PADDINGTON GREEN
POLICE STATION

January 2023

Replacement Environmental Statement Volume 1

Replacement Environmental Statement Volume 1 – January 2023 - GLA0711 AMND Rev 01 January 2023

Berkeley
Designed for life

PREFACE

REPLACEMENT ENVIRONMENTAL STATEMENT

Background

A full planning application (the 'application') was submitted by Berkeley Homes (Central London) Limited (the 'Applicant') on 1 April 2021 for the residential-led redevelopment (the '2021 proposed development') of a site at 2-4 Harrow Road, Paddington, W2 1XJ (the 'site') within the administrative boundary of the Westminster City Council (WCC) under application reference 21/02193/FULL.

The application was accompanied by an Environmental Statement (the '2021 ES') prepared by Ramboll UK Ltd ('Ramboll') and a team of technical specialists, which comprised the following documents:

- Non-Technical Summary (NTS);
- Volume 1: Main Environmental Statement;
- Volume 2: Townscape, Visual and Built Heritage Assessment (TVBHIA);
- Volume 3A: Technical Appendices.

The 2021 ES reported on the conclusions of an environmental impact assessment (EIA) that was undertaken of the 2021 proposed development in accordance with the statutory procedures set out in The Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (hereafter referred to as the 'EIA Regulations').

Following the submission of the application, Avison Young were commissioned by WCC to undertake an independent peer review of the 2021 ES. Ramboll and the team of technical specialists responded, on behalf of the Applicant, to clarification comments made by Avison Young.

The application was considered at WCC's planning committee on 9 September 2021. WCC officers made a recommendation for approval. The planning committee resolved to refuse the application contrary to the officers' recommendation for the following reasons (in summary):

- Due to the excessive height and bulk, Block K would have a detrimental impact on the local townscape, would result in substantial harm to the setting of the Little Venice, Paddington Green, Lisson Grove and Maida Vale Conservation Areas and have a detrimental impact on views from Regents Park and Hyde Park;
- The 2021proposed development fails to maximise the number of dual aspect flats within Blocks I and J, resulting in poor levels of natural daylight and outlook due to the proximity of the existing buildings within West End Gate; and
- Due to the excessive height and bulk of the proposed blocks, the 2021proposed development would result in a significant loss of daylight and sunlight to existing residential properties.

The application was subsequently referred to the Greater London Authority (GLA) for 'Stage 2' review. Following a review of the application and the proposed decision of WCC, the GLA considered that the 2021proposed development was of strategic importance and had the potential to make an important contribution to housing and affordable housing supply. On 22 November 2021 the GLA directed that the GLA would act as the local planning authority for the purpose of determining the application.

Reason for Submission

The GLA's Stage 2 report (reference 2021/0711/S2) identified various areas where further work was anticipated in the event that the Mayor of London took over determination of the application. In particular, urban design, building height, residential quality, climate change and transport were identified.

The Applicant is now proposing to make amendments and refinements to the 2021 proposed development in order to address the areas of further work. These amendments comprise the following:

- Removal of Block I bullnose and movement of block footprint 8 m east;
- Reduction of Block J footprint width by 10 m;
- Increase in distance between Block I and Block J from 9 m to 10 m;
- Removal of Block K shoulder element;
- Removal of podium element (now three standalone blocks linked at basement level);
- Increase in the height of Block I from 62.020 m above ground floor finished floor level (FFL) (94.355 m AOD) (18 storeys) to 83.019 m above ground Floor FFL (115.219 m AOD) (24 storeys);
- Increase in the height of Block J from 54.145 m above ground floor FFL (86.480 m AOD) (15 storeys) to 60.389 m above ground floor FFL (92.724 m AOD) (17 storeys);
- Increase in the height of Block K from 110.720 m above ground floor FFL (143.055 m AOD) (32 storeys) to 133.969 m above ground floor FFL (166.304 m AOD) (39 storeys);
- Removal of roof level communal, residential amenity space at Block J;
- Removal of office floorspace and amenity space;
- Relocation of internal residential amenity space at Block K from level 25 to level 1;
- Amendment of residential unit / floorplate design to increase percentage of social rented units;
- Removal of all north facing single aspect residential units and increase in dual aspect residential units up to approximately 55%;
- Amendments to core arrangement (all cores now have a dual staircase, with one staircase terminating at basement level and one terminating at ground floor level);
- Amendments to B2 footprint (overall minor increase), previously B2 accessed via Block J core terminating at B2 level, now accessed via Block I core terminating at B2 level and redesign of waste management services;
- Amendments to B1 footprint (reduction of the western extent and north-eastern extent), on account of the following layout changes:
  - Omission of office bin store, office lifts and office facilities;
  - Relocation of residential bin store in Block K further south, to suit the new location of the refuse chute;
  - Relocation of plant to the north;
- Complete stopping-up and partial pedestrianisation of Newcastle Place to vehicle traffic with the exception of fire / emergency access;
- Increase in ground level public realm provision from 3,553 m^2 to 4,755 m^2;
- Reduction in external communal amenity space provision from 835 m2 to 0 m^2;
- Increase in play space provision from 1,138 m^2 to 1,150 m^2;
- Fully updated landscape design proposals; and
- Amendments to glazing ratio and the addition of spandrel panels to the façade to improve energy performance.

The 2021 proposed development as amended by the proposed amendments is hereafter referred to as the '2022 amended proposed development'.

A full update of the EIA has been undertaken to consider and assess the likely significant effects of the 2022 amended proposed development on the environment. Where relevant, consideration has been given to changes in baseline conditions; any new and emerging legislation, policy and assessment methodology requirements; and any new cumulative schemes that have come forward due to the passing of time.

The fully updated EIA has been reported in this Replacement ES, hereafter referred to as the '2022 Replacement ES'. Accordingly, the reader should disregard the 2021 ES.

The 2022 Replacement ES comprises the following documents:

- Replacement Non-Technical Summary;
- Volume 1(R): Replacement Main Environmental Statement;
- Volume 2(R): Replacement Townscape, Visual and Built Heritage Assessment; and
- Volume 3(R): Replacement Technical Appendices.

This document comprises Volume 1(R): Replacement Main Environmental Statement.

The complete 2022 Replacement ES documents will be available for viewing at:

Greater London Authority

London City Hall

Kamal Chunchie Way

London

E16 1ZE

VOLUME 1(R): REPLACEMENT MAIN ENVIRONMENTAL STATEMENT

Contents

1(R) INTRODUCTION

Introduction

1.1 This Environmental Statement (ES) has been prepared on behalf of Berkeley Homes (Central London) Limited (the 'Applicant'), in accordance with the statutory procedures set out in The Town and Country Planning (Environmental Impact Assessment) Regulations 2017[1] (the 'EIA Regulations').

1.2 The ES relates to the proposed redevelopment of a site located at 2-4 Harrow Road, Paddington, London, W2 1XJ (the 'site'). The redevelopment proposals comprise a residential-led scheme for which the Applicant submitted a planning application for full planning permission (the 'application') to the Westminster City Council (WCC) in April 2021.

1.3 The Applicant recognised that the redevelopment proposals submitted in 2021 (the '2021 proposed development') falls within Schedule 2, Paragraph 10b of the EIA Regulations as an 'urban development project' which, owing to its nature, scale and location, is likely to give rise to significant effects on the environment. The Applicant therefore commissioned an environmental impact assessment (EIA) for the 2021 proposed development, the findings of which were presented within an ES that accompanied the application (the '2021 ES').

1.4 EIA is a formal process in which the likely significant effects of certain types of development projects on the environment are identified, assessed and reported upon. For certain types of development, the process must be followed in order for such effects to be taken into account before a decision is made on whether planning permission should be granted.

1.5 This ES presents the results of an updated EIA that has been undertaken taking into consideration proposed amendments that the Applicant has made to the 2021 proposed development (the '2022 amended proposed development'). In accordance with the EIA Regulations, the ES reports on the likely significant environmental effects of the 2022 amended proposed development during the demolition and construction stage, as well as during the subsequent completed development stage.

1.6 This ES replaces the 2021 ES in full and is hereafter referred to as the '2022 Replacement ES'.

1.7 The updated EIA has taken into account the mitigation measures that are being proposed by the Applicant, including those measures that have been integrated into the planning and design of the 2022 amended proposed development to avoid and, where avoidance is not possible, to off-set and/or reduce likely significant adverse effects. It then evaluates the significance of the residual effects.

1.8 The updated EIA has been carried out by Ramboll UK Limited ('Ramboll') and a team of technical specialists in accordance with best practice guidelines including, the Institute of Environmental Management and Assessment (IEMA) Quality Mark scheme. The EIA team, in addition to the Applicant's wider design and planning team, is presented in Table 1.2, along with the respective disciplines.

1.9 The 2022 Replacement ES comprises the following:

- Replacement Non-Technical Summary (NTS);
- Volume 1(R): Replacement Main Environmental Statement (this document);
- Volume 2(R): Replacement Townscape, Visual and Built Heritage Impact Assessment (TVBHIA); and
- Volume 3(R): Replacement Technical Appendices.

1.10 This chapter of the 2022 Replacement ES provides a general description of the site, the relevant planning context, planning application details, as well as the content and structure of the 2022 Replacement ES. More detailed information on the site is provided in the technical assessments of this Volume, as well as in ES Volume 2(R). Further information on how the scope of the EIA was defined and on the structure of the 2022 Replacement ES, is provided in Chapter 2: EIA Process and Methodology.

1.11 This chapter is accompanied by the following technical appendices within ES Volume 3(R):

- Appendix 1.1: IEMA Quality Mark Checklist; and
- Appendix 1.2(R): Regulation 18(5)(b) Statement.

Development Context

Site Location and Context

1.12 The site is located at 2-4 Harrow Road, Paddington, London, W2 1XJ (centred at National Grid Reference: TQ 26945 81743), as presented in Figure 1.1.

Figure 1.1: Site Location

[1] Secretary of State, 2017. Town and Country Planning (Environmental Impact Assessment) Regulations 2017, London, HMSO.

1.13 The site is bounded by:

- West End Gate (WEG) development to the north;
- Edgware Road to the east;
- Harrow Road and the A40 to the south;
- Paddington Green Road and open space to the west; and
- 14-17 Paddington Green (14-17 PG) development to the north-west.

1.14 As shown in Figure 1.2, the site's surrounding context is of a mixed nature with residential use predominant to the north, north-west and north-east within public open space in the form of Paddington Green to the west; small scale commercial along Edgware Road as part of the Edgware Road / Church Street district shopping centre which includes a popular street market; larger scale mixed-use to the south of the A40 in the Paddington Basin (including hotels; the Saint Mary's Hospital; offices; and residential uses); and educational facilities (including the City of Westminster College Paddington Green campus) to the north-west.

1.15 The Edgware Road London Underground Station (which is served by the Bakerloo Line) is located approximately 50 m to the east of the site. Paddington Mainline Station is located approximately 400 m to the south-west.

1.16 The site is surrounded by a number of tall buildings located in the Hall Place Estate (Hall Tower and Braithwaite Tower, Parsons House) and WEG to the north; and the Hilton London Metropole Hotel, Burne House, Capital House and Merchant Square development to the south. There are further tall buildings with planning permission in the Paddington basin which are partially or yet to be implemented.

Figure 1.2: Existing and Emerging Surrounding Land Use Context

1.17 The WEG development (16/12162/FULL) to the north of the site is under the control of the Applicant with Blocks A to F now completed and occupied.

1.18 The 14-17 PG development (18/08004/FULL and associated Listed Building Consent 18/080110/LBC and subsequent S73 application 22/03790/FULL) forms an overlap to/extension of the WEG development, replacing Blocks G and H of WEG. This scheme is also under the control of the Applicant. Demolition works have been completed for 14-17 PG, with substructure construction works underway. 14-17 PG Blocks G and H are anticipated to be completed and occupied by Q2 2026.

Site Description

1.19 As shown in Figure 1.3, the site redline boundary is approximately triangular in shape and occupies much of the street frontage of the street block on which it sits, covering a total site area of approximately 0.83 hectares (ha).

1.20 The site lies at an elevation of between 31 m above Ordnance Datum (mAOD) and 32.5 mAOD and is generally flat. Ground level within the site ranges between 31.4 m above ordnance datum (mAOD) to 33.4 m AOD.

1.21 The site is primarily occupied by the Paddington Green Police Station, which was constructed in the 1970s. The main on-site built development comprises the following:

- A single, interconnected building, albeit with a number of different, interrelated built forms, with hardstanding. This includes the 17 storey accommodation/section house on the eastern side of the site, a main office and police front of house 3 storey building below this on the eastern side of the site, and an 8 storey annex at the western side of the site, connected by a single storey building that previously housed high security cells;
- A single level of basement and a surface level podium car park to the rear, both accessed from Newcastle Place;
- Newcastle Place;
- An electricity substation in the north-eastern corner; and
- 13 existing trees, four of which are in planters.

1.22 The remaining areas of the site are formed of concrete, asphalt, cobble and paved hardstanding.

1.23 The site is underlain by a single level basement used for on-site parking, which is accessed via entrance and exit ramps off Newcastle Place.

1.24 Several street trees are present on the pavements surrounding the existing building. These include mature London plane *Platanus x hispanica* trees, semi-mature lime *Tilia sp*. trees and young Turkish hazel *Corylus colurna*.

1.25 The site was acquired by the Applicant in 2020 following the vacation of the site by the Metropolitan Police as part of their London wide estate and disposals strategy. In this regard the neighbourhood policing function has been relocated to a new facility. The site is currently vacant with part of the basement temporarily used for material storage and vehicle parking associated with the adjacent WEG development.

1.26 Representative photographs of the site taken in 2021 are shown in Figure 1.4. These photographs as considered to remain materially valid.

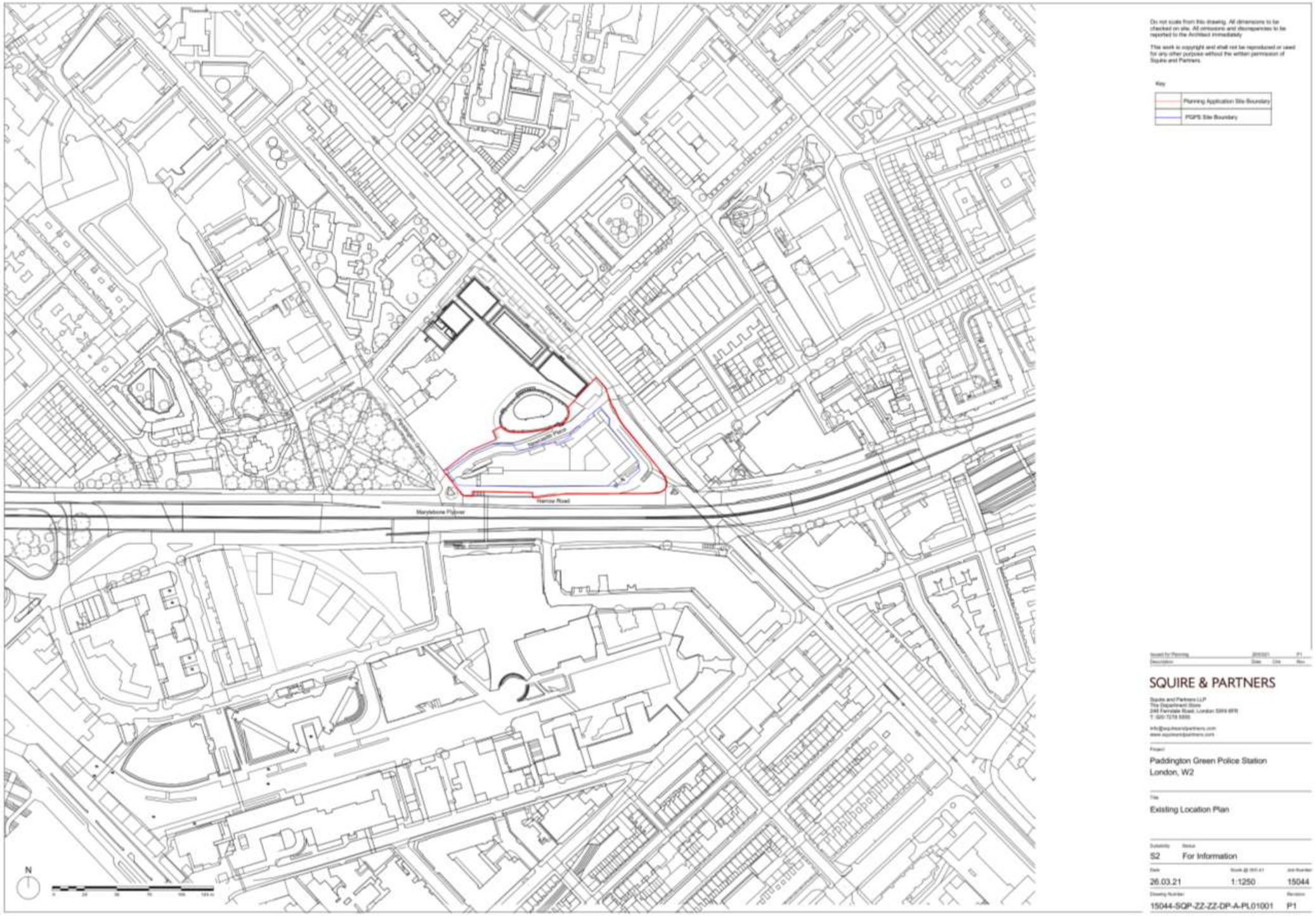


Figure 1.3: Site Redline Boundary Plan

View Looking North-West along Edgware Road

View Looking South-West along Newcastle Place

View Looking South-East along Newcastle Place

View Looking North-East A40

Surfaced Car Parking Area and Link Block

Internal Hardstanding Courtyard

Figure 1.4: Representative Site Photographs

Environmental Considerations

1.27 Geological maps for the area indicate that the geology beneath the site is underlain by Langley Silt Member (Clay and Silt), Lynch Hill Gravels and London Clay Formation.

1.28 Historic[2] and recent[3] ground investigations undertaken at the adjacent WEG development indicate the following ground stratigraphy at the site:

- Rubbly Made Ground (typically 1-2 m thickness);
- Langley Silt Member (clays, silts and sands, typically 2-3 m thickness);
- Lynch Hill Gravels (gravelly sands and flint gravel with uppermost 1-2 m thick layer of laminated clay, typically 6 m thickness in total); and
- London Clay (silty clay typically from 12 m below ground level (mbgl) to depth (anticipated approximately 50 mbgl).

1.29 The superficial Langley Silt Member and London Clay at depth are classified by the EA as Unproductive Strata. The intermediate Lynch Hill Gravel is classified as a 'Secondary A' aquifer, described as 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers'. The site is not located within a groundwater Source Protection Zone.

1.30 There are no surface water features on the site and no main rivers located within a 1 km radius. The closest surface water features are the Grand Union Canal, located approximately 150 m to the south and the Boating Lake at Regent's Park approximately 1 km to the north-east. The nearest surface watercourse is the Paddington Basin approximately 150 m south, connecting to the Grand Union Canal and Regents Canal at the junction of Little Venice 750 m north-west of the site. No additional surface water features have been identified within 1 km of the site.

1.31 A review of EA data indicates that the site is located in Flood Zone 1 (low probability) where the annual probability of flooding from rivers or the sea is less than 1 in 1,000 (0.1%). The site is also shown by the EA to be at Very Low or Low risk of surface water (pluvial) flooding, associated with potential surcharging of the drainage network during extreme rainfall events.

1.32 The site is not shown to be within a Critical Drainage Area (CDA) as shown in the WCC 2010 Strategic Flood Risk Assessment (SFRA).

1.33 An updated extended Phase 1 Habitat Survey/UKHab Survey of the site undertaken on 27 May 2022[4] categorised the existing on-site habitats as negligible to site level importance for wildlife. Limited vegetation is present, with street trees of site level importance and scattered ephemeral vegetation of negligible importance. The street trees are suitable for use by common bird species. No potential roost features were recorded on the buildings or trees, and the site is considered to be of negligible potential for use by bats.

1.34 St Mary's Churchyard and Paddington Green Park Square Gardens Borough Grade II Site of Importance for Nature Conservation (SINC) is located immediately to the west of the site.

1.35 The site is located within the Watling Street Tier II Archaeological Priority Area (APA), designated for being within the vicinity of a Roman road, with potential for remains of the road and roadside activity. The northern and north-western parts of the site is located within the Paddington Tier II APA, designated for its potential to contain remains of the historic settlement of Paddington Green.

1.36 The northern half of Newcastle Place at its western end, which is within the redline boundary, is located within Paddington Green Conservation Area (CA), but otherwise the site is not located within a CA.

[2] Soil Mechanics 1995
[3] LEAP Environmental 2015

[4] Earlier survey was undertaken in September 2020.

1.37 The Police Station building is unlisted. However, the following heritage receptors are located within approximately 500 m of the site:

- Lisson Grove Conservation Area;
- Maida Vale Conservation Area;
- Bayswater Conservation Area;
- St John's Wood Conservation Area;
- Molyneux Conservation Area;
- Church of St Mary (Grade II*);
- Marylebone Lower House North Westminster Community School (Grade II*);
- The Children's Hospital (Grade II); and
- 17 and 18 Paddington Green (Grade II).

1.38 In addition there are several buildings of merit, as identified in the Paddington Green CA Audit, the Lisson Grove CA Audit and the Bayswater CA Audit within 500 m of the site.

1.39 The closest Registered Park and Gardens is the Grade I Listed Hyde Park, located approximately 1 km south of the site. Regents Park (which is also a CA) is located approximately 1 km east of the site.

1.40 The site is not located within one of the designated views under the London View Management Framework, nor in a locally designated view.

1.41 The prevailing townscape character comprises the following:

- To the north-west of the site, the area is dominated by the Hall Place Estate which features a mixture of medium scale residential blocks and tower blocks;
- To the north, north-east and east of the site beyond Edgware Road, the area is densely built up, generally characterised by three to five storey terraces and small post-war blocks with ground floor retail lining Edgware Road;
- To the south of the site, beyond the A40, the area is dominated by Paddington Basin, mainly comprising large scale commercial buildings, generally of recent construction, arranged in relatively coherent groupings; and
- To the west of the site, the area features a mix of smaller scale historic buildings, open space, low rise post-war housing, stuccoed villas, mansion blocks and educational uses (The City of Westminster College). Parts of this area are within the Paddington Green and Maida Vale CAs.

1.42 The site is situated in a highly accessible location with a public transport accessibility level (PTAL) rating of 6b. Edgware Road Underground Station is approximately 50 m to the east of the site and Paddington Station approximately 400 m to the south-west of the site. There are also good bus, pedestrian and cycle routes in the vicinity of the site, with the following three London Cycle Network (LCN) routes in the locality of the site:

- Route 50 which provides a link between Marylebone and Hendon;
- Route 5 links Edgware and Battersea; and
- Route 36 provides links to Twickenham and Hammersmith.

1.43 Due to the site's urban location it is affected by road traffic noise.

1.44 The site is located within the Westminster Air Quality Management Area (AQMA) declared under the Environment Act 1995, which incorporates the whole City of Westminster (CoW). The AQMA has been designated due to the high traffic flows within the CoW which give rise to concentrations of pollutants nitrogen dioxide (NO2) and fine particulates (PM10) that exceed the current National Air Quality Standard objectives.

1.45 The site falls outside the designated London Congestion Charging Zone.

1.46 The site is located within the Little Venice ward.

1.47 The prevailing wind direction is south-westerly with a secondary north-easterly wind.

1.48 With respect to telecommunications users and sensitive receptors (primarily terrestrial and satellite television users) it is expected that due to the nature of building use around the site, there will be a high number of different radio networks and services in use for communications and remote monitoring needs. A number of different wireless and radio technologies will be in use for both public and private requirements.

1.49 Publicly available environmental sensitivity data sets for the site and surrounding study area are shown in Figure 1.5.

Planning Context

Planning Policy Context

1.50 In respect of the application, the proposed development falls within Schedule 2, Paragraph 10b of the EIA Regulations as an 'urban development project'.

1.51 It is necessary to consider the proposed development against relevant policies and guidance at national, regional and local levels. At the national level, planning policy is contained within the National Planning Policy Framework (NPPF)[5].

1.52 The NPPF sets out the Government's planning policies for England. It provides the greater part of national planning policy advice and articulates the Government's vision for delivering sustainable development. The NPPF is supported by on-line Planning Practice Guidance (PPG) and both are material planning considerations.

1.53 The statutory development plan for the site comprises the:

- The London Plan, 2021[6]; and
- Westminster City Plan 2019-2040, 2021[7] and Policies Map.

1.54 The site is located in the Church Street/Edgware Road Housing Renewal Area (adopted Local Plan Policy 6) which seeks the redevelopment of the area to deliver at least 2,000 high quality new homes, job opportunities, community facilities, new infrastructure and high quality design including tall buildings. The site also sits within the Central Activities Zone (CAZ, adopted Local Plan Policy 14), which seeks to deliver growth through intensified town centres and deliver uses that provide active frontages serving visiting members of the public alongside new homes.

1.55 The Westminster City Plan 2019-2040 was adopted in April 2021. It sets out the vision and strategy for development within the City of Westminster and contains policies that will be used in determining planning applications.

1.56 WCC is undertaking a partial Local Plan Review and have undertaken a Regulation 18 consultation in Autumn 2022. Given the early stage of review of the Local Plan, in accordance with the provisions within the NPPF, it is not accorded any weight in decision making at this time.

[5] Ministry of Housing, Communities and Local Government, 2021. The National Planning Policy Framework. London. HMSO.
[6] Greater London Authority, 2021. The London Plan. The Spatial Development Strategy for Greater London. London. GLA.
[7] Westminster City Council, 2021. Westminster City Plan 2019-2040. London. WCC.

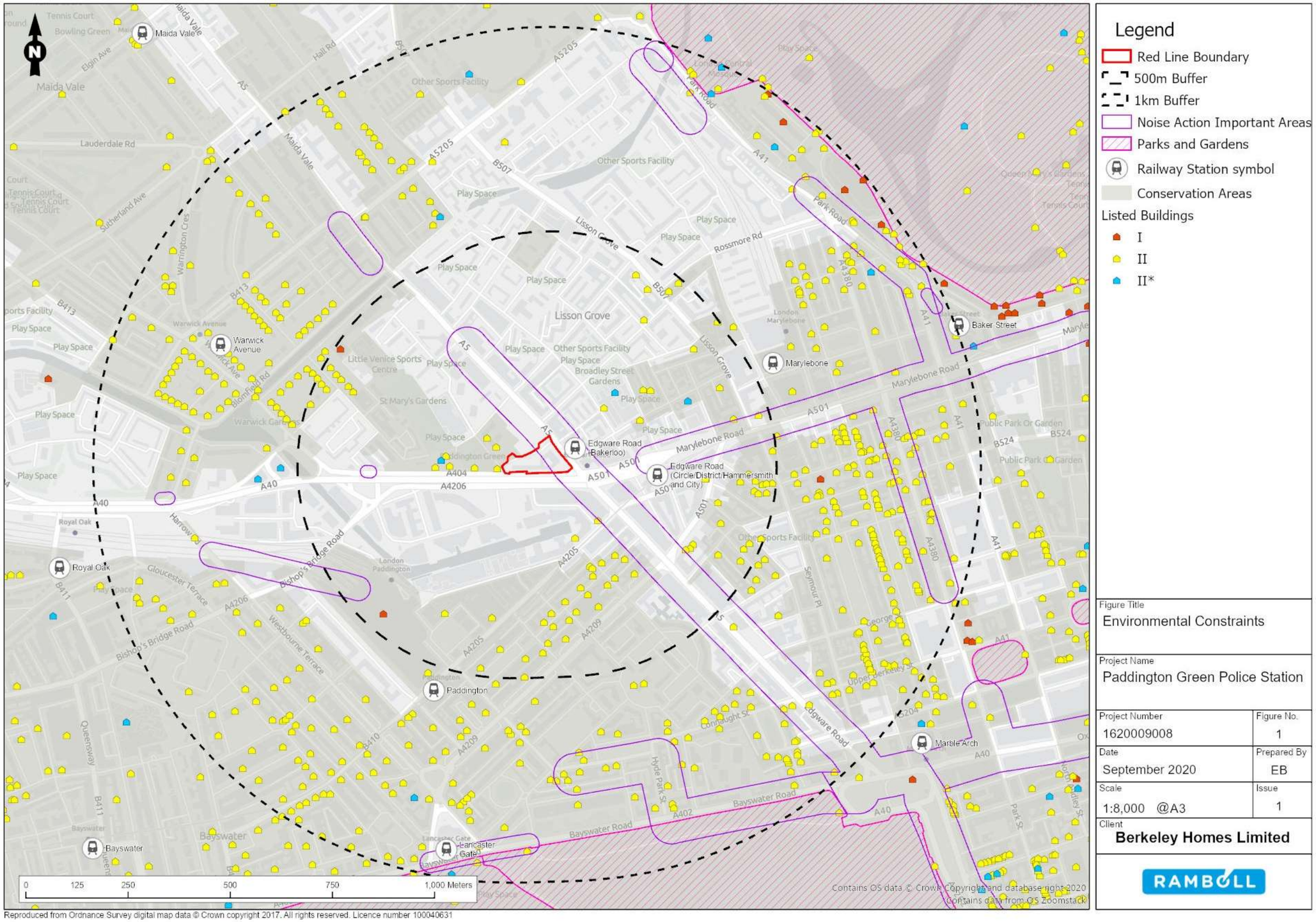


Figure 1.5: Surrounding Environmental Sensitivities

1.57 The EIA has also had regard to the following supplementary planning guidance:

- Supplementary Planning Guidance (SPG) and Supplementary Planning Documents (SPDs):
  - Circular Economy Statements, 2022[8];
  - Whole Life Carbon Assessments, 2022[9];
  - Energy Assessment Guidance, 2022[10];
  - London Environment Strategy, 2018[11];
  - Mayor's Transport Strategy, 2018[12];
  - Affordable Housing and Viability SPG, 2017[13];
  - Housing SPG, 2016[14];
  - Culture and Night-Time Economy SPG, 2017[15];
  - Accessible London: Achieving an Inclusive Environment SPG, 2014[16];
  - The Control of Dust and Emissions During Construction and Demolition SPG, 2014[17];
  - Character and Context SPG, 2014[18];
  - London Planning Statement SPG, 2014[19];
  - Sustainable Design and Construction SPG, 2014[20];
  - All London Green Grid SPD, 2012[21];
  - London View Management Framework SPG, 2015[22];
  - London's World Heritage Sites, 2012[23]; and
  - Planning for Equality and Diversity in London, 2007[24].
- Local Guidance and SPDs:
  - Planning Obligations and Affordable Housing SPD, Consultation Draft 2022[25]; ;
  - WCC Code of Construction Practice (CoCP), 2022[26];
  - Environment SPD, 2022; and
  - Paddington Green Conservation Area Audit, 2003[27].

1.58 The site is located within the designated 'Little Venice and Maida Vale' Neighbourhood Plan Area; however, there is currently no draft or adopted Neighbourhood Plan within this area.

1.59 Key policies and guidance from these documents and others have been referenced in the Planning Statement which accompanies the application, and in technical assessment chapters where relevant.

Planning History

1.60 The on-site buildings were originally consented in the late 1960s (ref. A.174.66) as a 'Divisional Police Station, district headquarters, and section house.' It is understood that construction of the building was completed in 1971.

1.61 The most recent planning history of the site is summarised in Table 1.1 and relates mainly to operational works at the site. There are further advertising applications for a public call box, applications for the temporary installation of public art, and for the installation of telecommunications and CCTV equipment on the building. The applications summarised in Table 1.1 have been identified on the WCC planning portal in relation to the site.

Table 1.1: Site Planning History

Reference	Description	Decision	Date of Decision
21/02193/FULL	Demolition and redevelopment of the site to provide three buildings, providing private and affordable residential 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.	Pending	N/A
20/05827/EIASCO	Request for a scoping opinion under Regulation 15 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 for redevelopment of the site, including demolition of the existing police station, excavation of basement, erection of three blocks containing approximately 650 flats (including 260 affordable flats) and 8250 sqm of Class E floorspace and stopping up of Newcastle Place.	Decided	25 March 2021
20/06527/FULL	Use of the annex part of the site as an office (Class E)	Approved	11 December 2020
20/02103/CLEUD	Mixed use comprising police station (*Sui Generis*), office (Class B1), residential institution (Class C2).	Withdrawn	07 September 2020
01/06109/FULL	Erection of a replacement covered walkways between police station and office annex at first floor level.	Approved	08 August 2001
95/04667/1884	Panel and glazed infill to external covered way.	No Objections	15 August 1995
94/00394/1884	Proposed replacement of two security huts.	No Objections	28 January 1994
91/04645/1884	Repositioning of observation post.	No Objections	18 October 1991
91/03630/1884	Single storey extension to provide cloakroom/ baggage store.	No Objections	27 August 1991

[8] Greater London Authority, 2022. Circular Economy Statements. London. GLA.
[9] Greater London Authority, 2022. Whole Life-Cycle carbon Assessment's guidance. London, GLA.
[10] Greater London Authority, 2022. Energy Assessment Guidance. London. GLA
[11] Greater London Authority, 2018. London Environment Strategy. London. GLA.
[12] Greater London Authority, 2018. Mayor's Transport Strategy. London. GLA.
[13] Greater London Authority, 2017. Affordable Housing and Viability Supplementary Planning Guidance (SPG). London, GLA.
[14] Greater London Authority, 2016. Housing Supplementary Planning Guidance, London, GLA.
[15] Greater London Authority, 2017. Culture and the Night-Time Economy, Supplementary Planning Guidance. London. GLA.
[16] Greater London Authority, 2014. Accessible London: Achieving an Inclusive Environment, Supplementary Planning Guidance. Implementation Framework. London. GLA.
[17] Greater London Authority, 2014. The Control of Dust and Emissions During Construction and Demolition, Supplementary Planning Guidance. London. GLA.
[18] Greater London Authority, 2014. Character and Context, Supplementary Planning Guidance. London. GLA.
[19] Greater London Authority, 2014. London Planning Statement, Supplementary Planning Guidance. Implementation Framework. London. GLA.
[20] Greater London Authority, 2014. Sustainable Design and Construction, Supplementary Planning Guidance. London. GLA.
[21] Greater London Authority, 2012. Green Infrastructure and Open Environments: The All London Green Grid, Supplementary Planning Guidance. Implementation Framework. London. GLA.
[22] Greater London Authority, 2015. London View Management Framework, Supplementary Planning Guidance. London. GLA.
[23] Greater London Authority, 2012. London's World Heritage Sites: Guidance on Settings, Supplementary Planning Guidance. Implementation Framework. London. GLA.
[24] Greater London Authority, 2007. Planning for Equality and Diversity in London, Supplementary Planning Guidance to the London Plan. London. GLA.
[25] Westminster City Council, 2022. Planning Obligations and Affordable Housing Supplementary Planning Document. Consultation Draft, March 2022.
[26] Westminster City Council, 2022. Code of Construction Practise. London. WCC.
[27] Westminster City Council, 2003. Paddington Green Conservation Area Audi.t

Table 1.1: Site Planning History			
Reference	**Description**	**Decision**	**Date of Decision**
91/00634/1884	Access ramp for the disabled at main entrance to Paddington Green Police Station on Harrow Road.	No Objections	12 March 1991

1.62 The Applicant submitted a full planning application on 1 April 2021 for the 2021 proposed development as described in Table 1.10. The application was considered at WCC's planning committee on 9 September 2021. WCC officers made a recommendation for approval. The planning committee resolved to refuse the application contrary to the officers' recommendation for the following suggested reasons (in summary):

- Due to the excessive height and bulk, Block K would have a detrimental impact on the local townscape, would result in substantial harm to the setting of the Little Venice, Paddington Green, Lisson Grove and Maida Vale Conservation Areas and have a detrimental impact on views from Regents Park and Hyde Park;
- The proposed development fails to maximise the number of dual aspect flats within Blocks I and J, resulting in poor levels of natural daylight and outlook due to the proximity of the existing buildings within West End Gate; and
- Due to the excessive height and bulk of the proposed blocks, the proposed development would result in a significant loss of daylight and sunlight to existing residential properties.

1.63 The application was subsequently referred to the GLA for 'Stage 2' review. On 22 November 2021 the GLA directed that the GLA would act as the local planning authority for the purpose of determining the application (application was 'called in').

1.64 Since then the Applicant has consulted with the GLA on proposed amendments to address areas of further work identified by the GLA, and has undertaken public consultation on the proposed amendments.

Application Details

1.65 The description of the 2022 amended proposed development as stated on the application form is:

"Demolition of the existing building and redevelopment of the site to provide three buildings of 39, 24 and 17 storeys in height, providing residential units (including affordable units)(Class C3), commercial uses (Class E), a community use (Class F.2), 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, disabled car parking and cycle parking and connection through to the basement of the neighbouring West End Gate development."

1.66 The 2022 amended proposed development would comprise three buildings (Blocks I; J; and K). As discussed in ES Chapter 5(R): Demolition and Construction Description, the delivery of the buildings is proposed to be sequenced over a number of phases, with demolition delivered in Phase 0; site-wide substructure works, Block I, including associated hard and soft landscaping delivered in Phase 1; and Blocks J and K and associated hard and soft landscaping delivered in Phase 2. Each building would be occupied upon completion.

Applicant

1.67 The application is submitted to the GLA on behalf the following entity:

Berkeley Homes (Central London) Ltd

Chelsea Bridge Wharf

380 Queenstown Road

London

SW11 8PE

Project Team

1.68 The Applicant has appointed a design team to assist in the development of the updated application and has concurrently appointed an EIA team to undertake the EIA and prepare the ES in accordance with Regulation 18(5)(a) of the EIA Regulations. The team members and their respective roles are presented in Table 1.2.

Table 1.2: Design and EIA Team	
Company	**Role**
Hogan Lovells	Legal Advisor
Turley	Planning Consultant
Squire and Partners	Lead Architect
Murdock Wickham	Landscape Architect
WSP	Mechanical and Electrical Engineer, Structural Engineer, Infrastructure and Utilities Consultant/Civil Engineer Energy Consultant
Ramboll	ES Project Manager and Co-ordinator Air Quality Consultant Noise and Vibration Consultant Ecological Consultant Ground Conditions Consultant ES Compilation and Production Consultant
CBRE	Socio-Economics Consultant
Museum of London Archaeology	Archaeology Consultant
ARUP	Transport Consultant
GIA	Daylight, Sunlight and Overshadowing Consultant
RWDI	Wind Microclimate Consultant
Montagu Evans	Townscape, Visual and Built Heritage Consultant
Miller Hare	Accurate Visual Representations Consultant

Environmental Statement

Environmental Statement Structure

1.69 The 2022 Replacement ES comprises the following documents:

- Replacement Non-Technical Summary
- Volume 1(R): Replacement Main Environmental Statement
  - 1(R): Introduction
  - 2(R): EIA Process and Methodology
  - 3(R): Alternatives and Design Evolution
  - 4(R): 2022 Amended Proposed Development Description
  - 5(R): Demolition and Construction Description

  - 6(R): Socio-Economics
  - 7(R): Air Quality
  - 8(R): Noise and Vibration
  - 9(R): Wind Microclimate
  - 10(R): Daylight, Sunlight, Overshadowing and Solar Glare
  - 11(R): Cumulative Effects
  - 12(R): Summary of Residual Effects

  Replacement Glossary of Terms and Abbreviations
- Volume 2(R): Replacement Townscape, Visual and Built Heritage Assessment:
  - Technical Appendix 1.1(R): Legislation and Policy
  - Technical Appendix 1.2(R): AVR Methodology
  - Technical Appendix 1.3(R): Map of Townscape Receptors
  - Technical Appendix 1.4(R): Map of Heritage Receptors
  - Technical Appendix 1.5(R): Zone of Theoretical Influence
  - Technical Appendix 1.6(R): Map of Viewpoint Locations
  - Technical Appendix 1.7(R): List Entry Descriptions
- Volume 3(R): Technical Appendices:
  - Technical Appendix 1.1: IEMA Quality Mark Checklist
  - Technical Appendix 1.2(R): Regulation 18(5) Statement
  - Technical Appendix 2.1: EIA Scoping Opinion Request Report
  - Technical Appendix 2.2: Avison Young EIA Scoping Independent Review
  - Technical Appendix 2.3: EIA Scoping Opinion
  - Technical Appendix 2.3(N): Avison Young Independent Environmental Statement Review
  - Technical Appendix 2.4(R): Replacement Ecological Impact Assessment
  - Technical Appendix 2.5(R): Replacement Ground Conditions Preliminary Risk Assessment
  - Technical Appendix 2.6(R): Replacement Archaeological Desk Based Assessment
  - Technical Appendix 2.7(R): Replacement Flood Risk Assessment Statement
  - Technical Appendix 2.8(R): Replacement Transport Data
  - Technical Appendix 6.1(R): Socio-Economic Planning Policy and Legislation
  - Technical Appendix 6.2(R): Socio-Economic Magnitude Thresholds
  - Technical Appendix 6.3(R): Socio-Economic Cumulative Schemes Details
  - Technical Appendix 7.1(R): Air Quality Legislation, Policy and Guidance
  - Technical Appendix 7.2: Air Quality Environmental Health Officer Consultation
  - Technical Appendix 7.3(R): Air Quality Model Inputs, Transport Data and Results Processing Tools
  - Technical Appendix 7.4(R): Air Quality Background Concentrations and Model Verification
  - Technical Appendix 7.5(N): Air Quality Modelling Results
  - Technical Appendix 8.1(R): Noise and Vibration Legislation and Policy
  - Technical Appendix 8.2: Baseline Noise and Vibration Survey
  - Technical Appendix 8.3(R): Construction Noise Assumptions
  - Technical Appendix 8.4(R): Transport Data
  - Technical Appendix 8.5(R): Site Suitability Assessment for Residential Use
  - Technical Appendix 9.1(R): Pedestrian Level Wind Microclimate Assessment
  - Technical Appendix 10.1: Pre-application Consultation
  - Technical Appendix 10.2(R): Drawings
  - Technical Appendix 10.3(R): Daylight and Sunlight Results (Existing Neighbours)
  - Technical Appendix 10.4(R): Window Maps (Existing Neighbours)
  - Technical Appendix 10.5(R): Daylight and Sunlight Assessment (Recently Implemented and Consented Neighbours);
  - Technical Appendix 10.6(R): Overshadowing Assessment;
  - Technical Appendix 10.7(R): Solar Glare Assessment
  - Technical Appendix 10.8(R): Summary of Existing vs Proposed
  - Technical Appendix 10.9(N): Alternative Method Justification

Environmental Statement Content

1.70 The required content of an ES is set out in Schedule 4 of the EIA Regulations. Table 1.3 presents the requirements of the EIA Regulations and indicates where in this 2022 Replacement ES, the requirements have been met.

