptable conditions for the intended use, representing **moderate beneficial to negligible** effects (not significant).

15.10.6 Walking use wind conditions would occur at off-Site pedestrian thoroughfares south of the cumulative Paddington Green Police Station adjacent to Harrow Road and at the north-western corner adjacent to Newcastle Place, at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower during the windiest season. The walking use wind conditions at the north-western corner of the existing building at the intersection of Paddington Green, Hall Place and Church Street and at the north-western corner of Braithwaite Tower are present in the Baseline and are made no worse by the introduction of the Proposed Scheme. Additionally, the walking use wind conditions around the cumulative Paddington Green Police Station would not be attributed to the Proposed Scheme. Due to this, mitigation measures at these locations would not be required, representing **negligible** effects (not significant). All other off-Site thoroughfares would have sitting to strolling use wind conditions during the windiest season, acceptable conditions for the continual use representing **negligible** effects (not significant).

Entrances

15.10.7 As in Configuration 3, the easternmost entrance to the retail unit at the northern corner of Plot A2 of the Proposed Scheme would have wind conditions suitable for strolling use during the windiest season, one category windier than suitable for an entrance location, representing a **minor adverse** effect (significant) and necessitating mitigation.

- 15.10.8 All other on-Site entrances to the Proposed Scheme would have sitting and standing use wind conditions during the windiest season, acceptable conditions for entrance locations, representing **minor beneficial** to **negligible** effects (not significant).
- 15.10.9 All off-Site entrance locations would have sitting to standing use wind condition during the windiest season, acceptable conditions for their continual use representing **negligible** effects (not significant).

Bus Stops

- 15.10.10 Walking use wind conditions during the windiest season would occur at the bus stop fronting Harrow Road (Edgware Road (Stop EX)) south of the vacant Paddington Green Police Station. Since the walking use conditions at this bus stop are present in the Baseline and would not be made windier by the introduction of the Proposed Scheme, mitigation measures would not be required. All other bus stops around the Site would have sitting use and standing use wind conditions during the windiest season, acceptable condition for the intended use, representing **negligible** effects (not significant).

Pedestrian Crossings

- 15.10.11 Pedestrian crossings surrounding the Site would have wind conditions suitable for sitting to strolling use during the windiest season, acceptable conditions for the intended use representing **negligible** effects (not significant).

Ground Level Amenity – Mixed Use

- 15.10.12 The courtyard within Block A1 would have sitting use wind conditions during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.10.13 Off-Site, Broadley Street Gardens would have sitting use wind conditions during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).

Balconies

- 15.10.14 The top two south-western facing external walkways of Block A2 would have strolling use wind conditions at their southern edge which would be one category windier than suitable for amenity spaces, representing **minor adverse** effects (significant). Mitigation measures would therefore be required at these locations.
- 15.10.15 The topmost south-western facing balcony location/external walkway of Block A2 and the top two north-eastern facing balconies at the northern corner of Block A2 would have wind conditions suitable for strolling use during the summer season, one category windier than suitable, representing **minor adverse** effects (significant), therefore mitigation would be required at these locations.
- 15.10.16 All other balcony locations around the Proposed Scheme would have sitting and standing use wind conditions during the summer season, acceptable conditions for the intended use, representing **negligible** effects (not significant).

Terraces

- 15.10.17 The podium level terrace within Block A2 would have sitting use wind condition during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.10.18 The podium terraces on both Site B and Site C would have sitting use and standing use wind conditions during the summer season, acceptable conditions for a mixed-use amenity space, representing **negligible** effects (not significant).
- 15.10.19 Should the roof terraces on Site B and Site C be accessible, then amenity provisions would have to be located where sitting use and standing use wind condition would occur during the summer season. Should amenity provisions be located where strolling use or windier condition would occur, mitigation measures would be required.

Strong Winds

- 15.10.20 Instances of strong winds would be likely to occur off-Site where walking use wind conditions would occur during the windiest season. As discussed above, the walking use wind conditions in these areas are either calmer than those in the Baseline or are not attributable to the Proposed Scheme, therefore mitigation measures would not be required.