Table 1.3: Information Required in an Environmental Statement (Schedule 4 of EIA Regulations)

	Required Information	Chapter/Section of 2022 Replacement ES
1	A description of the development, including in particular: • a description of the location of the proposed development; • a description of the physical characteristics of the proposed development, including, where relevant, requisite demolition works, and the land-use requirements during the operation stage; • a description of the main characteristics of the operational phase of the proposed 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; • 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 operation stage.	ES Chapter 1(R): Introduction, Volume 1(R) ES Chapter 4(R): 2022 Amended Proposed Development Description, Volume 1(R) ES Chapter 5(R): Demolition and Construction Description, Volume 1(R) ES Chapters 6(R)-10(R), Volume 1(R) ES Volumes 2(R) and 3(R)
2	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the Applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	ES Chapter 3(R): Alternatives and Design Evolution, Volume 1(R)
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 proposed 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.	ES Chapter 3(R): Alternatives and Design Evolution, Volume 1(R)
4	A description of the factors specified in Regulation 4(2) likely to be significantly affected by the proposed 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	ES Chapters 6(R)-10(R), Volume 1(R) ES Volumes 2(R) and 3(R)

Table 1.3: Information Required in an Environmental Statement (Schedule 4 of EIA Regulations)

	Required Information	Chapter/Section of 2022 Replacement ES
	adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	
5	A description of the likely significant effects of the proposed development on the environment resulting from, *inter alia*: a) the construction and existence of the development including, where relevant, demolition works; b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); 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; 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; and g) the technologies and the substances used. 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. The description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the proposed development, including in particular those established under Council Directive 92/43/EEC and Directive 2009/147/EC.	ES Chapters 4(R)-11(R), Volume 1(R) ES Volumes 2(R) and 3(R)
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.	ES Chapters 6(R)-10(R), Volume 1(R) ES Volumes 2(R) and 3(R)
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). The 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.	ES Chapter 5(R): Demolition and Construction Description, Volume 1(R) ES Chapters 6(R)-10(R), Volume 1(R) ES Volumes 2(R) and 3(R)
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 of the European Parliament and of the Council or	ES Chapters 6(R)-10(R), ES Volume 1(R) ES Volumes 2(R) and 3(R)

Table 1.3: Information Required in an Environmental Statement (Schedule 4 of EIA Regulations)

	Required Information	Chapter/Section of 2022 Replacement ES
	Council Directive 2009/71/Euratom 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.	
9	A non-technical summary of the information provided under 1 to 8 above.	Replacement Non-Technical Summary
10	A reference list detailing the sources used for the descriptions and assessments included in the ES.	ES Chapters 1(R)-10(R), ES Volume 1(R) ES Volumes 2(R) and 3(R)

Environmental Statement Good Practice

1.71 As with EIA, good practice in the preparation of an ES is defined in a number of sources, with more specific issues covered by ES review checklists. Many of these checklists are very detailed and go to some length. In terms of widely applicable and practical guidance, the Institute of Environmental Management and Assessment (IEMA) Quality Mark indicator check has been referenced in undertaking the EIA and in producing this 2022 Replacement ES as described in Technical Appendix 1.1, ES Volume 3(R).

1.72 Ramboll is a Registrant on the IEMA Quality Mark. Accordingly, as part of Ramboll's Quality Assurance procedures and Quality Mark Commitments, the EIA has been undertaken to meet the Quality Mark Commitments as set out in Technical Appendix 1.1, ES Volume 3(R).

1.73 As required by Regulation 18(5)(b) of the EIA Regulations, Technical Appendix 1.2 presents a statement from the Applicant outlining the relevant expertise or qualifications of the competent experts that have undertaken the updated EIA and prepared this 2022 Replacement ES.

2(R) EIA PROCESS AND METHODOLOGY

Introduction

2.1 This chapter of the ES sets out the general approach to the process and to the methodology that is adopted when undertaking an EIA. It describes the legislative framework in which the updated EIA for the 2022 amended proposed development has been undertaken and identifies the key guidance that was considered. The scoping and consultation process that was adopted to identify the key environmental topics for inclusion in the EIA is outlined, as well as the overall EIA methodology adopted.

2.2 While the approach and methodology to the EIA are described in this chapter, further detail on how the methodology was tailored to each technical aspect of the EIA is presented in the relevant technical assessment chapters of the ES.

2.3 This chapter is accompanied by the following technical appendices within ES Volume 3(R):

- Technical Appendix 2.1: EIA Scoping Opinion Request Report;
- Technical Appendix 2.2: Avison Young EIA Scoping Independent Review;
- Technical Appendix 2.3: EIA Scoping Opinion;
- Technical Appendix 2.3(N): Avison Young Independent Environmental Statement Review;
- Technical Appendix 2.4(R): Replacement Ecological Impact Assessment;
- Technical Appendix 2.5(R): Replacement Ground Conditions Preliminary Risk Assessment;
- Technical Appendix 2.6(R): Replacement Archaeological Desk Based Assessment;
- Technical Appendix 2.7(R): Replacement Flood Risk Assessment Statement; and
- Technical Appendix 2.8(R): Replacement Transport Data.

Environmental Impact Assessment

2.4 Legislation on EIA was first implemented in the UK in 1988 following the adoption of the 1985 European Commission (EC) Directive (No. 85/337/EEC) on the assessment of the effects of certain public and private projects on the environment[1]. Legislation was subsequently introduced in 1999, following the adoption of the amended 1997 EC Directive (No. 97/11/EEC)[2]. In England, the 1997 Directive was transposed into law through The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (SI 1999/293)[3]. These regulations were amended by The Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2006 (Statutory Instrument 2006/3295)[4] and The Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008 (Statutory Instrument 2008/2093)[5]. These were then superseded by The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (Statutory Instrument 2011/1824)[6], with The Town and Country Planning (EIA) (Amendment) Regulations, 2015[7] coming into force on 6 April 2015.

2.5 The European Parliament adopted a fully updated version of the EIA Directive (2014/52/EU) in 2014. This Directive was transposed into law through The Town and Country Planning (Environmental Impact Assessment) Regulations, 2017[8] on 16 May 2017 (i.e. the 'EIA Regulations'), which supersede all previous EIA Regulations. This ES has been prepared pursuant to (and in accordance with) the EIA Regulations.

2.6 The EIA Regulations set out the statutory process and minimum requirements for EIA and the contents of the ES. Specifically, they prohibit the grant of planning permission for developments likely to have significant effects on the environment, defined in the EIA Regulations as 'EIA development', unless information on those effects is considered by the relevant planning authority in reaching its decision on a planning application. That information includes both the ES, which is the Applicant's own assessment, and any other information provided by consultees, the public, and any other persons about the proposal's environmental effects.

2.7 In addition to the EIA Regulations, there is guidance available on EIA and the application of the EIA Regulations, which has been considered in undertaking this EIA including:

- IEMA Guide to Climate Change Resilience and Adaptation[9];
- IEMA Guide to Materials and Waste in Environmental Impact Assessment[10];
- IEMA: Delivering Proportionate EIA[11];
- IEMA: Health in Environmental Impact Assessment[12];
- IEMA: IEMA Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance[13];
- IEMA: Shaping Quality Development[14];
- IEMA: Special Report into the State Environmental Impact Assessment Practice in the UK[15];
- IEMA: Guidelines for Environmental Impact Assessment[16];
- IEMA Special Report into the State Environmental Impact Assessment Practice in the UK[17];
- Department for Communities and Local Government (DCLG) Amended Circular on Environmental Impact Assessment (consultation paper)[18];
- DCLG Environmental Impact Assessment: A guide to good practice and procedures (consultation paper)[19];
- NPPF[20];
- PPG[21];
- Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (MHCLG) Online Resource - Guidance for Environmental Impact Assessment[22];

[1] The Council of the European Union (CEU), 1985. Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. CEU.
[2] The Council of the European Union (CEU), 1997. Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. CEU.
[3] Secretary of State, 1999. Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. London. HMSO.
[4] Secretary of State, 2006. Town and Country Planning (Environmental Impact Assessment) (Amendment) (Wales) Regulations 2006. London. HMSO.
[5] Secretary of State, 2008. Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008. London. HMSO.
[6] Secretary of State, 2011. Town and Country Planning (Environmental Impact Assessment) Regulations 2011. London. HMSO.
[7] Secretary of State, 2015. Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015, London, HMSO.
[8] Secretary of State, 2017. Town and Country Planning (Environmental Impact Assessment) Regulations 2017, London, HMSO.
[9] Institute of Environmental Management and Assessment (IEMA), 2020. IEMA Guide to Climate Change Resilience and Adaptation. IEMA.
[10] IEMA, 2020. IEMA Guide to Materials and Waste in Environmental Impact Assessment. IEMA.
[11] IEMA, 2017. Delivering Proportionate EIA. IEMA.
[12] IEMA, 2017. Health in Environmental Impact Assessment. IEMA.
[13] IEMA, 2017. IEMA Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance. IEMA.
[14] IEMA, 2015. Shaping Quality Development, November 2015. IEMA.
[15] IEMA, 2011. Special Report into the State Environmental Impact Assessment Practice in the UK. IEMA.
[16] Institute of Environmental Management and Assessment (IEMA), 2004. Guidelines for Environmental Impact Assessment. IEMA.
[17] Institute of Environmental Management and Assessment (IEMA), 2011. Special Report into the State Environmental Impact Assessment Practice in the UK. IEMA.
[18] Department for Communities and Local Government, 2006. Amended Circular on Environmental Impact Assessment: A consultation paper. DCLG.
[19] Department for Communities and Local Government, 2006. Environmental Impact Assessment: A guide to good practice and procedures – a consultation paper. DCLG.
[20] Ministry of Housing, Communities and Local Government, 2021. National Planning Policy Framework. London. HMSO.
[21] Department for Levelling Up, Housing and Communities and Ministries of Housing, Communities and Local Government (Live Document) Planning Practice Guidance [online] Available: http://planningguidance.communities.gov.uk/.
[22] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2020. Guidance for Environmental Impact Assessment. DCLG.

- Highways England, 2019 and 2020. Design Manual for Roads and Bridges (DMRB) LA series[23]; and
- Institute of Environmental Assessment Guidelines for Environmental Assessment of Road Traffic[24];
- IEMA Shaping Quality Development[25].

2.8 Guidance of relevance to individual technical assessments have been set out in Chapters 6-12(R), as well as ES Volume 2(R).

2.9 In accordance with the EIA Regulations, this EIA has been undertaken based on the 2022 amended proposed development as described in ES Chapter 4(R): 2022 Amended Proposed Development Description and ES Chapter 5(R): Demolition and Construction Description of this Volume.

EIA Process

2.10 EIA is a process that identifies the likely significant environmental effects (both beneficial and adverse) of a proposed development. The process aims to avoid, off-set and/or reduce any significant adverse environmental effects, where these are identified, and to enhance any beneficial effects. Proposed developments to which EIA is applied are those that are likely to have significant effects on the environment by virtue of factors such as their nature, size or location.

2.11 The process and outcomes of the EIA are presented in an ES. The contents of an ES are prescribed by the EIA Regulations and should be a clear and concise summary of a proposed development and its likely environmental effects - including direct, indirect and cumulative effects - on the natural, built and human environments. The ES is submitted to a relevant planning authority (in the case of planning applications, to local planning authorities) to accompany an application for planning permission. In this way, the aim of EIA is to protect the environment by ensuring that a local planning authority, when deciding whether to grant planning permission for a project which is likely to have significant effects on the environment, does so in the full knowledge of the project's likely significant effects and takes this into account in the decision making process. Alongside this, an EIA's objective is also to ensure that the public and statutory consultees are given early and effective opportunities to participate in decision making procedures and to enable the grant of required licences.

Screening

2.12 Screening is the term in the EIA Regulations used to describe the process by which the need for EIA is considered in respect of a proposed development. Some developments are automatically subject to EIA by reason of their size, nature and effects. These projects, known as Schedule 1 developments, include mainline railways, airports, waste facilities and large power stations. The 2022 amended proposed development is not such a project.

2.13 The need for an EIA for all other projects is determined on the basis of the following set criteria:

- The development is within one of the classes of development stated in Schedule 2 of the EIA Regulations; AND
- EITHER it meets or exceeds the size threshold for that class of development in Schedule 2; OR a part of the project is in a sensitive area; AND
- It is likely to have significant effects on the environment by virtue of factors such as its nature, size, or location.

2.14 These are known as Schedule 2 developments. Given the scale of the 2022 amended proposed development and the location of the site, it is accepted by the Applicant that the 2022 amended proposed development has the potential to have significant effects on the environment and that it falls within Schedule 2 paragraph 10(b) within the category of 'Urban Development Projects'. The 2022 amended proposed development exceeds the applicable size threshold for Urban Development Projects because the development includes more than 1 ha of urban development which is not residential development; and more than 150 dwellings are proposed. Given this, an EIA has been undertaken and the results are reported in this 2022 Replacement ES. Accordingly, a request for formal screening to WCC was not necessary.

Scoping and Consultation

Pre-Submission Consultation

2.15 Scoping is the term used in the EIA Regulations whereby an applicant can request a formal 'scoping opinion' from the relevant local planning authority on the content of an ES and the extent of the information to be considered in the assessments. The purpose of scoping is to focus the EIA on the environmental issues and potential impacts which need the most thorough attention; to identify those which are unlikely to need detailed study; and to provide a means to discuss methods of impact assessment so as to reach agreement on the most appropriate.

2.16 The Applicant submitted an EIA Scoping Report to WCC on 17 September 2020 in support of a request for a formal EIA Scoping Opinion pursuant to Regulation 15(1) of the EIA Regulations (Technical Appendix 2.1, ES Volume 3(R)). The EIA Scoping Report is presented in Technical Appendix 2.1 of ES Volume 3(R) and sets out a description of the then emerging proposed development; the potential key environmental impacts and likely effects to be considered as part of the EIA; as well as the proposed approach that would be adopted for the EIA including the proposed scopes and assessment methodologies to predict the scale of effects and to assess the significance in each case.

2.17 WCC appointed Avison Young to undertake an Independent Review of the submitted EIA Scoping Report. This was followed by consultations between the Applicant's EIA project team and Avison Young to provide clarifications and additional information between November 2020 and February 2021. Avison Young subsequently confirmed that the proposed EIA and ES scope was appropriate. The final Avison Young report is presented in Technical Appendix 2.2, ES Volume 3(R) and includes a complete history of the consultations. Accordingly, these are not repeated in this chapter, unless where considered essential.

2.18 WCC adopted an EIA Scoping Opinion on 25 March 2021 which is presented in Technical Appendix 2.3, ES Volume 3(R). WCC confirmed their agreement to the scope of the EIA as presented in the EIA Scoping Report. The 2021 EIA was undertaken on the basis of the adopted EIA Scoping Opinion.

2.19 A summary of the general EIA Scoping Opinion comments and requests is presented in Table 2.1. The EIA Scoping Opinion comments and requests received in respect of the individual environmental topics and technical assessments scoped in the EIA as technical assessment chapters are summarised and considered in each of the technical assessment chapters of ES Volume 1(R) and 2(R) and are therefore not repeated in Table 2.1.

Table 2.1: General EIA Scoping Opinion Comments, Responses and Agreements

Consultee	Scoping Opinion	Responses and Agreements
WCC (March 2021)	The evidence put forward to justify scoping out Transportation and Accessibility and Air Quality are based on anticipated vehicular traffic arising from the proposed development. The validity of the traffic data should be cross-checked and validated with final and fixed proposed development traffic flows (including for relevant Cumulative Schemes). Should this exercise	The traffic flows assessed in the 2021 EIA was consistent with that provided to Avison Young during the independent EIA Scoping review consultations. The transport data that has been used within the updated EIA is provided in this 2022 Replacement ES as follows:

[23] Highways England, 2019. Design Manual for Roads and Bridges Volume 11 Section 2 LA104 Sustainability and Environment. Appraisal. Environmental Assessment and Monitoring.
Highways England, 2020. Revision 1 Environmental Assessment and Monitoring.

[24] Institute of Environmental Assessment, 1993. Guidelines for Environmental Assessment of Road Traffic.
[25] IEMA, 2016. Environmental Impact Assessment Guide to Delivering Quality Development.

Table 2.1: General EIA Scoping Opinion Comments, Responses and Agreements

Consultee	Scoping Opinion	Responses and Agreements
	continue to demonstrate no significant transportation and accessibility effects and no significant air quality effects would arise from vehicular emissions associated within the operation of the final and fixed proposed development then this should be explained / evidenced in the forthcoming ES. It would then remain appropriate to scope them out of the ES. If, however, this is not the case, then an appropriate assessment of transport and traffic (environmental effects) and associated air quality effects will be required for inclusion with the ES.	• Air Quality assessment annual average daily traffic (AADT) in Technical Appendix 7.4(R); and • Noise and Vibration assessment annual average weekly traffic (AAWT) in Technical Appendix 8.4(R). The full set of transport data provided by the Applicant's transport consultant Arup, including AM and PM flows considered within the separate Transport Assessment (TA) is presented in Technical Appendix 2.8(R).
Natural England	On the basis of the material supplied with the consultation, significant effects on statutorily designated nature conservation sites or landscapes are unlikely. The Applicant must provide sufficient information for your authority to assess whether protected species are likely to be affected and, if so, whether appropriate avoidance, mitigation, or compensation measures can be put in place.	An Ecological Impact Assessment (EcIA) of the proposed development was presented in Technical Appendix 2.4 of the 2021ES. This EcIA has been updated for the 2022 amended proposed development and is presented in Technical Appendix 2.4(R).
WCC Public Protection and Licensing Environmental Sciences	Impacts to future occupiers will require assessment due to the historic us of the site which include various factories prior to use as a police station. Communal open spaces, residential development and sensitive uses are proposed under Class E. Therefore contamination should be scoped into the impact assessment.	A Ground Conditions Preliminary Risk Assessment (PRA) was undertaken of the proposed development and presented in Technical Appendix 2.5 of the 2021 ES. All sensitive uses would be provided over a capped ground level, underlain by a site-wide basement. Clean soil would be used for landscaped areas. Taking into consideration these factors, as well as the standard control and design measures that would be adopted for both demolition and construction stage, as well as the completed development stage, significant effects are unlikely to be required. An updated PRA has been prepared for the 2022 amended proposed development and is presented in Technical Appendix 2.5(R) of this 2022 Replacement ES.
WCC Waste	The application should provide sufficient information on the operational waste management measures to be included within the proposed development (and outlined within the Waste Strategy) and the waste management practices	A waste strategy for the 2021 proposed development was presented in the Design and Access Statement that accompanied the 2021 application.

Table 2.1: General EIA Scoping Opinion Comments, Responses and Agreements

Consultee	Scoping Opinion	Responses and Agreements
	during all stages of the proposed development to fulfil key legislative requirements. No chute should be proposed as part of the strategy to collect waste and recyclables as the use us of chutes has not demonstrated or result in capturing quality recyclable materials for further processing and use. The proposed development would require siting of a public Micro Recycling Centre that will be funded by the Applicant.	A summary of this waste strategy was presented in ES Chapter 4: Proposed Development Description of the 2021 ES. Furthermore waste volumes and management measures for the demolition and construction stage were presented in ES Chapter 5: Demolition and Construction Description of the 2021 ES. Updated waste information for the 2022 amended proposed development is provided in the corresponding replacement chapters of the 2022 Replacement ES.
Transport for London (TfL)	The Applicant has entered into pre-application discussions with TfL. It is understood that the Transport and Access chapter is proposed to be scoped out of the ES because the development will not give rise to significant adverse effects in relation to Transport. TfL is working with the Applicant team to agree the scope of the Transport Assessment and the development's impact on strategic transport matters. Therefore TfL is in agreement with the suggested approach.	A separate Transport Assessment (TA) accompanied the 2021 application. The full set of transport data provided by the Applicant's transport consultant Arup, including AM and PM flows, was presented in Technical Appendix 2.8 of the 2021 ES. The transport data remained consistent with that provided during the Avison Young consultations and confirmed that the proposed development would not give rise to significant levels of traffic flows. Updated transport data for the 2022 amended proposed development is provided in the Replacement TA and Technical Appendix 2.8(R).
Thames Water	The following issues should be considered and covered in either the EIA or planning application submission: • The proposed development's demand for sewage treatment and network infrastructure both on- and off-site and can it be met; • The surface water drainage requirements and flood risk of the proposed development both on- and off-site and can it be met; • The proposed development's demand for water supply and network infrastructure both on-and off-site and can it be met; • Build-out/phasing details to ensure infrastructure can be delivered ahead of occupation; and • Any piling methodology and will it adversely affect neighbouring utility services.	For the 2021 proposed development, the requested information was provided as follows: • Foul Sewage and Utilities Assessment that accompanied the 2021 application; • Technical Appendix 2.6: Flood Risk Assessment Statement; • ES Chapter 4: Proposed Development Description; and • ES Chapter 5: Demolition and Construction Description. Updated information for the 2022 amended proposed development is provided in the corresponding replacement reports and chapters of the 2022 Replacement ES.

2.20 Due to the similar scale and nature of the 2021 proposed development and the 2022 amended proposed development, the scope and methodology agreed in March 2021 are considered to remain valid, especially in respect of building height with the scheme considered in the EIA Scoping Process, proposed at up to 39 storeys.

Post-Submission Consultation

2.21 Following submission of the planning application in March 2021, the 2021 ES was reviewed by Avison Young on behalf of WCC. Following consultation between Avison Young and the Applicant's consultant team, it was agreed that there were no material omissions from the 2021 ES and no further information was requested by WCC in accordance with Regulation 25 of the EIA Regulations 2017 (Technical Appendix 2.3(N)).

2.22 In advance of the WCC Planning Committee, further views were assessed on request of Committee members.

2.23 Following the 'call in' by the GLA , the Applicant has consulted regularly with the GLA and presented to the GLA's Design Review Panel (DRP). The responses and feedback received primarily related to the design of the 2021 proposed development and to the emerging proposed amendments.

2.24 The main GLA and DRP comments and an explanation of how the Applicant has taken them into account, is provided in Chapter 3(R): Alternatives and Design Evolution.

2.25 No comments were received in respect of the scope of the EIA or methodologies adopted in the technical assessments, with the exception of the Townscape, Visual and Built Heritage Impact Assessment, for which an assessment of additional viewpoints and heritage assets was requested. This is discussed further in Volume 2(R).

2.26 In light of the above, in accordance with Regulation 18(4)(a), the updated EIA has been undertaken and the 2022 Replacement ES prepared based on the EIA Scoping Opinion issued on 25 March 2021.

2.27 Where the approach differs, full justification is provided within the technical assessment, as appropriate.

2.28 As part of the 2021 EIA Scoping Process, technical consultations were undertaken with the:

- WCC in respect of noise, air quality and ground contamination;
- WCC in respect of assessment views for inclusion in the TVBHIA;
- WCC in respect of the list of cumulative schemes to assess;
- Greater London Archaeology Advisory Service (GLAAS) in respect of the archaeological desk based assessment;
- TfL in respect of the TA scope and traffic modelling requirements; and
- EA in respect of the FRA.

2.29 Details of these technical consultations, which are considered to remain valid, are included in the relevant replacement technical assessments, as appropriate.

Scope of EIA

Non-Significant Issues

2.30 The aim of the EIA Scoping Process is to ensure that the EIA is proportionate and focussed only on the likely significant environmental effects of the 2021 proposed development. Appraisals for each technical topic were undertaken as part of the EIA Scoping Process to determine the existing baseline conditions and as a result, the potential for significant effects to arise.

2.31 Accordingly, the EIA Scoping Process identified that the 2021 proposed development is unlikely to give rise to significant environmental effects in respect of the following environmental topics and therefore would not need to be scoped as discrete technical assessment chapters within the ES:

- Ecology;
- Contamination;
- Archaeology;
- Water Resources and Flood Risk;
- Transport and Accessibility;
- Telecommunication Interference;
- Light Spill;
- Waste;
- Climate;
- Major Accidents and Disasters; and
- Human Health.

2.32 Justification for scoping these topics areas out of the 2021 ES was provided in Technical Appendices 2.1 and 2.2. Due to the similar scale and nature of the 2021 proposed development and the 2022 amended proposed development, the justification remains valid.

2.33 In respect of Waste, the 2021 EIA Scoping Process noted that the potential for significant effects was unlikely when following the methods of assessment set out in the IEMA guidance on Materials and Waste in Environmental Impact Assessment[26] and when considering the measures embedded into the 2021 proposed development design with respect to waste minimisation. As such a Waste chapter was scoped out of the 2021 ES; however, the use of materials and anticipated waste arisings were summarised in Chapter 4: Proposed Development Description and Chapter 5: Demolition and Construction Description. Updated waste information for the 2022 amended proposed development is provided in the corresponding replacement chapters of the 2022 Replacement ES.

2.34 Whilst significant environmental effects in respect of Major Accidents and Disasters and Human Health was considered unlikely in the 2021 EIA Scoping Process, consideration was given to these topics within the following technical chapters in this 2021 ES:

- Major Accidents and Disasters:
  - Chapter 4: Proposed Development Description;
  - Chapter 5: Demolition and Construction Description; and
  - Chapter 9: Wind Microclimate.
- Human Health:
  - Chapter 4: Proposed Development Description;
  - Chapter 5: Demolition and Construction Description;
  - Chapter 6: Socio-Economics;
  - Chapter 7: Air Quality;
  - Chapter 8: Noise and Vibration;
  - Chapter 9: Wind Microclimate; and
  - Chapter 10: Daylight, Sunlight and Overshadowing.

2.35 Updated Major Accidents and Disasters and Human Health information for the 2022 amended proposed development have been provided in the corresponding replacement chapters of the 2022 Replacement ES.

[26] IEMA, 2020. Materials and Waste in Environmental Impact Assessment. IEMA

2.36 Standard best practice, mitigation and enhancement measures identified during the course of preparing these chapters were integrated into the 2021 proposed development as described in 2021 ES Chapter 4: Proposed Development Description and ES Chapter 5: Demolition and Construction Description. The same approach has been adopted for the 2022 amended proposed development with updated information provided in the corresponding replacement chapters of the 2022 Replacement ES.

2.37 In respect of air quality and noise and vibration, completed development effects on surrounding receptors were scoped out of the technical assessments on account of the 'car-free' nature of the 2021 proposed development and associated insignificant levels of predicted development traffic flows. However, for the 2022 amended proposed development, consideration has been given to the amended proposals in respect of Newcastle Place and a focussed road traffic assessment has therefore been undertaken of the amended traffic flows in this location for completeness.

Potentially Significant Issues

2.38 The potentially significant environmental issues that were identified during the EIA Scoping Process and which were addressed within discrete technical assessment chapters in the 2021 ES are as follows:

- Socio-Economics (Chapter 6, ES Volume 1);
- Air Quality (Chapter 7, ES Volume 1);
- Noise and Vibration (Chapter 8, ES Volume 1);
- Wind Microclimate (Chapter 9, ES Volume 1);
- Daylight, Sunlight, Overshadowing and Solar Glare (Chapter 10, ES Volume 1);
- Cumulative Effects (Chapter 11, ES Volume 1); and
- Townscape, Visual and Built Heritage (ES Volume 2).

2.39 Due to the similar scale and nature of the 2021 proposed development and the 2022 amended proposed development, these 'scoped-in' environmental issues remain valid and updated assessments are presented in corresponding replacement ES Chapters.

2.40 In respect of townscape, visual and built heritage, additional viewpoints and heritage receptors have been assessed in the updated EIA as requested by the GLA during post-submission consultations.

EIA Approach

Consideration of Alternatives

2.41 The EIA Regulations require that an applicant provides a summary description of reasonable alternatives studied and to provide a description of their specific characteristics, as well as an indication of the main reasons for selecting the preferred option, including a comparison of the environmental effects. The EIA Regulations do not define the term 'alternative' and EIA practice tends to consider alternative design proposals and to explain the process through which the 2021 proposed development and 2022 amended proposed development has evolved.

2.42 ES Chapter 3(R): Design Evolution and Alternatives explores the objectives of the 2022 amended proposed development and describes how the development proposals have evolved in response to environmental and planning opportunities and constraints, as well as pre-submission and post-submission consultation comments.

2.43 For the 2022 amended proposed development, the following alternatives have been considered:

- The 'Do-Nothing' alternative where the existing site condition remains in its underutilised state with no redevelopment; and
- Alternatives considered in the course of the design process (such as layouts and design) taking into account environmental and other relevant planning and design constraints as part of the design evolution.

Baseline

2.44 The purpose of the EIA is to predict how environmental conditions may change as a result of a proposed development and to specify any investigative measures to be taken and/or required. This requires that the current environmental conditions and those in the future, are established. This is referred to as the 'baseline' and is usually established through a combination of desk-based research, site survey and empirical studies and projections. Together, these describe the existing and future character of a site and the value and vulnerability of key environmental resources and receptors, against which any changes or effects resulting from a proposed development can be identified, understood and assessed.

2.45 For the updated EIA of the 2022 amended proposed development, the existing baseline represents the existing environmental conditions of the site and the surrounding study areas at the time of the assessments as described in ES Chapter 1(R): Introduction.

2.46 The technical assessments in ES Volume 1(R) (6(R)-10(R)), ES Volume 2(R) and ES Volume 3(R) provide a description of topic specific existing baseline conditions against which the 2022 amended proposed development has been assessed.

2.47 However, the 2022 amended proposed development has also been assessed against future baseline conditions as follows:

- For the air quality and noise and vibration assessments, consideration has been given to two projected environmental conditions in the future:
  - 2026, the year of the most intensive demolition and construction works, in terms of the number of traffic flows;
  - 2030, the projected year of completion of the 2022 amended proposed development, when the residential and non-residential areas would become fully occupied by sensitive receptors and would give rise to environmental effects; and
- For the socio-economics assessment, consideration has also been given to a future baseline of the first year of residential occupation (2028) in respect of school provisioning.

2.48 For the wind microclimate; daylight, sunlight and overshadowing; townscape, visual and built heritage assessments, consideration has been given to both existing and future baseline conditions.

2.49 The baseline conditions have been defined taking into consideration the completion status of immediately adjacent WEG and 14-17 PG developments being delivered by the Applicant and how these may affect conditions at the site (i.e. sources of sensitive receptors). This is explained in the scenario section of this chapter, but in summary the WEG development forms part of the existing baseline and the 14-17 PG development forms part of the 2026 and 2030 future baselines and have therefore been considered as off-site sensitive receptors.

2.50 The baseline conditions have been characterised by means of desk studies, site visits, surveys and modelling. As a result of the lockdown arising from the COVID-19 pandemic during the preparation of the 2021 ES, alternative methods were used to collect representative data, with more reliance placed on desk-based studies, which were considered equally robust. The data collection process is considered to remain robust as a basis for the updated EIA.

Receptors

2.51 Receptors that may be sensitive to potential environmental impacts as a result of the 2022 amended proposed development, can be summarised as follows, with further detail provided in respective technical assessments.

- Existing underlying geology and hydrogeology – primarily Principal and Secondary Aquifers;
- Existing soils;
- Existing water resources, in particular ground water, surface water features and public potable water supplies;
- Existing ecological receptors, in particular the immediately adjacent St Mary's Churchyard and Paddington Green Park Square Gardens Borough Grade II SINC;
- Future users of and visitors to the site and surrounding study area;
- Existing and future pedestrians at and around the 2022 amended proposed development;
- Existing off-site and future on-site non-residential occupants;
- Existing and future off-site residential properties including but not limited to:
  - WEG development;
  - 14-17 PG development;
  - Hall Place Estate, Church Street;
  - Residents along Edgware Road;
- Existing community facilities in proximity to the site including but not limited to:
  - Paddington Health Centre;
- Existing townscape character areas;
- Existing visual receptors and local and strategic views from publicly accessible locations such as roads, footpaths and open spaces;
- Existing above ground heritage assets such as listed buildings, registered parks and gardens, locally listed buildings and conservation areas, most notably those located within 500 m of the site (in particular the Paddington Green Conservation Area);
- Potential existing buried heritage assets on-site (in particular the Watling Street Tier II Archaeological Priority Area (APA) and Paddington Tier II APA);
- Existing open space, outdoor sport facilities and parks including, but not limited to:
  - Paddington Green;
  - St Mary's Churchyard and Paddington Green Park Square Gardens Borough Grade II SINC;
- Existing transport facilities, such as Wood Lane, Shepherd's Bush, and surrounding bus stops and associated users;
- Westminster Air Quality Management Area; and
- Demolition and construction workers.

Impact Assessment

Basis of EIA

2.52 In accordance with the EIA Regulations, the EIA has been undertaken based on the:

- site as shown and described in Chapter 1(R): Introduction, as well as the individual technical assessments (ES Chapters 6(R)-10(R)) of this Volume and ES Volume 2(R); and
- 2022 amended proposed development as shown and described in ES Chapter 4(R): 2022 Amended Proposed Development Description and Chapter 5(R): Demolition and Construction Description of this Volume.

2.53 The 2022 amended proposed development has been assessed in the EIA, as defined by the following documents and materials:

- Detailed planning application drawings;
- Detailed 3D model; and
- Detailed area schedule and residential unit mix.

2.54 In respect of the proposed area schedule it is noted that although planning permission is sought for use class E non-residential floorspace with its wide-ranging end uses, pre-application consultations with WCC and the GLA concluded that specific uses would be delivered namely flexible commercial space and community use. These uses would be secured by means of an appropriately worded planning condition.

Sources of Proposed Development Information

2.55 In addition to the above, information on the 2022 amended proposed development has been drawn from the following application documents, as appropriate:

- Application Covering Letter;
- Replacement Site Plan and Site Location Plan 1:1,250;
- Replacement Planning Statement (including Tall Building Assessment and Draft Heads of Terms);
- Site Survey (Levels);
- Replacement Design and Access Statement (including Inclusive Design Statement);
- Replacement Transport Assessment;
- Replacement Landscape Design and Public Realm Strategy (incl. biodiversity, ecology benefits and proposed lighting);
- Replacement Statement of Community Involvement;
- Replacement Energy Statement;
- Replacement Overheating Assessment;
- Replacement Sustainability Strategy (including BREEAM Pre-Assessment Report);
- Replacement Fire Statement;
- Replacement Ventilation and Extraction Statement;
- Replacement Drainage Strategy Report; and
- Replacement Foul Sewage and Utilities Statement.

Assessment Methodology

General

2.56 The aim of the EIA is not to assess the 2022 amended proposed development's compliance/performance against planning policy as this is considered within the Replacement Planning Statement that accompanies the application. Instead, reference has been made to national, regional and local policy to inform the scope of technical assessments, the assessment methodologies applied and the existence of any sensitive receptors to be considered. Detailed methodologies for the assessment of each of the environmental topic areas scoped into the EIA as discrete technical assessment chapters are provided within each replacement technical chapter of this ES Volume 1(R) and ES Volume 2(R); however, in general terms, the assessments have been based upon the following approach:

- Review of the existing conditions at the site and study area for the environmental topic area under consideration via various sources of existing information, data and reports;
- Desk-top studies;
- Site surveys;
- Consideration of relevant legislation;
- Consideration of relevant planning policies (national, regional and local), guidance and standards;
- Consultations with stakeholders and consultees as appropriate;

- Consideration of potentially sensitive receptors that could be affected by the 2022 amended proposed development;
- Use of published technical guidance and best practice;
- Use of quantitative and qualitative assessment methods, professional judgement and expert opinion;
- Identification of potential environmental impacts and likely effects, with an evaluation of their likely duration, magnitude and scale, taking into consideration embedded mitigation (where relevant); and
- Recommendation for additional mitigation and/or enhancement measures, followed by an assessment of the significance of the residual effects.

2.57 How the 2022 amended proposed development might affect the environment relies on predictions about what impact a certain action would have. Some predictions can be made using mathematical or simulation models, particularly where there are well known relationships between cause and effect. For example, the degree to which noise levels may increase as a result of additional traffic flows can be predicted using a mathematical equation. The level of air pollution from a known traffic flow can also be predicted from a computer-based simulation model. The visibility of a building can be predicted by accurately superimposing its outline and position over a photograph. Other impacts are less easy to predict in quantitative terms; for example, whilst the extent of a loss of a habitat can be measured, the effect on the abundance of individual species is more difficult to predict. In such cases, the EIA attempts to quantify the anticipated scale of impact using empirical experience, literature and professional judgement.

2.58 In all cases, the overall approach and specific methods of predicting the likely nature and magnitude of impact, as well as the scale of effect is set out in each of the technical assessments. Where used, recognised specific predictive methods are referenced. Any assumptions or limitations to knowledge are stated. In either case the thought process leading to the conclusions is based on reasonably reliable data and so is considered to be prudent and robust.

2.59 Where detailed information on the 2022 amended proposed development has not been available, reasonable assumptions have been made, and have been clearly set out, based on experience of developments of similar type and scale to enable assessment of likely significant effects.

2.60 The 2022 amended proposed development has not yet been approved so the conditional tense ('would') has been used to describe the development proposals, situations, potential impacts and likely effects that could/would arise from the introduction of the 2022 amended proposed development, as well as the mitigation measures that would be delivered or would be required upon approval. This approach does not lessen the Applicant's commitment to deliver the 2022 amended proposed development as presented within this 2022 Replacement ES. Furthermore, each technical assessment (and in particular summary tables at the conclusion of each chapter) clearly sets out the means by which any required mitigation measures relied upon, would be secured.

Proposed Development Stages

2.61 The EIA considers the following stages of the 2022 amended proposed development:

- Demolition and Construction Stage;
- Completed Development Stage; and
- Cumulative Stage.

2.62 The 2022 amended proposed development would comprises three buildings (Block I; J; and K). As discussed in ES Chapter 5(R): Demolition and Construction Description, the delivery of the buildings is proposed to be sequenced over a number of phases, with demolition delivered in Phase 0; site-wide substructure works, Block I, including associated hard and soft landscaping delivered in Phase 1; and Blocks J and K and associated hard and soft landscaping delivered in Phase 2. Each building would be occupied upon completion.

2.63 Assessment of the phased delivery of the 2022 amended proposed development has been undertaken in the demolition and construction stage assessment based on the information provided in ES Chapter 5(R): Demolition and Construction Description. Specifically, there is the potential for new on-site receptors, such as the residents of Block I, to be present on-site while construction works associated with Blocks J and K are ongoing. The potential impacts on these on-site receptors during construction have been taken into account during the assessment process and have been assessed in the relevant technical assessment chapters of this 2022 Replacement ES.

2.64 Despite the sequencing of delivery over phases, the demolition and construction programme for the 2022 amended proposed development would be continuous over a seven-year period. Construction activities associated with each phase would overlap, as detailed in the demolition and construction programme set out in ES Chapter 5(R): Demolition and Construction Description, and this has been accounted for in the technical assessments of the demolition and construction stage.

2.65 It is not anticipated that there would be a material delay (i.e. of more than 12 months) between the development phases. Accordingly, for the completed development stage, the EIA has assessed and reported on the operational environmental effects of the completed development as a whole, as it is not considered appropriate, reasonable or proportionate to undertake a phase-by-phase assessment of operational effects for the completed development stage. Assessment of the completed development as a whole is considered to be the reasonable worst-case.

2.66 Should the 2022 amended proposed development not be phased, the environmental effects would be no worse than reported in the completed development stage assessments of this 2022 Replacement ES.

Assessment Scenarios

2.67 As noted earlier, the assessment of the 2022 amended proposed development has been carried out against the existing baseline conditions as described in ES Chapter 1(R): Introduction, technical assessment chapters and supplemented by relevant existing and updated surveys.

2.68 However, in accordance with standard practice, ES Chapter 6(R): Socio-Economics, ES Chapter 7(R): Air Quality and ES Chapter 8(R): Noise and Vibration have carried out their assessments against 'future baseline' scenarios for the demolition and construction stage and completed development stage.

2.69 These scenarios have been informed by the existing WEG and future 14-17 PG developments immediately to the north and north-west of the site. The defined baseline conditions have therefore accounted for these two schemes, especially as the delivery programmes for the two schemes are under the control of the Applicant and therefore benefit from a greater level of certainty. This was confirmed in the consultations undertaken with Avison Young.

2.70 The future baseline for the demolition and construction stage is the year of the most intensive demolition and construction works, in terms of the number of traffic flows, as set out in ES Chapter 5(R): Demolition and Construction Description.

2.71 Accordingly, the following assessments scenarios have been considered:

- **Scenario 1:** Existing Baseline (2022) (including the completed and occupied Paddington Exchange and WEG Blocks A to F developments)
- **Scenario 2:** Future Baseline (2026) year of peak construction (including completed and occupied cumulative scheme at 14-17 PG Blocks G + H[27]) + 2022 Amended Proposed Development; and
- **Scenario 3:** Future Baseline (2026) + 2022 Amended Proposed Development + Cumulative Development.

[27] As indicated in Chapter 5(R), on-site enabling, demolition and construction works are likely to commence Q3 2023. As indicated in Chapter 1(R),14-17 PG is expected to be fully completed and occupied by Q2 2026. To account for potential earlier phased occupation of 14-17 PG and adopting a worst-case, it has been assumed that 14-17 PG would be fully occupied by the time that enabling, demolition and construction works commence on-site.

2.72 The future baseline for the completed development stage comprises the year in which the 2022 amended proposed development would be fully completed, occupied and operational.

2.73 Accordingly, the following assessment scenarios have been considered:

- **Scenario 1:** Existing Baseline (2022) (including the completed and occupied Paddington Exchange and WEG Blocks A to F schemes);
- **Scenario 2:** Future Baseline (2030) (including the completed and occupied cumulative scheme at 14-17 PG Blocks G + H); and
- **Scenario 3:** Future Baseline (2030) + 2022 Amended Proposed Development; and
- **Scenario 4:** Future Baseline (2030) + 2022 Amended Proposed Development + Cumulative Development.

Mitigation

2.74 Mitigation is the term used to refer to the process of avoiding where possible and, if not, reducing, controlling and/or off-setting the likely significant adverse effects of a development. Mitigation measures relate to the design stage; the demolition and construction stage; or the activities associated with the completed development.

2.75 As part of the EIA, an iterative approach has been adopted where significant environmental effects have been avoided where possible in the first instance through the design refinements and iterations, as reported upon within Chapter 3(R): Alternatives and Design Evolution of this ES. Where adverse environmental effects were identified through early assessment work, opportunities to reduce or control impacts and effects, or in some cases, to compensate for impacts and effects, were identified and incorporated into the 2022 amended proposed development. In addition, opportunities to enhance the beneficial environmental effects of the 2022 amended proposed development have also been sought and incorporated into the 2022 amended proposed development. These are referred to as 'embedded' mitigation.

2.76 Within each technical chapter of this 2022 Replacement ES, the assessment of the effects that are likely to arise as a consequence of a potential impact/change to environmental receptors from the 2022 amended proposed development is initially presented. If any additional mitigation measures are required, further to that already embedded into the 2022 amended proposed development throughout its evolution, these are proposed, and the 2022 amended proposed development is reassessed to ascertain the likely residual effects and the likely significant environmental effects. This is reported on within each technical assessment of the 2022 Replacement ES.

2.77 In all cases, mitigation measures are presented as embedded, specific commitments or statements of fact. It is anticipated that the implementation of mitigation identified throughout the 2022 Replacement ES, would be secured by means of approval of the planning drawings, appropriately worded planning conditions, planning obligations secured pursuant to section 106 of the Town and Country Planning Act 1990, the collection of any applicable community infrastructure levy (CIL) or through other statutory and building control regimes. Where the need for mitigation is identified, each assessment confirms how the mitigation will be secured.

Impacts and Effects

2.78 Unless otherwise required by published assessment guidance (air quality), the EIA has made distinction between:

- impacts: the change or action; and
- effects: the result/consequence/outcome of the change.

2.79 As a general rule, the EIA assesses the effects that are likely to arise as a consequence of a potential impact/change to environmental receptors following the application/consideration of embedded mitigation measures.

2.80 A range of likely effects have been considered - including direct or indirect (or secondary) and cumulative:

- Direct effects are those which arise as a direct consequence of a project action, e.g. the loss of habitat or the run-off of surface water to a watercourse;
- Indirect effects include, for example, the decline in the abundance of a species as a result of the loss of habitat or the damage to aquatic vegetation as a result of water pollution. Other common examples include the effect on air quality and ambient noise as a result of increased traffic flows; and
- Intra- and inter-project cumulative effects are those that could arise concurrently (refer to Cumulative Effects section later in this chapter).

2.81 Furthermore, consideration has been given to the temporal and spatial nature of effects including permanent or temporary; reversible and irreversible; short-, medium- or long-term; local, borough, regional, national levels. In the context of the 2022 amended proposed development, temporary (short- and medium-term) effects would be typically those associated with the demolition and construction works, and permanent (long-term) effects would typically be those associated with the completed and operational development.

2.82 Typically, local effects would be those affecting receptors neighbouring the site, while effects upon receptors within the wider study area are assessed at a borough level (i.e. City of Westminster). Regional effects would be those affecting receptors within Greater London. Effects upon different parts of the country, or England as a whole, are considered to be at a national level and effects across national boundaries would be considered at an international level (albeit there are no such effects at national or international level).

Significance

2.83 The assessment of residual environmental effects is important in that it informs the determination by the relevant planning authority of the overall acceptability of a proposed development. Determining significance relies on accepted thresholds and criteria where available or, for situations in which such are not available, expert interpretations and value judgments.

2.84 Significance is usually a function of the vulnerability/sensitivity, value or importance of the resource affected (receptor), the magnitude of the potential impact and the scale of the effect. Importance might be a function of international designation or local relevance. Thus, significance is a concept that can be applied objectively to individual effects.

2.85 Throughout this 2022 Replacement ES the same terminology has been used to describe these individual effects, unless specific alternative terminology exists in recognised issue specific guidance, for example in ES Chapter 7(R): Air Quality.

2.86 Within this 2022 Replacement ES, significance has been evaluated with reference to definitive standards, accepted/published criteria and legislation, where available. Where it has not been possible to quantify potential impacts and residual effects, qualitative assessments have been carried out, based on expert knowledge and professional judgement. Where uncertainty exists, it has been noted in the relevant assessment and a prudent or conservative approach adopted so that the significance will not be under-estimated.

2.87 Specific typical conventions have been developed to define significance, wherever possible, defined and structured as transparently as possible using the following criteria:

- The sensitivity of the receptor to the change or potential impact, based on a rating of high, medium and low;
- The magnitude of the potential impact, based on a rating of high, medium, small/low and unknown;
- The scale of the effects based on a rating of negligible, minor, moderate, major;
- The likelihood of the effect occurring, based on a rating of certain, likely or unlikely;
- The duration of the effect, based on a rating of long-, medium- and short-term;

- The geographical extent of the effect at local, borough, regional, national and international levels; and
- The reversibility of the effect, being either reversible or irreversible.

2.88 Unless indicated otherwise within a technical assessment, the duration of the effect has been defined as follows:

- Short-term: up to 5 years;
- Medium-term: 5-10 years; and
- Long-term: 10 years +.

2.89 In order to provide a consistent approach to the presentation of effects, the following terminology has been used to describe the type/nature of residual effect:

- **Adverse** - detrimental or negative effect to an environmental resource or receptor;
- **Neutral** - an effect that on balance, is neither beneficial nor adverse to an environmental resource or receptor OR an effect that is equally beneficial and adverse to an environmental resource or receptor[28]; and
- **Beneficial** - advantageous or positive effect to an environmental resource or receptor.

2.90 The scale of the predicted effects has been classified according to the following semantic scale:

- **Negligible[29]** - imperceptible effect;
- **Minor** - slight, very short or highly localised effect;
- **Moderate** - limited effect (by magnitude, duration, reversibility, value and sensitivity of receptor) which may be considered significant; and
- **Major** - considerable effect (by magnitude, duration, reversibility, value and sensitivity of receptor) which may be more than of a local significance or lead to a breach of a recognised environmental threshold, policy, legislation or standard.

2.91 There are some exceptions to the conventions and terminology described above for certain topic specific assessments. For example, the Air Quality assessment uses 'slight' instead of 'minor' and 'substantial' instead of 'major' to define air quality impacts and does not apply a scale to the reported effects, instead concluding whether the effects would be significant or not in accordance with the Institute of Air Quality Management(IAQM) and Environment Protection UK (EPUK) Guidance. Also, the TVBHIA uses 'Nil' and 'None' in respect of impacts and effects. This is set out in the relevant technical assessments.

2.92 The scale of effects is typically determined through the use of matrices and the application of professional judgement. However, the use and interpretation of matrices rely on the judgement and discretion of the particular technical specialist. Accordingly, a fixed/set/generic matrix has not been adopted for the EIA as a whole.

2.93 The specific benchmarks have been established by the project team using available national, regional and local policy together with other relevant guidance, recognised best practice and expert judgement. The development of these benchmarks is explained in more detail in each assessment or technical appendix.

2.94 Throughout the 2022 Replacement ES, residual effects have been predicted as either '**significant**' or '**not significant**'. Significant effects are considered material to the planning decision process. Residual effects of moderate and major scale are typically considered significant, but would be dependent on the relevant technical assessment, as well as the existence of published assessment guidance. Where published assessment guidance is not definitive in respect of categorising/determining significant environmental effects, professional judgement has been applied, taking into account the duration, extent and context of the effect, to determine significant effects.

Cumulative Assessment

2.95 The EIA Regulations require that all likely significant effects of a development are taken into account, including cumulative effects.

2.96 There is no prescriptive guidance on the methodology for the assessment of cumulative effects. However, the Institute of Environmental Management & Assessment (IEMA) Guidance[30] identifies two types of cumulative effects:

- Type 1 - **Intra Project Effects**: Combined effects of different types of impact or 'impact interactions', for example the multiplying effects arising from noise, dust and visual impacts during the construction of the 2022 amended proposed development on a particular sensitive receptor; and
- Type 2 - **Inter Project Effects**: Combined or additive effects generated from the 2022 amended proposed development together with other existing or approved projects and also referred to as 'in-combination effects'. These other developments may generate their own individually insignificant effects but when considered together could result in significant cumulative effects, for example, combined transport and accessibility impacts from two or more (proposed) developments.

Intra-Project Cumulative Effects

2.97 As mentioned above, there is no established EIA methodology for assessing and quantifying the intra-project cumulative effects of individual effects on sensitive receptors. Therefore, Ramboll has developed an approach which uses the defined residual effects of the 2022 amended proposed development to determine the potential for effect interactions and so the potential for intra effects of individual effects.

2.98 Intra-project cumulative effects from the 2022 amended proposed development itself on existing off-site and future on-site sensitive receptors during the demolition and construction works and also once the 2022 amended proposed development is completed, have been considered. It is possible however, that depending on the predicted individual 'completed developments' effects, only the demolition and construction work effects would actually be considered as often they generate the greatest likelihood of interactions occurring and hence significant effects. Indeed, demolition and construction effects are usually more adverse (albeit on a temporary basis) than effects as a result of a completed development.

2.99 Dependent on the relevant sensitive receptors, the assessment focusses either on key individual receptors or on groups considered to be most sensitive to potential interacting effects. The criteria for identifying those receptors which are considered to be potentially sensitive include existing land uses, proximity to the demolition and construction works and the site, and likely duration of exposure to impacts.

2.100 It should be noted that only residual effects that are minor, moderate or major in scale have been considered within this assessment, as negligible effects are, by definition, imperceptible in their nature. Due to the 'cross-boundary' and 'overlapping' nature of these effects across various environmental topics, and the assessment approach adopted, the results of intra-project cumulative effects are holistically presented within a discrete assessment chapter (ES Chapter 11(R): Cumulative Effects) and not within each of the technical assessment chapters. This avoids unnecessary duplication and repetition and presents a proportionate approach.

[28] In respect of the TVBHIA it is possible for Neutral residual effects to be classed as 'significant' for situations in which the 'net equation' of beneficial and adverse impacts considered together results in an overall effect which is neither beneficial or adverse on balance (e.g. due to their guidance, a townscape and visual impact assessment can result in a 'moderate neutral' effect, which would be classed as 'significant').

[29] Negligible can also be used in isolation when achieving a particular threshold, absolute value or target criteria.

[30] Institute of Environmental Management and Assessment. The State of Environmental Impact Assessment Practice in the UK. 2011.

2.101 With regard to the potential for cumulative effects to occur, it is anticipated that standard mitigation measures as detailed in ES Chapter 5(R): Demolition and Construction Description of this Volume can be applied to prevent temporary significant effects from the interaction of effects occurring on-site. It is also anticipated that a site-specific Construction Environmental Management Plan (CEMP) would be secured by means of an appropriately worded planning condition.

Inter-Project Cumulative Effects

2.102 The EIA Regulations require an assessment of potentially significant cumulative effects of a proposed development along with other 'existing and/or approved projects'. There are no legislative or policy requirements which set out how an inter-project cumulative impact assessment should be undertaken.

2.103 Accordingly, inter-project effects arising from the 2022 amended proposed development in combination with, or in addition to, 'cumulative schemes' during the demolition and construction works and also once the proposed development is complete, have been considered in the EIA.

2.104 Each technical assessment presents the combined effects of the 2022 amended proposed development together with relevant/qualifying cumulative schemes, with the exception of the Replacement Townscape, Visual and Built Heritage Impact Assessment which considers the effects of the 2022 amended proposed development in addition to the relevant/qualifying cumulative schemes.

2.105 Schedule 4 of the EIA Regulations states that only schemes which are existing and/or approved should be considered, i.e. schemes built or under construction or with a planning permission.

2.106 Spatial considerations and scale of development criteria has been developed based on professional judgement to determine whether cumulative schemes have the potential for cumulative effects when combined with the proposed development's effects. The criteria applied to the cumulative schemes is those which:

- Either: are consented/approved or have resolution to grant or are currently at early stage of demolition/construction; and
- Have a total floor space area of 10,000 m^2 GEA in floor area or would give rise to >150 residential units; and
- Either:
  - Within 1 km of the redline boundary/site; or
  - Spatially linked to the site by means of the local road network; or
  - visible in protected/important views to and from the site.

2.107 A list of cumulative schemes for consideration in the inter-project cumulative effect assessment of the 2021 amended proposed development was presented to WCC as part of the EIA Scoping Opinion Request Report in 2021 (ES Volume 3(R): Technical Appendix 2.1). Following the EIA Scoping Process, including consultations with Avison Young , the agreed list was maintained and updated to account for the status of each scheme and any new potential, qualifying schemes. The following approach was adopted:

- Those schemes which have been completed and form part of the existing baseline, were removed from the cumulative schemes list:
  - Three Merchant Square - 10/09758/FULL;
  - Paddington Exchange (North Wharf Gardens) Phase 1 West - 12/11911/FULL, S73 - 14/09037 /FULL, S73 - 16/03632/FULL;
  - Dudley House (North Wharf Road and 139-147 Harrow Road) - 15/11458/COFUL;
  - 55-65 North Wharf Road - 14/10648/FULL;
  - Paddington Exchange (North Wharf Gardens) Phase 2 East - 13/11045/FULL, S73 - 16/12289 /FULL;
  - Crossrail Paddington Station Eastbourne Terrace - 11/05349/XRPS; and
  - Warner Stand Redevelopment - 13/12002/FULL; and
  - Lords Cricket Ground – Compton and Edrich stands redevelopment - 18/08510/FULL[31].

2.108 The cumulative schemes have been quantitatively assessed on a topic-by-topics basis, subject to the availability of scheme information in the public domain. Where information was not available, or schemes do not comply with the above criteria, qualitative approaches were adopted based on professional judgement.

2.109 Each technical assessor was reviewed the list and has included within their individual technical assessment those cumulative schemes which have the potential for cumulative effects. Where a cumulative scheme has been excluded, this has been clearly stated within each technical chapter with reasons why.

2.110 The location of the cumulative scheme considered in the EIA is shown in Figure 2.1 and the description of each cumulative scheme, is summarised in Table 2.2.

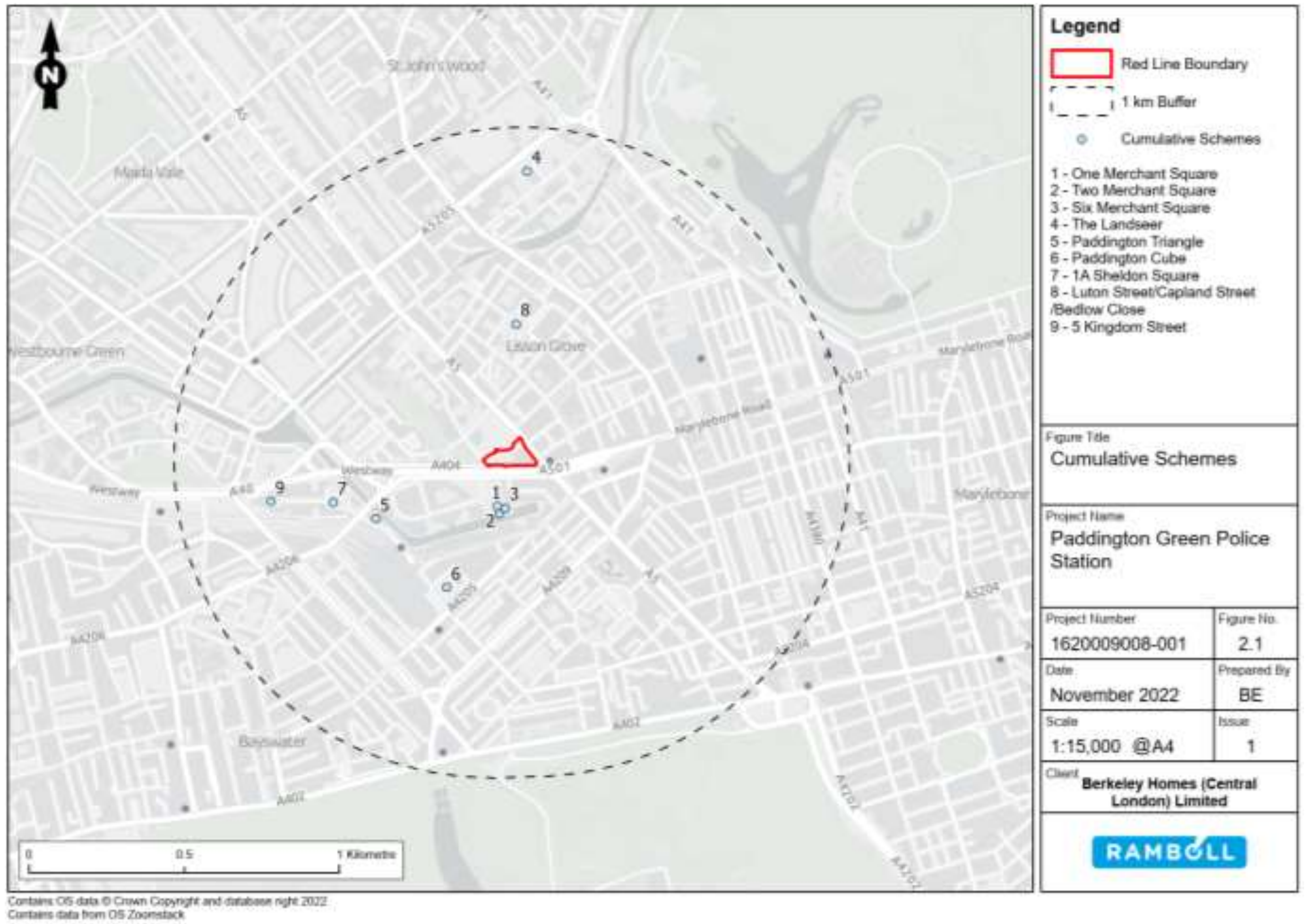


Figure 2.1: Cumulative Schemes Location

[31] It is noted that in respect of the cumulative wireline AVRs of the replacement townscape, visual and built heritage assessment, the completed schemes of North Wharf Gardens, Crossrail Paddington and Lords Cricket Ground have been retained as part of the cumulative schemes list as the baseline photography is of an age where the schemes are at varying stages of construction, and therefore for completeness they have been retained.

Table 2.2: Cumulative Schemes Description

No.	Scheme	Planning Application Description	Consent Status
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 grant. Subject to S106 being signed.

	One Merchant Square
	10/09756/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 42 storey building;
		• A maximum of 222 market residential units (and no less than 213 residential units) (Class C3) comprising:
		  • 49 one bedroom units;
		  • 91 two bedroom units;
		  • 79 three bedroom units; and
		  • 3 four (+) bedroom units.
		• A 90 room boutique hotel (Class C1) (totaling 8,040 m^2 GIA);
		• Provision of basement parking to deliver:
		  • 133 car parking spaces; and
		  • 232 cycle spaces.
		• Provision of servicing and ancillary space, highway works, new vehicular and pedestrian access and associated hard and soft landscaping.
			Granted – Signed S106.
			
			Implemented.

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;
		• 20,775 m^2 of office floorspace (Class B1);
		• 396 m^2 of retail floorspace (Class A1/A2/A3/A4/A5);
		• Provision of basement parking to deliver:
		  • 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.
			Granted – Signed S106.
			Construction started 31/08/2015.

Table 2.2: Cumulative Schemes Description

No.	Scheme	Planning Application Description	Consent Status

3	Six Merchant Square
	11/10445/FULL
	
	Refer to scheme 1 for revised proposal under 18/05018/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 15 storey building;
		• 57 market residential flats and 62 affordable residential flats (Class C3) comprising:
		• Market housing;
		  • 4 one bedroom units;
		  • 29 two bedroom units; and
		  • 24 three bedroom units.
		• Affordable housing;
		  • 21 two bedroom units;
		  • 16 three bedroom units;
		  • 3 four (+) bedroom units;
		• 583 m^2 GIA retail floorspace (Class A1/A2/A3/A4/A5)
		• 811 m^2 GIA medical centre (Class D1);
		• Provision of basement parking to deliver:
		  • 51 car parking spaces; and
		  • 152 cycle spaces.
		• Provision of servicing and ancillary space, highway works, new vehicular and pedestrian access and associated hard and soft landscaping.
			Granted – Signed S106.
			Implemented.
			
			18/05018/FULL has resolution to grant subject to S106 being signed.

4	The Landseer 38-44 Lodge Road
	09/09773/FULL
	14/04393/FULL
	15/00529/FULL
	S73 – 15/02673/FULL
		Demolition of existing buildings and redevelopment to include:
		• Erection of buildings between 5 and 12 storeys;
		• 129 residential units (Class C3) providing 17,594.3 m^2 GIA) comprising:
		Market housing;
		  • One studio unit;
		  • 15 one bedroom units;
		  • 36 two bedroom units;
		  • 19 three bedroom units; and
		  • 10 four (+) bedroom units.
		Affordable housing;
		  • 24 one bedroom units;
		  • 18 two bedroom units; and
		  • 5 three bedroom units.
		• Provision of basement parking to deliver;
		  • 103 car parking spaces; and
		  • 258 cycle spaces.
		• Ancillary leisure and gym facility; and
		• Associated landscaping and ancillary works.
			Granted – Signed S106.
			Commenced construction.
			Part implemented to preserve 2015 planning permission.

Table 2.2: Cumulative Schemes Description

No.	Scheme	Planning Application Description	Consent Status
	36 St John's Wood Road 38-44 Lodge Road 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. • 26,000 m^2 proposed; • 89 extra care residential (C3); • 7,494 m^2 care home (C2); and • 1,8553 m^2 affordable residential (C3).	Consented - April 2020 at appeal. Under construction.
5	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: • Erection of a 21 storey building; • 34,184 m^2 GIA office space (Class B1); • 132 m^2 GIA retail space (Class A1/A2/A3); and • Provision of associated landscaping and other associated works.	Granted – Signed S106.
6	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 m^2 (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	Granted – Signed S106. Under construction (July 2019).
7	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 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.	
8	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 development.	Consented March 2019. Under construction.

9	5 Kingdom Street
	19/03673/FULL
		Full planning permission for the erection of a mixed-use development comprising ground floor (at Kingdom Street level) plus 19 storeys to provide offices (B1a) and retail (A1/A3) plus plant and amenity areas at roof level. Three floors below Kingdom Street delivered in phases to provide an auditorium (Sui Generis), and a flexible mix of business (B1a), retail (A1/A3/Sui Generis), sport and leisure (D2), exhibition/conference (D1/Sui Generis) uses and a community and educational space (D1) 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.
		Scheme comprises the following (GIA):
		• Office (including internal ancillary space) (B1a): 48,264 m^2
		• Flexible retail (A1/A3): 265 m^2
		• Flexible retail/office use (A1/A3/B1a):723 m^2
		• Public Garden' incl. cafe/bar (*Sui Generis*): 1,635 m^2
		• Flexible mix of commercial/leisure/cultural uses: Restaurant (A3); Market Hall (*Sui Generis*); Conference/Exhibition space (D1/*Sui Generis*); Cinema (D2); Gym/sports (D2): 3,390 m^2
		  • (Restaurant/Market hall: combined, would make up to a maximum of 100 % of total area;
		  • Conference/Exhibition space: would make up to a maximum of 100% of total area;
		  • Cinema: would make up no more than 50 % of total area; and
		  • Gym/sports: would make up no more than 50 % of total area.
		• Affordable Workspace (B1a): 3,900 m^2
		• Education and community space (D1): 100 m^2 (to be connected to facilities within the affordable workspace)
		• Auditorium (*Sui Generis*): 738 m^2
			Refused by WCC but subsequently called in and granted by the GLA.
			Decision notice 01 March 2021.

Table 2.2: Cumulative Schemes Description			
No.	**Scheme**	**Planning Application Description**	**Consent Status**
		• Mixed Use Ancillary (plant, servicing, etc.): 6,913 m^2 Total: 65,928 m^2	

2.111 Where possible, the status of cumulative schemes' construction works have been taken into account. For example, where construction has progressed to a material degree, such as to affect local views, wind microclimate, daylight and sunlight, such schemes have been considered as part of the existing baseline. However, for the purposes of socio-economics, occupancy levels would not be available in the public domain and therefore such schemes have continued to be considered as cumulative schemes.

2.112 In addition to the above cumulative schemes, consideration was also to the following two schemes to the north of the site:

- WEG development (16/12162/FULL); and
- 14-17 PG development (18/08004/FULL and associated Listed Building Consent 18/080110/LBC and subsequent S73 application 22/03790/FULL) which forms an overlap to/extension of the WEG development, replacing Blocks G and H of WEG.

2.113 Both of these schemes fall under the control of the Applicant and therefore their development programmes have been used to inform the defined existing and future baselines scenarios as discussed earlier.

Assumptions and Limitations

2.114 The principal assumptions that have been made, and any limitations that have been identified, in undertaking the EIA are set out below. Assumptions specifically relevant to each environmental topic have been set out in each technical assessment of the ES.

- Baseline conditions have been established from a variety of sources, including historical data, but due to the dynamic nature of certain aspects of the environment, conditions at the site and surrounding land uses may change;
- The assessments contained within each of the technical assessments of ES Volume 1(R) and within ES Volume 2(R) are based on the current legislative and policy framework, having regard to emerging policies and legislative changes;
- It is assumed that information received from third parties is accurate, complete and up to date;
- The assessments contained within each of the technical assessments of ES Volume 1(R) and within ES Volume 2(R) are based upon the application drawings submitted;
- The assessments contained within each of the ES Volume 1(R) technical assessments and in ES Volume 2(R) are based on the assumption that embedded mitigation measures set out in the application drawings, through regulatory regimes or via the management controls as set out in ES Chapter 4(R): 2022 Amended Proposed Development Description and ES Chapter 5(R): Demolition and Construction Description are implemented;
- The assessments contained within the ES Chapter 7(R): Air Quality and ES Chapter 8(R): Noise and Vibration are based on industry-average specifications for construction, mechanical and services plant as project-specific details will be finalised during the construction planning and procurement stages;
- Construction works across the site would take place substantially in accordance with the phasing and programme of works described in Chapter 5(R): Demolition and Construction Description;
- Cumulative Schemes will be implemented substantially in accordance with information that is publicly available or that has been provided to the Applicant, and subject to the same regulatory regimes and good practice management controls;
- Assessments have assessed the existing baseline conditions at the time of the Replacement ES preparation (2022) unless otherwise stated in the technical chapter. However, due to the ongoing impacts of the COVID-19 pandemic, pre-COVID-19 data has also been used to compare and supplement collected data. In respect of transport, the data presented is the best information available, given traffic surveys were not possible during preparation of the 2021 ES because of the COVID-19 lockdown situation and 2022 traffic levels are still not considered to be representative of 'normal' conditions. Accordingly, transport data has been derived by adopting the following approach:
  - 2015 Baseline Traffic Flows have been taken from the WEG EIA (planning ref: 16/11562/FULL).
  - DfT traffic data over time has been reviewed. This was available for Edgware Road and Westway. The data shows that traffic flows have not increased since 2015.
  - Background traffic growth is generally not expected in Central London locations. On this basis, no TEMPRO growth has been applied to future year scenarios. Traffic growth has been accounted for by applying traffic from cumulative schemes in the local area.
  - For the A40 Westway, baseline flows taken from 2019 DfT count data (surveys not undertaken as part of WEG EIA).
- It is widely acknowledged the COVID-19 pandemic has seen an increased prevalence of home-working and reduced traffic, noise and emissions. It is not possible to predict what may change in the future, so it is considered that assessments based on or supplemented by pre-COVID-19 baseline assessments are reasonable and representative. The main difference would be to traffic flows, where pre-COVID-19 baselines are worse, and therefore the assessments are based on reasonable worst-case scenarios.

Technical Assessment Chapters

2.115 A consistent approach to the presentation of EIA findings in the 2022 Replacement ES has been adopted for each of the technical assessments, including:

- an explanation of the information gathering and assessment methodology, including a review of policy and legislative requirements of relevance to the specific technical area;
- a description of the baseline conditions;
- the identification and assessment of the potential impacts and likely effects arising during the demolition, construction and operation of the 2022 amended proposed development taking into account any embedded mitigation measures;
- a description of additional opportunities for mitigation or enhancement to reduce the significance of any adverse environmental effects, including the requirements for post-development monitoring; and
- an assessment of the residual environmental effects and an evaluation of their significance against defined criteria.

2.116 Each environmental topic considered in the EIA has been assigned a separate chapter in ES Volume 1(R) (Chapter 6(R)-10(R) inclusive) with the exception of the Replacement Townscape, Visual and Built Heritage Impact Assessment which is presented separately in ES Volume 2(R). Within each technical chapter the assessment is presented and reported in the following format:

- Introduction – a brief introduction to the assessment;
- Methodology – an overview and review of policy and legislative requirements of relevance to the specific technical area, a summary of consultation undertaken, an outline of the technical, spatial and temporal scope of the assessment, a description of the methods undertaken to characterise the baseline, as well as an explanation of the approach to defining the significance of likely environmental effects;
- Baseline Conditions – a description of the baseline conditions;

- Assessment of Effects – an assessment of the likely significant effects of the 2022 amended proposed development and an evaluation of their significance against defined criteria taking into account embedded mitigation;
- Assessment of Residual Effects – a description of the additional mitigation, if required and then an assessment of the likely residual effects of the 2022 amended proposed development;
- Summary of Residual Effects;
- Cumulative Effects – cross reference to the intra-cumulative effects assessment in ES Chapter 11(R) and an assessment of inter-project cumulative effects; and
- Summary.

3(R) ALTERNATIVES AND DESIGN EVOLUTION

Introduction

3.1 The EIA Regulations require the ES to report on the reasonable alternatives (for example in terms of design, technology, location, size and scale) studied by the Applicant, 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.

3.2 This chapter of the ES therefore explores the objectives of the 2022 amended proposed development, its design evolution and the reasonable alternatives considered. In doing so, the chapter considers the analysis of the site and existing environmental conditions which informed the design evolution of the 2022 amended proposed development. The 'Do Nothing' scenario is also addressed. Throughout the design process there has been regular consultation with the WCC and the GLA, TfL and other key stakeholders. In addition, the Applicant has undertaken a comprehensive community engagement programme which has also informed the design process.

3.3 The chapter reports on both the pre-application submission (prior to submission of the application to WCC in April 2021) and post-application submission stages taking into account the amendments to the 2021 proposed development that have been incorporated following post-submission consultations with the GLA.

3.4 Further details can be found in the Design and Access Statement and the SCI which accompanies the application.

Development Objectives

3.5 The 2022 amended proposed development aims to realise the comprehensive redevelopment of the site in order to meet the development aspirations set out within local and regional policies, but more importantly to complete the wider West End Gate (WEG) masterplan development (including the 14-17 PG scheme).

3.6 The specific development objectives for the 2022 amended proposed development are to deliver:

- the urban regeneration of brownfield land;
- the repurposing and redevelopment of surplus public sector land;
- high quality new homes offering a good mix of different unit sizes and layouts that are appropriate to the local area;
- a mixed-use scheme that enhances the vibrant local community;
- commercial units, restaurants, and cafes which open onto new, high quality public realm and animates the local area;
- improved permeability and accessibility across the site;
- high quality, landscaped open space for local residents; and
- high quality architectural design and buildings of appropriate scale and massing for the local area.

3.7 The integration of the 2022 amended proposed development within the wider WEG masterplan serves to enhance the above objectives and to deliver a fully co-ordinated development that maximises efficiencies; that delivers a coherent response to Paddington Green and the Paddington Green Conservation Area (CA); and that delivers an enhanced open space offer on-site.

Policy Considerations

3.8 The development considerations for the site are set out in the following planning policy and guidance documents at national, regional and local levels:

- NPPF (2021) and PPG (continuously updated);
- London Plan (March 2021);
- Westminster City Plan (April 2021); and
- Supporting SPGs and SPDs (regional and local), guidance and standards.

3.9 Development considerations for the site are set out in these adopted and emerging planning documents and have informed the design of the 2022 amended proposed development.

3.10 Throughout the pre- and post-application submission design processes, which included public consultation; engagement with WCC, the GLA, the London Review Panel and other stakeholders; and consideration of formal consultation responses and representations, a range of issues were identified which influenced the final layout, height and use of the 2022 amended proposed development. The design process has therefore been an iterative one, as the design team has sought to respond to the issues raised. This has produced 'alternatives' or different ways in which the development objectives could be feasibly achieved on-site.

3.11 The sections below outline some of the key environmental factors that influenced the design of the 2022 amended proposed development.

Site Design Considerations

3.12 The following site considerations informed the design process:

- The WEG development to the north which sets a design language and context for scale and height, with the tower at 30 storeys tall.
- The high quality urban realm incorporated into the wider WEG masterplan which offers an opportunity to extend an urban oasis into the site and surrounding streetscape.
- The Church Street Market and wider community to the east which brings a vibrant diverse existing community for PGPS to feed into, and WCC's associated masterplan for the redevelopment of a number of sites within Church Street.
- The south-eastern corner of the site, which is constrained by the existing TfL London Underground Line (LUL) zone of influence at the junction of Edgware and Harrow Road.
- The Paddington Basin which sets a context for height and mass to the south of the site, with One Merchant Square being the highest point at 42 storeys.
- The Paddington Green CA, the boundary of which overlaps with the northern half of Newcastle Place at its western end as shown in Figure 3.1.
- The Paddington Green open space, which is a key amenity and ecological feature on the western site boundary.
- Newcastle Place which dissects the site on the east/west axis and is utilised as a service road, limiting the extent of pedestrian and cycle use.

3.13 The existing site suffers from poor quality urban realm and broken streetscapes that are a result of the Police Station use providing no street activation, little green landscape spaces and poorly designed subways connecting to the south of the A40 and traversing the hostile street level environment for

pedestrians. Combined, these features contribute very little to the activity and pedestrian movement at ground floor level. The solid Police Station facades also prevent any permeability of the urban block due to the previous high security function of the Police Station, resulting in Newcastle Place being used as little more than a service road.

Environmental Considerations

Socio Economics

3.14 The site is located within Little Venice Ward within the City of Westminster (CoW), within the Central Activity Zone (CAZ), in proximity to the Church Street/Edgware Road Housing Renewal Area, and adjacent to the Edgware Road/Church Street district shopping centre.

3.15 The population at local site level comprises a relatively high proportion of working age residents (73.6 %) and a correspondingly low population of dependent residents (children and older people).

3.16 There are 16 primary schools located within 1.6 km (1 mile) of the site. In addition, there are eight secondary schools located within 3.2 km of the site. There is also a good spread of health facilities locally, with 20 GP surgeries within 1.6 km of the site; although the most up-to-date NHS capacity data indicates a local deficiency in available capacity.

3.17 The site is in an area that is deemed by the WCC to have sufficient open space and access to public playspace. Paddington Green, which is a publicly accessible green space, is located immediately to the west of the site.

3.18 The site is located within the Mayor of London's Edgware Road Housing Zone which includes some of the most deprived areas in London.

3.19 Redevelopment of the site would provide opportunities to contribute to the regeneration of a brownfield site and to satisfy the demand for residential-led mixed-use development in the CoW. From early on consideration was given to the delivery of affordable housing, the on-site provision of open space and leisure facilities for the newly introduced residential population, as well as on-site play space for 0-5 and 5-11 year olds. In this way, socio-economic factors were considered as part of the evolution of the redevelopment proposals for the site.

Ground Conditions

3.20 To inform the emerging design, desk-based reviews of the site and its immediate surroundings were undertaken using third party and publicly available data. This data together with a site visit in September 2020 confirmed that:

- ground conditions at the site comprise Made Ground underlain by Langley Silt Member (Clay and Silt), London Clay Formation;
- there is a potential for ground contamination from previous uses at the site and within the surrounding area. In particular it is understood that the previous Police Station was served by at least two oil tanks located within the basement; and
- materials could contain amounts of asbestos which would be a possible contamination source when the ground is disturbed during the works.

3.21 On this basis, the site is typical of a brownfield development site in London in terms of ground contamination potential. Further site investigations would be undertaken in advance of the redevelopment works to inform the preparation of an appropriate remediation strategy for the site. Made Ground would be removed as part of the proposed basement excavation, which would reduce the risk of dissolved metals, such as nickel, leaching out of the soil and enable the removal of any contaminated on-site material.

3.22 Accordingly, contamination was carefully considered in the preliminary foundation and piling options, the potential for re-use of on-site material and the preparation of a CEMP such as to avoid the mobilisation of contaminants and risk to workers.

Archaeology

3.23 Desk-based reviews of the Paddington Green historical development and of third party and publicly available data were undertaken, together with a review of historical evaluation works and watching briefs undertaken at the adjacent WEG site. This has confirmed the following:

- The site was first developed in the mid-late 17th century;
- Archaeological remains have been largely removed by the 18th century and later by basements on the Edgware Road frontage and in the north and west of the site;
- The site is located within the Watling Street Tier II Archaeological Priority Area (APA), designated for being within the vicinity of a Roman road, with potential for remains of the road and roadside activity. The northern and north-western parts of the site is located within the Paddington Tier II APA, designated for its potential to contain remains of the historic settlement of Paddington Green.
- The study area has been subject to a number of archaeological investigations mostly recording post-medieval remains; and
- The site has low potential for buried heritage assets of other periods.

3.24 As such the archaeological potential of the site is likely to be limited to remains of no more than low significance.

Built Heritage

3.25 The northern half of Newcastle Place at its western end, falls within the Paddington Green CA as shown in Figure 3.1.

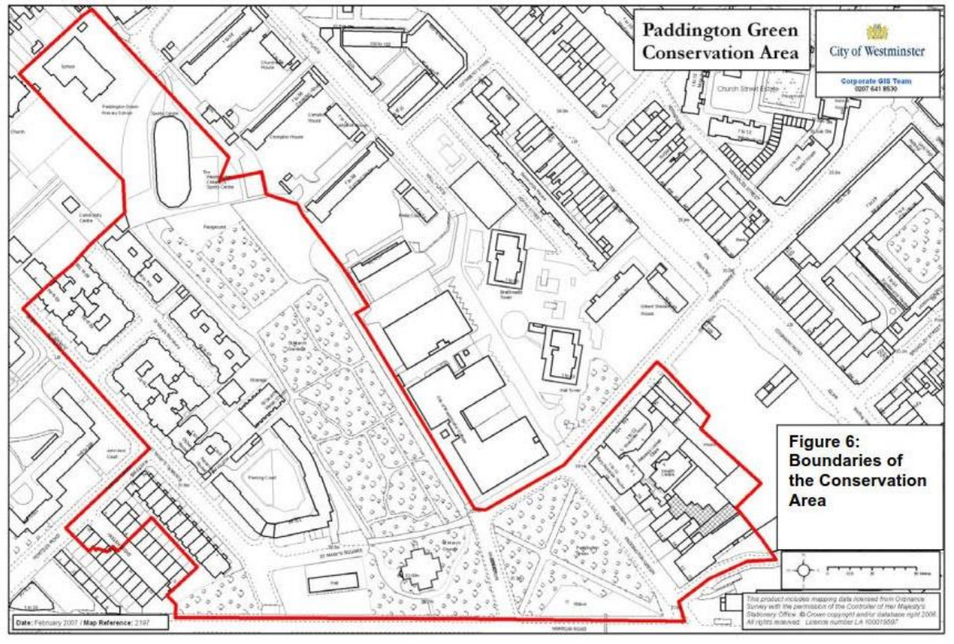


Figure 3.1: Paddington Green Conservation Area

3.26 The Police Station is unlisted. However, the following heritage receptors are located within approximately 500 m of the site:

- Paddington Green CA;
- Lisson Grove CA;
- Maida Vale CA;
- Bayswater CA;
- St John's Wood CA;
- Molyneux CA;
- Church of St Mary (Grade II*);
- Marylebone Lower House North Westminster Community School (Grade II*);
- The Children's Hospital (Grade II); and
- 17 and 18 Paddington Green (Grade II).

3.27 In addition, there are several buildings of merit, as identified in the Paddington Green CA Audit, the Lisson Grove CA Audit and the Bayswater CA Audit, within 500 m of the site.

3.28 The 2022 amended proposed development would introduce new built development and could affect the setting of the identified heritage assets. Accordingly, the height, massing, materiality, visibility and design quality of the new buildings were carefully considered during the iterative design process and informed by means of view studies and specialist heritage advice.

3.29 Consideration was given to additional heritage receptors during the post-application submission stage on account of the increased building heights.

Townscape and Visual Amenity

3.30 The 2022 amended proposed development offers an opportunity to contribute to the regeneration of the local neighbourhood through the redevelopment of the site. As such the emerging development proposals have had due regard to the site's existing character, the prevailing surrounding townscape character, visual amenity and views to and from the site.

3.31 The site comprises a largely vacant Police Station originally constructed in the 1970s. The existing building is part 17, part 8 and part 3 storeys and is of poor architectural quality and disused, so detracts from the townscape character. To the north of the site No.17 and No.18 Paddington Green are Grade II listed. No.17 forms part of the 14-17 PG scheme.

3.32 The local area around the site is varied in character. Post-war towers around the junction of Edgware Road and Harrow Road / Marylebone Road to the south of the site, and residential towers within the Hall Place estate to the north of the WEG scheme, are dominant elements within the local townscape. Buildings are generally of poor to mediocre quality. Smaller scale historic buildings are located immediately north-west of the site, and to the west of WEG. Parts of Edgware Road are also lined by smaller scale, older buildings. Further south, large scale modern development located around Paddington Basin includes buildings that are generally of good architectural quality.

3.33 The site is not located within the viewing corridors of any of the designated views under the London View Management Framework, although is in the periphery of LVMF 4A.1 from Primrose Hill, nor in a locally designated view.

3.34 Zone of Visual Influence (ZVI) mapping was undertaken. In general, beyond very short range views along the streets fronting the site, the most open short range views are from the east along Edgware Road, and from the south along Harrow Road. Views from the west are screened to a significant extent by trees on Paddington Green and in the churchyard of St. Mary. The substantial existing buildings around the site, including the Hall Place Estate, the emerging WEG scheme, the buildings to the south of the Marylebone junction and buildings around Paddington Basin, limit or block visibility of the site from many short and medium range locations. There is limited or no visibility of the site in most longer range views in its direction, due to the scale of intervening development.

3.35 During the design process, a computer model was used as a tool to illustrate how the different iterations of the design would affect various views. An early assessment of the townscape and visual effects were undertaken, which was used by the architects to make modifications to the massing of the design, and where possible, improve the design to take account of advice as part of pre-application consultations.

3.36 Consideration was given to 11 additional views during the post-application submission stage on account of the increased building heights.

Transport and Accessibility

3.37 The site enjoys very good access to public transport, with a PTAL rating of 6b (rated as Excellent on a scale where 1a is the lowest and 6b is the highest of accessibility).

3.38 Edgware Road Underground Station is located approximately 50 m to the east of the site; Edgware Road (Hammersmith & City and District Lines) London Underground Station approximately 250 m to the south-east; and Paddington Underground and National Rail Station approximately 400 m to the south-west of the site. Approximately 625 m to the east of the site is Marylebone Station. Marylebone is served by national rail services to the Midlands and the South-East. There are also good bus, pedestrian and cycle routes in the vicinity of the site.

3.39 Measures to minimise transport impacts associated with the demolition and construction of the 2022 amended proposed development were actively explored during the design evolution process and in the preparation of a framework CEMP for ES Chapter 5(R): Demolition and Construction Description. This has resulted in the consideration of appropriate demolition and construction traffic routes to minimise disturbance to nearby sensitive residential receptors.

3.40 Opportunities to increase the accessibility and permeability of the site to pedestrians were explored during the design process. In addition, the proposal was designed to reinforce and align with the principles established within the WEG Travel Plan by promoting sustainable modes of transport and safe and secure cycle storage spaces was integrated into the design of the 2022 amended proposed development.

3.41 Careful consideration was also given to servicing arrangements at the site, in respect of both access and sufficient space provisioning at basement level.