Church Street Sites A, B and C ES Volume I: Main Report

Chapter 16: Effect Interactions

Westminster City Council

November 2021

16. Effect Interactions

16.1 Introduction

- 16.1.1 This chapter considers the potential for effect interactions to arise during both the demolition and construction, and the complete and operational phase of the Proposed Scheme. This chapter also presents an assessment of the significance of identified residual effects.
- 16.1.2 *Chapter 7: EIA Methodology* identifies receptors which may experience effects from more than one topic assessment. The identified residual effects (as set out within Chapters 8 to 15, and *ES Volume II: TVIA* and *Chapter 19: Residual Effects and Conclusions*) have been reviewed against the sensitive receptors which they could affect. It is considered that negligible effects identified within technical assessments do not have the potential to result in significant effect interactions. Where there is more than one residual effect (above the negligible effect category) on a particular receptor, the potential for effect interactions has been determined. If there is the potential for an effect interaction, consideration is then given as to whether there is the potential for any resultant combined cumulative effects and whether further mitigation is required.
- 16.1.3 Table 16-1 and Table 16-2 present a summary of residual effects (above the negligible effect category) on sensitive receptors which have been scoped into the effect interactions assessment within *Chapter 7: EIA Methodology*. Consideration has been given to the demolition and construction phase (Table 16-1) and the complete and operational Proposed Scheme (Table 16-2).

16.2 Assessment of the Combined Effects of Individual Impacts – Demolition and Construction

- 16.2.1 Based on the methodology detailed above and within *Chapter 7: EIA Methodology*, Table 16-1 presents a review of the potential for interactions of individual effects during the demolition and construction phase of the Proposed Scheme. The potential effects of the interactions are then further discussed below.

Table 16-1 Combined effects of individual demolition and construction effects on sensitive receptors

Sensitive receptors	Demolition and Construction Residual Effects (above negligible category)				Potential for effect interaction
Demolition and Construction Workers	Socio-economics Employment generation during the demolition and construction phase				No significant effect interactions or combined effects are likely to occur.
Minor Beneficial					
Future On-Site Users (early occupants of the Site while the remaining phases of the Proposed Development are still under construction)					No significant effect interactions or combined effects are likely to occur.
Neighbouring Residential Properties/ Local Residents	Noise and Vibration Construction noise affecting receptors at Edgware Road, Boscobel Street, Penfold Street and Salisbury Street Negligible to Moderate Adverse	Noise and Vibration Construction vibration affecting identified receptors within close proximity (negligible), and specifically Edgware Road (Moderate) Negligible to Moderate Adverse	Townscape and Visual Impact Direct change in townscape elements and character during construction on TCA1, and TCA2 and TCA3 Minor to Moderate Adverse	Townscape and Visual Impact Direct visual effect on the representative view with a partial or glimpsed view to construction of the Proposed Scheme would alter the view on RV01 to RV19 Minor to Moderate Adverse	Yes: Built Heritage combined effects Daylight, Sunlight and Overshadowing combined effects Socio-economics combined effects Traffic and Transportation combined effects Townscape and Visual Impact Assessment
	Socio-economics Employment generation during the demolition and construction phase Minor Beneficial	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Daylight and Sunlight Negligible to Major Adverse	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Overshadowing on Area 3-7 Major Adverse	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Solar Glare of viewpoint 9, 10 and 17 Minor Adverse	
	Built Heritage Effect of Proposed Scheme on heritage assets Negligible to Minor Adverse				