Noise and Vibration

3.42 As the 2022 amended proposed development would introduce a new residential population, early specialist design advice was given to ensure that the site would be suitable for residential use and that residents would not be adversely affected by both existing and future potential noise and vibration sources.

3.43 The site is located in an area where road traffic noise is noticeable. Baseline noise and vibration surveys were undertaken at the site to characterise existing noise conditions. This was followed by detailed modelling to inform the layout, orientation and position of building blocks, the façade design (including balconies) and the ventilation strategy.

3.44 Consideration was given to the:

- location of habitable rooms relative to facades exposed to high levels of noise to maximise acoustic separation;
- location of residential units and communal private amenity space at Level 01 to avoid ground level exposure to noise, as far as possible;
- location of open space and playspace relative to high levels of noise to maximise acoustic separation; and

- required glazing performance to ensure target internal noise criteria would be achieved and internal spaces would be suitable for use.

3.45 Measures to minimise noise emissions from the 2022 amended proposed development (such as those from demolition and construction works, plant, servicing and delivery arrangements and vehicle movements) were actively explored during the design evolution process and in the preparation of a framework CEMP for ES Chapter 5(R): Demolition and Construction Description.

Air Quality

3.46 As the 2022 amended proposed development would introduce a new residential population, early specialist design advice was provided to ensure that the site is suitable for residential occupation and that residents would not be adversely affected by both existing and future air quality.

3.47 The site is located within an Air Quality Management Area (AQMA) declared under the Environment Act 1995, which incorporates the whole of the CoW. The AQMA has been designated due to NO_2 and PM_{10} concentrations in excess of the current National Air Quality Standard objectives.

3.48 Measures to minimise air emissions from the 2022 amended proposed development (such as dust and fugitive emissions from demolition and construction works, plant, servicing and delivery arrangements, as well as vehicle movements) were actively explored during the design evolution process and in the preparation of a CEMP framework for ES Chapter 5(R): Demolition and Construction Description.

3.49 Furthermore, given the location of the site within an AQMA and the nature of the proposed uses, the design evolution process considered:

- the promotion of more sustainable modes of transport by limiting on-site car parking provision and maximising bicycle space provisioning;
- renewable energy sources (ASHP and PV) and connection to a local heating network (the WEG energy centre), to reduce impacts to local air quality and to existing/future sensitive receptors; and
- the ability of future residential occupiers of the proposed development to receive 'suitable clean air' through appropriate ventilation systems where required.

Water Resources and Flood Risk

3.50 The site is predominantly comprised of hardstanding areas and the vacant police station buildings. There are no surface water features on the site, and no main rivers located within a 1 km radius. The closest surface water features are the Grand Union Canal, located approximately 170 m to the south-west at its nearest point (Paddington Branch of the Grand Union Canal) and the Boating Lake at Regent's Park approximately 1 km to the east. No additional surface water features have been identified within 1 km of the site.

3.51 A review of EA data indicates that the site is located in Flood Zone 1 (low probability) where the annual probability of flooding from rivers or the sea is less than 1 in 1,000 (0.1%).

3.52 Standard issues relating to the demand for water from the completed development, the capacity of foul drainage, as well as measures to reduce the area of impermeable surfaces which would contribute to stormwater run-off, attenuation and the introduction of Sustainable Drainage System (SuDS) were considered during the design evolution process.

3.53 In addition, control measures to manage potential impacts to controlled waters during the demolition and construction works were considered in the preparation of a framework CEMP for ES Chapter 5(R): Demolition and Construction Description. As such Water Resources, Hydrology and Flood Risk were not considered to be one of the key considerations in the design evolution process.

Ecology

3.54 The site is not covered by any statutory nature conservation destinations and is identified as being a site of wildlife deficiency.

3.55 St John's Wood Church Local Nature Reserve is located approximately 1km north of the site. There are no other statutory local, nationally or internationally designated sites within 2 km of the site. St Mary's Churchyard and Paddington Green Site of Borough Importance for Nature Conservation is present to the west of the site.

3.56 An updated extended phase 1 habitat survey of the site was undertaken over the summer season in 2022. This confirmed that the on-site habitats are of negligible or site level value for wildlife. The desk studies confirmed that no designated sites are present within the site. In addition no protected or notable species records were provided for the site.

3.57 Recommendations made in the updated phase 1 habitat survey were integrated into the landscape strategy for the 2022 amended proposed development, which would increase the biodiversity value of the site and its immediate surroundings.

3.58 In addition, a biodiversity net gain assessment has been undertaken to maximise biodiversity enhancement.

Wind

3.59 The 2022 amended proposed development would introduce new built development on-site. As such there is the potential for changes to the speed and direction of the wind as it moves around new buildings within and around the site.

3.60 The meteorological data indicates that the prevailing wind direction throughout the year is from the south-west quadrant. There is a secondary prevailing wind from the north-east during the spring.

3.61 Measures to minimise potential impacts on pedestrians and residents (such as appropriate entrance locations and soft landscaping design) were actively explored during the design evolution process.

3.62 Wind tunnel testing was undertaken to inform the landscape design and embed mitigation measures to ensure that pedestrian areas are suitable for their intended use.

Daylight, Sunlight and Overshadowing, Solar Glare

3.63 Changes to local daylight and sunlight levels may be experienced when new buildings are introduced on a site and are different in height and massing from the surroundings.

3.64 The site is located within a well-established urban setting. Given the constrained nature of the site and proximity to residential neighbours at WEG, 14-17 PG and Edgware Road, the density, height and massing proposals were considered to minimise detrimental impacts in respect of daylight and sunlight losses, where possible.

3.65 Analysis of the 2022 amended proposed development were undertaken to provide advice on the design of the scheme massing. In addition, analysis was undertaken to consider the potential for daylight and sunlight within the scheme and advice given in terms of unit size, window size and location, as well as room layouts. Further analysis was undertaken for the 2022 amended proposed development to consider the potential for daylight and sunlight within the 2022 amended proposed development as a whole.

3.66 The risk of solar glare was considered in respect of the 2022 amended proposed development's materiality.

Telecommunications

3.67 The construction of large structures can cause localised disruption to telecommunication services such as TVs, radio and satellite signals. However, following the digital switch over, potential impacts at the site would be limited to interference of microwave links that cross near to or above the site. Previously the Police Station utilised the TETRA / Airwave radio network. This was a consideration in the EIA of the WEG scheme to the north. However, as the police station is largely vacant and would be demolished as part of the current proposal, disruption to these networks is no longer relevant.

Waste

3.68 The development works of the 2022 amended proposed development would generate demolition, excavation and construction waste materials. In addition, the introduction of a residential population would give rise to the generation of new waste streams from the site.

3.69 Accordingly, consideration was given to waste minimisation measures during the design evolution and how construction wastes could be minimised and re-used on-site. This has informed the preparation of a framework CEMP, as set out in Chapter 5(R): Demolition and Construction Description, appropriate servicing arrangements and the provisioning of sufficient waste management facilities on-site to encourage recycling, as set out in the Operational Waste Management Plan (OWMP) that accompanies the application.

Climate Change

3.70 Climate change resilience and adaptation have been key considerations in the design evolution process. Accordingly, opportunities have been sought to future–proof the 2022 amended proposed development as far as possible against climate change effects; whilst at the same time, limiting the 2022 amended proposed development's contribution to climate change. Accordingly, the following were considered and explored during the design evolution process:

- Replacement of existing energy and resource inefficient building stock and infrastructure;
- Measures to reduce the risk of flooding through sustainable drainage;
- Measures to minimise water consumption, such as the installation of water saving devises and rainwater harvesting;
- Measures to reduce carbon dioxide emissions and overheating through energy efficient design;
- Measures to minimise the generation of waste and to maximise re-use or recycling;
- Sustainably sourcing and procurement of materials with lasting life spans;
- Protection of existing green infrastructure, such as retaining as many of the existing trees as possible;
- Delivery of biodiversity enhancement and green infrastructure, including green roofs;
- Connection to the district heating network; and
- Use of renewable sources of energy.

Health and Wellbeing

3.71 Health and wellbeing have been key considerations in the design evolution process. In this regard, the 2022 amended proposed development has sought to promote and encourage healthier lifestyles through:

- physical investment in a deprived area;
- provisioning of housing in a range of residential unit types and tenures;
- provisioning of high quality homes, appropriately sized, energy efficient, warm and dry;
- access to green space;
- provisioning of a range of open space and amenity space;
- access to outdoor play opportunities;
- provisioning of on-site leisure uses;
- access to a wide range of supporting services, including employment opportunities;
- provisioning of cycle spaces and promotion of walking;
- provisioning of safe, accessible spaces; and
- ensuring internal and external noise levels comply with the World Health Organisation (WHO) requirements; and
- avoiding exposure to poor air quality.

Alternatives

Do-Nothing Alternative

3.72 The 'Do Nothing' scenario is a hypothetical alternative conventionally considered, albeit briefly, in the EIA as a basis for comparing the development proposal under consideration.

3.73 When considering the 'Do-Nothing' alternative, the following is noted:

- The site's long-standing use has ended and the site needs to be, as a matter of principle, re-purposed;
- The site is located within the Central Activity Zone (CAZ), adjacent to the Edgware Road/Church District Centre and in proximity to the Church Street/Edgware Road Housing Renewal Area.
- This gives encouragement for development which seeks to provide alternative uses to those that have recently occupied the site.
- The Applicant secured planning consent for the redevelopment of the WEG site and as part of this process, prepared a wider masterplan vision for 14-17 PG and the site.
- The Applicant subsequently secured planning consent for 14-17 PG and has implemented both the WEG and 14-17 PG schemes.
- The Applicant purchased the site in 2020 with the intention of completing and implementing the wider WEG masterplan vision.

3.74 In the event the 2022 amended proposed development at the site, or any other development, did not come forward, a number of adverse effects and lost opportunities would result:

- The opportunity to complete the wider WEG masterplan landmark development further along Paddington Green and Edgware Road;
- The opportunity to provide a fully integrated development;
- The opportunity to deliver additional housing;
- The opportunity to maximise permeability and accessibility between Paddington Green and Edgware Road;
- The opportunity to remove potentially contaminated soil;
- The opportunity to maximise the productive use of the site; and
- The opportunity to delivery biodiversity gain.

Alternative Sites

3.75 No alternative sites have been considered by the Applicant for the following reasons:

- The site is owned by the Applicant and therefore the Applicant did not consider alternative sites which are the property of a third party;
- The site is located immediately to the south of the WEG site, which was previously identified in the 2016 Westminster City Plan as a proposal site for redevelopment which would contribute to the

meeting the WCC's housing needs. The Applicant has now delivered the WEG scheme and is in the process of delivering the 14-17 PG scheme, and is committed to the complete delivery of the wider WEG masterplan vision;

- The proposal utilises shared facilities with the WEG development to increase efficiencies;
- The Applicant is seeking to optimise the site's potential in accordance with the NPPF; and
- The site would provide a key development opportunity to contribute to the regeneration of an underutilised site, and to provide greater and more varied housing, retail and leisure opportunities.

Alternative Land Uses

3.76 The proposed land uses have been informed by prevailing local and regional policy. Accordingly, no other land uses were considered other than those proposed.

Alternative Layouts, Designs and Design Evolution

3.77 The following sub-sections of this chapter describe the design evolution process undertaken by the Applicant's design team. A series of site layout and built form options are presented and described along with an explanation of the decisions that have informed the evolution of the alternatives considered. Commentary has been provided where changes have been informed by pre- and post-application submission consultation and environmental considerations.

3.78 A series of concept options were explored throughout the design development process. These sought to define the most appropriate design response for the site and to deliver the successful completion of the wider WEG masterplan.

3.79 Due to the small extent of the site, hugely divergent layout options were not possible.

3.80 The scheme design was refined by reference to the following key design drivers;

- Site layout;
- Height and scale of buildings;
- Façade design and articulation;
- Private, communal and public amenity space;
- Residential quality, including aspect and internal space planning; and
- Daylight, sunlight and overshadowing levels at existing receptors in close proximity to the site.

Early Design Concepts

3.81 Early design concepts were informed by the following design principles:

- **Complete the Masterplan** - The design should complete the Applicant's long held aspiration for the WEG masterplan[1] (initially set out in the planning application for WEG in 2015) and, in the process, deliver a considerable number of private and affordable homes in Westminster. In addition to this, the design response should repair the broken streetscape and create a new gateway at an important central London crossroads.
- **Marking the Gateway** - Edgware Road is the old Roman Road into London and this is dissected by the more modern Westway. It is at this critical junction that the concept should introduce height in order to mark the importance of this key gateway into the city centre and play on a hierarchy of heights between the existing WEG tower (Block A), One Merchant Square and the 2022 amended proposed development.
- **Improved Urban Realm** - The 2022 amended proposed development should reimagine Newcastle Place as a green urban oasis designed for priority pedestrian and cycle use. By investing in quality urban realm in this area, a reinvigorated pedestrian link can be formed between Paddington Green and Edgware Road. This would help open up Newcastle Place and would offers views into and through the landscape spaces.
- **Façade Articulation** - The building design and architectural response should be conceptualised as distinct building forms that define a specific character for each of the building elements. This approach would help to tie the 2022 amended proposed development into the wider WEG masterplan.

3.82 A series of massing concepts were developed during the initial design stages to explore the impact of buildings on the local context and to establish the most suitable spatial arrangement for the 2022 amended proposed development. Two of these concepts are shown in Figure 3.2.

3.83 The setting out and planning of each building volume was carefully considered to respond to the existing context and provide a dynamic architectural response to the site.

3.84 Analysis of these initial design concepts allowed the block alternatives to be developed into a preferred concept design direction. Option 1 was selected for the following reasons:

- The proposals drew inspiration from the organic form of the existing WEG tower and helped to complete the overall masterplan using a common architectural language.
- The height of the towers formed a cluster of tall buildings that gradually stepped up in height towards the key junction of Edgware Road and Harrow Road.
- The placement of the two towers on the site allowed for light to penetrate into Newcastle Place and enliven the new landscape and urban realm in this area.
- The creation of a podium helped to link the towers and create opportunities for activation of the ground floor streetscape.

[1] The masterplan was initially set out in the planning application for WEG in 2015 (phase 1). This was subsequently followed by 14-17 PG as phase 2 of the masterplan.

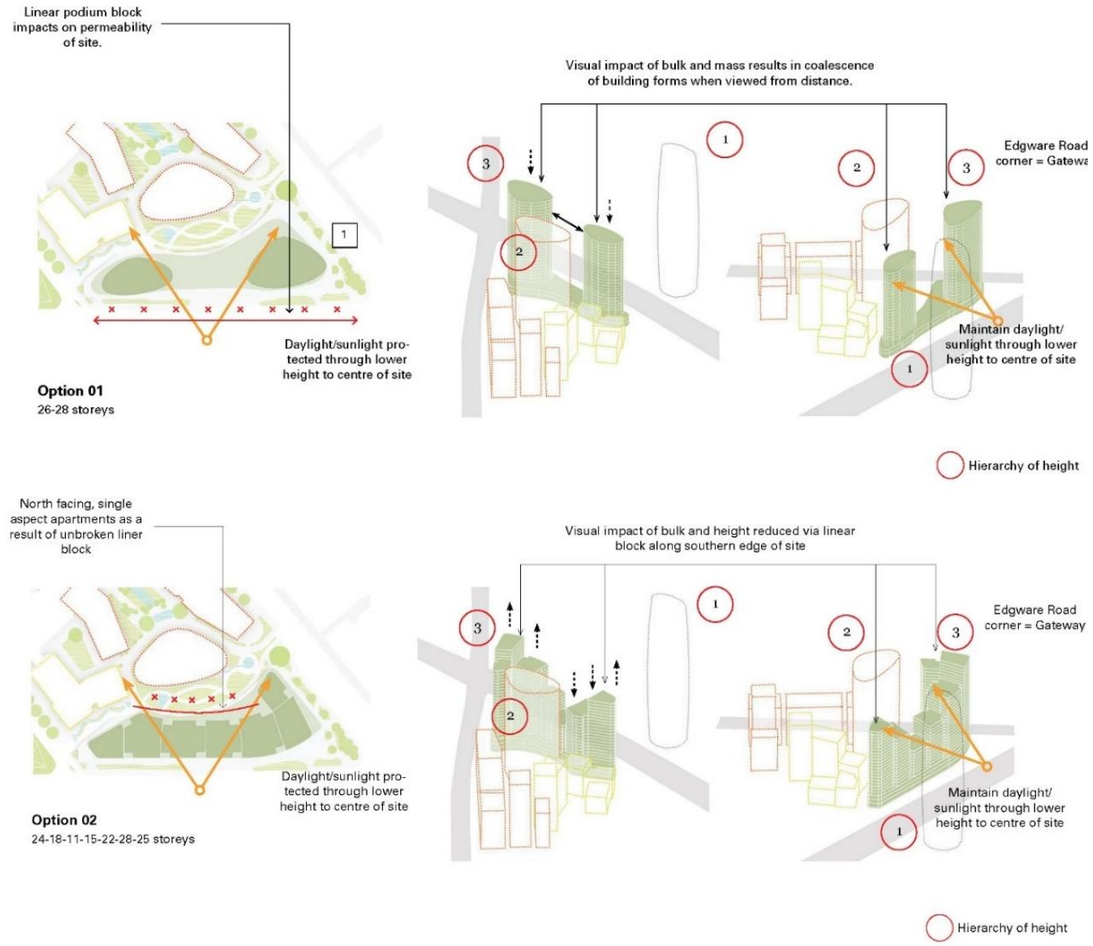


Figure 3.2: Early Massing Concepts

3.85 Option 1 was selected as the preferred design concept because of the placement of the two tower forms to each corner of the site. This allowed the scheme to be read alongside the existing WEG tower especially when using the same façade articulation to create a grouping of buildings and complete the set.

Pre-2021 Submission

Pre-Application Scheme 1

3.86 Pre-application Scheme 1 explored the development of two distinct towers located on the western and eastern corners of the site. The towers were sat upon a podium building form providing the opportunity for roof gardens to be incorporated and to provide much needed green space and improvements to the biodiversity of the site.

3.87 The building design followed the same organic form as the WEG tower and as such resulted in considerable visual bulk and mass when viewed from a distance. Two towers were proposed at 42 storeys (Edgware Road corner) and 36 storeys (Paddington Green corner) as shown in Figure 3.3.

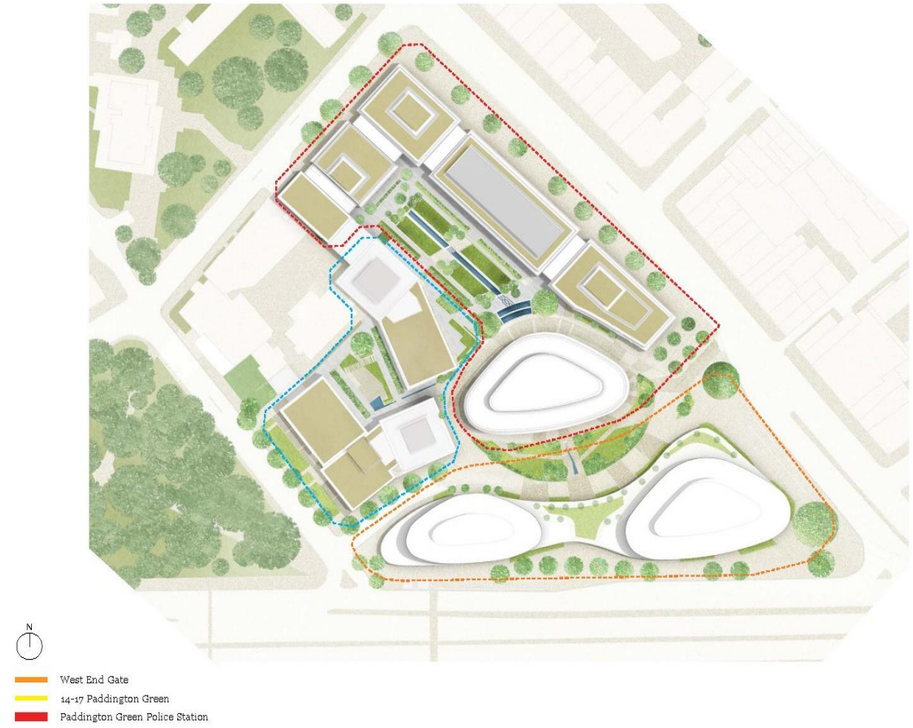


Figure 3.3: Pre-Application Scheme 1 Block Layout

3.88 Through the use of a similar façade treatment as the WEG tower, the proposals allowed for the integration of recessed balconies to provide private amenity space to all residents whilst also offering a level of privacy, solar shading and acoustic protection from the busy Westway and Edgware Road.

3.89 The proposals looked to address the broken streetscape around Edgware Road, Harrow Road and through Newcastle Place. A pedestrian plaza was created on the key corner junction with Edgware and Harrow Road, whilst vast improvement to the landscape and biodiversity of Newcastle Place were introduced to form a new green oasis within the development.

3.90 All homes within the development were designed to provide private amenity space via recessed balconies, with additional communal amenity provided on the podium. The homes were orientated to maximise views out and to provide dual aspect units wherever possible. Given the form and layout of the towers, there were inevitably apartments that would be affected by single aspect, north facing outlooks

3.91 The following key design constraints were identified and comments raised during pre-application discussions with WCC:

- Whilst this design response and façade articulation drew inspiration from the successful implementation of the WEG tower, the buildings were deemed to represent excessive bulk and mass when read against the buildings of the WEG masterplan and the wider context. Views from distance were problematic and led to coalescence of the building forms.
- The public realm improvements did not provide a focal point of regeneration to the important gateway junction of Edgware Road and Harrow Road/Westway.

3.92 The following adverse environmental impacts were identified:

- The recessed balconies incorporated into the façade as full width elements, whilst offering some opportunity to explore acoustic treatment and provide a level of privacy, resulted in poor daylight to apartments;
- The podium created a wall like structure that impacted on the permeability of the site. The ability to create new pedestrian and cycle routes through the site was therefore limited;
- There was the potential for adverse wind conditions due to the size, shape and position of tall buildings close to each other;
- The extent of the podium base limited the quantity and quality of public realm that could be introduced to Newcastle Place and between buildings. This limited the level of biodiversity gain that could be achieved on the site in relation to the areas identified as public realm;
- There was limited communal roof terrace provisioning; and
- A proportion of apartment layouts would be north facing on both towers as a result of the building forms and orientation.

Pre-Application Scheme 2

3.93 Following further pre-application discussions with WCC, the massing options were further refined to address the key concerns with bulk, mass and the impact of the podium at ground floor level. This resulted in scheme 2 as illustrated in Figure 3.4.

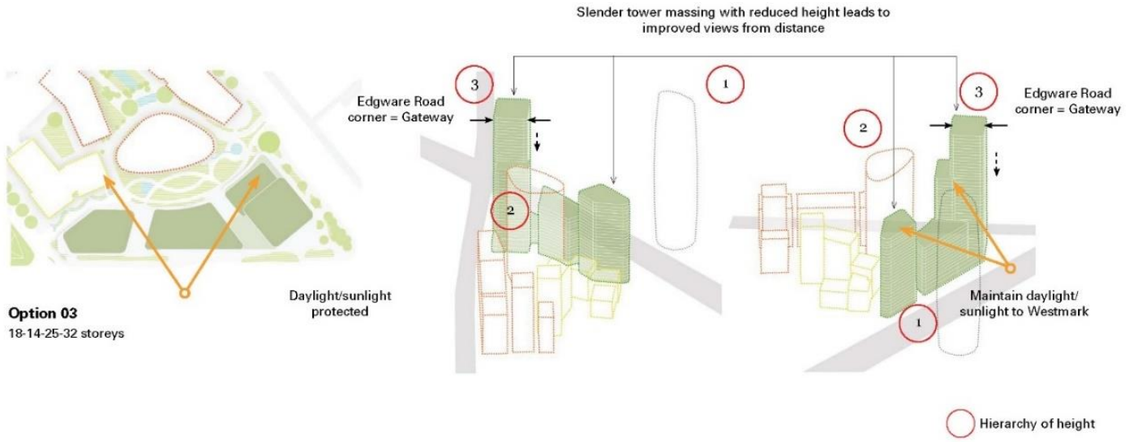


Figure 3.4 Pre-Application Scheme 2 Massing

3.94 In order to further break down the mass and introduce much needed permeability to the urban block, the design was developed further to introduce three distinct building volumes. A more slender 39 storey tower was introduced to mark the gateway corner of Edgware and Harrow Road and was complemented by a flatiron 25 storey tower in the western corner overlooking Paddington Green, with a lower 15 storey mansion block positioned to the centre of the site.

3.95 Careful placement of the taller elements to the extremities of the site allowed for the central mansion block to step down in height and maximised daylight and sunlight into the Newcastle Place urban realm. The amended height allowed for a smaller and more elegant building footprint, improving sightlines and spacing between buildings whilst also helping to mark the junction of Edgware and Harrow Road.

3.96 The overall result, as shown in Figure 3.5 delivered a more considered design response that reinforced the importance of the junction of Edgware and Harrow Road/Westway, created a new urban realm across from the Edgware Road Underground station and addressed the concerns raised with regards to bulk, mass and coalescence.

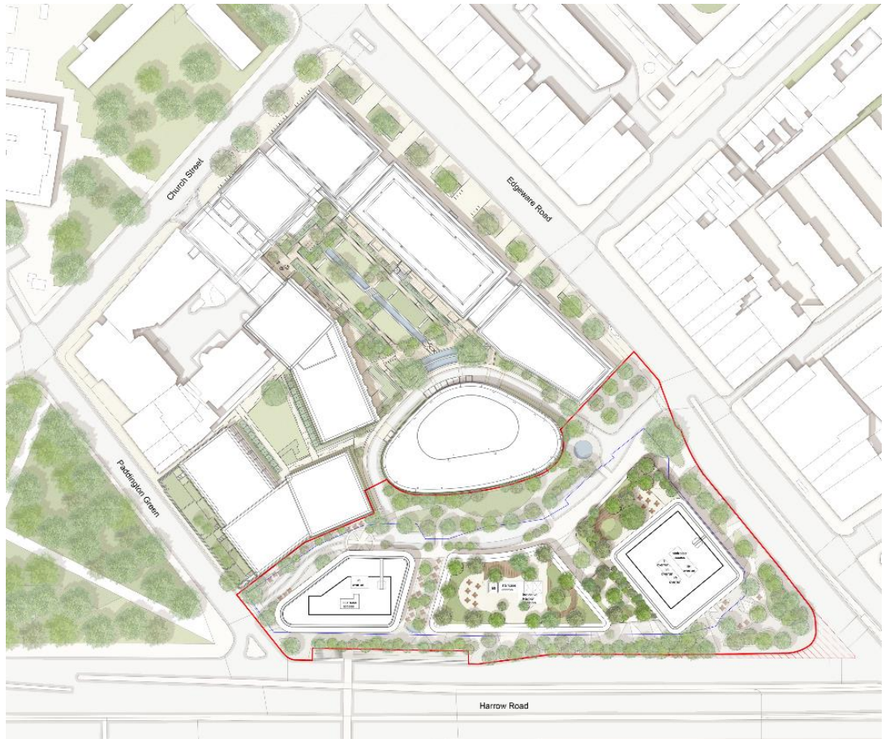


Figure 3.5: Pre-Application Scheme 2 Block Layout

3.97 The podium was broken at two key points to create new links into the site off Harrow Road on the southern boundary. An open-air pedestrian walkway was formed between two of the building volumes, offering opportunities for seating areas, water features and soft landscaping features to increase biodiversity. A second link was formed at ground floor level between the central Block J and Block K tower building. This formed the office entrance and was designed as an enclosed, double height space designed to provide a range of public and residential facilities at ground floor to bring a diverse and varied range of offerings.

3.98 Facades continued to draw reference and inspiration from the architectural language of the existing WEG tower and the wider WEG masterplan. The façade detailing was developed and refined further, allowing each of the three building volumes to have its own character and style. Glass to solid ratios were optimised and façade detailing developed to limit air loss and minimise unwanted solar gains. This fabric first approach to the design aimed to maximise the energy performance of the external fabric of the building and the overall energy performance of the scheme to reduce carbon.

3.99 The more dynamic and slender building forms were developed to maximise the number of dual aspect apartments and significantly minimise the number of north facing, single aspect apartments.

3.100 Balconies were recessed into the façade depths and strategically positioned in front of bedrooms in order to allow living, kitchen and dining rooms to extend fully out to the external windows and maximise the amount of daylight/sunlight in these key spaces.

3.101 Acoustic treatment to recessed balconies and façade systems was developed to limit the impact of external noise on the apartments.

3.102 The following consultation feedback was provided:

- Excessive height was noted during pre-application discussions with WCC and as part of the consultation process.
- The architectural language was very similar to the existing buildings and as such made it harder to distinguish each building form when viewed from distance, impacting on the quality of the proposals.

3.103 In addition, the potential for adverse daylight, sunlight and overshadowing impacts were identified on Edgware Road.

3.104 In response to these comments, the design was further refined to reduce the overall height and visual impact of the towers whilst also exploring more fluid and organic architectural forms that would help to generate more unique building forms.

Selected Scheme: 2021 Proposed Development

3.105 The revised and refined proposals that defined Scheme 2 formed the basis of the 2021 proposed development that was submitted to WCC in April 2021. This option was developed on the basis of extensive consultation with WCC, the GLA, public consultation and weekly input from all members of the design team.

3.106 The key design drivers of the 2021 proposed development were as follows;

- A residential led development of appropriate scale and mass for the local area that would deliver an appropriate number of new homes, including affordable housing, for a site directly adjacent to the Paddington Opportunity Area;
- Enhancement of the urban realm to help repair the broken streetscapes around the site and deliver a range of new landscape spaces with a focus on pedestrian and cycle use;
- Provision of high quality architecture which benefits from a prominent Westminster site and successfully completing the WEG masterplan;
- Provision of public space at ground floor and private residential spaces via roof terraces and recessed balconies to all apartments;
- Activation of ground floor frontages through the provision of flexible commercial, affordable workspace, office and residential amenity space.
- Regeneration of a neglected site providing much needed homes for a variety of tenures; and
- Provision of affordable homes on-site.

3.107 The key environmental advantages of the 2021 proposed development were considered to be as follows:

- Good levels of daylight and sunlight to residential accommodation;
- Improved views along Edgware Road marking a key gateway into the city centre and reinvigorating connections to Paddington Green;
- Provision of private balcony amenity space and communal roof garden space for residents;
- Building envelopes that are energy efficient and comply with Part L of the Building Regulations;
- A substantial amount of high quality public and private open space, with a large quantity of trees that will significantly enhance the greening of the site; and
- Biodiversity enhancement as part of the landscape proposals.

3.108 The 2021 proposed development therefore:

- met the Applicant's development objectives;
- responded to the housing demand (particularly affordable housing); and
- responded to the comments received during the pre-application consultation process, particularly in relation to height and articulation of the building forms, to deliver a high quality residential led development on the site.

Post-2021 Submission

3.109 Following the submission of the application, the application was considered at WCC's planning committee on 9 September 2021. WCC officers made a recommendation for approval. The planning committee resolved to refuse the application contrary to the officers' recommendation for the following reasons (in summary):

- Due to the excessive height and bulk, Block K would have a detrimental impact on the local townscape, would result in substantial harm to the setting of the Little Venice, Paddington Green, Lisson Grove and Maida Vale Conservation Areas and have a detrimental impact on views from Regents Park and Hyde Park;
- The 2021 proposed development fails to maximise the number of dual aspect flats within Blocks I and J, resulting in poor levels of natural daylight and outlook due to the proximity of the existing buildings within West End Gate; and
- Due to the excessive height and bulk of the proposed blocks, the 2021 proposed development would result in a significant loss of daylight and sunlight to existing residential properties.

3.110 The application was subsequently referred to the Greater London Authority (GLA) for 'Stage 2' review. Following a review of the application and the proposed decision of WCC, the GLA considered that the proposed development was of strategic importance and had the potential to make an important contribution to housing and affordable housing supply. On 22 November 2021 the GLA directed that the GLA would act as the local planning authority for the purpose of determining the application.

3.111 The GLA's Stage 2 report (reference 2021/0711/S2) identified various areas where further modification was required in the event that the Mayor of London took over determination of the application. In particular, urban design, building height, residential quality, climate change and transport were identified.

3.112 The following sections summarise how the design of the 2021 proposed development evolved to arrive at the selected 2022 amended proposed development.

Design Evolution

3.113 The design evolved continuously to capture comments and feedback from pre-application meetings with WCC, the GLA, consultation with key stakeholders and the local community and subsequent post-application meetings with the GLA, local community and London Review Panel.

3.114 The following sections summarise how and why the design evolved in respect of the site layout, building heights and massing, facades and landscaping.

Layout

3.115 Following the early concept designs, the building footprints were rationalised to provide more orthogonal building footprint, resulting in more rational and refined homes in the 2021 proposed development.

3.116 Positions of balconies were developed in line with detailed energy modelling to ensure the setting out and position of balconies resulted in the suitable thermal performance of the external envelope. Internally, the location and setting out of Living, Kitchen and Dining (LKD) spaces within apartments were also refined to ensure daylight / sunlight requirements were satisfied.

3.117 Following submission of the 2021 application, the overall layout of the proposals was revised to address the daylight and sunlight impact on neighbouring properties, which was raised by WCC as a reason for refusal of the 2021 proposed development. The building footprints and positions on the site were revised to introduce smaller footprints and increased gaps between buildings as shown in Figure 3.6. This resulted in substantial improvements to the public realm and quality of homes within the 2022 amended proposed development.

3.118 The impact on daylight and sunlight values to neighbouring properties to the north was explored in order to improve these values. As a result, the footprint of Block I was reduced to increase the distance between

the buildings whilst the bullnose element that formed part of the 2021 proposed development was removed.

3.119 As a result of these design amendments, the Block J building footprint was also reduced and the distance between Block J and I was increased from 9 m to 10 m. This delivered better quality internal spaces to homes within each block whilst also improving the public realm offering.

3.120 Two distinct open-air pedestrian walkways were formed between the building volumes, offering opportunities for seating areas, water features and soft landscaping features to increase biodiversity.

3.121 As a result of more dynamic and slender building forms, the typical floor layouts were also revised to eliminate all north facing, single aspect apartments. This in turn increased the number of dual aspect apartments by 10 %.

2021 Proposed Development

2022 Amended Proposed Development

Figure 3.6: Pre- and Post-Application Submission Development Layout Comparison

Building Height and Massing

3.122 Various massing studies were undertaken to address concerns around building height, bulk, massing and coalescence in views.

3.123 During the pre-application design evolution process, the building heights of the tower elements were reduced from 39 to 32 storeys on Edgware Road and from 25 to 18 storeys on the corner of Paddington Green. The reductions sought to address concerns raised by WCC and consultees with the overall height and mass of the building forms when read against the existing WEG scheme and the wider context.

3.124 Following submission, and in consultation with the GLA, further massing studies were undertaken to explore the impact of height and the desire to design a gateway tower on the key junction into central London whilst reading the development as a successful cluster of tall buildings and reducing coalescence.

3.125 This resulted in the building heights of the tower elements being increased from 32 to 39 storeys on Edgware Road and from 18 to 24 storeys on the corner of Paddington Green. The reduced building footprints allowed for the increase in building heights to be carefully managed to ensure bulk and mass was appropriate in the context of a cluster or family of tall building in the site.

3.126 The overall building form, plan orientation and reduced bulk and mass improve daylight and sunlight performance and notably increase the extent of public realm to the corner of Edgware and Harrow Road to the south and Newcastle Place to the north.

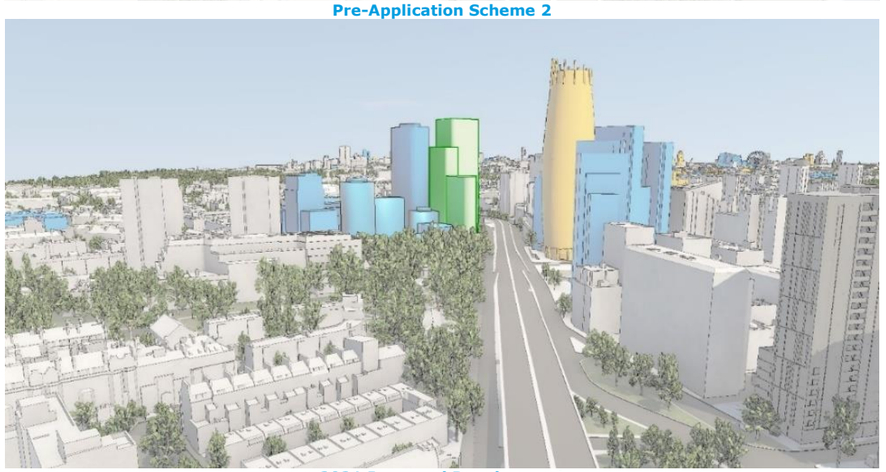
- **Western Block (Block I)**
  - The height and footprint of the building were driven by the site constraints in the western corner of the site adjacent to Paddington Green. At this point, the site boundary converges to form a more narrow 'nose'. By embracing this dynamic, the building footprint was developed with a bullnose corner, resulting in the flatiron building form.
  - Following feedback from pre-application discussions and consultation, the height of the building was reduced from 25 storeys to 18 storeys in the 2021 proposed development to reduce the visual impact of the buildings. This reduction in building height also allowed the block to sit more comfortably with the lower scale development to the north and the residential character of the Paddington Green CA.
  - Following submission and discussions with the GLA and post-submission consultation, the height of the building was increased from 18 storeys to 24 storeys in the 2022 amended proposed development to form a more appropriate building of height and mass with the additional height helping to clearly mark the entrance to Newcastle Place from Paddington Green.
  - The footprint of the building was driven by the site constraints and the desire to improve the daylight and sunlight levels to neighbouring properties to the north, in particular Block H of the 14-17 PG development.
  - The design of the building footprint and the orientation of the layouts also helped to improve aspect to apartments and minimise north facing single aspect homes.
- **Central Block (Block J)**
  - The central block was designed to sit at a lower height between the two larger towers on the corners of the site. This step down in height, helped to eliminate any issues of bulk and mass when viewed from distance as the building is generally low enough to ensure it is not visible from distance.
  - This building sat at a 15 storey height through the pre-application design process as it plays an important role in offsetting the height of the towers and allows the building to adopt its own character and form, sat centrally within the site boundary.
  - Following submission, the building was increased in height to 17 storeys but still performs the same role and sits comfortably within the cluster of tall buildings.

- **Eastern Block (Block K)**
  - The height and footprint of the gateway tower evolved to mark the key junction of Edgware Road and Harrow Road/Westway. The initial scheme proposed a 39 storey to this corner, with a shoulder element stepping down to 28 storeys in order to generate a more slender and refined tower form when viewed from distance. The height of the tower was reduced to 32 storeys for the 2021 proposed development, a reduction of seven floors in height. This reduced the overall impact of the visual bulk and mass when viewed from distance whilst still allowing the tower to be tall and elegant in form to mark the gateway junction.
  - The shoulder of the tower was set at 25 storeys and was rotated in plan form to provide a more dynamic interface with the main tower mass. This change of façade orientation not only helped to improve aspect for residents, but also allowed a play of light on the façade when viewed from distance, helping to offer subtle differentiation between the building forms.
  - Following submission, the height and footprint of the gateway tower evolved with an increase in height to 39 storeys to this corner and the removal of the shoulder element that characterised the 2021 proposed development. This revised height of tower sits more comfortably with the existing WEG tower (Block A), which sits at 30 storeys in height and further reinforces the concept of a cluster of tall buildings that culminates in the consented 42 storey One Merchant Square tower.
  - The smaller building footprint and increased distance between the tower and the existing buildings to the north help to improve legibility of the scheme when viewed from a distance.

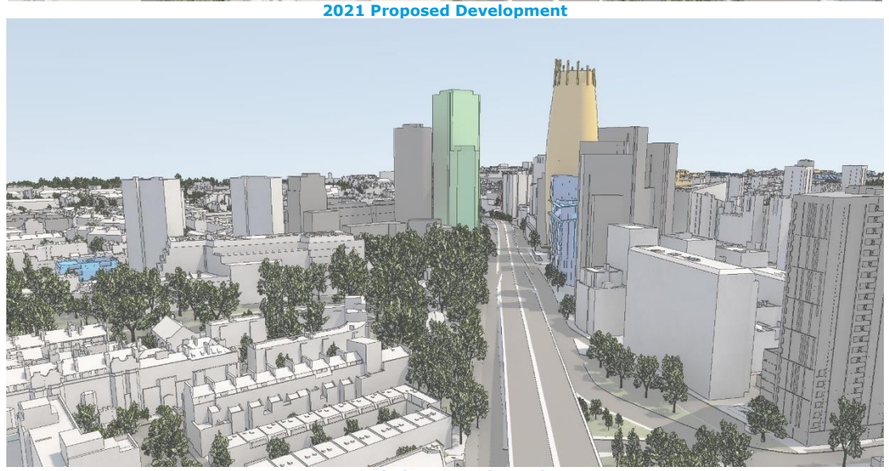
3.127 In addition to the evolution of the building heights discussed above, the design was developed further following submission in order to further break down the mass and introduce much needed permeability to the urban block. Accordingly, the podium link between Block J and K was removed from the 2021 proposed development.

3.128 The overall result, as shown in Figure 3.7 and Figure 3.8 delivered a more considered design response that reinforced the importance of the junction of Edgware and Harrow Road / Westway as a location for building height, created a significant uplift in the extent of public realm across the site and addressed the concerns raised with regards to bulk, mass and coalescence. Whilst taller than the 2021 proposed development, the additional height combined with smaller building footprints delivers more slender and elegant buildings with greater distance between buildings resulting in more legible and distinct architectural building forms.

Pre-Application Scheme 2



2021 Proposed Development



2022 Amended Proposed Development

Figure 3.7: Pre- and Post-Application Submission Building Massing Evolution

Figure 3.8: 2022 Amended Proposed Development Massing

Facades

3.129 A range of façade design options were explored through detailed bay study analysis and Computer Generated Illustrations (CGIs).

3.130 Further detailed input on daylight and sunlight analysis focused on the development of apartment layouts to ensure that the extent of light provided to key living spaces were maximised wherever possible.

3.131 The facades for the selected pre-application scheme were developed to deliver a more dynamic and organic façade treatment when compared to the WEG scheme. This resulted in distinctive series of building forms that provide each building form with its own character and improve the perception and differentiation of the design proposals when viewed form distance.

3.132 Following submission, further refinement to the facades were made, drawing on the rational and ordered façade treatments of the wider WEG development. Further design evolution of the facades and incorporation from the London Review Panel process focused on the introduction of full height, bronze coloured aluminium vertical mullions that reinforced the verticality of the building and brought additional depth to the facades. This was applied to all buildings in the 2022 amended proposed development to further reinforce the architectural language of the buildings and to help the proposals read successfully as part of a wider cluster of tall buildings and family of architectural design responses.

3.133 Following design development, GLA input and consultation feedback, the façade articulation has evolved to introduce clearly defined horizontal banding that helps to break the buildings into a base, middle and top of the building. This helped to break down the visual bulk of the façade and bring a defined order the setting out of the tower elevations that allowed it to sit more comfortably in the wider context.

3.134 In addition, glass to solid ratios were optimised and façade detailing developed to provide a high performance external skin to each building using the fabric first approach to limit air loss and minimise unwanted solar gains and maximise overall energy performance of the scheme to reduce carbon.

3.135 Balconies have also been recessed into the façade depths and strategically positioned in front of bedrooms in order to allow LKD rooms to extend fully out to the external windows and maximise the amount of daylight / sunlight in these key spaces. Acoustic treatment to recessed balconies and façade systems was developed to limit the impact of external noise on the apartments.

3.136 The building height and façade refinements that have occurred over the design evolution process are illustrated in Figure 3.9.

Figure 3.9: Pre-and Post-Application Submission Building Height and Façade Evolution

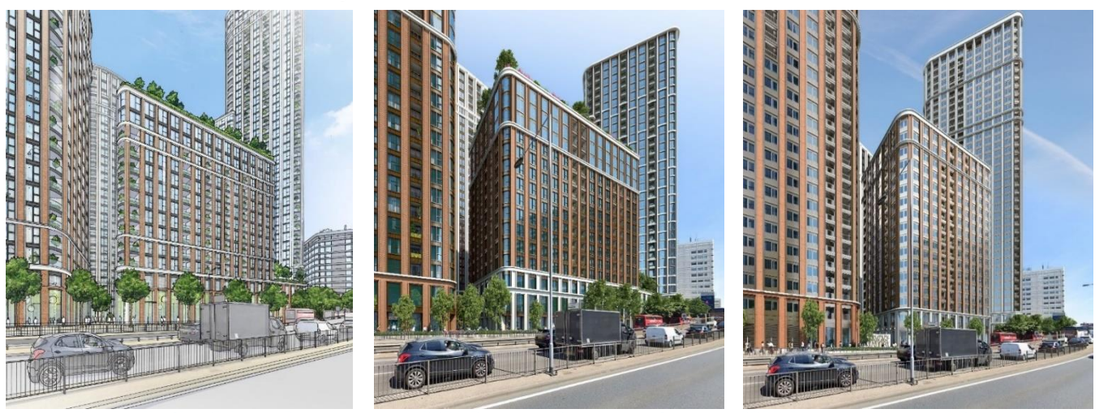
3.137 The façade evolution of the individual blocks is discussed below and illustrated in Figures 3.10 to 3.12.

- **Western Bock (Block I)**
  - The pre-application scheme design proposals sought to apply a similar façade treatment to that utilised on the existing WEG tower. By incorporating a white Glass Reinforced Concrete (GRC) cladding panel with 'bronze' coloured aluminium glazing systems and cladding, the tower elements of the proposed development would read as a set of buildings in white.
  - Through the evolution of the design, and the reduction in height of this block, the façade treatment was changed to a terracotta colour GRC cladding system for both Block I and Block J. This draws reference from the tone and texture of the brickwork applied to the mansion blocks of the surrounding conservation areas. The buildings immediately to the north of the site within 14-17 PG also apply a terracotta colour GRC to the facades and so the move to incorporate this into the block helps to 'stitch' the building more seamlessly into the surrounding context as shown in Figure 3.8.
  - Through the post-submission evolution of the design, and the increase in height of this block, the façade treatment further evolved whilst still retaining a terracotta colour GRC cladding system for both Block I and Block J.

Pre-Application Scheme 2 | 2021 Proposed Development | 2022 Amended Proposed Development

Figure 3.10: Pre-and Post-Application Submission Block I Façade Development and Materiality Evolution

- **Central Block (Block J)**
  - The design of the central block facades drew inspiration form the brickwork tones and texture found on the mansion blocks of Maida Vale and the surrounding areas. This was successfully applied to the new mansion buildings on Edgware Road as part of the first phase of the WEG scheme. The block also makes reference to the extruded, taller mansion blocks of New York, to deliver a taller building form at the site.
  - The façade panels were originally designed as brick panels; however, this was revised to replace the brick with terracotta colour GRC panels. This acknowledges that due to the height of the building, the use of brick was not the most appropriate material as it is more often associated with the smaller residential scale of the surrounding area.
  - Furthermore, the GRC cladding offers further opportunity to explore the panel profile and detail to enhance the façade articulation.



Pre-Application Scheme 2 | 2021 Proposed Development | 2022 Amended Proposed Development

Figure 3.11: Pre-and Post-Application Submission Block J Façade Development and Materiality Evolution

- **Eastern Block (Block K)**
  - The design of the western block has drawn on the successful delivery of the WEG tower. The façade language originally drew on the same cladding panel and window system design to create a very similar architectural language that allows the new building form to read as part of a family of buildings.
  - However, following pre-application consultation feedback and further design evolution, the façade articulation was revised to create a more slender and organic series of vertical cladding panels with wider 'bronze' coloured metal cladding panels and window system. This change in façade treatment maintained a visual link with the WEG tower through the material palette, but helped to ensure that the block has its own architectural identity.
  - As a result of the change to façade treatment, views from distance were improved by virtue of clear differentiation between the more rigorous façade treatment of the existing WEG tower and the more organic and slender treatment applied to the western block.

Pre-Application Scheme 2 | 2021 Proposed Development | 2022 Amended Proposed Development

Figure 3.12: Pre-and Post-Application Submission Block K Façade Development and Materiality Evolution

Landscaping

3.138 The evolution of the site-wide landscape strategy was driven by the requirements to maximise the areas of open space across the site, enhance connectivity with the surrounding area and provide biodiversity net gain. In addition the landscape strategy focused on creating a healthy and safe environment with a priority given to pedestrian and cycle users.

3.139 The key design objectives of the landscape strategy were as follows:

- Celebrate the site's prominent location through the provision of high quality, connected public realm;
- Development of a public realm that builds on the range of public open spaces near the site, integrating Paddington Green, Edgware Road, and the residential nature of Maida Vale;
- Integrate tree planning and other soft landscaping to provide healthy amenity and recreational spaces;
- Increase the biodiversity and urban greening of the site; and
- Promote a feeling of inclusiveness, safety and security.

3.140 The initial landscape proposals generated to support pre-application scheme 1 (Landscape Option 1) reimagined Newcastle Place as an urban green route helping to create a new course from Paddington Green to Edgware Road (See Figure 3.13). A new pedestrian link was also created through the site to connect Harrow Road and Newcastle Place, bringing much needed permeability to the urban block. Roof terraces to the lower podium block then provided additional residential amenity.

Figure 3.13: Pre-Application Scheme 1 Landscaping Option

3.141 As the overall design proposals were revised following feedback and comments from WCC, the GLA and wider consultation, the landscape proposals also evolved. The green spaces to Newcastle Place and the landscape planting to the boundaries of the site on Edgware Road and Harrow Road were retained and further enhanced to ensure the improvement to the existing streetscape formed an integral part of the design response. The option of including two landscaped gardens on the roof of Block J and the roof of the shoulder element of Block K were presented within this option, as shown at Figure 3.14. This landscape scheme formed the basis of the landscape proposals as part of pre-application scheme 2.

Figure 3.14: Pre-Application Scheme 2 Landscaping Option

3.142 The 2021 proposed development built upon the principles of the pre-application scheme 2 and as a result, additional green space and soft landscaping was provided in Newcastle Place, providing not just a new route through the site but also areas for sitting and enjoying the new urban realm. The inclusion of communal residential roof terraces were provided to Block J and K for use by residents whilst a new plaza was developed on the corner of Edgware Road, activated by the retail provision that front onto it. This lead to the 2021 proposed development landscaping scheme submitted to WCC in 2021 as shown in Figure 3.15.

Figure 3.15: 2021 Proposed Development Landscaping

3.143 Following submission of the 2021 application, the landscaping proposals were refined as the development's built form evolved in consultation with the GLA and other stakeholders. The following key changes were made:

- Inclusion of a new ground level pedestrian link between Blocks J and K, improving site connectivity with the adjacent context;
- Removal of vehicle access to Newcastle Place (in-part), except for controlled emergency access, facilitating provision of a more generous/ fully pedestrian friendly public realm;
- Provision of a more generous public realm to Newcastle Place following a reduction in the architectural footprint of Building K;
- Inclusion of specific on-site play space within Newcastle Place;
- Inclusion of additional public green space to the west of Block I, following a reduction in the architectural footprint;
- Redesign of Plaza space to the south-east of Block K;
- Revision to materials and planting palettes to ensure regard to the key principles as set out in the Public London Charter, especially regarding the feeling of access and inclusivity with and to the surrounding context; and
- Removal of communal residential roof terraces to Blocks J and Block K as all roof space is now utilised to accommodate the improved energy strategy.

3.144 The 2022 amended proposed development landscaping scheme is illustrated in Figure 3.16.

Figure 3.16: 2022 Amended Proposed Development Landscaping

Comparison of Environmental Impacts

3.145 A summary comparison of the anticipated potential environmental impacts of the three main scheme options are presented in Table 3.1.

Table 3.1: Environmental Comparison

Environmental Impact/Effect	Pre-Application Scheme 1	Pre-Application Scheme 2 & 2021 proposed development	2022 amended proposed development
Amenity	Limited communal amenity at podium level.	Extensive rooftop amenity on the entirety of Block J and on Block K level 25.	Rooftop amenity lost due to introduction of ASHPs on roofs but 53% increase in ground floor public realm as a result of smaller building footprints.
Biodiversity	Improved biodiversity on-site due to introduction of communal amenity on the podium level and landscape to the public realm.	Revised proposals provide more permeability of the urban block resulting in more landscape improvement and increased biodiversity over Scheme 1.	Further permeability of the urban block and increased extent of public realm resulting more soft landscaping and 224 % biodiversity net gain over existing site condition.
Daylight and Sunlight	Layout and orientation of towers result in a proportion of north facing apartments. More single aspect apartments as a result of larger building footprint and shape.	Revised building forms result in more facade area and greater opportunity to deliver truly dual aspect apartments. North facing apartments reduced.	Reduced building footprints results in increased gaps between buildings, improved daylight/sunlight to neighbouring buildings and improvement to the number of sun hours on ground. North facing single aspect apartments eliminated and number of dual aspect apartments increased by 10 %.
Wind	Two larger tower buildings clustered together with the existing WEG tower create areas for wind channelling, at ground, terrace and balcony amenity spaces.	Proposals result in the majority of the site having suitable wind conditions. There would be no strong wind exceedances which would pose safety concerns.	Proposals result in the majority of the site having suitable wind conditions. There would be no strong wind exceedances which would pose safety concerns.
Townscape and Visual	Irregular building heights create a varied skyline. Considerable visual bulk and mass of building forms result in coalescence with the existing WEG and Merchant Square towers when viewed from distance.	More slender building forms allowed for greater separation of building forms, resulting in less coalescence.	Tall, elegant tower forms result in more slender buildings forms when viewed from distance. Removal of shoulder element to the gateway tower reduces visual bulk and mass. Additional height to towers produces more defined step in heights when read against the existing surrounding context and reinforces the cluster of tall buildings stepping up in height.

3.146 Socio-economic, archaeology, transport, air quality, noise impacts were considered to be consistent across the three scheme options.

2022 Amended Proposed Development

3.147 The 2022 amended proposed development was selected as the preferred, updated option for the following reasons:

- Delivery of a slender, refined and balanced massing that responded to the townscape views in a more rational and considered fashion;
- Building forms and orientation maximise the number of dual aspect apartments whilst also eliminating the number of north facing, single aspect apartments;
- Improved biodiversity through significant increase in the landscape area available at ground floor and to building rooftops;
- Building layouts more cognisant of daylight/sunlight requirements through the careful placement of living, kitchen and dining spaces on primary facades;
- Optimised glass to solid façade rations and recessed balconies provide a greater energy performance through limiting the direct heat gains and reducing the extent of mechanical cooling required to each apartment; and
- Recessed balconies incorporated acoustic treatment to improve the acoustic performance of the façade system and minimise the extent of external noise in apartments, especially on the primary south elevation overlooking the Westway.

Public Engagement and Consultation

Pre-2021 Submission

Community Consultation

3.148 Comprehensive pre-application consultation with neighbouring residents and stakeholders was undertaken by the Applicant. This involved an initial round of consultation in November 2020, followed by a second round from February 2021.

3.149 Due to the impact of the COVID-19 pandemic and the inability to hold face-to-face consultation events, a digital model of engagement was selected. This has included the following:

Digital Consultation Website

3.150 A digital website was created featuring information about the 2021 proposed development, exhibition boards to view and two surveys designed to gather feedback and comments on the proposals.

3.151 Key statistics from the first round of consultation for comments were as follows:

- Distribution of over 6,000 flyers advising of consultation launch;
- Two Facebook advertisements with a combined click rate of 1,174; and
- 600 unique views of the consultation website with 80 completed surveys.

3.152 Key statistics from the second round of consultation for comments were as follows:

- Distribution of over 6,000 flyers advising of consultation launch;
- Two Facebook advertisements with a combined click rate of 916; and
- 424 unique views of the consultation website with 33 completed surveys.

Webinars

3.153 As part of the first round of consultation the project team held two webinars, on 3 December and 10 December 2020.

3.154 The webinars included a presentation from the project team followed by a Q&A session with viewers. Both webinars were recorded and added to the website for anyone to view. In total, 37 people registered to attend the webinars and over 30 questions were submitted. Once uploaded to the consultation website there were a further 72 views.

3.155 The second round of consultation included a further two webinars held by the project team, on 25 February and 12 March 2021.

3.156 As with the first round of consultation, the webinars included a presentation from the project team followed by a Q&A session with viewers. Again, both webinars were recorded and were added to the consultation website for anyone to view.

3.157 In total, 40 people registered to attend the webinars, which were viewed a subsequent 81 times following their upload to the main consultation website.

Locally Elected Representatives and Local Stakeholders

3.158 Throughout the public consultation, the Applicant met with a number of key stakeholders. Meetings were held with:

- Cllr Geoff Barraclough (Shadow Cabinet Member for Business & Planning);
- Cllr Matt Noble (Church Street Ward Councillor);
- Little Venice Ward Councillors;
- Hyde Park Ward Councillors;
- Regents Park Ward Councillors;
- Karen Buck MP – Westminster North;
- Nickie Aiken MP (Office) - Cities of London and Westminster;
- Marble Arch/Paddington BID;
- Paddington Waterway & Maida Vale Society;
- Marylebone Association; and
- South-East Bayswater Residents Association (SEBRA) & Paddington Residents Active Concern on Transport (PRACT).

3.159 Additionally, three written responses from Hyde Park Estate Association; The Church Street Ward Neighbourhood Forum; and St Marylebone Society were also received.

Pre-Application Consultation

3.160 In total, five pre-application meetings were held with WCC in 2020. The main issues that were covered comprised the following:

- Height, scale and massing;
- Design and façade articulation;
- Layout;
- Landscape;
- Affordable housing mix and tenure;
- Non-residential uses and community uses;
- Construction logistics;
- Identified views;
- Transport and Servicing Strategy;
- Acoustic Strategy;
- Air Quality Strategy; and
- Daylight, Sunlight and Overshadowing.

Post-2021 Submission

Community Consultation

3.161 Comprehensive post-application consultation with neighbouring residents and stakeholders was undertaken by the Applicant between June and October 2022. This comprised the following events and activities:

- Public Exhibition, attended by 18 people;
- Consultation website, viewed 240 times;
- 14 stakeholders contacted and five stakeholder meetings held in June and October 2022;
- Online Webinar;
- Online survey, available via the consultation website, social media adverts and a hard copy available to the exhibition event and completed by 15 people;
- Over 7,000 leaflets delivered to the local community, inviting them to fill in the survey, attend both the public exhibition and the webinar and to contact the project team through via email or freephone; and
- Social Media (Facebook and Instagram) adverts which have reached over 5,200 people.

London Review Panel

3.162 The first presentation to the London Review Panel (LRP) was held on 8 June 2022.

3.163 Revised design proposals were presented that included:

- Block I reduced to improve daylight/sunlight levels to neighbouring properties to the north and provision of new public realm on the south-west corner of the site.
- Block J footprint reduced to allow for greater distance between buildings.
- Block K footprint rationalised to align the shoulder element with the main tower and repositioned on site to increase the extent of public realm on the corner of Edgware and Harrow Road.
- Building heights revised to better define the cluster of tall buildings and mark the key gateway junction into central London.
- Sunlight hours on ground increased as a result of smaller building footprints.

- North facing single aspect apartments eliminated and an uplift in dual aspect homes as a result.
- Quantum of public realm increased and new character areas to define the landscape proposals and connect the design response to the surrounding context and history of the site.
- Revised energy strategy incorporating Air Source Heat Pumps (ASHP) to reduce the development's reliance on the carbon based energy network.

3.164 Following feedback from the first LRP presentation, the design was further revised to look at key design amendments that would bring further improvement to the scheme. These included:

- Block K was further rationalised to remove the shoulder element and provide a more slender and elegant tall building to mark the gateway corner of the site.
- Distances between Block K and existing buildings to the north was increased resulting in additional public realm to the Newcastle Place entrance.
- The public realm was further refined to deliver a more contextual design response that responds to the gritty and urban nature of the surrounding context in order to blur the boundaries between hard and soft landscape whilst also delivering a new green street that will encourage people to utilise it.
- Further improvements were made to the residential mix as a result of the reduced Block K building footprint.

3.165 Following generally positive feedback from a second LRP held on 18 August 2022, the proposals were developed in line with the key design amendments to drive towards the selected scheme design.

Post-Application Consultation

3.166 Post-application meetings were held with the GLA throughout the post-application design stage to agree the proposed amendments to the 2021 proposed development. The main issues covered, which are discussed in the preceding sections of this chapter, comprised:

- Height, scale and massing;
- Design and façade articulation;
- Layout;
- Landscape;
- Residential unit numbers, affordable housing mix and tenure; and
- Non-residential uses and community uses.

Conclusion

3.167 The overarching aim for the 2022 amended proposed development has been to regenerate a prominent brownfield site. This has consequently highlighted opportunities to deliver a high-quality mixed-use development comprising residential and commercial uses with associated landscaping and public realm improvements.

3.168 The pre- and post-application design processes have been iterative, responding to the numerous opportunities and constraints on-site and in the surrounding area, principally those relating to the site's surrounding context, building height, townscape, visual amenity and built heritage; air quality; noise and vibration; daylight and sunlight; and wind.

3.169 The massing and layout options for the proposals were developed in consultation with WCC and the GLA with particular focus on providing a landmark development as the final phase of the wider WEG masterplan development, while also being specific to the constraints and opportunities of the site in its own right. This approach has been reinforced by inclusion of significantly increased permeability and accessibility between Paddington Green and Edgware Road.

3.170 Refinement of massing, layout and façade options throughout the design evolution processes was informed by the pre-and post-application consultation processes and extensive environmental appraisals. Noise, air quality, wind, daylight, sunlight and overshadowing modelling were of particular importance in ensuring the amended proposed development minimised environmental impacts and delivered high quality residential accommodation.

3.171 A more slender 39 storey tower was introduced to mark the gateway corner of Edgware and Harrow Road and was complemented by a taller and more slender 24 storey tower in the western corner overlooking Paddington Green, with a lower 17 storey mansion block positioned to the centre of the site.

3.172 The design evolution processes considered a range of options which were refined (during the pre-application stage) and updated (during the post-application stage) through consultation with WCC, GLA, local stakeholders and the local community.

4(R) 2022 AMENDED PROPOSED DEVELOPMENT DESCRIPTION

Introduction

4.1 This chapter of the ES provides a description of the 2022 amended proposed development for the purposes of identifying and assessing the potential environmental impacts and likely environmental effects of the 2022 amended proposed development in the technical assessments of ES Volume 1(R) (Chapters 6(R)-10(R)) and ES Volume 2(R).

4.2 In accordance with the EIA Regulations, this chapter sets out the physical characteristics of the built development including the proposed access and egress arrangements; the landscape strategy; estimated utility demand; and estimated emissions, residues and waste arisings.

4.3 A general description of the site is provided in ES Chapter 1(R): Introduction, with more detailed descriptions provided in each technical assessment within this Volume and ES Volume 2(R). These are therefore not repeated in this chapter.

4.4 Further detailed information on the 2022 amended proposed development is provided in relevant planning application documents as presented in ES Chapter 2(R): EIA Process and Methodology.

Planning Application

4.5 As indicated in ES Chapter 1(R): Introduction, the Applicant is submitting a full planning application for the 2022 amended proposed development, described as follows in the application form:

"*Demolition of the existing building and redevelopment of the site to provide three buildings of 39, 24 and 17 storeys in height, providing residential units (including affordable units)(Class C3), commercial uses (Class E), a community use (Class F.2), 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, disabled car parking and cycle parking and connection through to the basement of the neighbouring West End Gate development*."

4.6 In summary, the 2022 amended proposed development would comprise the following:

- Demolition of the Paddington Green Police Station;
- Excavation of a basement with connection to the WEG development basement;
- Erection of three buildings (Blocks I, J, K) along, set back from, Harrow Road and Edgware Road;
- Delivery of ground floor commercial and community uses and residential at upper floors; and
- Stopping up of Newcastle Place with associated landscaping and cycle parking.

4.7 The delivery of the 2022 amended proposed development would be sequenced across a number of phases as described in ES Chapter 5(R): Demolition and Construction Description.

Proposed Development Description

Site Arrangement

4.8 As illustrated in Figure 4.1, Blocks I, J and K would be constructed across the site, west to east respectively, to provide flexible commercial, community and residential floorspace. The blocks would be arranged along the southern frontage of the site enabling the delivery of a landscaped area to the north between the WEG (Blocks A-F)/ 14-17 PG (Blocks G and H) developments and the new buildings.

4.9 The main entrance to the site would be from Edgware Road onto Newcastle Place. This entrance would allow delivery and drop off vehicle and pedestrian access to the site. Vehicles associated with servicing would access the basement levels via Church Street and the WEG basement.

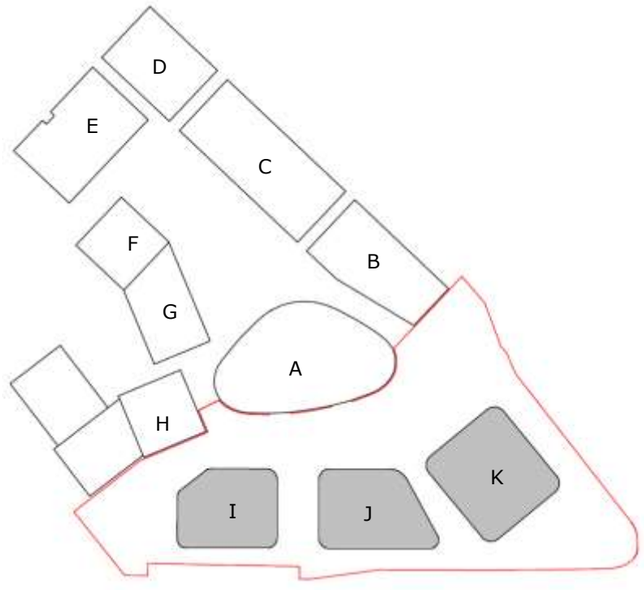


Figure 4.1: 2022 Amended Proposed Development Site Arrangement

4.10 The 2022 amended proposed development would be 'car free', excluding disabled, service, delivery and drop off vehicles, and therefore car movement to and from the site would be minimal.

4.11 Landscaping and public amenity space would be delivered across the 2022 amended proposed development. Newcastle Place would be redesigned to create an expanse of landscaped public realm that would link Paddington Green to Edgware Road.

Land Use

Area Schedule

4.12 The summary floorspace schedule for the 2022 amended proposed development is presented in Table 4.1 including the quantum of each use-class to be delivered across the 2022 amended proposed development.

Table 4.1: 2022 Amended Proposed Development Area Schedule		
Use Class	**Gross Internal Area (GIA) m²**	**Gross External Area (GEA) m²**
Residential (Use Class C3) – 556 units including Ancillary Residential Amenity*	45,350	69,725
Flexible Commercial (Use Class E)	1,079	1,215
Community	133	150
Total*	**46,562**	**71,087**
*Excludes core/circulation and basement		

Unit Mix and Tenure

4.13 The 2022 amended proposed development would deliver 556 residential units. The residential provision across the proposed development would include a variety of unit types, ranging from studio, one-bedroom, one person units to four-bedroom, six person units. The 2022 amended proposed unit and tenure mix is presented in Table 4.2.

Table 4.2: 2022 Amended Proposed Development Residential Unit and Tenure Mix						
Tenure	**Unit Type**					
	Studio/MH[1]	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**Total**
Intermediate	13	59	38	0	0	110
Social Rented	0	11	50	46	2	109
Private	22	77	139	93	6	337
Total by unit	35	147	227	139	8	556
% by unit	6.3	26.4	41.0	25.0	1.4	100

4.14 The 2022 amended proposed development would deliver a total of 39.4 % affordable housing (by unit number), which would comprise 19.6 % social rented housing and 19.8 % intermediate housing.

Land Use Distribution

4.15 The land use distribution across the site has been arranged on horizontal and vertical profiles to create distinct residential, flexible commercial, community and residential amenity zones.

4.16 Flexible commercial floorspace would be provided at the ground level of Blocks I, J and K creating active frontages.

4.17 Representative general arrangement plans of the 2022 amended proposed development are presented in Figure 4.2 to 4.6.

Basement Levels

4.18 The 2022 amended proposed development would be underlain by two levels of basement both of which would connect into the basement of the WEG development to the north. Basement Level B1 would be the larger of the two, comprising a full basement level (as existing) and extending to the entire footprint of the site with an additional extension in the north-west to provide the connection to the WEG development. The on-site basement would be accessed off Church Street as per the existing arrangement associated with WEG.

4.19 Level B1 would accommodate three cores with associated lobby arrangements and the following uses:

- 17 accessible car parking spaces;
- 1,012 long stay cycle storage spaces for residential and commercial use (with an additional 104 spaces within the WEG basement);
- Cycle changing facilities for use by the commercial units;
- Residential, commercial and retail refuse stores;
- Surface water attenuation tanks; and
- Mechanical and electrical plant.

4.20 The substantially smaller Level B2 basement would accommodate waste management facilities which would integrate with the existing WEG waste management strategy.

Ground Level

4.21 As shown in Figure 4.4, ground level uses at:

- Block I would comprise flexible commercial floorspace, community space, residential entrance and estate storage, egress, plant and a cycle entrance;
- Block J would comprise flexible commercial floorspace, fire service and residential entrance, egress, plant and a cycle entrance; and
- Block K would comprise flexible commercial floorspace, an estate management office, a residential entrance, storage, fire service and egress, plant and a cycle entrance and goods entrance.

Typical Floor Levels

4.22 Figure 4.5 presents representative general arrangement plans for typical residential levels.

4.23 Block I would provide residential units from level one upward. This block would have a single central core with seven apartments per floorplate.

4.24 Block J would provide residential units from level one upward. This block would have a single central core with six apartments per floorplate.

4.25 Block K would provide residential units would level one upwards. This block would have two back-to-back central cores with 11 apartments per floorplate from floor two upwards. Floor one would contain internal residential amenity space.

Roof Levels

4.26 As shown in Figure 4.6, the roof levels across the 2022 amended proposed development would be comprised of servicing and plant equipment, photo voltaic (PV) panels, and biodiverse green roof areas around the perimeter of each roof.

[1] MH: Manhatten

Figure 4.2: 2022 Amended Proposed Development Basement Level B1 General Arrangement Plan

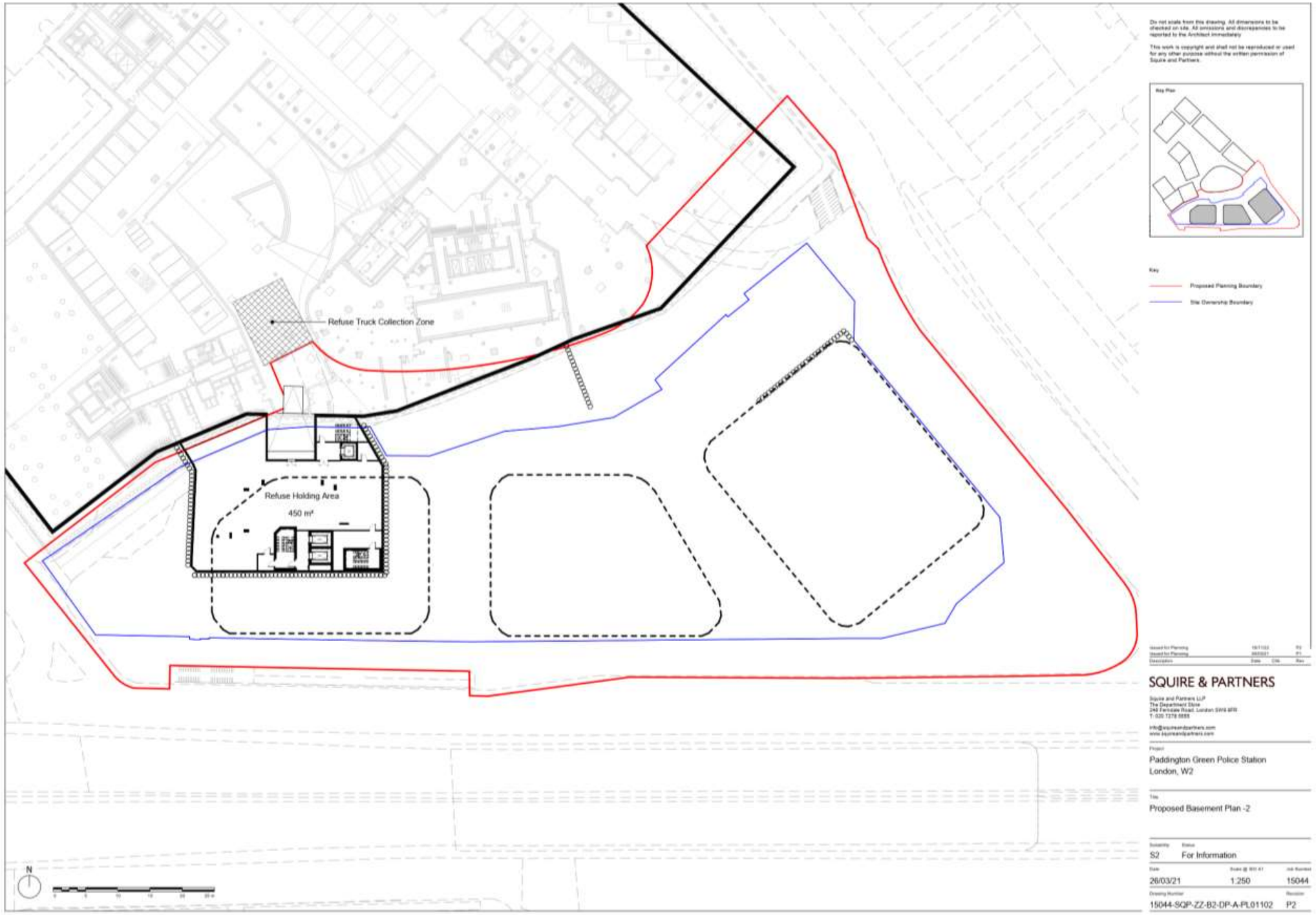


Figure 4.3: 2022 Amended Proposed Development Basement Level B2 General Arrangement Plan

Figure 4.4: 2022 Amended Proposed Development Ground Level General Arrangement Plan

Figure 4.5: 2022 Amended Proposed Development Typical Residential Level General Arrangement Plan

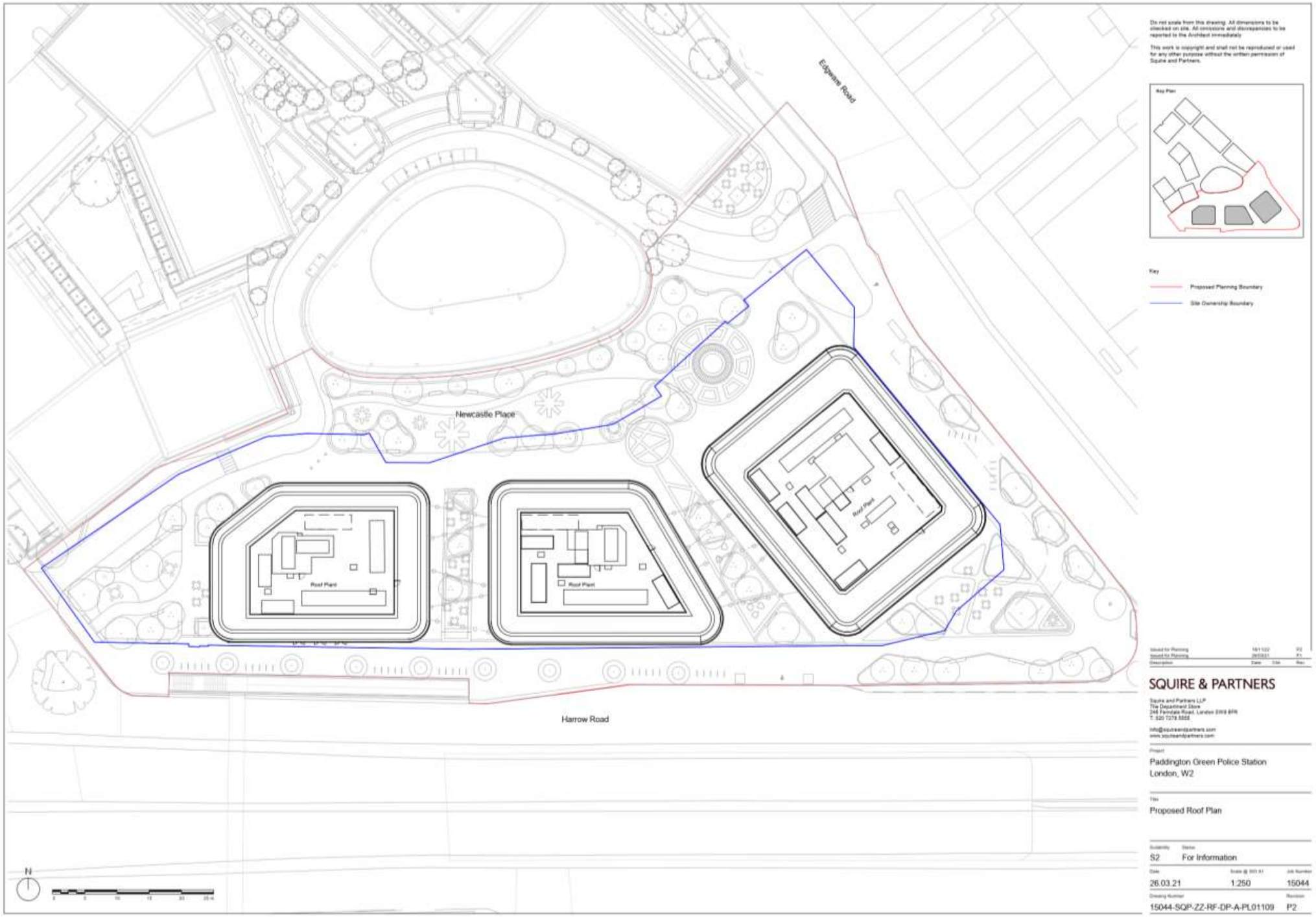


Figure 4.6: 2022 Amended Proposed Development Roof Level General Arrangement Plan

Built Form, Height and Massing

4.27 The architectural design of the blocks has been informed by the surrounding context including the Paddington Green Conservation Area, the character of other surrounding neighbourhoods such as Maida Vale and Little Venice, the wider WEG masterplan and the prominent gateway location of the site.

4.28 Three main building typologies would be delivered across the 2022 amended proposed development, each having a distinct built form and performing a specific role within the townscape narrative.

4.29 The built form and typology of each building would be as follows:

- Block I: The bullnose form of the building, located adjacent to Paddington Green would be cut back and a new, more slender building form would be created to minimise the buildings impact on daylight and sunlight levels to the blocks immediately to the north.
- Block J: The overall building height would be increased in order to main the overall composition of the cluster of tall buildings but would remain lower in height than Block I and K to balance the overall composition of the cluster of tall buildings. The overall building footprint would be reduced to increase the gaps between buildings and improve daylight and sunlight performance.
- Block K: The shoulder element of Block K would be removed to significantly reduce the building footprint and result in a slender tower form.

4.30 The 2022 amended proposed development's building heights are summarised in Table 4.3.

Table 4.3: 2022 Amended Proposed Development Building Heights

Block	Height (m AOD)	Storeys (above ground)
I	115.219	24
J	92.724	17
K	166.304	39

Material Palette and Façade Detailing

4.31 The 2022 amended proposed development would comprise two distinct character areas within the site; the commercial character which would exist at the ground level; and the residential based character which would exist at upper levels. Whilst these two character areas would sit at separate levels, the entrances to the residential uses would be at ground level as an active part of the streetscape. As such the proposed façade designs have been produced to create a hybrid architecture that makes a clear visual distinction between the residential and commercial components, and the distinct parts of the site.

4.32 The materials that would be used for the blocks are presented in Figure 4.7 and 4.8.

Block I and J

4.33 Block I and J would comprise a series of terracotta coloured glass reinforced concrete (GRC) columns to define the bays. The designs would embellish the detail further with bronze coloured aluminium mullions that would run full height either side reconstituted stone panels to bring another layer of detail and refinement. The window systems would comprise consistent bronze coloured aluminium window systems, continuing the detailing and tones used on the WEG development and ensuring that the 2022 amended proposed development read as part of the whole.

Block K

4.34 For Block K, GRC columns and spandrels would define the solid area of each façade and bring a level of rigour and repetition to the facades. This would be accentuated with the careful detailing of the material that varies from building to building. The tower would comprise white GRC columns to bring a more organic feel to the façade treatment of the tallest building.