Sensitive receptors	Demolition and Construction Residual Effects (above negligible category)				Potential for effect interaction
Neighbouring and Local Commercial Properties and Businesses	<p>Noise and Vibration Construction noise affecting receptors at Edgware Road, Boscobel Street, Penfold Street and Salisbury Street Negligible to Moderate Adverse</p>	<p>Noise and Vibration Construction vibration affecting identified receptors within close proximity (negligible), and specifically Edgware Road (Moderate) Negligible to Moderate Adverse</p>	<p>Townscape and Visual Impact Direct change in townscape elements and character during construction on TCA1, and TCA2 and TCA3 Minor to Moderate Adverse</p>	<p>Townscape and Visual Impact Direct visual effect on the representative view with a partial or glimpsed view to construction of the Proposed Scheme would alter the view on RV01 to RV19 Minor to Moderate Adverse</p>	<p>Yes: Built Heritage combined effects Noise and Vibration combined effects. Socio economic combined effects Townscape and Visual Impact combined effects</p>
	<p>Socio-economics Employment generation during the demolition and construction phase Minor Beneficial</p>	<p>Built Heritage Effect of Proposed Scheme on heritage assets Negligible to Minor Adverse</p>			
Neighbouring / Local Amenity / Open Space	<p>Noise and Vibration Construction noise affecting receptors at Edgware Road, Boscobel Street, Penfold Street and Salisbury Street Negligible to Moderate Adverse</p>	<p>Noise and Vibration Construction vibration affecting identified receptors within close proximity (negligible), and specifically Edgware Road (Moderate) Negligible to Moderate Adverse</p>	<p>Townscape and Visual Impact Direct change in townscape elements and character during construction on TCA1, and TCA2 and TCA3 Minor to Moderate Adverse</p>	<p>Townscape and Visual Impact Direct visual effect on the representative view with a partial or glimpsed view to construction of the Proposed Scheme would alter the view on RV01 to RV19 Minor to Moderate Adverse</p>	<p>Yes: Built Heritage combined effects Noise and Vibration combined effects Socio economic combined effects Townscape and Visual Impact combined effects</p>
	<p>Socio-economics Employment generation during the demolition and construction phase Minor Beneficial</p>	<p>Built Heritage Effect of Proposed Scheme on heritage assets Negligible to Minor Adverse</p>			

16.3 Assessment of the Combined Effects of Individual Impacts – Complete and Operational

- 16.3.1 Based on the methodology detailed above and within *Chapter 7: EIA Methodology*, Table 16-2 presents the review of the potential for interactions of individual effects once the Proposed Scheme is complete and operational. The potential effects of the interactions are then further discussed below.

Table 16-2 Combined Effects of Individual Effects on Sensitive Receptors of the Complete and Operational Proposed Scheme

Sensitive receptors	Completed Development Residual Effects (above negligible category)				Potential for effect interaction
Future On-Site Users	Socio-economics Provision of Housing Moderate Beneficial	Socio-economics Provision of Affordable Housing Minor Beneficial	Socio-economics Provision of Publicly Accessible Play Space Minor Beneficial	Socio-economics Provision of Publicly Accessible Open Space Minor Beneficial	Yes: Socio-economics combined effects
	Socio-economics and Health Employment generation during the complete and operational phase Minor Adverse	Traffic and Transportation Change in vehicle flows associated with the site across all local road links Moderate Beneficial	Wind Microclimate Thoroughfares with strolling to sitting use wind conditions during the windiest season Negligible to Moderate Beneficial	Wind Microclimate Entrances with standing to sitting use wind conditions during the windiest season Negligible to Minor Beneficial	Traffic and Transportation combined effects Wind Microclimate
Neighbouring Residential Properties/ Local Residents	Socio-economics Provision of Housing Moderate Beneficial	Socio-economics Provision of Affordable Housing Minor Beneficial	Socio-economics Provision of Publicly Accessible Play Space Minor Beneficial	Socio-economics Provision of Publicly Accessible Open Space Minor Beneficial	Yes: Built Heritage combined effects
	Socio-economics Employment generation during the complete and operational phase Minor Adverse	Traffic and Transportation Change in vehicle flows associated with the site across all local road links Moderate Beneficial	Townscape and Visual Impact Direct visual effect on view on RV01 to RV19 Negligible to Moderate Beneficial	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Solar Glare of viewpoint 9, 10 and 17 Minor Adverse	Daylight, Sunlight and Overshadowing combined effects Socio-economics combined effects Traffic and Transportation combined effects
	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Daylight and Sunlight Negligible to Major Adverse	Daylight, Sunlight and Overshadowing Effect of Proposed Development on Overshadowing on Area 3-7 Major Adverse			Townscape and Visual Impact Assessment

Sensitive receptors	Completed Development Residual Effects (above negligible category)			Potential for effect interaction
Neighbouring and Local Commercial Properties and Businesses	<p>Socio-economics Additional Local Spend by Residents Minor Beneficial</p>	<p>Traffic and Transportation Change in vehicle flows associated with the site across all local road links Moderate Beneficial</p>	<p>Townscape and Visual Impact Direct visual effect on view on RV01 to RV19 Negligible to Moderate Beneficial</p>	<p>Yes: Built Heritage combined effects Socio-economics combined effects Traffic and Transportation combined effects Townscape and Visual Impact Assessment</p>
Neighbouring / Local Amenity / Open Space	<p>Noise and Vibration Operational noise from Church Street Market affecting receptors at Church Street Market Negligible to Minor Adverse</p>	<p>Traffic and Transportation Change in vehicle flows associated with the site across all local road links Moderate Beneficial</p>	<p>Townscape and Visual Impact Direct visual effect on the view view on RV01 to RV19 Negligible to Moderate Beneficial</p>	<p>Yes: Noise and Vibration combined effects Traffic and Transportation combined effects Townscape and Visual Impact Assessment</p>

16.4 Conclusion

Demolition and Construction

- 16.4.1 Whilst there are likely to be residual adverse effects as a result of both the demolition and construction phase, and once complete and occupied, these effects vary in physicality and ability to combine with other effects and are therefore unlikely to interact to create a more significant effect on the specified receptors.
- 16.4.2 Table 16-1 shows that during the demolition and construction phase of the Proposed Scheme, the early occupants of the Proposed Scheme, local residents and commercial properties within the vicinity of the Application Site may experience temporary adverse effects due to noise and vibration resulting from the demolition and construction activities. With the adoption of best possible environmental management practices and mitigation measures, the combined effect of individual impacts on the identified sensitive receptors will be reduced as far as is reasonably practicable. These practices will be detailed in a Construction Environmental Management Plan (CEMP), which will be secured by an appropriately worded planning condition. The CEMP will set out the proposed environmental design and management measures during the demolition and construction phase as outlined within each of the technical chapters of this ES.
- 16.4.3 The potential adverse residual effects identified have little potential for interaction and are unlikely to combine to result in significant effects on the receptor groups identified in Table 16-1. Therefore, it is considered that the combined effects during demolition and construction will not be significantly greater than those presented for individual elements in Table 16-2.

Completed Development

- 16.4.4 Table 16-2 shows that there is the potential for a series of effect interactions to take place for all the receptor groups once the Proposed Scheme is completed, due to a combination of effects from socio-economic benefits delivered by the Proposed Scheme (minor to moderate beneficial), improved visual view with the completed Proposed Scheme (negligible to moderate beneficial), reduction of vehicle flows on local road links (moderate beneficial), improved wind conditions at throughfares (negligible to moderate beneficial), improved wind conditions at entrances (negligible to minor beneficial), a slight increase in noise associated with Church Street Market (negligible to minor adverse) and major adverse effects on some daylight and sunlight receptors.



Church Street Sites A, B and C ES Volume I: Main Report

Chapter 17: Summary of Mitigation

Westminster City Council

November 2021

17 Summary of Mitigation

17.1 Introduction

17.1.1 IEMA's Environmental Impact Assessment Guide to Delivering Quality Development¹ defines three sets of mitigation measures which would need to be considered in the assessment of likely significant effects:

- Primary mitigation measures – these include modifications to the location or design of the Proposed Development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken;
- Tertiary mitigation measures – these include actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative or planning requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects; and
- Secondary mitigation measures – these include actions that will require further activity in order to achieve the anticipated outcome. These may be imposed as part of the planning consent, or through inclusion in the ES. Examples include mitigation to be conditioned by the Westminster City Council (WCC) or other commitments made but not included within the plans and proposals submitted with the planning application.