Block K | Block I and J

Figure 4.7: 2022 Amended Proposed Development Materiality

Figure 4.8: 2022 Amended Proposed Development South Façade of Blocks I, J and K Respectively

4.35 Figures 4.9-4.12 presents the façade and massing elevations of the 2022 amended proposed development.

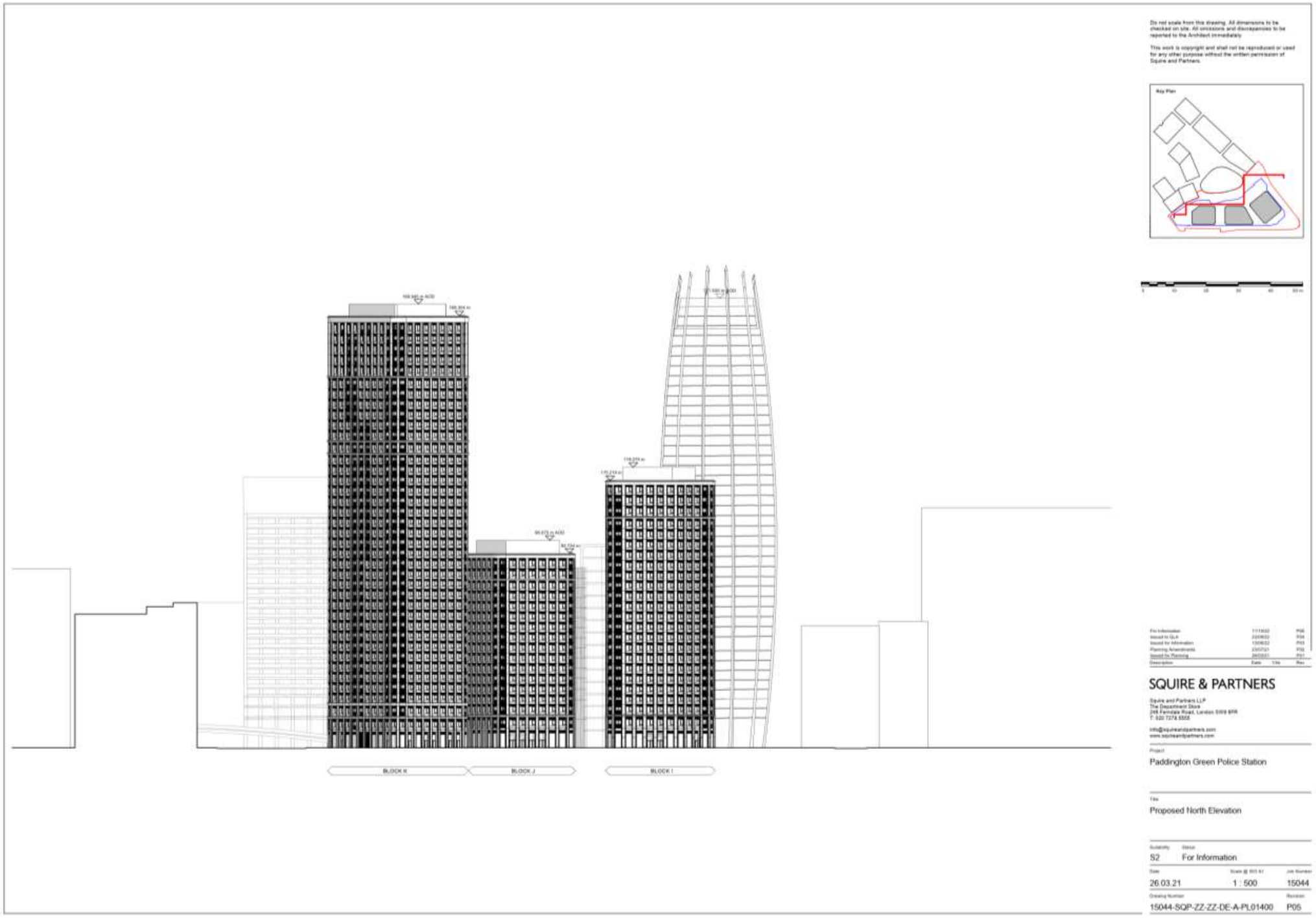


Figure 4.9: 2022 Amended Proposed Development North Elevation

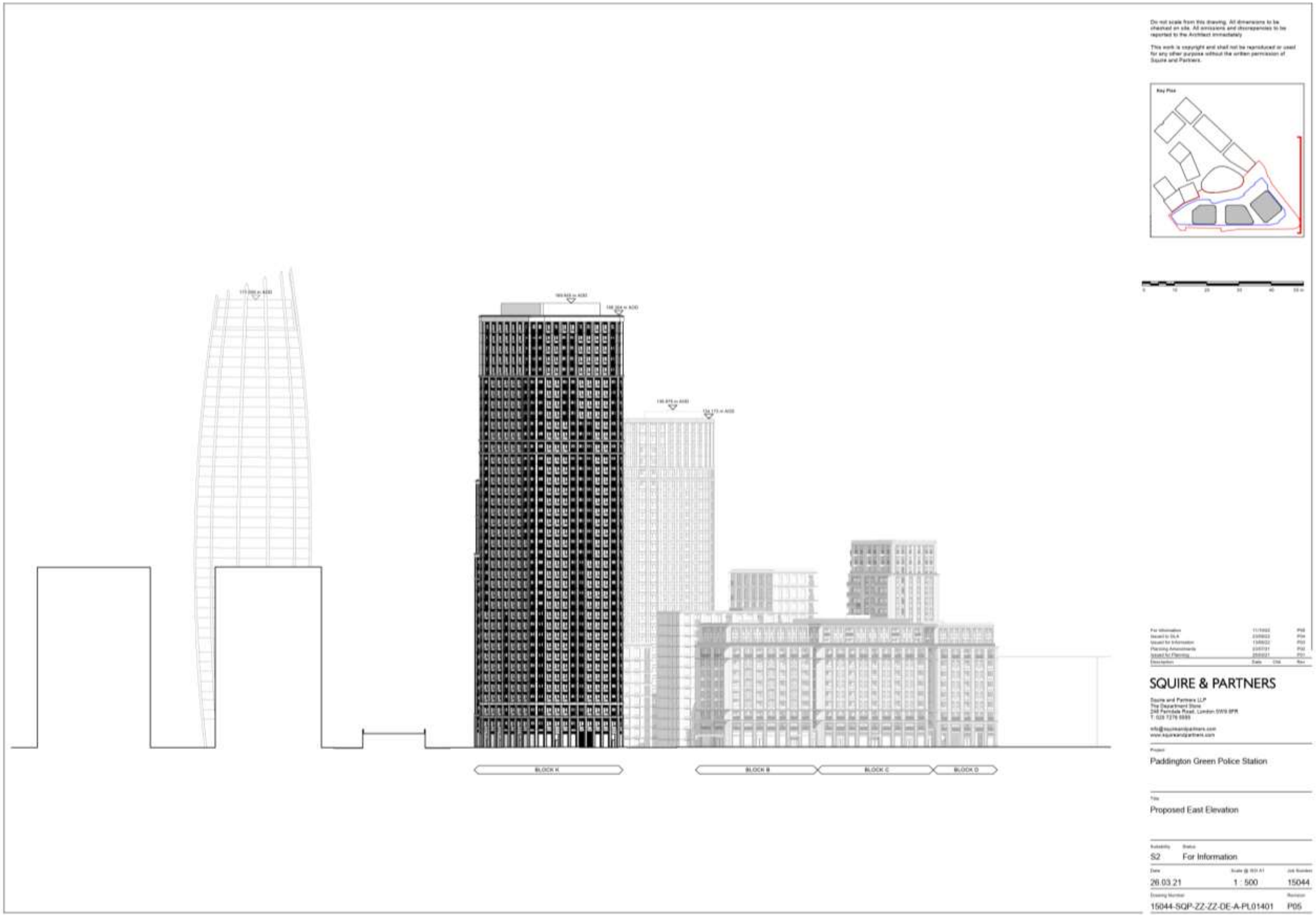


Figure 4.10: 2022 Amended Proposed Development East Elevation

Figure 4.11: 2022 Amended Proposed Development South Elevation

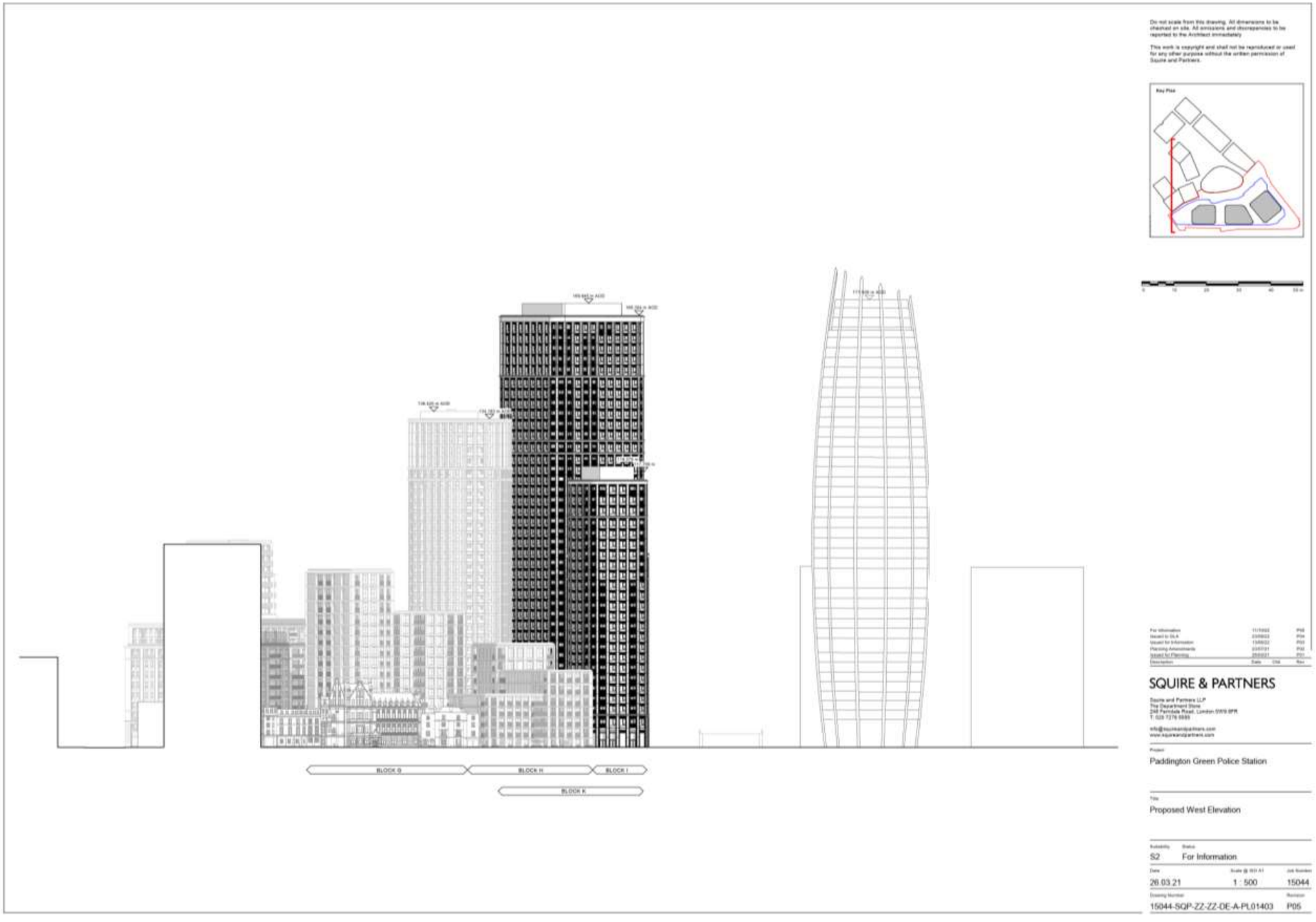


Figure 4.12: 2022 Amended Proposed Development West Elevation

Public Realm and Open Space Network

Public Amenity Space

4.36 A total of 4,755 m^2 of public realm and open space would be delivered across the 2022 amended proposed development. Figure 4.13 illustrates the open space proposals.

4.37 The landscape masterplan is defined across two levels on the ground level and roof level, as presented in Figure 4.14.

4.38 The key landscape character areas that would be identified at ground level to respond to the different character areas around the 2022 amended proposed development, would comprise the following:

- **Newcastle Place:**
  - Newcastle Place would provide a new vibrant public amenity space at the heart of the 2022 amended proposed development, and a pedestrianised new green link between Edgware Road and Paddington Green.
  - A formal bosque of trees with feature paving, seating and lighting immediately to the south of WEG Block B, would provide a structured space in the streetscape and entry into Newcastle Place from Edgware Road. An animated water feature and the existing London Plane tree on Edgware Road would combine with the 'bosque' of trees to create a strong legible gateway to the site and invite further exploration. The bosque would provide space for circulation and gathering, as well as outdoor dining opportunities to spill-out from the adjacent retail use in WEG Block B.
  - The re-routing of the existing carriageway would enable the creation of a central landscaped, amenity lawn area with a southern aspect. The lawn would offer an area for informal recreation and relaxation that would be complimented by high quality surface finishes, seating and integrated elements for play. Raised planters wrapping the lawn would provide for shelter and enclosure, complemented by semi-mature and multi-stems tree planting, groundcover and accent plants.
- **Edgware Road Streetscape:**
  - Along Edgware Road the deep building setback would allow for generous pedestrian circulation spaces and space for spill out uses including, outdoor seating and displays, activating the building frontage.
  - A new avenue of London Plane trees would improve the streetscape environment and promote the tree-lined avenue character of Edgware Road. The new planting would adapt and integrate with final TfL works to convert the existing Joe Strummer subway into a rain garden.
  - Additional improvements would comprise enhanced paving, integration of signage, information and additional cycle parking.
- **Edgware Road Junction Plaza:**
  - The proposed avenue of London Plane trees along the Edgware Road frontage of the site, would culminate in a new plaza space on the corner of Edgware Road, opposite Edgware Road Underground Station.
  - Within the predominantly hard paved plaza, three Oak trees would provide greening, shade, shelter and seasonal interest. Fixed feature seating would provide places to stop and rest with additional space to allow flexibility for spill out outdoor activity from the proposed retail uses.
- **Harrow Road Streetscape:**
  - Flexible commercial uses would be provided along Harrow Road at ground level.
  - A new roadside tree avenue would provide greening and a physical and visual buffer to the adjacent carriageway and fly-over, improving the quality of the pedestrian environment and health of the street.
  - Other enhancements would include decluttering of redundant signage, guarding and access restrictions, footway paving improvements and new cycle parking.

4.39 Hard and soft landscaping would be provided across the site. The public realm would be softened with extensive new trees and planting. Edgware Road and Harrow Road would be paved with artificial stone pavers, with some highlighted detailed paving to designate entries to retail units. Newcastle Place and the new links into the site would be paved in stone units with contrasting size and pattern.

4.40 Street furniture would comprise:

- seating integrated with raised planters containing trees and shrubs (seating would have backs and arm rests to improve function and accessibility for all users);
- robust rubbish bins at key locations in semi-public areas that would be managed by the on-site facilities team;
- short-stay cycle stands would be provided in various locations around the site to facilitate ease of use; and
- legible London signage.

4.41 It is anticipated that the landscaping and public realm surrounding Block I would be delivered as part of Phase 1, with the remaining public open space delivered in Phase 2.

Figure 4.13: 2022 Amended Proposed Development Open Space Strategy

Figure 4.14: 2022 Amended Proposed Development Landscape Masterplan

Play Space

4.42 Within the amenity space, play space would be delivered as presented in Table 4.5 and shown in Figure 4.15.

Table 4.5: 2022 Amended Proposed Development Play Space Provision

Age Group	Area (m^2)
<5	360
5-11	300
12-15	180
16 and 17	0
Total	**840**

4.43 In addition 310 m^2 of play space would be delivered on-site which forms part of the allocated play space for the neighbouring WEG development. Accordingly a total of 1,150 m^2 of play space would be brought forward within the site.

4.44 Figure 4.15 shows the play space that would be integrated within the landscape. Given the constraints of the site, play space allocation would focus on providing play opportunities for younger children and their carers. Play space has been implemented in keeping with the principles of Mayor of London's Supplementary Planning Guidance (2012), Shaping Neighbourhoods: Play and Informal Recreation[2] and WCC Guidance for Play[3].

4.45 As well as the on-site play provision, residents would benefit from the number and extent of green spaces within walking distance of the site. The large expanses of Hyde Park and Regents Park are both within walking distance of the site, whilst Paddington Green, St Mary's Church Yard and the parks of Little Venice and Maida Vale are in the more immediate vicinity. Play provisions for 12 years and older would be provided by the numerous facilities and play areas within close proximity of the site. Financial contributions would supplement the on-site provision.

4.46 The blue hatched area in Figure 4.15 indicates an area of 310 m^2 that is allocated to the consented WEG development. This is to ensure that the provision of play space required by the consented WEG development is maintained within the proposed landscaping.

Biodiversity Enhancements

4.47 Existing on-site biodiversity is very limited. The 2022 amended proposed development presents an opportunity for substantial biodiversity enhancement.

4.48 Extensive landscape and planting would be delivered within the 2022 amended proposed development, designed to include a mosaic of habitats. Plant and tree species would be selected to provide shelter and food sources for wildlife with the inclusion of a range of species that flower for a long period of the year, fruiting species and native species.

4.49 Native and non-native plants chosen would create a diverse landscape with a variety of pants providing, colour, fruit and nectar as well as habitat for various birds and other wildlife.

4.50 Bird boxes would be incorporated into the 2022 amended proposed development where the nearby Paddington Green foraging habitat and shelter of existing large canopied trees is more conducive for wildlife.

4.51 Biodiverse green roofs on each of the blocks would seek to mimic open-mosaic type habitat, flower-rich perennial planting, evergreen hedgerows, rain gardens and high levels of new tree planting. Species incorporated will be a mixture of native and non-native species with known biodiversity importance.

4.52 A Biodiversity Net Gain assessment has been undertaken which has quantified the level of biodiversity change from the existing site to the 2022 amended proposed development. The increase in biodiversity has been calculated at 224.42 %. These biodiversity gains would be significantly more than the 10 % net gain required by planning policy for area-based habitats and singular/street trees.

Lighting Strategy

4.53 All lighting would be designed in accordance with the Institution of Light Engineers (ILE) document entitled 'Guidance Notes for the Reduction of Light Pollution'[4].

4.54 External lighting would be provided and would be supplemented by the use of illuminated bollards to light paths and low-level lighting to greenery and proposed water features.

4.55 Vehicular access would be restricted within the site to Newcastle Place, Harrow Road and Edgware Road; light levels along these routes would be developed to comply with road regulations. Street lighting would be implemented with diffuse optic and low-level lighting to greenery for pedestrian wayfinding.

4.56 Activation to ground level frontages via flexible commercial would bring animation to the street frontage and this would be enhanced through amenity lighting to shopfronts and up-lighting to denote key building entrances.

Façade Lighting

4.57 Ambient lighting would be provided at non-residential façades.

4.58 Entrances would be illuminated with feature up-light fittings. Feature light strips would be used within the planters to light the front face of the soft landscape adjacent to entrances. Floor luminaries would be placed behind the glazing line in reception areas.

4.59 Gallery lighting would be provided across flexible commercial frontages.

Balconies

4.60 Balconies would be provided with surface mounted fittings on one side of the balcony to illuminate the balcony without overspill of light to the façade. Fittings would have a downward shielded output for glare avoidance and visual comfort.

[2] Greater London Authority, 2012. Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance. London. GLA.
[3] Westminster City Council, 2021. A partnership approach to open spaces and biodiversity in Westminster. Online. Available at: https://www.westminster.gov.uk/planning-building-and-environmental-regulations/environment-conservation-and-pollution/our-strategy-open-spaces-and-biodiversity last accessed 06/04/2021.

[4] Institute of Lighting Professionals (previously Institution of Lighting Engineers), 2005. Guidance Notes for the Reduction of Obtrusive Light. ILP.

Figure 4.15: 2022 Amended Proposed Development Play Space Provision

Proposed Access

4.61 The 2022 amended proposed development would deliver an inclusive design in compliance with The Equality Act (2010)[5]. The proposed Access and Movement plan is presented in Figure 4.16.

Pedestrian and Cycle Access

4.62 Pedestrian and cycle access from the public highway network would be via entrances on Newcastle Place, Harrow Road and Edgware Road. Footways would be provided along the extent of the site frontage which would connect with the existing pavement. Footways would extend into the site, providing continuous pedestrian access to each building entrance.

4.63 Access to Edgware Road, Newcastle Place, Paddington Green and the Westway would be level with the pavement. Pavement surfacing would meet WCC requirements.

Vehicular Access

4.64 The 2022 amended proposed development has been designed as a 'car free' scheme and therefore limited vehicular access would be provided, aside from 17 accessible car parking spaces at the basement level, accessed through the WEG basement from Church Street to comply within the 3 % disabled car parking provision set out within the London Plan. Should the demand for additional accessible parking spaces arise beyond 3 % of homes, the WEG basement car parking can be used.

4.65 Additional vehicular access to the site would be provided from Newcastle Place (along a loop road around the north of WEG Block A), primarily for deliveries to the residential units and drop offs. This loop road access is limited to day-to-day deliveries via dedicated loading bays. All other servicing would be via the basement levels accessed off Church Street as part of the WEG development. Vehicular access to the car park, located at basement Level B1, would be via the vehicle ramp which is accessed off Church Street.

4.66 The access scheme has been prepared in liaison with Design Case Officers, alongside TfL. A Transport Assessment has been prepared by the transport consultant and accompanies the application, the scope of which has been agreed with TfL.

Emergency Access

4.67 Emergency vehicle access to the site would be provided from Edgware Road onto Newcastle Place (to the south of WEG Block A). Whilst there is no regular vehicle access to this area, sufficient space has been allowed for emergency vehicle access only.

Building Access

Common Elements - Building Entrances

4.68 Flush thresholds would be provided for entrances into all ground level areas and from all ground level main lobbies to the residential cores.

4.69 Ramped access may be required in places from secondary entrances to the cores to negotiate the external pavement falls.

4.70 Handrails to ramps, lifts and stairs would be suitably detailed in line with Part M.

4.71 Minimum widths of 1.5 m to ramps and 1.2 m to stairs would be provided.

4.72 A disabled lift access would be provided to the roof terrace on Block J.

Common Elements – Within Buildings

4.73 The residential entrance lobbies would be provided with adequate space to manoeuvre as required under Part M and Lifetime Homes.

4.74 All common corridors would be 1.5 m wide and flush thresholds would be provided to all lobbies, lifts and unit entrance doors.

4.75 All unit sizes have been designed with the space requirements of Lifetime Homes and Part M in mind and all floors would be served by adequately sized lifts for wheelchair users.

4.76 All service corridors would be a minimum of 1.2 m clear width.

4.77 Refuse stores would be located at basement level and designed with flush thresholds from the buildings and to the outside.

Common Elements – Vertical Circulation

4.78 Each of the residential cores would provide multiple passenger lifts that allow for step free access to all floors.

4.79 In addition to the lifts, two dedicated firefighting stairs would be incorporated into each of the cores.

4.80 Access to the lift and stair cores would be via the ground floor residential entrance lobbies, with access control utilised to ensure the core would only be accessible to residents.

Common Elements - Horizontal Circulation

4.81 Once on each of the floor plates, horizontal circulation would be via dedicated residential access corridors that lead to each of the apartment entrance doors.

4.82 All circulation corridors would be a minimum of 1.5 m wide and provide flush thresholds to all apartment entrances.

[5] Government Equalities Office, 2010. Equalities Act 2010

Figure 4.16: 2022 Amended Proposed Development Access Strategy

Parking

Cycle Parking

4.83 A breakdown of cycle parking provision for the 2022 amended proposed development is presented in Table 4.6.

Table 4.6: 2022 Amended Proposed Development Cycle Parking Spaces

Land Use	Long Stay	Short Stay
Residential	1,004	15
Flexible Commercial	8	66
Total	**1,012**	**81**

4.84 The 2022 amended proposed development would provide a minimum of 1,012 long stay cycle parking spaces. An additional 104 long stay cycling parking spaces would be provided within the WEG basement to meet new London Plan[6] standards. Cycle parking for each block would be provided in excess of WCC cycle parking requirements and the allocated numbers would be in line with GLA/TfL requirements. Long-stay residents parking would be provided at basement level in secure cycle stores.

4.85 Cycle stores would be accessible via lifts from the residential cores.

4.86 Cycle racks for short-stay casual use would be distributed within the public realm across the site. In total 81 short-stay cycle spaces would be provided in accordance with the London Plan standards. Short-stay visitor cycle parking would be located on the Edgware junction, Edgware Road and Harrow Road frontages.

Car Parking

4.87 The 2022 amended proposed development has been designed as 'car free', aside from the provision of 17 accessible car parking spaces, which would be provided at basement Level B1 in line with policy requirements. Of these spaces 50 % would be provided with active electric charging point (EVCPs). The remaining 50 % of spaces would be provided with the capacity to be fitted with EVPCs should these be required in the future.

Proposed Development Deliveries and Servicing

Deliveries and Servicing Management

4.88 Servicing and deliveries at the 2022 amended proposed development would take place in two main locations:

- Day-to-day deliveries and drop off would take place at both ends of Newcastle Place, via the dedicated loading bays at grade as shown in Figure 4.16.
- All other servicing would be via the basement levels accessed off Church Street as part of the WEG development. The service area would act as a point of contact for refuse delivery and collection.

4.89 When servicing to residential units is required, these would be accessed via the residential lifts through core connections in the basement levels.

4.90 The concierge management of the site would maintain and manage day-to-day operations.

Waste Management

4.91 An Operational Waste Management Plan has been produced to accompany the application and provides detailed information on the anticipated waste arisings and management of waste during operation of the 2022 amended proposed development. A summary is provided in the sections below.

Operational Waste Arisings

4.92 Waste arisings have been estimated using the WCC planning guidance Recycling and Waste Storage Requirements[7]. Where a suitable metric was not available waste generation metrics have been sourced from S5906:2005 Waste Management in Buildings – Code of Practice[8].

Commercial

4.93 Two days of waste storage has been provided for all waste streams in the waste room for commercial units. The estimated two-day waste arisings for non-residential floorspace are summarised in Table 4.7.

4.94 This is based on guidance for these use classes sourced from WCC; the actual waste arisings would be dependent on the business activities that ultimately occupy the 2022 amended proposed non-residential units.

Table 4.7: 2022 Amended Proposed Development Estimated Commercial Waste Generation ((m^3) per two days)

Waste Stream	A1 Retail	A3 Restaurant & Cafe	Total
Residual	0.18	2.94	3.12
Paper	0.40	0.00	0.40
Cardboard	0.59	0.25	0.83
Plastic	0.19	0.15	0.34
Aluminium	0.00	0.15	0.15
Glass	0.04	0.25	0.29
Food Waste	0.07	1.18	1.25
Total	**1.47**	**4.91**	**6.38**

Residential

4.95 The total estimated residential waste arising for the 2022 amended proposed development has been calculated and is summarised in Table 4.8.

[6] Greater London Authority, 2021. The London Plan: The Spatial Development Strategy for Greater London. Online. Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf last accessed 30/03/2021

[7] Westminster City Council, 2018. Recycling and Waste 5.2Storage Requirements. Online. Available at: file:///C:/Users/JALLC/Downloads/Waste_Storage_Require2.6ments.pdf

[8] British Standards Institution, 2005. Waste Management in Buildings – Code of Practice.

Table 4.8: 2022 Amended Proposed Development Estimated Residential Waste Generation ((m³) per week)

Waste Stream		Affordable		Private	Total
		Social Rent	Intermediate		
Residual		7.7	4.4	20.4	32.6
MDR	Paper & Card	5.1	3.0	13.6	21.7
	Glass	5.1	3.0	13.6	21.7
	Plastic & Metal	5.1	3.0	13.6	21.7
Food		2.6	1.5	6.8	10.9
Total		**25.6**	**14.9**	**68.0**	**108.56**

Waste Facilities

Flexible Commercial

4.96 Each commercial tenant would be required to provide temporary waste storage areas within their demise which would have sufficient capacity to separately store refuse and recyclables.

4.97 Each day at the end of the retail unit's operation the respective unit's staff will transfer the waste to the Level B2 waste store in trolleys or roll cages via the cycle lift for presentation and collection.

The facilities management (FM) team would be responsible for communicating with commercial tenants on the requirements for transferring waste and recycling to the storage facility, including the requirements for bulky and non-standard waste. The waste store and individual zones within the store would be clearly labelled at all times.

Residential

4.98 Each individual residential unit would be provided with a segregated waste bin. The segregated waste bin would include sufficient individual receptacles to allow the segregation of the waste in accordance with the WCC Guidance.

4.99 In addition to a segregated waste bin, WCC would provide a suitable food waste caddy for the collection and storage of food waste.

4.100 Three residential waste storage areas would be provided at basement level in close proximity to each of the service cores. The waste storage areas located in the basement would be where all residential refuse, recyclable and food waste generated from the individual blocks would be stored prior to collection.

4.101 Sufficient space within each of the waste storage areas has been provided to accommodate the required number of refuse, recyclables and food waste containers assuming a weekly waste collection frequency.

4.102 Residents of Block I and J would be required to transport their own waste form their individual apartments directly to their local waste storage area using the residential passenger lifts.

4.103 The residential service core within Block K would contain a waste chute, which would allow residents to dispose of their waste at each floor level, which would discharge into a waste chute room at basement level. It is proposed that the refuse waste stream from Block K would be compacted using a compactor that is incorporated into the chute at an assumed compact ratio of 2:1. Recycling waste and food waste would not be compacted. Suitable signage compliant with WCC requirements would be provided above the chute hopper on each floor to provide guidance on which materials can be recycled. The chute would feature integrated CCTV to police its use, ensuring residents are using it correctly.

4.104 On the collection day nominated by WCC the on-site FM team would transport the bins containing the waste or recyclables using an electric vehicle, to the waste presentation area at basement level via the car park access roads.

4.105 Waste generated within the 2022 amended proposed development would be collected in the waste waiting area located in basement level B2. The capacity of this waiting area is based on the bin storage requirements for Blocks I, J and K to allow the collection of the refuse, recyclables and food waste bins that would require presentation on a weekly basis.

4.106 Waste generated within residential amenity space would be stored in domestic style waste containers/bins within the various amenity spaces. This waste would be regularly removed by the FM team as part of their daily cleaning activities and would be placed in Block K residential waste storage area for disposal.

Proposed Development Plant and Ventilation

Heating and Cooling

Residential

4.107 An all electric and zero fossil fuel heating and cooling strategy has been proposed to minimise carbon emissions. Heating and hot water for the residential areas and non-residential landlord areas of the amended proposed development would be served by high temperature air source heat pumps (ASHP) and PV panels. A connection to the combined heat and power (CHP) led energy centre located within the adjacent WEG development would also be delivered for resilience purposes.

4.108 Three ASHP with heat recovery would provide primary heating demand. These would also provide a portion of the cooling demand (35 %) and heat harvesting, with one Air-Cooled Chiller providing the remaining cooling load (65 %). An additional water sourced heat pump (WSHP) would provide the heating capacity to match the heat recovery heat rejection for temperature elevation. These units are to be located at the basement and roof level.

4.109 Space heating and domestic hot water (DHW) would be provided from dedicated Heat Pump Units for all dwellings. They would be fed from a communal Heat Pump system installed on roof in conjunction with a WSHP unit at the basement. A communal system would provide greater flexibility for decarbonisation of heat in the future. The Heat Pumps would have built-in metering capability to ensure tenants are billed for the heat used.

4.110 Each apartment would be provided with a mechanical utility cupboard (MUC), where the majority of the apartment plant and equipment would be located.

4.111 In order to mitigate the risk of overheating the design would use a combination of passive (minimising solar gains using blinds / balconies) and non-passive (mechanical cooling via high-efficient fan coil units (FCU) located in each apartment served from an air cooled chiller on the roof in the private apartments / inline DX cooling module within the affordable units) measures. The exact combination would be finalised at detailed design stage when more advanced thermal analysis for the building has been undertaken.

Non-Residential

4.112 Heating and cooling within the shell and core non-residential areas would be provided by an all electric communal system fed by two ASHP located on the roof of Block I.

4.113 All non-residential areas would be served by high efficiency fan coil units. The non-residential areas would be developed to shell standard only. The tenants would be responsible for provision of services to

suit their requirements. However, heating and cooling would be provided for the tenants' use with a capped services connection for the site wide low temperature hot water (LTHW).

4.114 Domestic hot water in the retail areas would be served by the ASHP and WSHP.

4.115 LTHW pipework would be distributed via the basement to the heat interface unit within each block. From the heat interface unit (HIU) all areas within these buildings would be provided with FCUs.

Ventilation

Residential

4.116 In line with the London Plan 2021[9], dwellings would be designed to reduce potential overheating and reliance on air conditioning units. The proposed glazing specification is presented in Technical Appendix 9.3(R) of ES Volume 3(R).

4.117 Each apartment would be provided with a Mechanical Ventilation Heat Recovery (MVHR) unit. This would be located within the MUC and ducted at ceiling level.

4.118 Low energy lighting would be specified throughout residential areas to reduce internal heat gains from luminaries.

Non-Residential

4.119 Mechanical ventilation would be provided in non-residential areas and the landlord areas to ensure sufficient ventilation can be provided at all times. Low specific fan power air handling units with heat recovery would be specified to reduce the energy demand associated with the mechanical ventilation systems.

4.120 All areas would be specified with low energy lighting. Additionally, photoelectric sensors and motion sensors would be applied throughout relevant areas to help reduce lighting demand and turn off lighting when spaces are unoccupied or adequately day-lit reducing internal heat gains from luminaires.

4.121 All areas would comply with building regulations solar gain limits and would be provided with cooling to guarantee comfortable conditions are maintained throughout the year.

Plantrooms and Ancillary Areas

4.122 Mechanical ventilation would be provided to the basement, with main extract fans located at ground level. The 2022 amended proposed development's Ventilation Statement[10] shows that the basement exhaust vents would terminate within the landscape and have been set out within the DAS and landscape plans.

4.123 Natural ventilation would also be provided via the ramp off Church Street into the basement.

Utilities

Electricity

4.124 UK Power Networks is the Electricity Distribution Network Operator (DNO) for the site.

4.125 The estimated site wide electrical demand required for the 2022 amended proposed development would be 4,200 kVA plus, 1,000 kVA LS diverse supply. A point of connection has been provided by UK power networks for a maximum demand of 5,200 kVA from Amberley Road and Aberdeen Place.

High Voltage

4.126 An existing UKPN substation is located in the north-eastern corner of the site. As part of the 2022 amended proposed development, this substation would be decommissioned by UKPN and demolished, with existing supplies being diverted to a new substation within the 2022 amended proposed development.

4.127 The 2022 amended proposed development would provide a new UKPN substations to serve the site. A Point of Connection (POC) has been secured from UKPN. The locations of the substation would be determined and agreed, as part of the detailed design.

Gas

4.128 No Gas connection is proposed for the development

Potable Water

4.129 Consultation with Thames Water has been initiated to establish the potable water capacity available to the site and to determine the locations for connection to the existing network. There are existing potable water distribution mains on the A5 Edgware Road.

4.130 A point of connection has been provided by Thames Water for a flow rate of approximately 6.9 l/s plus a fire supply of 8.8 l/s connecting from the existing 188 mm diameter cast iron water main in Newcastle Place.

4.131 Main cold water supplied from the external Thames Water infrastructure would enter the 2022 amended proposed development from Edgware Road and be routed to the cold water storage tanks located at basement level. These tanks would provide a storage volume to cater for peaks in demand and potential short-term loss of mains supply. The building potable water system would be supplied from the storage tanks via a multistage booster set.

Foul Water

4.132 All foul drainage from the upper levels of each block would drop below the structural slab at ground level where it is routed under gravity into the new foul connections into site-wide foul network. Basement level drainage would be pumped and would provide 24 hour storage and a full back-up pump system in accordance with Building Regulations Part H.

4.133 All foul water would be discharged via demarcation chambers and through new connections to the 450 mm Thames Water combined water sewer within the Newcastle Place carriageway north of the site.

4.134 To prevent any internal flooding as a result of overloaded public sewers, non-return valves/flaps valves would be utilised to prevent sewer water backing up and entering the site. The 2022 amended proposed developments peak foul flow discharge rate has been calculated to be 30.9 l/s.

Surface Water

4.135 The 2022 amended proposed development's drainage strategy has been developed in tandem with the 2022 amended proposed development's flood risk assessment (FRA) in ES Volume 3(R), Technical Appendix 2.7(R). These documents have evaluated the options for attenuating surface water on-site and demonstrate how these would be achievable within the 2022 amended proposed development.

4.136 It is proposed to use green roofs as the primary sustainable drainage strategy (SuDS) feature for the development and would be provided on all three blocks.

[9] Greater London Authority, 2021. The London Plan: The Spatial Development Strategy for Greater London. Online. Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

[10] WSP, 2021. Berkeley Homes (Central London) Limited. Ventilation Statement. PGPS-WSP-XX-XX-ST-CS-0001 REVISION P01 MARCH 2021.

4.137 Surface water attenuation would be in the form of an attenuation tank system located at basement, Level B1 slab. Stored water from the tank would then be pumped at restricted rates to the ground level via a rising main, where it would then discharge via gravity to the Thames Water combined sewer in Newcastle Place.

4.138 Due to the lack of nearby water courses surface water discharge to into a nearby watercourse is unachievable. Surface water would be discharged into the sewer network located in the Newcastle Place carriageway. There is no surface water sewer in close proximity to the site, so the connection would be made into the combined sewer system.

4.139 Based on a greenfield runoff rate of 4.86 l/s as a limiting discharge rate for the 2022 amended proposed development, a total attenuation storage volume of approximately 450 m^3 is required to achieve a greenfield runoff rate reduction for up to the 1 in 100 year + 40% Climate Change Storm event.

Telecommunications

4.140 No detailed telecommunication design has been undertaken at this stage, as is typical for development projects of this size. The telecoms systems would likely consist of telephony (voice) and broadband. It is anticipated that the infrastructure works up to and including the connection point would be provided by network operator (BT or others). From this point the internal network/communications and TV infrastructure would be developed by a specialist installer to be distributed to all final recipients within each building.

Resources, Emissions and Residues

Resource Use

Energy

4.141 An outline Energy Statement has been prepared for the 2022 amended proposed development and accompanies the application.

4.142 The energy strategies have been developed taking into consideration the Energy Hierarchy approach ('Be Lean', 'Be Clean', and 'Be Green') which aims to reduce the energy consumption of the 2022 amended proposed development by prioritising the implementation of passive design and energy efficiency measures (‘Be Lean’), followed by the consideration of district heat networks (‘Be Clean’) and the implementation of low and zero carbon technologies (‘Be Green’).

4.143 Passive and energy efficiency measures ('Be Lean') would be employed within the 2022 amended proposed development to minimise carbon emissions. These measures would include effective building layout, improved thermal envelope performance and efficient service design. Examples of particular measures that are proposed to be implemented are as follows:

- Improved glazing percentage, building fabric and air tightness;
- Energy efficiency measures including heat pumps in all dwellings, high efficiency comfort cooling and individual Mechanical Ventilation with Heat Recovery (MVHR) units in each dwelling; and
- Highly energy efficient lighting fittings and controls.

4.144 The implementation of ‘Be Lean, Be Clean, Be Green’ measures would result in carbon dioxide savings across the 2022 amended proposed development. These are presented in Table 4.9.

Table 4.9: 2022 Amended Proposed Development Be Lean, Be Clean, Be Green – Carbon Reductions

Carbon Measure	Regulated Emissions (tonnes CO_2/year)	CO_2 savings (tonnes CO2/year)	% Reduction in Regulated Carbon Emissions
Baseline emissions (Tonnes CO_2)	514.4	-	-
Emissions after energy demand reduction (Tonnes CO_2) (Be Lean)	436.3	78.1	15 %
Emission after energy efficient supply (Tonnes CO_2) (Be Clean)	436.3	0	0 %
Emissions after renewable energy (Tonnes CO_2) (Be Green)	172.5		51 %
Total on-site savings	-	341.9	66%

Potable Water

4.145 The development would employ best practice design regarding water conservation and would have reduced mains water demand over typical building performance. Proposed water saving features are as follows:

- Water efficient sanitary fittings such as low flush WCs and low flow taps and showers with flow regulators would be installed in the dwellings. A daily water consumption of 105 l/person/day would be targeted for the dwellings to be achieved through the provision of low flow sanitary fixtures and fittings; and
- In the non-residential areas, the sanitary fittings would be specified such that a reduction over a notional building consumption is at least 25 %.

Materials

4.146 Material optimisation and opportunities to promote a circular economy would be considered as part of the 2022 amended proposed development.

4.147 Prior to commencing demolition works, a Demolition Audit would be carried out to establish types and quantities of expected demolition materials, pending the appointment of the contractor.

4.148 A Circular Economy Statement has been produced for the 2022 amended proposed development and would be used to inform the design team of any possibilities for reusing any material or element on-site in order to reduce waste generated during the demolition process.

4.149 In response to the GLA London Plan ‘S12 - Minimising greenhouse gas emissions’ a Whole Life Carbon (WLC) analysis has been carried out for the 2022 amened proposed development which is summarised within the Sustainability Statement.

4.150 Where feasible, the design team would:

- utilise demolition materials directly on site if and where feasible;
- prioritise acquiring materials from suppliers in responsible sourcing schemes such as the Building Research Establishment (BRE) BES 6001:2008 Responsible Sourcing Standard[11];
- specify materials that are gown or made locally and request this from appointed contractors; and
- ensure that environmentally sensitive (non-toxic) building materials are used throughout.

[11] Building Research Establishment (BRE), 2008. Environment and Sustainability Standard: Framework Standard for the Responsible Sourcing of Construction Products (BES 6001).

Emissions

To Air

4.151 The design of the 2022 amended proposed development has been developed to take account of an extensive set of objectives, including reducing building CO_2 emissions, as discussed earlier in this chapter.

4.152 An energy centre would not be provided on-site. Heating and hot water provision would be provided through connection to the WEG energy centre together with on-site provision of ASHP and PV panels at roof level. There is sufficient spare capacity available within the WEG energy centre to service the 2022 amended proposed development.

4.153 Therefore, the 2022 amended proposed development would not have building emissions from combustion sources and would therefore be considered 'air quality neutral'.

To Sewers and Water

4.154 An FRA has been undertaken for the 2022 amended proposed development which includes an assessment of surface water runoff. The results of the FRA have been used to inform and ensure measures for reduced surface water runoff have been integrated into the design of the 2022 amended proposed development. Surface water for the site would be collected into attenuation tanks located at basement Level B1, pumped and discharged into the sewer network at Newcastle Place.

4.155 Foul Water would be discharged to public combined sewers located around the site.

To Land

4.156 No routine emissions to land are anticipated with the operation of the 2022 amended proposed development.

Residues

Waste

Demolition, Excavation and Construction Waste

4.157 See ES Chapter 5(R): Demolition and Construction Description. The 2022 amended proposed development would incorporate best practice waste reduction measures developed in line with the waste hierarchy to reduce, reuse and recycle.

4.158 A Construction Environmental Management Plan (CEMP), including a Site Waste Management Plan would be drafted and implemented by the appointed contractor.

Operational Waste

4.159 See Waste Management Section of this Chapter.

4.160 A Waste Management Strategy has been produced separately to accompany the application.

Sustainability

4.161 A Sustainability Statement and Circular Economy Statement (CES) have been produced to accompany the application. A summary is provided in the following paragraphs.

Sustainability Appraisal

4.162 The design of the 2022 amended proposed development has been carefully progressed to create a sustainable asset by adopting sustainable design principles. These principles include ensuring efficient resource use (i.e. energy, water and materials), reducing overall greenhouse gas emissions (operational and embodied carbon emissions), and improving wellbeing of future and existing (neighbouring) occupants.

4.163 Consideration has been given to:

- adoption of the energy hierarchy approach to maximise operational energy and carbon emission savings;
- energy monitoring during both the demolition and construction stage and completed development stage;
- life-cycle analysis and embodied carbon;
- water efficiency through installation of efficient sanitary fittings in all residential properties;
- materials with low embodied energy, and the re-use and recycled of materials;
- social sustainability by creating a mixed used site creating synergies between residential and commercial uses;
- economic sustainability through job creation opportunities onsite;
- biodiversity enhancement; and
- promotion of sustainable transportation by providing cycle storage.

Circular Economy Statement

4.164 The CES demonstrates how the design and construction of the development promotes resource efficiency by adopting a circular economy approach that contributes to a sustainable development. Consideration has been given to:

- the effective use and management of materials and resources as far as possible, in accordance with the GLA first principle of the circular economy[12];
- eliminating waste generation in accordance with the GLA second principle of circular economy[12]; and
- managing waste sustainably in accordance with the GLA third principle of circular economy[12].

Proposed Development Operational Provisions and Controls

Operational Management

4.165 It is currently not known exactly what hours of operation the non-residential uses would follow, as this would be determined by the future tenant, but they are expected to be in accordance with normal operating hours of similar urban developments.

4.166 Aspects of operational management incorporated into the 2022 amended proposed development would likely comprise the following:

- Provision of security services;
- Technological and Integrated Electronic Security Systems, such as CCTV cameras;
- Security control room and associated operators;

[12] Greater London Authority, 2020. Circular Economy Statement – Guidance. Online. Available at: ggbd_circular_economy_statement_guidance_2020_web.pdf (london.gov.uk) last accessed 06/04/2021

- Sufficient and uniform lighting at all access and enclosed areas;
- Intercom system linked to 24 hour security control office;
- Electronic key fobs;
- Facility management;
- Concierge desk;
- Maintenance staff;
- Landscape staff;
- Cleaning staff; and
- Emergency planning.

Operational Management Plan

4.167 An Operational Management Plan would be prepared and implemented at the 2022 amended proposed development for all elements.

4.168 A life safety emergency diesel back-up generator with net thermal input of approximately 1.4 MWth is proposed within the plant space of Block J with exhaust at roof level. The generator equipment model and exact testing regime times are not currently known, but the generator would be expected to follow a testing regime of monthly run test and six monthly load test. Based on professional experience, the monthly test would be expected run for a short period of time between 30 minutes to one hour.

Delivery and Servicing Management Plan

4.169 A Delivery Servicing Plan and a Waste Management Strategy would be prepared and implemented at the 2022 amended proposed development.

Emergency and Disaster Management

4.170 The following summarises the emergencies that could arise at the 2022 amended proposed development and the design measures that have been incorporated in the 2022 amended proposed development to respond to these incidents.

4.171 In the instance of a fire the following design measures have been incorporated in the 2022 amended proposed development:

- Residential: Compartments would be provided between each different use to minimise the risk of fire spread. Residential units would be fitted with an enhanced fire detection and alarm system above the requirements of the Building Regulations. Communal corridors would be kept smoke free by mechanical smoke controls to ensure stairs are fully protected and can be used to aid in escape and fire fighting access. One lift in each core (2 within Block K) would be a dedicated fire fighting lift and a sprinkler system would be in place throughout the residential buildings. The facades of the buildings, constructed mainly from GRC, mineral wool insulation and aluminium windows systems would be non-flammable;
- Commercial: Commercial units would be constructed as standalone units with a 'simultaneous evacuation strategy'. Exits have been designed to accommodate full capacity for the greatest number of people expected under the proposed uses. Each unit would have a stand-alone fire detection and alarm system with a high standard of detector coverage linked to a 24/7 alarm receiving centre.
- Basement: The shared basement car park would have a 'simultaneous evacuation' strategy with multiple secure fire exit routes that lead directly to the ground level. The residential building cores would be designed to help with the evacuation of any mobility impaired person. A fire detection and alarm system with a high standard of detector coverage would be in place, as well as a custom designed ventilation system to remove smoke.
- Fire Service Access: Fire hydrant cover for the existing site would be reviewed with the fire service and upgraded if required to fully comply with their requirements. All residential building cores would be fire-fighting cores and would include fire-fighting stairs, lifts and wet risers. All cores would be accessible for fire tenders from Newcastle Place.