17.1.2 Each of the technical chapters of this ES (*Chapters 8 - 15*) and *ES Volume II: TVIA* have identified mitigation measures that are either embedded within the design of the Proposed Scheme ('primary mitigation'), considered as standard practice ('tertiary mitigation'), or are deemed necessary above and beyond the standard approach ('secondary mitigation'). Primary and tertiary mitigation measures have been identified in the Environmental Design and Management section of the technical chapters and secondary mitigation has been outlined under the Additional Mitigation Measures section. Full details of the mitigation measures for the Proposed Scheme have been provided within the relevant technical chapters. However, a summary of these mitigation measures and potential securing mechanisms are identified within Table 17.1. Furthermore, Table 17.1 also references any mitigation measures identified at the EIA Scoping stage, on the basis of which any technical assessments were scoped out of the EIA (refer to *Chapter 7: EIA Methodology* and *ES Volume I: Appendix 7-1*).

17.1.3 Due to the hybrid nature of the Proposed Scheme, principles for the design mitigation have been established within the Design Code and Parameter Plans submitted with the planning application for Site B, Site C and Church Street Market Infrastructure. However, the delivery of specific design details for the outline element will be established through the submission of future Reserved Matters Planning Applications (RMAs).

¹ IEMA, (2016); Environmental Impact Assessment Guide to Delivering Quality Development
<https://www.iema.net/assets/newbuild/documents/Delivering%20Quality%20Development.pdf> [Accessed 18st February 2020]

Table 17.1 Summary of mitigation within technical ES chapters

Mitigation measure	Primary/tertiary/secondary mitigation	Proposed securing mechanism
Air Quality		
<i>Demolition and construction</i>		
Construction Environmental Management Plan (CEMP): A CEMP is to be developed by the contractor to either avoid or reduce dust impacts. The CEMP will include dust control mitigation measures suitable for a high risk site (in accordance with IAQM Guidance).	Tertiary	Planning Condition
<i>Operational</i>		
The proposed residential units in Site A have been designed to be located at a significant distance (more than 90 m) from one of the main sources of pollution in the vicinity of the Site (Edgware Road). This will allow future users of Site A to experience likely acceptable levels of pollutants.	Primary	Parameter Plan 102 and DAS
The Proposed Scheme will be powered by Air Source Heat Pumps (ASHPs) and photovoltaic panels (PV), with proposed generators running approximately 5 minutes weekly, with an annual load bank test. The proposed generators will meet stage V emission standards, as defined in the Mayor of London "Non-Road Mobile Machinery Practical Guidance v.4".	Tertiary	Energy Statement
The Proposed Scheme will lead to a net reduction in car parking spaces and traffic generation, therefore emissions associated with the operational phase will be lower than current emissions in the area. The Scheme has been designed to prioritise pedestrian and cyclist movements.	Primary	General Arrangement Drawings and Design Code
A Travel Plan Will be submitted which provides a set of measures aimed at encouraging sustainable travel and a plan for implementation and monitoring of those measures.	Tertiary	Planning Condition
Built Heritage		
<i>Demolition and construction</i>		
Effects will be mitigated within the Proposed Scheme during demolition and construction through Application Site hoardings which will mask many of the operations. Cranes, associated with construction and demolition will be visible, but these are temporary and are the necessary first step in the redevelopment of the Application Site and the surrounding area is characterised by such features.	Tertiary	Planning Condition
<i>Operational</i>		
Effects on identified built heritage assets can be mitigated through the design of the Proposed Scheme as outlined in the material submitted for approval, including, the Design and Access Statement. It is considered that the design of the Proposed Scheme is of high quality and responds to the local context. The high-quality design and materials affect the qualitative part of the assessment and are therefore factored into this.	Primary	DAS

Mitigation measure	Primary/tertiary/secondary mitigation	Proposed securing mechanism
The Proposed Scheme will use a palette of materials informed by the surrounding area. The materials used will be of a high quality, commensurate with the quality of the design. The scale of the Proposed Scheme will therefore complement and sit comfortably alongside the surrounding identified built heritage assets.	Primary	Design Code
Climate Change		
<i>Demolition and construction</i>		
In response to the principles set out in the Circular Economy Statement, which is submitted in support of the planning application, during the enabling works and construction phase potential energy loss associated with material wastage would be reduced through the following measures: <ul style="list-style-type: none"> • Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme; • Implementation of a 'just-in-time' material delivery system where practical to avoid materials being stockpiled or over-ordered; and • Maximisation of waste segregation, re-use and recycling of materials off-site where re-use on-site is not practical (through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing). 	Tertiary	Circular Economy Statement
<i>Operational</i>		
Climate adaptation measures incorporated into the Energy Statement include passive design measures such as: <ul style="list-style-type: none"> • Optimising building form, orientation and site layout; • Use of natural ventilation; • Use of high-performance glazing; • Optimising glazing ratio and use of solar shading; • Use of enhanced thermal insulation and improvements to U-Values; and • Improvements to fabric air permeability. 	Tertiary	Energy Statement
Climate adaptation measures incorporated into the Flood Risk Assessment and Foul and Surface Drainage Strategy include: <ul style="list-style-type: none"> • Using rainwater as a resource to irrigate the landscaping design. • Installing biodiverse green roofs high roof levels. The reservoir/drainage layer, which is part of the green roof build up will store rainwater for irrigation of the plants (green roofs) via capillary action. • Water butts have been proposed for irrigation of soft landscape at podium level. The proposed blue roofs at podium level have been sized to accommodate runoff from the podiums as well as those high-level roof areas that drain into the podium level. • Surface water drainage design to accommodate runoff during storm events up to the 1 in 100 (1%) AP plus climate change event (40%). 	Tertiary	Flood Risk Assessment

Mitigation measure	Primary/tertiary/secondary mitigation	Proposed securing mechanism
<ul style="list-style-type: none"> The use of sustainable drainage system (SuDS) techniques within the Proposed Development 		
Daylight, Sunlight and Overshadowing		
<i>Demolition and construction</i>		
None	Not applicable	Not applicable
<i>Operational</i>		
During the design process expert advice was given on alternative massing options, which were technically assessed to understand how the daylight, sunlight and overshadowing effects could be reduced and mitigated. After a number of technical iterations, the analysis of the results achieved with different massing options has informed the final designs of the residential buildings and massing parameters for the outline components.	Primary	Design Code
The potential for solar glare has been considered throughout the design process and as such solar glare mitigation is embedded within the design. This includes considerations such as orientation of the reflective elements on the façade, reducing large areas of glazing or reflective cladding and façade features such as fins.	Primary	Design Code
For the element proposed in outline, once the design is articulated at RMA stage, daylight, sunlight, overshadowing and solar glare effects may be reduced through improved detailed design.	Tertiary	Planning Condition
Noise and Vibration		
<i>Demolition and construction</i>		
CEMP: Construction noise and vibration, mitigated through 'Best Practicable Means' (BPM) as defined by Section 72 of the Control of Pollution Act 1974 and careful management will be documented in a Construction Environmental Management Plan (CEMP). The CEMP will be prepared prior to the commencement of works which will describe the mitigation measures that will be applied for construction activities. Measures to control noise as defined in Annex B of BS 5228-1 and measures to control vibration as defined in Section 8 of BS 5228-2 will be adopted where reasonably practicable.	Tertiary	Planning Permission
Construction Traffic Management Plan (CTMP): Traffic management will be employed to guide and control both public and construction traffic during deliveries and will be documented in a Construction Traffic Management Plan (CTMP).	Tertiary	Planning Condition
<i>Operational</i>		
All plant serving the Proposed Scheme shall be designed with appropriate attenuation and mitigation measures to comply with WCC plant noise conditions, with respect to noise sensitive receptors external to the Proposed Scheme.	Tertiary	General Arrangement Drawings and Design Code