5(R) DEMOLITION AND CONSTRUCTION DESCRIPTION

Introduction

5.1 This chapter of the 2022 Replacement ES provides a description of the 2022 amended proposed development, for the purposes of identifying and assessing the potential environmental impacts and likely environment effects of the 2022 amended proposed development in the technical assessments of ES Volume 1(R) (Chapters 6(R)-10(R)) and ES Volume 2(R).

5.2 In accordance with the EIA Regulations, the chapter sets out the demolition and construction works of the 2022 amended proposed development and the key activities that would be undertaken during the works. The chapter also describes the potential environmental impacts associated with the works and management controls that form part of the 2022 amended proposed development that would be implemented to avoid, minimise and where not possible, mitigate the magnitude of potential environmental impacts.

5.3 It is not possible to predict in detail the specific environmental impacts and effects that may arise from the works as detailed demolition and construction method statements and specifications have not yet been prepared and sub-contractors not yet appointed. However, it is possible to establish the potential environmental impacts associated with the works and to determine a framework for the management of these impacts to ensure that significant environmental effects are avoided and where not possible, mitigated. This is not least due to the extensive experience of the Applicant in undertaking the adjacent WEG development over a number of years.

5.4 The demolition and construction management framework which has been developed for the 2022 amended proposed development as part of the iterative design process is set out within this chapter and would form the basis for a Construction Environmental Management Plan (CEMP) to be implemented during the demolition and construction works. The framework has been developed taking account of a draft Replacement Construction Logistics Plan (CLP) which is presented in the Replacement Transport Assessment. It is anticipated that the implementation of the CEMP would be secured by means of an appropriately worded planning condition.

5.5 The CEMP would be prepared in accordance with standard best practice and regulatory requirements, as well as the WCC's Code of Construction Practice (CoCP)[1] and Basement Development SPD[2]. The CEMP will include a Construction Logistics Plan (CLP), as well as a Site Waste Management Plan (SWMP). The Applicant would also make contributions to WCC's Environmental Inspectorate and Construction Monitoring to mitigate potential impacts on nearby residents and businesses.

5.6 More specifically, the CEMP would define relevant policies, legislative requirements, thresholds/limits, procedures, roles and responsibilities for the implementation of environmental and management controls throughout the duration of the works. The CEMP would be discussed and agreed with WCC in advance of works commencing on-site.

5.7 An outline of all the anticipated environmental issues and necessary management controls that would be covered within the CEMP is provided within this chapter.

5.8 It is standard practice to allow the appointed contractors substantial input into documents such as the CEMP, CLP and SWMP; however, at this stage of planning, sub-contractors have not yet been appointed and detailed method statements have not yet been prepared for the 2022 amended proposed development. Nevertheless, and given the recent completion of the neighbouring West End Gate (WEG) development and ongoing construction of 14-17 Paddington Green (PG), the likely content of such documents can be predicted with a reasonable degree of certainty having regard to the standard requirements of WCC and the experience of the Applicant (as the main contractor) and project team in developments of this scale. As such it is considered that the likely environmental effects are still capable of assessment in this ES.

5.9 It is important to note that this chapter does not assess the magnitude of potential impacts, nor the significance of likely effects during the demolition and construction works, as this is dealt with in individual technical assessments within ES Volume 1(R) (Chapters 6(R)-10(R)) and ES Volume 2(R). Controls set out in this chapter are considered as embedded mitigation within each the technical assessments to enable the assessment of residual demolition and construction effects.

Development Programme

5.10 The site was in use as the Paddington Green Police Station until September 2018 when the police operation was moved to an alternative site at Church Street. Since then it has been occasionally used by The Mayor's Office for Policing and Crime (MOPAC) for parking and training purposes. Berkeley Homes acquired the site in July 2020 and during the interim, part of the site was utilised lawfully as offices. However the site is now vacant with part of the basement temporarily used for material storage and vehicle parking associated with the adjacent WEG development.

5.11 The site consists of a single, interconnected building, albeit with a number of different, interrelated built forms, and hardstanding. The built forms include the 17 storey accommodation/section house on the eastern side of the site, a main office and police front of house 3 storey building below this on the eastern side of the site, and an 8 storey annex at the western side of the site, connected by a single storey building that previously housed high security cells. A single level basement and a surface level podium car park is to the rear, both accessed from Newcastle Place. An electricity substation is located in the north-eastern corner.

5.12 The proposed works would comprise the demolition of the existing building (including its constituent built forms), hardstanding and basement followed by the formation of a two level basement with a connection tunnel through to the adjoining WEG development basement; the construction of three residential towers, with flexible commercial and community uses on the ground floor; stopping up of Newcastle Place; and associated public realm and landscaping works.

5.13 A detailed development programme has not yet been finalised. However, to enable assessment of likely environmental impacts and their effects within the EIA, an indicative, but feasible, programme has been developed by the Applicant based on a number of assumptions. These assumptions have been informed by an understanding of current and future projected market conditions, logistical arrangements, technical considerations and professional experience, all of which are considered to be reliable.

5.14 The indicative development programme is shown in Table 5.1 and is based on the assumption that planning permission is secured, and demolition commences on-site in Q3 2023.

[1] Westminster City Council, 2022. Code of Construction Practise, WCC.

[2] Westminster City Council, 2014. Basement Development in Westminster Supplementary Planning Document. WCC.

5.15 It is proposed that the 2022 amended proposed development would be delivered across the following three sequenced and overlapping phases, as set out in Table 5.1:

- Phase 0: Q3 2023 – Q3 2024;
- Phase 1: Q3 2024 – Q2 2028: and
- Phase 2: Q2 2026 – Q3 2030.

Table 5.1: Indicative 2022 Amended Proposed Development Programme

Phase	Duration (months)	Start Date	Completion Date
Phase 0			
Enabling, Demolition and Clearance Works	13	Q3 2023	Q3 2024
Phase 1			
Substructure Works (Site-Wide)	20	Q3 2024	Q2 2026
Superstructure Works: Block I	15	Q2 2025	Q3 2026
Envelope Works: Block I	17	Q3 2025	Q1 2027
Fit Out Works: Block I	20	Q3 2026	Q2 2028
External Works and Landscaping: Block I	6	Q4 2027	Q2 2028
Phase 2			
Superstructure Works: Block K and Block J	32	Q2 2026	Q3 2028
Envelope Works: Block K and Block J	32	Q4 2026	Q3 2029
Fit Out Works: Block K and Block J	33	Q3 2027	Q3 2030
External Works and Landscaping: Block K and Block J and Realignment of Newcastle Place	36	Q1 2027	Q3 2030

5.16 For the purpose of this EIA, based on commencement of works in Q3 2023, the development works are anticipated to be undertaken over a continuous seven-year period, with completion targeted for Q3 2030. Each building would be occupied upon completion.

5.17 Figure 5.1 illustrates the sequencing of the proposed phases across the site. The dashed green line outlines the extent of the site-wide basement.

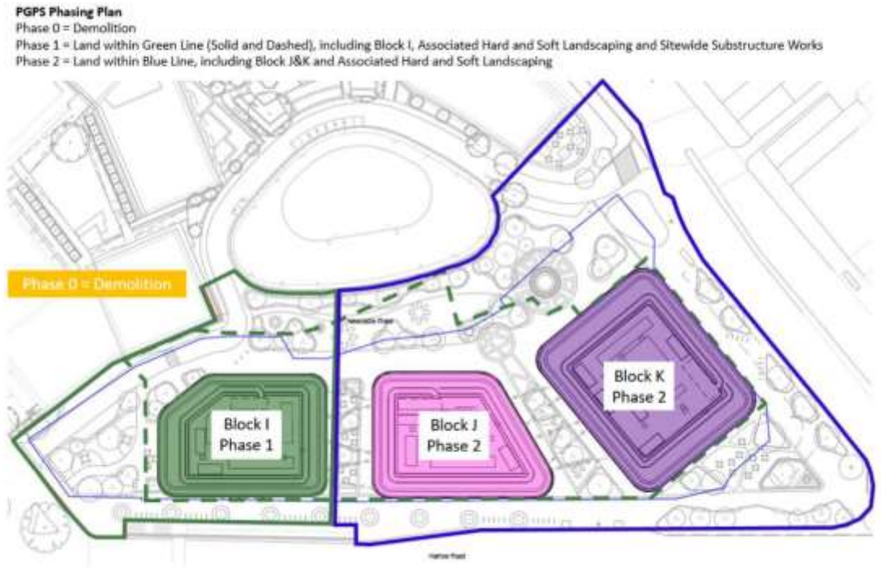


Figure 5.1: Indicative 2022 Amended Proposed Development Phasing Plan

5.18 The initial enabling works and subsequent demolition duration shown includes enabling works surveys, service disconnections, soft strip out, asbestos removal and removal of existing utilities.

5.19 It is envisaged that the existing substation would remain in location until a new permanent location is formed, to minimise disruption of services to stakeholders.

5.20 Public realm and infrastructure phasing would follow the same sequence as the associated buildings, with phased handover in line with the occupations.

5.21 The indicative programme is based on three buildings being of post-tension (PT) 'slab and slip form core' construction.

5.22 The cladding has been assumed on all buildings as a unitised system.

Interface with Key Stakeholders

5.23 Early discussions would be held with WCC and other relevant statutory consultees, such as TfL. These discussions would include site logistics, management, access and egress and hoarding arrangements.

5.24 Prior to work starting on-site, the CEMP and CLP would be produced and agreed with WCC. This would include roles and responsibilities, details on the control measures and actions to be taken to minimise the potential environmental impacts of the 2022 amended proposed development. Monitoring and record-keeping requirements will also be addressed in the CEMP.

Transport for London/WCC Highways

5.25 Pre-application meetings with both TfL and WCC Highways have been undertaken and have included a meeting that focussed on site and construction logistics.

5.26 There are two underpasses situated adjacent to the site:

- The first underpass extends under both Edgware Road and Harrow Road and has been closed to the general public. TfL is due to implement a sustainable drainage (SUD) scheme within the remaining subway ramps and collaboration on landscape design for the site is intended to be carried out with TfL.
- The second underpass extends under Harrow Road and is still currently in use by public. It is the intention to keep the underpass open throughout the works; however due to the logistics of the site, it is likely that the underpass would need to be temporarily closed to public access. Discussions would be undertaken with both WCC and TFL regarding the diversion of pedestrians, and temporary closures.

5.27 The site lies at the junction of two main routes through the area, Edgware Road and Harrow Road, adjacent to the flyover. Both of these main roads have bus stops sited directly adjacent to the site.

5.28 The surrounding land adjoining the existing buildings are under TFL and WCC ownership. Licences and appropriate permissions will be applied for prior to hoarding and scaffold construction. Site logistics indicate that scaffold may need to be located on TfL/WCC land.

5.29 Construction works are likely to affect aspects of the public realm such as footpaths and bus routes. Consultation with TFL and WCC has already commenced due to the current Edgware Road widening scheme's impact and the impact of the existing WEG development which adjoins the site to the north.

5.30 Pedestrian routes would also be assessed for the effects of the construction and any temporary provisions agreed with TFL and WCC, along with the appropriate procedures, securing licences and consents for any changes or temporary diversions.

5.31 The proposed logistics plan would require careful coordination and movement of the bus holding point on Harrow Road to create three new accesses into the site off Harrow Road for construction traffic to access the site; however, there would only ever be two accesses in use at any one time. In addition there would also need to be a footpath diversion and temporary closure of the underpass at specific times. However the Harrow Road footpath and Harrow Road underpass would remain open for the majority of construction, with closures only needed for minimal periods of time. Discussions have already commenced with TFL and WCC and would continue throughout the process.

5.32 It is proposed that additional access points would be used for construction traffic after the initial phase of enabling and demolition. These gates have been added to minimise disruption of pedestrian routes and bus routes, and would be agreed with TFL prior to any construction or demolition works commencing.

5.33 The proposed location of welfare facilities (south-eastern corner of site) is proposed on areas of land owned by both TFL and WCC. Discussions have commenced with both WCC and TfL to seek approval for this proposal. No concerns have been raised to date; however, no works would be undertaken until permissions and licences have been gained or a suitable solution found.

5.34 Where necessary, the construction would be carried out in accordance with TFL's standard for Construction Logistics and Community Safety (CLOCS). The standard covers the following issues:

- Construction traffic routing and contractor awareness of the selected routes;
- Control of site traffic, particularly at peak hours;
- Use of offsite holding areas or consolidation centres if required;
- Site access and egress; and
- Vehicle loading and unloading on-site as far as possible.

London Underground

5.35 The site is situated in close proximity to Edgware Road Bakerloo Line station, with the track positioning passing adjacent to the site on the south-eastern corner.

5.36 The site is within close proximity to the Bakerloo Line. The TfL London Underground Line (LUL) zone of influence overlaps the site redline boundary slightly in the south-western corner. Piling works within this area may require consultation with TfL/LUL. A correlation survey has been undertaken to determine the full extent of the underground line with LUL and this has indicated that a potential impact is highly unlikely. Site investigations will be undertaken following LUL approval of bore hole locations.

5.37 Construction methods, plant, assessment on expected ground movements together with associated monitoring would be agreed with TFL / London Underground.

Thames Water

5.38 The northern boundary of the site adjoins the WEG development. The sewer servicing both the site and WEG runs under the road at Newcastle Place. There is an additional sewer located on Paddington Green.

5.39 As part of the WEG development works, the sewer on Newcastle Place was replaced. It is considered that this replacement would provide sufficient capacity to satisfy the increased demand of both the WEG development and the 2022 amended proposed development. This will be verified and reconfirmed during the detailed design process.

5.40 The 2022 amended proposed development would be connected to the basement of the WEG development via a link located towards the western portion of the site, where the land ownership meets with the neighbouring WEG development. An additional service route is required towards the eastern end of the site; however, this would be much smaller and serve as a service only tunnel.

5.41 Any construction in this area would be subject to conditions of legal and technical agreement reached between the Applicant and Thames Water prior to the commencement of the works. It is not anticipated that this process would pose a constraint to the 2022 amended proposed development.

UK Power Networks

5.42 The existing substation on the corner of Newcastle Place and Edgware Road would require relocation with the 2022 amended proposed development.

5.43 Consultation with UKPN on the relocation of this substation will be required. It is proposed that the substation would remain in its current location until the new permanent location is provided to allow minimal disruption.

5.44 High voltage (HV) and low voltage (LV) cabling from the substation extends along the footway of Edgware Road. LV cabling runs adjacent to the existing building along the Harrow Road and along Newcastle Place. The proximity of the existing HV /LV cabling to the building line in Harrow Road and Edgware Road would be investigated and UKPN consulted if diversions are required.

BT/ Hyperoptic

5.45 There is known BT and Hyperoptic cabling running down Newcastle Place, Harrow Road and Edgware Road. A full utilities survey will be undertaken prior to any works commencing.

5.46 Consultation with BT and other providers involved will be undertaken prior to work that may impact these services. A full methodology for protection will be agreed prior to the work being undertaken.

Enabling and Demolition Works

Enabling Works

Pre-Commencement Surveys, Investigations, Consents and Licenses

5.47 Concurrent with the discharge of planning conditions, a number of surveys and investigations would be undertaken prior to the commencement of works on-site. In addition, various consents and licences would need to be granted. The following pre-commencement surveys and investigations are envisaged:

- Asbestos Survey (This has already been undertaken);
- Tree Surveys;
- Condition survey of A40/Westway flyover;
- Topographical surveys;
- Condition survey of perimeter roads;
- Correlation study to map out true LUL zone of influence;
- Condition survey and at least 3 months movement monitoring of the LUL Bakerloo line tunnels, subject to requirement from LUL;
- Condition survey of the underpasses;
- Condition survey of the UKPN substation;
- Structural investigations to current diaphragm wall to establish stability and temporary works requirements for the demolition;
- Utilities survey to establish existing utilities on-site and adjacent to the site prior to any preparatory works for the perimeter retaining wall construction. Services identified would be either diverted, capped, cut off or isolated, as appropriate;
- Geotechnical and Geo-environmental surveys to determine item such as soil types, land contamination (type and levels), ground conditions, groundwater levels and bearing capacities. Geoarchaeological monitoring may be required during these works;
- Noise and Vibration surveys to determine the extent of existing noise levels to sensitive receptors;
- Geophysical surveys, if required to determine the extent of underground obstructions, such as foundations of buildings previously occupying the site;
- Pre- and post-demolition telecommunication signal strength surveys; and
- Unexploded Ordnance (UXO) surveys.

5.48 All Statutory, WCC, TFL and LUL consents and licences required to commence on-site activity would be obtained ahead of works commencing, giving the appropriate notice period. These would include:

- Notices and agreements for works on the highway in accordance with the Highways Acts 1980 and Road Traffic Act 1988;
- Temporary Traffic Orders and parking bay suspensions;
- Hoarding and Scaffold licences;
- Details of pedestrian route diversions;
- Crane over sail licences;
- Connections to existing statutory services and mains sewer;
- Licence for discharge of water from the site into the public sewer;
- Approval of CEMP, including any specific agreements relating to the control and monitoring of demolition and construction noise, e.g. Section 61 of the Control of Pollution Act 1974 for noise;
- Section 80 Demolition Notice; and
- Construction Notice (Health and Safety Executive F10 notice).

Site Offices/Welfare Facilities and General Site Access

5.49 Construction compounds, including welfare facilities for construction staff would be constructed on the pavement at the south-eastern corner of the site partly on land owned by TFL and WCC.

5.50 Central good quality welfare facilities would be provided on the site and would include toilets, washing and changing facilities and a canteen with a kitchen. These temporary provisions would be expanded to meet the requirements of the anticipated maximum construction workforce numbers.

5.51 The welfare facilities would be provided in stacked site cabins. As the levels of construction activity increase the provision would be increased and would remain *in-situ* for the duration of the 2022 amended proposed development.

5.52 Temporary utility connections would be made to existing utility services for temporary accommodation and for construction use where no existing connections exist.

Hoarding, Gates and Scaffolding

5.53 Prior to demolition and in accordance with WCC's requirements, a 2.8 m high perimeter site hoarding and access/egress gates would be erected. The hoarding and gates would be maintained throughout the duration of the works around the site perimeter. The hoarding would segregate pedestrians and the general public from works and help to contain the work within the site boundary.

5.54 The exact scaffolding and hoarding locations would be identified and agreed as part of the CEMP. Licences for scaffolding and hoarding located on the public highway would be obtained from WCC and TFL.

5.55 The hoardings would comply with the relevant technical guidance for demolition and construction where practicable.

5.56 Secure vehicle access points with wheel cleaning facilities would be established at the site access locations. A separate pedestrian access point with security would be located close to the welfare facilities with a designated gate and footpath provided for the workforce.

5.57 The hoarding would be decorated appropriately with marketing graphics/ logo which would be approved under an advertisement application. Regular inspections would be carried out to ensure that the integrity of the hoarding is maintained, and the hoarding would be kept clean and in a good state of decoration. Offensive graffiti would be removed as soon as possible. Sharp or splintered edges would be avoided to ensure pedestrian safety.

5.58 Fans and façade netting would be installed to contain falling debris. The scaffold would be wrapped in sheeting such as Monaflex, installed tight to the scaffold, to act a dust and visual barrier, prior to works commencing on the scaffold.

5.59 CCTV system for out of hours security to secure the demolition and construction site would be installed, with key areas being monitored as well as the perimeter.

5.60 Additional hoarding and anticlimb provision would be installed around key risk areas.

5.61 Lighting would be provided to the hoarding during official hours of darkness avoiding strong shadows on surrounding footpaths and roads that could compromise safety and security of the public.

Utility Diversions/Removals

5.62 The existing substation located on the north-east corner of the site would be relocated into a new permanent location. Its current location falls outside the building line for the new construction and would be able to remain until after the new buildings have been structurally built.

5.63 UKPN will be contacted at the earliest opportunity to ensure that the works are acceptable to all parties and completed in a timely manner.

5.64 Prior to any demolition works taking place, the location of services would be identified and marked on site using utilities record drawings and on-site investigation techniques such as hand dug trial holes and scanning using a cable avoidance tool.

Tower Crane Locations

5.65 Two tower cranes would be positioned on-site at various stages during the construction works. The key parameters are provided in Table 5.2.

Table 5.2: Proposed Tower Crane Key Parameters

Tower Crane	Duration On-Site	Height (m)	Radius (m)	Approximate Grid Reference
TC1	54 months	120	50	N181762, E5269954
TC2	52 months	70	50	N1817439 E5269124
TC3	27 months	120	50	N181735, E526868

5.66 Oversail licences will be required for the tower cranes due to the shape of the site. These would be applied for and in place prior to any works being undertaken with regards the tower cranes. It is expected licences will have to be agreed with WCC and TFL.

5.67 The approximate locations of the tower cranes are shown in Figure 5.2.

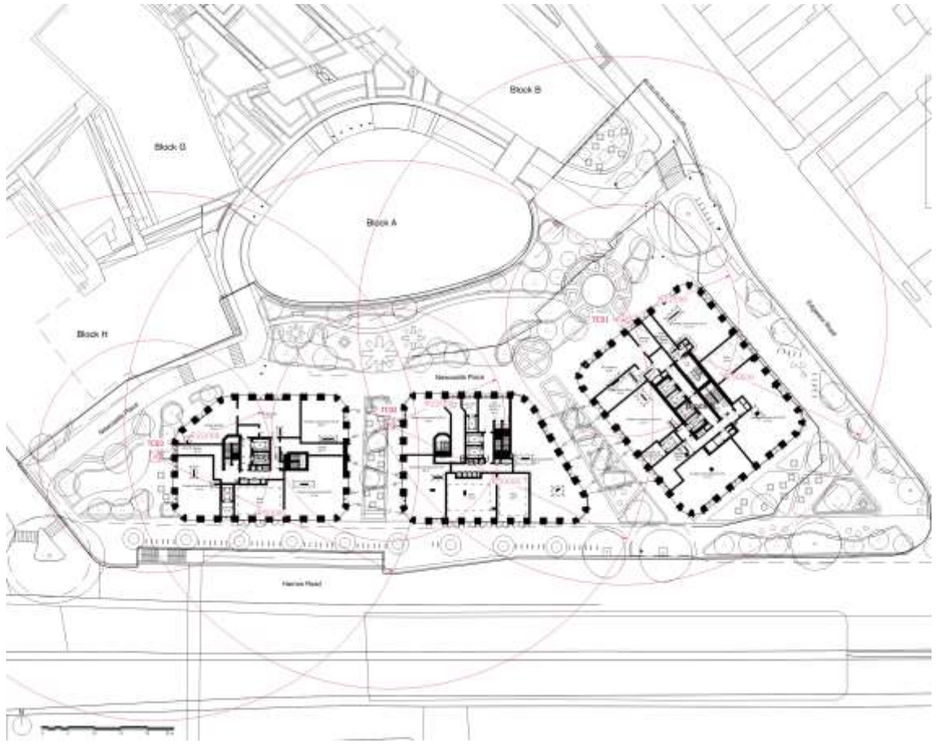


Figure 5.2: Proposed Tower Crane Locations On-Site

Temporary Works

5.68 Temporary works would be necessary during the course of the development works, in order to protect the public and ensure the structural integrity of the works as they progress. These would range from retaining walls and buttress piles to simple propping of hoardings to scaffold protection fans, temporary propping of walls and other temporary structures such as loading platforms. In all cases these works would comply with legislation, and would be designed and managed by the Applicant who is obliged by law to employ a temporary Works Co-ordinator.

5.69 In addition, temporary works within the basement excavation in the form of propping may be required for the piled retaining walls and propping of the existing diaphragm wall during the excavation process.

Demolition Works

5.70 Demolition works would include the demolition of the entire former Paddington Green Police Station building (including the 17 storey concrete frame tower, 8 storey tower, connecting structure and basement slab).

5.71 It is anticipated a mobile crane would be required periodically for the demolition of the 17 storey tower and 8 storey tower. The crane would be situated on-site, for lifting out existing building plant and lifting breakers onto the floor slab to commence demolition of the structure. It is envisaged the crane would be located within the site boundary.

5.72 The 17 storey tower would be broken down progressively from top down, to remove the debris and rubble from the workface. The lift shaft would be used to bring materials down to ground level, for removal with a long reach excavator.

5.73 It is envisaged that the building and its constituent built forms would be demolished using long reach mechanical plant incorporating breakers and crunchers working from inside the site boundary. Demolition on any road boundaries would principally be carried out by hand from the perimeter scaffolds which would allow screening to prevent from dust. Additionally, dust would be controlled using water mist sprays located on the long reach munching machines. Noise would be controlled and monitored throughout the demolition works

5.74 Materials would be crushed, graded and stockpiled with approximately 15 % targeted for on-site re-use within the piling mat for the perimeter retaining walls and bearing piles for the towers foundations. The remaining 85 % is likely to be transferred to suitable tipper or waste haulage vehicles and removed off-site for recycling dependent upon contamination.

Substructure Works

5.75 The Phase 1 substructure works would comprise utilising and reinforcing the existing retaining diaphragm wall for the basement structure; excavations, basement construction and foundations. Sections of the existing retaining structure would be removed and new retaining structure would be installed to form the link through to the basement of the adjacent WEG development.

Basement Piling, Excavation and Construction Works

5.76 The existing diaphragm wall would be retained where possible and where the proposed new basement footprint extent is beyond the existing diaphragm wall a new retaining wall would be constructed. Piles would augured, secant, contig or/or bearing piles. The length of the piles would vary, depending on whether they are to support superstructure column loads, but it is anticipated that the piles would largely be between 15 m to 20 m in length. Where large loads are transferred from the superstructure, the piles

would increase in length of between 35 m and 50 m below the ground surface. A piling method statement would likely be conditioned for future discharge/approval prior to commencement of works.

5.77 A site-wide basement would be excavated and the method of perimeter retaining wall would take into account the ground conditions and environmental considerations such as noise levels. The existing diaphragm wall would be used and propped in the temporary case with buttress piles to support the ground and paving to the site perimeter removing the requirement for further retaining structures and the need to break out the existing diaphragm wall.

5.78 It is anticipated that the basement would be constructed using a traditional 'bottom-up' approach using temporary earth berms, props and buttress piles to support the perimeter retaining walls whilst basement level 1 is excavated. It is proposed that basement level 2 is constructed using a 'top down' method of construction.

5.79 Based upon initial investigations there is the potential for excavation waste to be contaminated and therefore classed as hazardous waste. In addition, due to the limited extent of the site, opportunities for the storage and re-use of excavated material is considered unlikely. The Applicant's company policy is for 90 % of the excavation waste arisings to be re-used and/or recycled off-site where possible. However, due to the potential for contamination, this target would be difficult to achieve.

Basement Construction Sequence

5.80 The methodology and sequence for the proposed basement construction would be as follows:

- Stage 1: Based on the current survey information, the ground floor slab and basement slab would be removed/demolished prior to the installation of the buttress piles, except on Newcastle Place where the exiting diaphragm wall would be locally propped prior to the installation of the buttress piles.
- Stage 2: Installation of the pile mat/piling platform across the site.
- Stage 3: Installation of the buttress piles and plunged stanchion, which would prop the existing diaphragm wall.
- Stage 4: Installation of the temporary works propping system, waler beams and props to the existing diaphragm wall underside of existing ground floor slab.
- Stage 5: Installation of the secant piled wall and bearing piles where required.
- Stage 6: Excavation to formation level.
- Stage 7: Construction of the new raft foundation.
- Stage 8: Construction of the new perimeter basement reinforced concrete (RC) wall off the raft against the existing diaphragm wall.

Foundations

5.81 The foundations for the 2022 amended proposed development would typically comprise of a rotary piled solution.

5.82 There are a number of existing piles which would be redundant. These would be surveyed by the demolition contractor and broken out to -500 mm below the new pile cut off level.

Cores

5.83 The cores would incorporate the lifts, stairs and service risers and would be designed to provide the main lateral stability system for the buildings.

5.84 The concrete walls would be constructed from reinforced concrete using either slip-form construction or jump-formed techniques. Concrete would be pumped and a hydraulic placing boom used to assist concrete placement. Tower cranes would be positioned to suit the site logistics and used to lift reinforcement cages for the cores. Stairs would be installed once the cores are complete. In the meantime external hoists and temporary 'Haki' stairs would be erected to provide vertical transportation and means of escape for labour and materials.

Superstructure Works

5.85 The buildings floor slabs would be post-tensioned.

5.86 The construction of the superstructure of each block would involve the erection of RC cores (to provide for the overall stability of the structure), followed by the formation of RC columns and slabs, to roof level. Flat slab construction is proposed. The ground floor slab would form a podium which would have a number of step changes in thickness, the slabs generally getting deeper where transfer structures are required.

5.87 The cores would be constructed from RC using either slip-form construction or jump-formed techniques.

5.88 Slab thicknesses are intended to remain fairly constant throughout the 2022 amended proposed development.

5.89 Also, the use of concrete would be selected to provide adequate sound insulation within each block and to comply with fire protection requirements. Cement replacement content and secondary/recycled aggregate content would be considered once the sub-contractors have been appointed, to minimise environment impacts.

5.90 Construction (sub- and superstructure) waste volumes have been estimated based on Building Research Establishment (BRE) Benchmarks. It is anticipated that all construction waste material would be removed off-site. However, as the Applicant's company policy is to divert 90 % of construction, demolition and excavation waste from landfill through re-use or recycling, it is conservatively expected that 70 % by volume of non-demolition construction waste material would be recycled off-site in addition to the recycling and re-use of demolition and excavation waste volumes as discussed earlier.

Envelope and Fit out Works

5.91 Facades would be designed in accordance with air quality and noise performance criteria as detailed in Chapter 9(R): Air Quality and Chapter 10(R): Noise and Vibration. Façades would consist of a mixture of pre-fabrication and unitised (window bays) cladding systems to assist in the ease of erection and installation. Each cladding unit would be supported from brackets from the floor slabs and installed from the floors using spidercrane to lift it into position.

5.92 It is envisaged the tower cranes would remain in location until the hoist has been removed and hoist infill panels installed.

5.93 Internal fit out of the proposed residential units would be undertaken as part of the 2022 amended proposed development and would include light fittings, kitchens and bathrooms.

5.94 Non-residential uses would be delivered to 'shell and core' only.

Landscaping Works

5.95 Landscaping of the 2022 amended proposed development, including public amenity area, private residential terraces and perimeter public realm would be undertaken in accordance with the Replacement Landscaping Strategy. Landscaping would be delivered on a phase-by-phase basis following completion of the key construction works for each phase.

5.96 The Phase 2 landscaping would extend across the site boundary on Edgware Road and Harrow Road, onto land owned by both WCC and TfL. This would be undertaken by the Applicant under a S278 agreement.

Highways Works

5.97 The 2022 amended proposed development would 'stop up' the existing Newcastle Place (under S247 of the Town and Country Planning Act) to all vehicle traffic with the exception of fire / emergency access.

Utilities and Service Installation

Electricity

5.98 An existing UKPN substation is located in the north-eastern corner of the site. As part of the 2022 amended proposed development, this substation would be decommissioned by UKPN and demolished, with existing supplies being diverted to a new substation within the proposed development.

5.99 The 2022 amended proposed development would provide a new UKPN substations to serve the site. A Point of Connection (POC) has been secured from UKPN. The locations of the substation would be determined and agreed, as part of the detailed design.

Gas

5.100 There would be no proposed gas connection for the 2022 amended proposed development.

Potable Water

5.101 Consultation with Thames Water has been initiated to establish the potable water capacity available to the site and to determine the locations for connection to the existing network. There are existing potable water distribution mains on the A5 Edgware Road.

5.102 A point of connection has been provided by Thames Water for a flow rate of approximately 6.9 l/s plus a fire supply of 8.8 l/s connecting from the existing 188 mm diameter cast iron water main in Newcastle Place.

5.103 Main cold water supplied from the external Thames Water infrastructure would enter the 2022 amended proposed development from Edgware Road and be routed to the cold water storage tanks located at basement level. These tanks would provide a storage volume to cater for peaks in demand and potential short term loss of mains supply. The building potable water system would be supplied from the storage tanks via a multistage booster set.

Drainage/Waste Water

5.104 Thames Water would act as the utility provider for the 2022 amended proposed development.

5.105 A complete system of above ground foul water drainage pipework would be provided to convey foul water discharges from each residential unit, by gravity, to connect to the buried foul water drainage system.

5.106 Foul drainage would be routed into local Thames Water combined sewers within Edgware Road. The 2022 amended proposed development would have a foul water discharge rate at peak of approximately 30.9 l/s.

5.107 The 375 mm pipes which are proposed across the site beneath Newcastle Place, would be laid at a steep gradient of 1:57 and would have a full-bore hydraulic capacity of 267 l/s. Thames Water have confirmed sufficient capacity for the proposed rates (ref: DS60999583), appended to the Drainage Strategy.

Surface Water

5.108 Surface water runoff from the 2022 amended proposed development would be attenuated such that rainfall volumes associated with a 1 in 100 (1 %) annual probability storm (including an allowance for climate change) are accommodated on-site without causing above ground surcharging and without exceeding the proposed discharge rates.

5.109 Rainwater harvesting would also be provided to re-use surface water on-site as part of an irrigation system for areas of soft landscaping to minimise mains water use.

5.110 For determining the maximum surface water discharge rate, Greenfield rates have been calculated in line with the London Plan (Policy SI 13) with a discharge rate of 4.86 l/s.

Telecommunications

5.111 Communication services plant affected by the 2022 amended proposed development at the site would be re-directed as required to avoid damage during demolition or construction.

5.112 No detailed telecommunication design has been undertaken at this stage, as is typical for development projects of this size. The telecoms systems would likely consist of telephony (voice) and broadband. It is anticipated that the infrastructure works up to and including the connection point would be provided by network operator (BT or others). From this point the internal network/communications and TV infrastructure would be developed by a specialist installer to be distributed to all final recipients within each building.

Construction Vehicles and Plant

Construction HGV Trips

5.113 Table 5.3 summarises the estimated number of HGV trips associated with the demolition, excavation and construction of the site as provided by the Applicant. A proportion of the HGV trips would be associated with the delivery of machinery and construction materials. It is noted that trip generation associated with construction materials may utilise a wide range of vehicle types and would be dependent on the supply chain arrangements of the selected sub-contractors. However, based on the Applicant's experience, deliveries would be less than the trips associated with waste removals.

Table 5.3: Predicted Demolition and Construction Trips

Works	Duration of Works (months)	Average HGV Trips/Week	Average 2-way HGV Movements/ Week	Average Total 2-way HGV Movements/ Phase
Site Enabling and Substructure				
Site Enabling, Demolition and Clearance Works	13	30	60	3,380
Substructure Works	20	75	150	13,000
Superstructure				
Superstructure Works Block I	15	40.5	81	5,265
Superstructure Works Block J and K	32	60	120	16,640
Envelope Works				
Envelope Works Block I	17	9	18	1,326
Envelope Works Block J and K	32	10.5	21	2,912
Fit Out				

Table 5.3: Predicted Demolition and Construction Trips				
Internal Fit Out Block I	20	18	36	3,120
Internal Fit Out Block J and K	33	31.5	63	9,009
External Works and Landscaping Block I	6	30	60	1,560
External Works and Landscaping Block J and K	36	30	60	9,360

5.114 As can be seen in Table 5.3 and based on the experience of the Applicant, the most intensive period for demolition and construction vehicle activity would occur over the Substructure Works. A high level of overlap is likely to occur between works for the three buildings; however, the level of overlap cannot be predicted with any level of accuracy at this stage of the planning process. Therefore, peak demolition and construction HGV traffic flows would occur in 2026 with annual average daily trips (AADT) of 5.

5.115 The most intensely used HGVs on-site would likely comprise tipper trucks for the removal of excavated material, ready mix concrete trucks for the delivery of concrete and articulated lorries for the delivery of cladding panels.

Typical Construction Plant and Machinery

5.116 The types of plant and machinery that are likely to be used on-site per development works activity are provided in Table 5.4.

Table 5.4: Likely Plant and Machinery								
Plant	**Site Enabling Works**	**Demolition**	**Excavation and Remediation**	**Substructure**	**Superstructure**	**Refurbishment**	**Fit-out**	**Roads and Landscaping**
Bulldozers	✓	✓	✓	✓				✓
Compaction plant				✓				✓
Cranes and hoists	✓	✓	✓	✓	✓		✓	
Cutters, drills and small tools	✓	✓		✓	✓	✓	✓	
Crushers		✓	✓					
360º excavators		✓	✓					✓
Floodlights	✓	✓	✓	✓	✓	✓		✓
Fork lift truck		✓		✓	✓	✓	✓	✓
Generators	✓	✓	✓	✓	✓	✓	✓	✓
Hydraulic benders and cutters		✓		✓	✓	✓		
HGVs/lorries/vans	✓	✓	✓	✓	✓	✓	✓	✓
Piling rigs	✓		✓	✓				
Scaffolding and mobile hydraulic access platforms	✓	✓			✓	✓	✓	
Ready-mix concrete lorry				✓	✓	✓		
Concrete pump				✓	✓			
Mortar batching plant							✓	
Water pump			✓	✓				✓
Temporary supports			✓	✓	✓			
Hoists						✓	✓	

Construction and Contracting Strategy

5.117 The Applicant would be the main contractor and would be responsible for a number of sub-contractors (piling, concrete, cladding etc.) and ultimately for environmental management during the construction process.

Construction Employment

5.118 The construction of the 2022 amended proposed development would generate employment; a proportion of the construction employment is expected to be generated on-site, with the rest being elsewhere in the construction supply chain. The construction works would have local benefits through construction training and targeting the local labour force. This would be achieved through employment and training initiatives, and would be set out in the Applicant's employment and skills training plan. This plan would likely be conditioned for future discharge/approval prior to commencement of works.

5.119 Full details of construction employment are provided in ES Chapter 6(R): Socio-Economics.

Hours of Work

5.120 Working hours would be agreed with WCC, but are expected to be:

- 08:00 to 18:00 hours Monday to Friday;
- 08:00 to 13:00 hours Saturday; and
- No working on Sundays or Bank Holidays.

5.121 All work which is intended outside of these hours, excluding emergencies, would be subject to prior agreement, and / or reasonable notice to WCC in terms of Section 61 (S61) of the Control of Pollution Act 1974[3].

Health and Safety

5.122 All works on-site would be undertaken in accordance with the provisions of the Construction (Design and Management) (CDM) Regulations 2007[4]. A CDM Coordinator would be appointed by the Applicant and would work with the Project Team to ensure compliance with these Regulations.

5.123 All method statements would incorporate regulatory safety matters and a Health and Safety File would be maintained on-site for inspection by the Health and Safety Executive, WCC and others as appropriate.

[3]Secretary of State, 1974. Control of Pollution Act, HMSO.

[4] Secretary of State, 2015. Health and Safety, The Construction (Design and Management) Regulations 2015. HMSO.

Access Management

5.124 At the demolition stage it is anticipated that demolition traffic would enter the site via the existing accesses with smaller vehicles limited to 7.5 t onto Newcastle Place and larger vehicles accessing for demolition via 14-17 PG through secure hoarded gates. During the late demolition phase and construction phases over the whole construction programme three new accesses would be formed off Harrow Road at different points in time, with agreement from relevant parties. All construction traffic would enter and exit the site via one of the three new access points on Harrow Road and on towards the A404 Harrow Road. Two of the three new access points would be in operation at any one time.

5.125 Site logistics are indicative at this stage as the Applicant may consider alternative options that would further minimise vehicular impacts during the construction process. Any alternative arrangements proposed at the detailed design stage would be subject to prior approval of WCC, and assessment, if necessary. All contractors would be supplied with a vehicle route card and details of all access routes would be provided.

5.126 It is likely a temporary stopping-up notice would be required on the Newcastle Place, specific applications to WCC Highways and TfL relating to any road closures would be implemented by the Applicant in accordance with all statutory notice periods.

Consultation

5.127 The Applicant would engage with and inform the local community and local stakeholders of particular construction tasks and indicative timelines across the individual construction phases and would ensure that both parties are fully involved in any such dialogue.

5.128 Matters for public consultation during the demolition, bulk excavation and piling works would be brought to the public's attention through staging drop-in exhibitions and the circulation of bespoke newsletters within the established catchment area. Local stakeholders would be engaged in direct communication with the Applicant, design team and other such consultants as required from time to time through the established Resident's and Community Liaison Groups. These groups would be open to new members as and when required and would be run in accordance with the stipulations of WCC.

5.129 The Applicant's procedures would allow for:

- a clear point of contact for the public to make enquiries and to submit complaints;
- details of how enquiries would be registered and progressed;
- advising the intended timescale for responding to the matter raised;
- records of any responses given, and to whom; and
- escalation procedures if the response is not satisfactory.

Materials Management

Selection

5.130 Construction materials would be selected following the Building Research Establishment (BRE) 'Green Guide to Specification'. These include:

- Minimising embodied energy content (the energy used in manufacture);
- Using recyclable materials where they have high embodied energy; and
- Maximising the recycled content of the material, ease of maintenance, appropriate sourcing of materials and totally excluding deleterious and hazardous materials.

5.131 Key materials required for the proposed development are envisaged to include those indicated in Table 5.5.

Table 5.5: Indicative Key Construction Materials

Materials	Materials Required For
Concrete	Foundations, substructure, superstructure (including concrete piling), cores, stairs and shear walls
Steelwork	Foundations, superstructures, minor structural elements
Brick/Blockwork/Stonework	External Envelope, External and Internal walls
Cladding	External Envelope
Glazing	External Envelope (windows)
Partitioning (gypsum board)	Internal walls

Storage and Handling

5.132 The 'sustainability' of raw materials would be considered during the procurement process. All construction materials would be appropriately stored on-site to minimise damage by vehicles, vandals, weather or theft.

5.133 Due to the limited space on-site, contractors would be required to operate a 'just in time' policy for delivery of material. This means that materials would be brought to site just before their incorporation into the works, thereby minimising the need for on-site storage.

5.134 Where possible, prefabricated elements would be lifted directly into position from delivery vehicles. This would assist in reducing on-site storage and labour requirements and construction noise levels, thereby reducing potential nuisances to the surrounding receptors.