Mitigation measure	Primary/tertiary/secondary mitigation	Proposed securing mechanism
Design for plant with respect to local residents and amenity within the Proposed Scheme shall be designed to ensure a reasonable noise control – for example air inlet/exhaust for MVHR units. The large Air Source Heat Pumps on the roof of one of the Site A buildings will be provided with a noise screen comprising chevron style acoustic louvres, such that local noise levels on the terraces of the flat(s) immediately below will likely be 40-45 dBA when the ASHPs are in maximum use. As this is about 10 dB below the typical mean ambient noise levels due to traffic, this is considered acceptable as part of the Proposed Scheme.		
Socio-economics		
<i>Demolition and construction</i>		
No mitigation measures identified	Not applicable	Not applicable
<i>Operational</i>		
The employment generation associated with the existing 5,900 sqm (GIA) of employment space at the Site will be somewhat replaced by the jobs provided by the new employment space, but overall the net effect on employment is considered to be minor adverse. In order to mitigate the scale of the deadweight job losses, the retailers currently on-site should be made aware of the redevelopment plans and given as much notice as possible. This will give them more time to locate to alternative premises, or to relocate jobs to other branches.	Secondary Mitigation	Planning Condition
Provision of up to 16,043m ² of publicly accessible open space; and	Primary Mitigation	Design Code
Provision of up to 5,664m ² of play space provided for children and young people.	Primary Mitigation	Design Code
Townscape and Visual Impact		
<i>Demolition and construction</i>		
The CEMP will outline measures to minimise disturbance to the sensitive receptors within the vicinity of the Application Site, including hoarding around the Application Site, measures to minimise dust, noise, and disturbance from construction lighting.	Tertiary Mitigation	Planning Condition
<i>Operational</i>		
High quality design and materials stipulated in the Design Code	Primary Mitigation	Design Code
Traffic and Transport		
<i>Demolition and construction</i>		
A CLP will include route management, site management, hours of operation and measure to protect the highway and its users.	Tertiary Mitigation	Planning Condition

Mitigation measure	Primary/tertiary/secondary mitigation	Proposed securing mechanism
<i>Operational</i>		
A Framework Travel Plan (FTP) to encourage sustainable forms of transport and reduce car driver mode share.	Tertiary Mitigation	Planning Condition
A Delivery and Servicing Plan (DSP) will actively manage the deliveries and servicing trips to the Site specifically aims to ensure that the servicing of the development can be carried out safely, legally and efficiently, without creating any negative impacts on the local highway network, neighbouring businesses, local residents and the environment.	Tertiary Mitigation	Planning Condition
A Car Parking Management Plan (CPMP) will be produced for the development. This will outline how the car parking across the Application Site will be managed once the Proposed Scheme is operational to ensure there is no overspill parking to neighbouring areas.	Tertiary Mitigation	Planning Condition
Wind Microclimate		
<i>Demolition and construction</i>		
No mitigation measures for demolition and construction phase.	Not applicable	Not applicable
<i>Operational</i>		
Mitigation measures would be required for the easternmost entrance to the retail unit at the northern corner of Plot A2 of the Proposed Scheme and for the top two south-western facing external walkways/balcony locations of Block A2 and the top two north-eastern facing balconies at the northern corner of both Block A1 and Block A2. The following mitigation measures have been recommended to mitigate the areas outlined above: <ul style="list-style-type: none"> Entrance locations – the use of screens or planting extending 1.5m from the building facade and 2m tall, or through recessing the entrance by 1.5m. Balcony locations – balustrades at least 50% solid and 1.5m in height or alternatively, side screens at least 1.8m in height on the upwind side of the balcony locations. For those areas with windier than suitable conditions, the suitability of the above mitigation should be assessed by an experienced wind engineer prior to occupation of the Proposed Scheme.	Secondary	Planning condition

Church Street Sites A, B and C ES Volume I: Main Report

Chapter 18: Residual Effects and Conclusions

Westminster City Council

November 2021

18. Residual Effects and Conclusions

18.1 Introduction

- 18.1.1 This chapter of the ES summarises the residual effects and the conclusions of the EIA. Residual effects are effects that remain after the adoption of mitigation measures. Mitigation measures relate to each of the three key phases (mitigation by design, demolition and construction and once complete and operational) of the Proposed Scheme and are discussed in full in the relevant technical chapters of this ES (*Chapters 8 to 15*) and *ES Volume II: TVIA* and summarised in *Chapter 17: Summary of Mitigation*.
- 18.1.2 Each technical chapter contains detailed consideration of both the beneficial and adverse residual effects identified as likely to arise from the Proposed Scheme. The criteria applied to define the significance of residual effects are outlined within *Chapter 7: EIA Methodology* of this ES. Further details on the discipline specific methodologies are provided within each technical chapter (*Chapters 8 to 15*).
- 18.1.3 The residual effects listed within the technical chapters of this ES (*Chapters 8 to 15*) and *ES Volume II: TVIA* are described with reference to:
- The scale of effect (minor, moderate or major) and whether this is beneficial or adverse;
 - The geographic scale (global, national, regional, district, borough, local or the Zone of Visual Influence); and
 - The nature of the effect (temporary or permanent).
- 18.1.4 Where it has been anticipated that there will be no effect/no change in relation to specific effects, this has been stated.

18.2 Summary of Likely Significant Residual Effects

- 18.2.1 Table 18-1 provides a summary of the identified likely demolition and construction residual effects for each topic area from the technical chapters of this ES. Table 18-2 provide a summary of the identified likely effects resulting from the complete and occupied Proposed Scheme from each of the technical chapters of this. Significant residual effects are highlighted within the tables.

18.3 Effect Interactions and Cumulative Effects

- 18.3.1 Effects interactions (Chapter 16) were considered to determine if there was potential for different effects on single receptors to combine and result in new or increased effects. Whilst there are likely significant effects as a result of both the demolition and construction phase, and once completed, these effects are not considered likely to interact with each other to create an increase in significant effects on receptors.
- 18.3.2 Some of the topic assessment took into account the cumulative schemes in the locality as part of their assessment methodology (for example, transport).
- 18.3.3 There would be no additional likely significant adverse effects as a result of the cumulative schemes.

Table 18-1 Summary of residual likely significant demolition and construction effects

Topic	Description of effect	Nature of effect and geographic scale	Residual effect significance
Built Heritage	Visibility of cranes, hoarding and compounds	Temporary/long term/Local	Negligible to Minor Adverse
Noise and Vibration	Noise from construction traffic	Temporary/long term/Local	Negligible to Minor adverse
	Noise from construction activities	Temporary/long term/Local	Negligible to Moderate Adverse (Significant)
	Vibration from construction activities (human response)	Temporary/long term/Local	Negligible to Moderate Adverse (Significant)
Socio Economics	Net additional construction employment	Temporary/long term/Local	Minor beneficial
Townscape and Visual Impact	Effect on all identified townscape character areas	Zone of Visual Influence	Negligible to Moderate Adverse (Significant)
	Effect on visual amenity	Zone of Visual Influence	Minor to Moderate Adverse (Significant)

Table 18-2 Summary of residual likely significant completed development effects

Topic	Description of effect	Nature of effect and geographic scale	Residual effect significance
Built Heritage	Conservation Areas	Permanent/Local	Minor Adverse
	Listed Buildings	Permanent/Local	Minor Adverse
Daylight, Sunlight and Overshadowing	Daylight and Sunlight	Permanent/Local	Negligible to Major Adverse (Significant)
	Overshadowing of Areas 3-7	Permanent/Local	Major Adverse (Significant)
	Solar Glare of viewpoint 9, 10 and 13	Permanent/Local	Minor Adverse
Noise and Vibration	Noise of operational traffic	Permanent/Local	Minor (beneficial) to Negligible (adverse)
	Noise of Church Street Market	Permanent/Local	Negligible (adverse) to Minor (adverse)
Socio Economics	Operational Employment	Permanent/Greater London	Minor beneficial
	Housing	Permanent/WCC	Moderate beneficial (Significant)
	Local Spending by residents	Permanent/WCC	Minor Beneficial
	Provision of Open Space	Permanent/WCC	Minor Beneficial
	Provision of Play Space	Permanent/WCC	Minor Beneficial
Townscape and Visual Impact	Effect on visual amenity	Zone of Visual Influence	Negligible to Moderate Beneficial (Significant)
Traffic and Transport	Change in vehicle flows associated with the site across all local links.	Permanent/WCC	Moderate Beneficial (Significant)
Wind Microclimate	Thoroughfares with strolling to sitting use wind conditions during the windiest season	Permanent/Local	Negligible to Moderate beneficial (Significant)
	Entrances with standing to sitting use wind conditions during the windiest season	Permanent/Local	Negligible to Minor beneficial