Waste Volumes and Management

5.135 Anticipated volumes of demolition and excavation waste to be generated at the site, are provided in Table 5.6.

Table 5.6: Estimated Waste Arisings

Waste Stream	Total Volume (tonnes)	Beneficial re-use on-site subject to contamination testing* (tonnes)	Material to be recycled off-site* (tonnes)	Total Landfill (tonnes)
Demolition	**26,436**	-	25,379	1,057
Excavation Works and Pile Arisings	**37,590**	34,784	-	2,806
Construction Works	**9,805**	-	9,744	60
Total	**73,830**	**34,784**	**35,123**	**3,923**

Sensitive Receptors

5.136 A review of the site and study area has identified the following receptors that would be sensitive to potential construction impacts:

- Existing residential communities within 100 m of the site, particularly residential properties along Edgware Road, Paddington Green, at the WEG development and the 14-17 PG development;
- Existing community facilities within 100 m of the site including the City of Westminster College and Paddington Green Health Centre to the north of the site;

- Existing ecological receptors and open space within 100 m of the site, notably Paddington Green and St. Mary's Churchyard and Paddington Green SINC;
- Existing above ground heritage assets including listed buildings and conservation areas in particular the Paddington Green Conservation Area (CA); the Church of St Mary, Paddington Green (Grade II*); the Paddington Green Children's Hospital (Mary Adelaide House)(Grade II); and Nos. 18 Paddington Green (Grade II);
- Short, medium and long distance views to and from the site;
- Local air quality;
- Existing transport infrastructure, in particular the local highway network and public transport facilities;
- Pedestrians and road users of the surrounding roads and footpaths;
- Existing water resources, in particular ground water;
- Existing utilities infrastructure; and
- Existing telecommunication and radio signal receptions.

5.137 In addition it is anticipated that completed parts of the 2022 amended proposed development are likely to be occupied by new residents whilst construction on the remainder parts are being completed, with earliest occupation anticipated in 2028.

Potential Environmental Impacts

5.138 A review of the potential environmental impacts associated with the demolition and construction works has been undertaken to proactively inform the development proposals and inform appropriate mitigation measures. Potential impacts can arise from day-to-day works or from individual instances of accidents, poor operation or management. However, these impacts are largely dependent on the implementation of effective controls e.g. the employment of dust suppression methods, use of a well trained workforce and properly maintained plant.

5.139 A summary of the potentially environmental impacts that could arise during the demolition and construction works and the mitigation measures which are integral to the development proposals are provided in Table 5.7. Further detail and assessment of these likely impacts are provided in ES Volume 1(R) Chapters 6(R)-10(R) and in ES Volume 2(R).

5.140 Construction plant specifications have been defined allowing noise and other implications to be assessed. Potential impacts in many areas are largely dependent on attention to management control (e.g. watering to control dust, use of noise attenuated plant), which would be under the control of the Applicant and sub-contractors required, by tender requirements, to adhere to management controls and measures detailed in the CEMP.

5.141 It is noted that the Applicant would also make contributions to WCC's Environmental Inspectorate and Construction Monitoring to mitigate potential impacts on nearby residents and businesses.

Table 5.7: Summary of Potential Environmental Impacts during Demolition and Construction

Receptor	Potential Impacts	CEMP Mitigation
Above ground Heritage Assets	• Temporary impact on Paddington Green Conservation Area	• Installation of 2.8 m site hoarding • Standard, good on-site housekeeping • On-site wheel washing facilities • Dust management
Below ground Heritage Assets (Archaeology)	• Damage to potential *in-situ* archaeological remains (if present)	• Archaeological monitoring of geotechnical investigations, followed by a watching brief if considered necessary by archaeological advisor to WCC.
Transport and Pedestrian Infrastructure	• Temporary traffic disruption caused by site traffic and an increase in HGV movements	• Implementation of a CLP • Use of TfL and WCC approved access points and routes to the site, with deliveries outside peak hours where possible (and abnormal loads at quiet times, subject to agreement with WCC and TfL).
	• Transfer of mud and materials from vehicles onto public highways causing the potential for pollution hazards	• On-site wheel washing facilities
	• Temporary disruption to pedestrian access and routes within the locality of the site	• Implementation of a CLP • Maintenance of footpaths around the site, where possible, ensuring access is maintained for all.
Noise and Vibration	• Temporary increased noise levels at surrounding residential, community and commercial properties, from HGV vehicle movements and demolition / construction activities e.g. breaking out, crushing, piling, cutting etc.	• Installation of 2.8 m site hoarding • Agreement of working hours with WCC, careful selection of quiet plant • Appropriate siting and regular maintenance of plant • Use of temporary acoustic barriers around specific activities etc. • Setting of noise and vibration limits with associated monitoring during the works • Agreement of a S61 with WCC to set permissible noise and vibration levels • Installation of monitors around the site to measure noise and vibration
	• Vibration impacts on local buildings, due to increased vibration from demolition works, piling, use of heavy vehicles within the site etc.	• The construction techniques proposed are considered unlikely to result in significant vibration impacts but the need for vibration monitoring / setting of vibration action levels would be discussed and agreed with WCC.
Air Quality	• Windblown dust generated from demolition works, earthworks, stockpiles, construction vehicle movements on unpaved surfaces, crushing etc.	• Implementation of a dust management plan (DMP) • Dust suppression techniques, such as damping down, use of temporary screens, covering of stockpiles etc. • Installation of dust monitors around the site to monitor dust levels to confirm that suppression techniques are successful and dust is maintained at appropriate levels.
Soil and Groundwater	• Pollution incident through spill of fuels or chemicals, or discharge of sediment laden water/runoff	• Appropriate storage of fuels and potentially hazardous construction materials within a secure site compound • Provision of on-site pollution control kits

Table 5.7: Summary of Potential Environmental Impacts during Demolition and Construction

Receptor	Potential Impacts	CEMP Mitigation
		• Use of settlement system prior to discharge
	• Siltation and contamination of surface water runoff and ground water	• Use of settlement tanks, bunding and street sweeping to prevent contamination of the stormwater system
	• Potential for soil contamination	• Geotechnical and Environmental site Investigations to characterise current soil and groundwater conditions at the site and to inform the preparation of an appropriate Remedial Strategy and material re-use strategy in conjunction with WCC and the EA.
Ecology	• Accidental spills and discharges from the storage of fuels and construction materials which may create pollution hazards • Accidental release of surface water runoff containing elevated levels of suspended sediments or other contaminants	• Appropriate storage of fuels and potentially hazardous construction materials within a secure site compound • Provision of on-site pollution control kits • Use of settlement system prior to discharge
Natural Resource Use	• Waste generation and disposal of materials to landfill	• Preparation and Implementation of a SWMP • Waste minimisation at source, with segregation and recycling of waste generated • On-site re-use of waste and off-site recycling where possible
	• Use of natural resources	• Preparation and implementation of a SWMP • Appropriate sourcing of materials
Site Workers	• Release of asbestos during excavation works	• Identification and appropriate disposal of asbestos by a specialist contractor
	• Exposure of construction staff to contamination, if confirmed during planned site investigations works.	• Appropriate briefing of staff • Use of Personal Protective Equipment (PPE).
Residential Amenity	• Temporary visual intrusion for nearby residents, occupiers of other land uses, pedestrians and passers-by. • Temporary visual intrusion of construction works on views into and out of the site • Temporary increases in road noise and vibration generated from construction vehicles. • Temporary increases in noise and vibration levels generated from the use of site plant and machinery • Temporary generation of wind-blown dust nuisance from ground surfaces, stockpiles, vehicles, work faces and cutting and grinding of materials	• Installation of 2.8 m site hoarding • Standard, good site housekeeping • Appropriate construction site layout • On-site wheel washing facilities • Dust management • Demolition and construction traffic management • Agreement of working hours with WCC • Careful selection of quiet plant, appropriate siting and regular maintenance • Use of temporary acoustic barriers around specific activities etc. particularly near noisy works or where works are being undertaken adjacent to residential buildings • Setting of noise and vibration limits with associated monitoring during the works
	• Temporary generation of exhaust emissions from lorries and plant delivering and removing materials including dust and particulates which may impact upon local air quality	
Short, medium and long distance views to and from site	• Temporary impact in views looking out of the Paddington Green Conservation Area and views looking towards the site	• Installation of 2.8 m site hoarding • Standard, good on-site housekeeping • On-site wheel washing facilities • Dust management
Townscape	• Temporary impact to townscape character	• Installation of 2.8 m site hoarding • Standard, good on-site housekeeping • On-site wheel washing facilities • Dust management

Mitigation and Scope of Environmental Management Controls

5.142 The following mitigation controls would be committed to and delivered pursuant to either planning conditions, obligations contained in a legal agreement (under Section 106 of the Town and Country Planning Act, 1990) and supported as necessary by contract obligation between the Applicant and relevant sub-contractors or regulatory provisions in force from time-to-time.

Proposed Site Management Controls

Westminster County Council Code of Construction Practice (2016)

5.143 WCC has published a CoCP which contains a guide to good practice for contractors carrying out demolition and construction works within WCC's administrative boundary. Within the CoCP, WCC encourages the implementation of site-specific Environmental Management Plans (EMPs) for the demolition and construction stage, particularly for large scale redevelopments and for basements, a Construction Management Plan (CMP) is encouraged.

Construction Environmental Management Plan

5.144 The Applicant would make contributions to WCC's Environmental Inspectorate and Construction Monitoring to mitigate potential impacts on nearby residents and businesses. This would also require submission of a CEMP in conformity with Westminster's Basement Development SPD.

5.145 The 2022 amended proposed development's CEMP would be prepared to include a CLP and SWMP and would be submitted for review and approval by WCC prior to commencement of works on-site. It would include the following:

- A commitment to environmental protection (all consultants and trade contractors would be invited to declare their support for this at tender stage);
- Documentation of measures to comply with environmental aspects of any planning conditions;
- Detailed control measures and activities to be undertaken to minimise likely environmental impacts, as well as associated roles and responsibilities;
- Target criteria for environmental issues, where practical, such as water and energy consumption;

- Any requirements for monitoring and record keeping;
- Proposed noise, vibration and dust monitoring levels to be agreed by WCC;
- A dedicated point of contact during normal working hours and in emergencies with responsibility to deal with environmental issues if they arise; and
- A review and monitoring regime of on-site performance against the CEMP provisions by the project team and regular environmental audits of its implementation.

5.146 The CEMP would provide the necessary level of management and control of demolition and construction practices. This includes advance notice of operations and duration of work that may cause noise, disruption to access, or other effects.

5.147 The CEMP would form part of tender documentation and contractors would be required to demonstrate how they would work within these provisions, identify communication channels for exchange of information and set out programmes for monitoring and auditing of environmental control systems.

5.148 Where departures from the CEMP are inevitable, prior identification is required, such that other mitigation measures can be considered.

Considerate Constructors

5.149 The principal contractor would be required to register the site under the Considerate Constructors Scheme.

Principal Contractor and Management of Sub Contractors

5.150 All contractors would have responsibility for monitoring any sub-contractors' environmental performance; acting as a point of contact for consultation and feedback and for developing mechanisms to solve on-site issues as and when required.

Neighbourhood Plan/Public Liaison

5.151 The Applicant would be expected to nominate a manager who would act as the Project Environmental Manager (PEM), who would be named at all site entrances, with a contact telephone number. The contact name and details would be provided to all the relevant stakeholders by the Applicant prior to the start of the demolition and construction works.

5.152 The PEM would have primary responsibility for dealing with WCC, the GLA and other stakeholders on environmental matters, and all key stakeholders would be notified whenever a change of responsibility occurs for the PEM role. The PEM would keep neighbours, WCC and other relevant parties informed of the nature of the on-going works, their duration and programme to establish and maintain good relationships with them.

5.153 In accordance with WCC policy, an Environmental Inspectorate, acting on behalf of WCC, would be appointed to the project. The Environmental Inspectorate would be responsible for liaising with the Applicant's' construction team and advise on environmental responsibilities, agreeing routine arrangements for the site activities and ensuring compliance with WCC's CoCP. The PEM would constitute the main point of contact with the Environmental Inspectorate.

5.154 It is anticipated that regular meetings would take place between the PEM and key stakeholder groups to review progress and to agree any necessary actions. The PEM would also deal with enquiries from the general public, including any complaints. Any complaints would be logged and reported to the relevant individual within WCC (and *vice versa*) as soon as practicable.

5.155 The PEM would coordinate responses to queries and address issues in a timely and satisfactory manner.

Monitoring, Inspection and Auditing

5.156 The CEMP would define responsibilities and procedures for the management of the potential impacts on the environment arising during demolition, enabling and construction. A monitoring programme of the environmental effects of demolition and construction would be implemented to agreed WCC requirements. This programme would:

- evaluate the effectiveness of environmental mitigation, and identify environmental problems and appropriate responses at an early stage;
- ensure that the works are carried out in accordance with the provisions of the CEMP; and
- identify and implement any environmental improvements that would contribute to the overall environmental performance of the 2022 amended proposed development.

5.157 The Applicant would wish to reassure itself that the CEMP is being adhered to by all sub-contractors. To this end, site inspections and more formal audits would be undertaken and a checklist pro-forma, which would cover the environmental issues addressed in the CEMP, used.

5.158 Where a problem is identified, corrective action would be identified and implemented in conjunction with the Applicant, Site Manager and sub-contractors.

5.159 It is envisaged that there would be a requirement for regular reporting of monitoring and auditing to WCC, and WCC would be asked to review implementation of the protective measures as necessary during demolition and construction, and would have direct access to the monitoring representative to ensure that any non-compliances with the requirements of the CEMP are speedily rectified.

Emergencies and Environmental Incidences

5.160 Protocols to be implemented on-site in instances of emergencies and environmental incidences would be set out within the CEMP for approval by WCC.

Housekeeping and General Site Management

5.161 Hoardings would be erected around the site to provide a clear and secure demarcation between operational activities and other areas and to provide information regarding the 2022 amended proposed development and its progress. Particular attention would be paid to locations supporting high volumes of pedestrian movement (for example on the corner of Harrow road and Edgware Road), demolition and construction routes, access gates and security arrangements.

5.162 A 'clean site' policy would be maintained and contractors and their sub-contractors would be expected to maintain a tidy site. A street sweeper would be employed as required during the demolition, piling and excavation periods of the construction programme to make sure that the streets around the site would be kept clean during the works.

5.163 Hoardings would be lit from half an hour after sunset to half an hour before sunrise. Prior to the erection of any external floodlighting details would be agreed with WCC. On-site floodlights would be fixed to the tower cranes and on the hoarding or lighting poles to illuminate the basement. Emergency escape lighting would identify the escape route.

Residential and Open Space Amenity

5.164 The following mitigation and environmental controls would collectively limit potential visual, noise, vibration, traffic and dust impacts associated with the 2022 amended proposed development's construction works at the site:

- Maintaining aesthetically appropriate site hoardings;
- Agreeing working hours with WCC;
- Undertaking regular road sweeping;

- Arranging and locating potentially high impact site activities and plant away from neighbouring residential receptors;
- Selecting quiet plant and regularly maintaining plant;
- Implementing good site housekeeping measures;
- Directing site lighting away from sensitive receptors;
- Turning site lighting off outside of normal working hours;
- Screening scaffolding and active construction activities above hoarding levels, where practical;
- Implementing construction traffic management measures as agreed with WCC and TfL;
- Implementing and monitoring dust management measures;
- Implementing and monitoring noise and vibration measures; and
- Using temporary acoustic barriers around potentially noisy activities.

Archaeology

5.165 An Updated Archaeology Desk Based Assessment has been undertaken and is presented in Appendix 2.6(R), ES Volume 3(R).

5.166 The main impact would be the expansion of the existing basement Level 1 across the site, which would remove all archaeological remains within the proposed footprint. This may include localised and fragmented remains of the post-medieval buildings. The proposed second level of basement would have no addition impacts. New piles, pile caps, ground beams, trench foundations, landscaping and new services would only have an impact outside the footprint of the proposed basement Level 1. Impacts in these areas would depend on the depth of made ground; where it is deep, such impacts would further truncate post-medieval remains (removing shallow features) but where it is shallow they would also truncate or remove earlier remains cut into the gravels. Pile probing and obstruction removal would cause truncation to any adjacent remains.

5.167 Mitigation of potential impacts to potential below ground heritage assets would be undertaken by means of an archaeological watching brief during preliminary ground preparation and subsequent foundation construction, which would ensure that any archaeological assets were not removed without record. This strategy could be refined by the prior archaeological monitoring of geotechnical investigations, which would clarify the nature and depth of deposits: based on the results, it is possible that no further work may be necessary. Any archaeological work would need to be undertaken in accordance with an approved Written Scheme of Investigation (WSI) and could be carried out in accordance with an appropriately worded planning condition.

Contaminated Soil

5.168 An Updated Preliminary Risk Assessment has been undertaken and is presented in Appendix 2.5(R), ES Volume 3(R).

5.169 Site investigations would be undertaken in advance of development to quantify the contamination risk including asbestos in soils to construction workers and surrounding residents during ground disturbance and excavation works. Waste soil would be disposed of in line with best practise guidance and current regulatory requirements. The site investigations would also inform an appropriate remediation strategy for the site and would be prepared in consultation with WCC.

5.170 It has been concluded that the risk to future site occupants, off-site receptors and construction workers is likely to be low subject to the implementation of the following mitigation measures:

- Preparing and implementing a remediation strategy;
- Using appropriate, safe working practices;
- Providing health and safety training;
- Installing guidance notes and signs at the site;
- Developing a contingency plan in case of accidents as required under the Guide for Site Investigations and Remediation, as well as an Incident Reporting Procedure; and
- Using PPE.

5.171 A piling risk assessment of the site-wide basement would also be undertaken during the detailed design stage as the proposed piling strategy is developed by the structural engineers to determine the most appropriate method of piling and to minimise the risk of potential contamination to groundwater from piling. This piling risk assessment would be submitted to the EA for approval.

5.172 During construction works, it is anticipated that a number of potentially contaminative liquids and chemicals including diesel could be stored on-site. The following management and control measures would be included in the CEMP:

- Storing all liquids and solids of a potentially hazardous nature on surfaced areas, with bunding, in accordance with the EA's Pollution and Prevention Guidelines 2 ('PPG2 – Above Ground Oil Storage Tanks')[5] preventing pollution from above ground storage tanks;
- Ensuring that contractors control and bund any hazardous substances used on-site (although at this stage none are anticipated), including oil drums or containers on-site, in accordance with Control of Substances Hazardous to Health (COSHH) Regulations (as amended) and ensure that oil or other contaminants are not allowed to reach water courses or ground water sources including aquifers;
- Storing all oils and chemicals in bunded areas in order to contain any spillages, should these occur. Bunding would be specified to ensure secondary containment of at least 110 % of the volume of the largest tank within the bund;
- Siting all filling points, gauges and vents within the bund;
- Placing tanks on impermeable bases to reduce the risk of spillage to groundwater. Integral or self-bunded tanks would be favoured; and
- Sealing the drainage system of the bund with no discharge to any watercourse, land or underground strata. Associated pipe work would be located above ground and protected from accidental damage.

5.173 Furthermore, all site works would be undertaken in accordance with the EA's Pollution Prevention Guidance Note 6 ('PPG6 – Working at Construction and Demolition Sites')[6] and Guidance Note 3 ('PPG3 – Use and Design of Oil Separators')[7].

5.174 Demolition and construction vehicles would be properly maintained to reduce the risk of hydrocarbon contamination and would only be active when required. Construction materials would be stored, handled and managed with due regard to underlying soil and thus the risk of accidental spillage or release would be minimised.

Water Resources

5.175 The Applicant would hold plans on the site which would show the location of all surface and foul water drains and would make relevant staff aware of the drainage network.

5.176 To ensure that no contaminant-pathway-receptors pathways are created and to reduce the potential for contamination to occur during the Demolition and Construction stage, all site activities would be undertaken in accordance with the requirements of the Water Resources Act 1991[8], Water Act 2014[9],

[5] Environment Agency, 2011. Pollution Prevention Guidelines 3: Above Ground Oil Storage Tanks. EA.
[6] Environment Agency, 2010. Pollution Prevention Guidelines 6 Working at Construction and Demolition Sites. EA.
[7] Environment Agency, 2006. Pollution Prevention Guidelines 3 Use and Design of Oil Separators. EA.

[8] Secretary of State, 2009. Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009. London. HMSO.
[9] Secretary of State, 2014. Water Act 2014. London. HMSO.

Control of Pollution (Oil Storage) Regulations 2001[10]. Although the EA's Pollution Prevention Guidance (PPG) was withdrawn in 2015, consideration would be given to the good practice guidance which had been included in the PPGs as well as the current government guidance on Pollution Prevention for Businesses [https://www.gov.uk/guidance/pollution-prevention-for-businesses]. The Applicant would also be responsible for obtaining all necessary consents and ensuring compliance with the conditions of the consents.

5.177 The CEMP for the 2022 amended proposed development would include the following provisions:

- Regularly maintaining construction vehicles to reduce the risk of hydrocarbon contamination;
- Storing, handling and managing construction materials with due regard to the sensitivity of the local aquatic environment and thus the risk of accidental spillage or release;
- Locating above ground storage tanks on designated areas of hardstanding;
- Not using any underground storage tanks;
- Storing liquids such as degreasers, solvents, lubricants and paints in segregated, bunded enclosures; and
- Ensuring that any tanks storing more than 200 litres of oil on-site, would have secondary bunding. Bunding would be specified as having a minimum capacity of *"not less than 110 % of the container's storage capacity or, if there is more than one container within the system, of not less than 110 % of the largest container's storage capacity or 25 % of their aggregate storage capacity, whichever is the greater."*

5.178 In addition, the construction drainage system for the site would be designed and managed to comply with BS 6031:2009[11], which details methods that should be considered for the general control of drainage on construction sites.

5.179 Wherever possible, the Applicant would be encouraged to minimise the amounts of wastewater discharged from the site. Surface drainage and wastewater would pass through settlement tanks and oil interception facilities before discharge to sewer. The Applicant would ensure that all potentially contaminated water e.g. dewatering effluent is disposed of in accordance with the Water Resources Act 1991[12] and Water Industry Act 1999[13], to the satisfaction of the EA and Thames Water.

5.180 An Emergency Incident Plan would be in place for the site to deal with potential spillages and/or pollution incidents. This would include the provision of on-site equipment for containing spillages, such as emergency booms and chemicals to soak up spillages.

5.181 Any pollution incidents would be reported immediately to WCC and the regulatory bodies such as the EA.

Ecology

5.182 An Updated Ecological Impact Assessment has been undertaken and is presented in Technical Appendix 2.4(R), ES Volume 3(R).

5.183 Dust generated from demolition and construction works would be managed by means of 2.8 m high site hoarding and dust suppression measures, such as the use of water sprays, dampening down of roads and covering of storage areas, such that the potential for adverse dust generation is reduced.

5.184 Construction drainage, air quality and noise management controls would be actively implemented at the site to minimise potential construction impacts on the adjacent St Mary's Churchyard and Paddington Green SINC and the species it supports. Furthermore, construction lighting would be directed away from the SINC during the hours of darkness.

5.185 Measures to protect breeding birds during the demolition and construction works would be detailed in the CEMP, together with measures to control lighting effects on the adjacent SINC and foraging or commuting bats which may utilise this area.

5.186 All lighting would be appropriately aimed, controlled and switched off when the site is not operational (where practicable).

Transport

5.187 A draft CLP has been prepared and forms part of the TA that accompanies the application. It has taken into account legislative requirements (e.g. Highways Act 198014, the New Roads and Street Works Act 1991[15], Town and Country Planning Act 1990[16], Traffic Management Act 2004[17]); Police, Fire Authority and HSE Guidance; Local Authority Transport Schemes; and Neighbourhood Lorry Restrictions. The CLP includes details of the following:

- Agreed demolition and construction traffic routing and site access points;
- Road cleaning facility provisioning;
- Temporary traffic control measures;
- Temporary and permanent access to the works - for personnel/vehicles;
- Off-loading and storage areas;
- Traffic management procedures for waste disposal vehicles;
- Personnel and vehicle segregation;
- Equipment e.g. temporary fencing, signage etc.;
- Temporary and permanent closures and diversions of footpaths;
- Street furniture removal, if required; and
- Site inductions.

5.188 Wheel cleaning facilities with adjoining hard standings would be located at the access and egress points of the site. These wheel cleaning facilities would be supplemented by regular road cleaning during the excavation and basement works and would have appropriate catchment areas.

5.189 The draft CLP would be updated upon confirmation of the detailed development programme and would form part of the 2022 amended proposed development's CEMP.

Vehicle Routing and Traffic Management

5.190 Vehicles making deliveries to the site or removing spoil or demolition material would travel via designated routes which would be agreed with WCC, TfL and the police as required. The Applicant would liaise with WCC to provide directional signage on the principal routes on the highway network surrounding the site, if required, in order to improve navigation.

5.191 Demolition and construction traffic movements are likely to take place on the local and wider highway network between 08:00 and 18:00 hours from Monday to Friday and 08:00 to 13:00 hours on Saturdays unless the times are constrained by planning conditions. Where possible vehicle movements would be scheduled out of peak hours.

5.192 The demolition and construction sequence for the site would be programmed to minimise the need for road closures. However, there may be instances when they are unavoidable. Where this is the case, road closures would be requested 6 - 12 weeks in advance, and authorised by TfL, WCC and the Metropolitan Police.

[10] Secretary of State, 2001. Control of Pollution (Oil Storage) Regulations 2001. London. HMSO.
[11] British Standard Institution, 2009. BS6031:2009 British Standard Code of Practice for Earthworks. London. BSi.
[12] Secretary of State, 1991. The Water Act 1991. HMSO.
[13] Secretary of State, 1999. Water Industry Act. London. HMSO.
[14] Secretary of State, 1980. Highways Act. HMSO.
[15] Secretary of State, 1991. New Roads and Street Works, 1991. HMSO.
[16] Secretary of State, 1990. Town and Country Planning Act 1990. HMSO.
[17] Secretary of State, 2004. Traffic Management Act. HMSO.

5.193 The Applicant would co-ordinate all deliveries and collections to/from the site, and ensure that as far as possible that:

- all delivery and collection vehicles are aware of the proposed routing;
- prior to a delivery or collection, haulers would notify the relevant authorities (TfL, Police, Highways Authority etc.) in accordance with the Road Vehicles (Authorisation of Special Types) (General) Order 2003[18] if required;
- liaison would be undertaken with occupants of adjacent buildings to avoid delays to service deliveries due to construction vehicles; and
- deliveries would be made on a 'just in time' basis.

5.150 Larger vehicle movements would be scheduled to avoid peak hours on the local road network if at all possible. If an alternative construction traffic route is required this would first be agreed with WCC.

5.151 All deliveries would be made to the designated areas within the site. If for any reason it is necessary to load and unload outside site boundaries, the details and procedure for this would be agreed in advance with WCC and occupants of neighbouring properties.

HGV Management

5.194 It is anticipated that construction HGV movements would generally take place out of peak hours when congestion on the local road network is lower. Likely numbers of trips associated with on-site works, as calculated by the Applicant is provided in Table 5.3.

5.195 The most intensive period for demolition and construction vehicle activity would occur over the Substructure Works. A high level of overlap is likely to occur between works for the three buildings; however, the level of overlap cannot be predicted with any level of accuracy at this stage of the planning process.

5.196 Loading and unloading of vehicles, dismantling of equipment such as scaffolding or moving equipment or materials around the site would be conducted in such a manner as to minimise noise impacts to existing surrounding residential properties.

Parking Management and Staff Travel

5.197 Demolition and construction workers would be encouraged to access the site by public transport with limited parking provision provided on-site. Information would be provided on the local bus, rail and underground rail services to ensure workers are aware of the choices available to them.

5.198 Where practicable all loading and unloading of contractors' vehicles would be within the site boundary. Contractors would avoid parking vehicles on the public highway and vehicle movements would be staggered to avoid queuing outside the site access points.

Noise and Vibration

5.199 Effective co-ordination and time management of demolition and construction activities would be used to avoid noise and vibration nuisance to surrounding uses. Early and helpful communications with the surrounding and on-site receptors would assist in managing any complaints arising during the demolition and construction works of the 2022 amended proposed development.

5.200 Contractors would be required to ensure that works are carried out in accordance with best practicable means as stipulated in the Control of Pollution Act 1974[19]. A full explanation of measures to control construction noise would be incorporated within the CEMP and detailed in all construction method statements. All work intended outside of working hours, presented earlier in this chapter, would be subject to prior agreement and / or reasonable notice to WCC in terms of a S61.

Noise Emissions

5.201 The precise scope of noise control cannot be specified until detailed construction method statements are complete. However, the following standard best practice would be implemented as a minimum for the 2022 amended proposed development:

- Planning deliveries and removals out of peak hours;
- Parking construction traffic off the public highway;
- Controlling the discharge of trucks from site to avoid congestion;
- Implementing traffic management systems at the entrances to the site at all times to control the traffic into the site;
- Maintaining the 2.8 m site hoarding around the site boundary to screen noise from low level sources and/or street level receptors;
- Agreeing working hours with WCC;
- Using 'silenced' plant and equipment wherever possible and maintaining plant on a regular basis;
- Selecting electrically driven equipment where possible in preference to internal combustion powered; hydraulic power in preference to pneumatic; and wheeled in lieu of tracked plant;
- Regularly maintaining plant;
- Operating plant at low speeds where possible and incorporating automatic low speed idling;
- Siting noisy activities away from sensitive receptors, where possible;
- Temporarily screening or enclosing static noisy plant to reduce noise emissions and certifying plant to meet relevant standards;
- Implementing noise monitoring to accord with maximum levels set out in the ES;
- Minimising disturbance from reversing bleepers through measures such as site layout, provision of screening or use of broadband sound emitting reversing alarms;
- Switching off vehicle engines where vehicles are standing for an extended period of time;
- Lowering materials whenever practicable rather than dropping; and
- Making all contractors familiar with the guidance in BS 5228[20] which would form a pre-requisite of their appointment.

Vibration

5.202 There are sensitive receptors located immediately along the northern and north-western boundaries of the site.

5.203 BS 5228 Part 2 contains historic vibration measurement data for piling works, including the CFA method proposed for the 2022 amended proposed development. Historic data presented in Table D.6 4 of BS 5228 suggest that vibration levels would fall to below 1 mm/s within 10 m of the piling works. Vibration of less than 1 mm/s is unlikely to generate complaints from those living within nearby off-site sensitive properties. The historic data suggests that this method of piling is unlikely to lead to vibration that would cause damage to buildings, even cosmetic damage.

5.204 The following measures would be included within the CEMP for the 2022 amended proposed development:

- Sequencing the piling programme so that numerous piles within 10 m of an affected property or buried utilities are not carried out successively. A maximum of three piles would be installed out within 10 m of an affected property or buried utilities with a break before continuing in that area;

[18] Secretary of State, 2003. Road Vehicles (Authorisation of Special Types) (General) Order. HMSO.
[19] Secretary of State, 1974. Control of Pollution Act. HMSO.
[20] British Standards Institution, 2009 and 2014. British Standard 5228: 2009+A: 2014 Code of practice for noise and vibration control on construction and open sites. BSI.

- Carrying out vibration monitoring during early piling works, away from any affected property or buried utilities, to quantify the levels of vibration likely to be attained; and
- Compiling an appropriate action plan for incorporation into the CEMP to ensure that the adverse effects of subsequent piling work, if identified, are minimised at all works.

Air Quality

5.205 Dust and emission control and mitigation at the site would be particularly important during earthworks and dry weather periods. The WCC's Code of Construction Practice (CoCP)[21] states that the contractor must comply with the latest version of the 'The Control of Dust and Emissions during Construction and Demolition SPG[22]. The SPG measures for high risk sites for the control of dust and emissions during construction and demolition that would be adopted and implemented by the Applicant at the site are summarised in Table 5.8.

Table 5.8: Dust Mitigation Measures for High Risk Sites

Phase	Mitigation Measure
Communications	• Display name and contact details of responsible person for dust issues on Site boundary in addition to head/regional office contact information. • Display the head or regional office contact information
Dust Management Plan	• Develop and implement a Dust Management Plan (DMP) which would be included as part of the CEMP, to be approved by the Local Authority.
Site Management	• Record all complaints and incidents in a site log. • Take appropriate measures to reduce emissions in a timely manner, and record the measures taken within the log. • Make the complaints log available to the Local Authority if requested. • Record any exceptional dust incidents on or off site. • Hold regular liaison meeting with other high-risk construction sites within 500 m.
Monitoring	• Undertake daily on and off-site visual inspections where there are nearby receptors. • Carry out regular inspections to ensure compliance with the DMP and record results in the site log book. • Increase the frequency of inspections during activities with a high potential to create dust or in prolonged dry weather. • During the demolition and construction stage, the main potential impacts would be dust annoyance and locally elevated concentrations of $PM_{10.}$ WCC's CoCP requires dust monitoring for projects such as the 2022 amended proposed development. However, given that predicted PM_{10} concentrations within the study area are well below the objective, exceedances of the PM_{10} objectives at relevant receptors are unlikely and therefore a real-time monitoring programme is not considered deemed necessary to show compliance with particulates objectives. Nonetheless, confirmation should be sought with the Local Authority if dust deposition, dust flux, or real-time PM_{10} continuous monitoring are required.
Preparing and Maintaining the Site	• Plan site layout to locate dust generating activities as far as possible from receptors. • Use solid screens around dusty activities and around stockpiles. • Avoid site runoff of water and mud. • Fully enclose the site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
	• Keep site fencing barriers and scaffolding clean using wet methods. • Remove dusty materials from site as soon as possible. Minimise emissions from stockpiles by covering, seeding, fencing or damping down.
Operating Vehicle/ Machinery and Sustainable Travel	• Ensure all NRMM comply with the standards set in the Mayor of London's Control of Dust and Emissions During Construction and Demolition SPG. • The air quality section of the CEMP should include a statement of compliance with the GLA NRMM Low Emission Zone emissions requirements as set out in the Control of Dust and Emissions during Construction and Demolition SPG. • Site manager to maintain a list of all on-site NRMM using the GLA's NRMM London database. • Enforce an on-site speed limit of 15 mph on surfaced roads and 10 mph on unsurfaced areas. • Ensure vehicles switch of engines when stationary. • Avoid use of generators where possible. • Produce a CLP to manage the sustainable delivery of goods and materials. • Implement a Travel Plan that supports and encourages sustainable travel.
Operations	• Cutting, grinding or sawing equipment only to be used with suitable dust suppression equipment or techniques. • Ensure adequate water supply for effective dust and particulate matter suppression. • Use enclosed chutes, conveyors and covered skips. • Minimise drop heights of materials. • Ensure suitable cleaning material is available at all times to clean up spills.
Waste Management	• Avoid bonfires. • Avoid explosive blasting using appropriate manual or mechanical techniques. • Bag and remove any biological debris.
Measures Specific to Demolition	• Soft strip before demolition. • Ensure effective water suppression during demolition. • Avoid explosive blasting, using appropriate manual or mechanical alternatives. • Bag and remove any biological debris or damp down such material before demolition.
Measures Specific to Construction	• Ensure aggregates are stored in bunded areas and are not allowed to dry out. • Avoid concrete scabbling where possible. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos. • For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
Measures Specific to Trackout	• Use water-assisted dust sweepers to clean access and local roads. • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving the site are appropriately covered. • Inspections of haul roads to be recorded in site log, including any remedial action taken. • Implement a wheel washing system.

[21] Westminster City Council, 2016. Code of Construction Practise, WCC.

[22] Greater London Authority, 2014. Sustainable Design and Construction Supplementary Planning Guidance. London. GLA.

Table 5.8: Dust Mitigation Measures for High Risk Sites	
Phase	**Mitigation Measure**
	• Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit. • Access gates to be located at least 10 m from the receptors where possible.
Measures Specific to Earthworks	• Re-vegetate earthworks and exposed areas / soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil. • Only remove the cover in small areas during work and not all at once.

5.206 Sensitive receptors to dust include those located along the perimeter of the site, as well as the existing occupants of the site and future occupants of the 2022 amended proposed development. These include residential, education, places of worship and commercial receptors.

5.207 Mitigation measures would be incorporated into demolition and construction working practices to reduce the likelihood of significant adverse dust effects form the demolition and construction works.

Non-Road Mobile Machinery

5.208 Demolition and construction plant emissions are considered to be a small, insignificant and temporary emission source relative to ambient conditions. However, they are estimated to account for 12 % of NOx (nitrogen oxides) emissions and 15 % of PM_{10} emissions in Greater London. The 2022 amended proposed development is located in the Central Activities Zone[23]. Therefore, suitable best practice mitigation measures for site plant would be adhered to as follows to reduce the likelihood of significant adverse air quality effects from Non-Road Mobile Machinery (NRMM) throughout the demolition and construction works:

- NRMM should be compliant with the current standards stage IV for construction machinery operating in the Central Activities Zone, as set out in the Control of Dust and Emissions during Construction and Demolition SPG and NRMM Practical Guide[24];
- NRMM would be modern and well maintained. Should any emissions of dark smoke occur (except during start-up) then the relevant machinery would be stopped immediately and any problem rectified before being used again;
- Engines and exhaust systems would be regularly serviced according to manufacturer's recommendations and maintained to meet statutory limits/opacity tests;
- Plant would be located away from the boundaries close to residential areas;
- Use of diesel or petrol powered generators would be avoided by using mains electricity or battery powered equipment where feasible and if safety concerns can be overcome;
- A CLP would be implemented to manage the sustainable delivery of goods and materials;
- Including a statement of compliance with the GLA's NRMM Low Emission Zone emissions requirements, within the air quality section of the CEMP; and
- Log all machinery online using the register at https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm.

5.209 In addition, construction plant emissions on-site would be minimised by means of the following controls:

- Keeping site plant and equipment in good order and maintained in accordance with the manufacturers specifications;
- Ensuring plant is not left running when not in use;
- Locating stationary construction plant away from the site boundaries and pedestrian walkways as far as possible;
- Using plant with dust arrestment equipment where practicable; and
- Employing cleaner fuels for construction plant, where practicable.

5.210 The Applicant would give detailed dust control protocols as part of their contracts for the Site.

Aviation

5.211 During the construction works, crane operators would comply with the recommendations of BS 7121:2012[25]. In addition, the provision of medium intensity steady red obstacle lighting to the completed tower buildings to provide 360 degree visibility and to the temporary construction crainage when operating above 100 mAOD, to be agreed with London City Airport before work starts on-site.

Waste Management

5.212 The WCC CoCP requires that works carried out on a construction site, should as far as reasonably practicably minimise the amount of spoil and waste transported and disposed of.

5.213 As a principal waste mitigation measure during the 2022 amended proposed development's construction works, the Applicant has prepared a SWMP which has been submitted as part of the planning application, the basis of which would be implemented on site.

5.214 The scope of the SWMP would include the following:

- Identification of the likely types and quantities of waste generated (including waste acceptance criteria testing to assist in confirming appropriate waste disposal options for any contaminated materials);
- Identification of waste management options in consideration of the waste hierarchy, on- and off-site options, and the arrangements for identifying and managing any hazardous wastes produced;
- A plan for efficient materials and waste handling in consideration of constraints imposed by each Site;
- Targets for the diversion of waste from landfill;
- Identification of waste management sites and contractors for all wastes, ensuring that contracts are in place and emphasising compliance with legal responsibilities; and
- A commitment to undertaking waste audits to monitor the amount and type of waste generated and to determine if the targets set out in the SWMP have been achieved. Targets would be reviewed and where necessary, amended. All results would be communicated to the staff.

5.215 In particular, the following measures would be proposed in the SWMP to minimise waste generation on-site:

- Ordering the quantity of materials required for the job, thus reducing over-ordering;
- Determining when and where materials are required and requesting 'just in time' deliveries;
- Returning damaged goods or incomplete deliveries;
- Requesting suppliers to minimise packaging and to guarantee a take-back service, especially for pallets;
- Ordering materials that are cut to size, rather than standard sizes;
- Where possible and appropriate to do so, using prefabrication off-site;
- Having appropriate storage areas ready - these should be covered to protect against rain and ideally have a hard standing surface;

[23] https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm.
[24] Cleaner Construction for London, 2022. Non-Road Mobile Machinery (NRMM) Practical Guide. V5. April 2022.
[25] British Standards Institution, 2012. BS 7121:2012 Code of Practice for Safe Use of Cranes. BSI.

- Determining where special handling is required; and
- Securing the site to avoid theft and vandalism.

5.216 Any waste that is not re-used on-site and therefore requires off-site disposal would be dealt with in accordance with the Waste Hierarchy, the requirements of the EA and in line with relevant legislation.

Recycling

5.217 Segregation (on-site or off-site) and recycling of cardboard, timber, metal, plastics, plasterboard and gypsum based products would be strongly encouraged by the Applicant and project team. The segregation of polythene film waste from other plastics would also be considered and local collections investigated.

5.218 It is proposed that waste would be segregated and stored for collection on-site, through the use of a series of colour coded skips and potentially equipped with compactors to take different materials. Additionally, colour coded wheelie bins would be placed at appropriate locations for each material type for manual loading. These bins would be transferred to the relevant skip storage location.

5.219 Where standard sized pallets are used for material storage, then regular collections would be organised for removal and for re-use rather than disposal in timber skips.

5.220 Where on-site segregation of waste is not deemed possible due to spatial constraints at the site, the waste carriers would be required to ensure off-site segregation for waste and diversion from landfill is undertaken.

Disposal

5.221 All construction materials that cannot be re-used or recycled or are classified as 'hazardous', following the Waste Acceptance Criteria testing, would be disposed of at appropriately licensed disposal facilities. The destination of all waste or other materials from the site would be notified to the relevant authority for approval. Deposition would be in accordance with the requirements of the:

- EA;
- Environmental Protection Act 1990[26];
- Controlled Waste (Amended) Regulations 2012[27];
- Waste Regulations 2011[28];
- Hazardous Waste (England and Wales) Regulations 2005[29];
- Duty of Care (Amended) Regulations 2003[30]; and
- Environmental Permitting (Amended) Regulations 2015[31].

5.222 To provide evidence of licensed tipping and to prevent the likelihood of fly tipping, a docket system would be used. The Applicant and sub-contractors would operate a sequential numbered docket system to confirm that each load has been received at the approved disposal site. Copies of these dockets would be kept at the site and would be available for inspection.

5.223 No burning of construction waste would take place on-site.

Deconstruction of Proposed Development

5.224 Table 5.9 sets out the design life periods for the various components of the 2022 amended proposed development.

Table 5.9: Design Life Period for 2022 Amended Proposed Development Components

Development Component	Design Life Period
Structure/Substructure	60 years
Floor Structure	60 years
Roof Structure	60 years
Roof Membrane Systems	18 years
Roof Metal Flashings	10 years
Metal Roof Coverings	40 years
Masonry Precast	60 years
Cladding	40 years
Render	30 years
Internal Wall Finishes	15 years
Lifts	15 years
Internal Finishes	15 years

5.225 The deconstruction of the 2022 amended proposed development would follow a demolition method and sequence. Safe working practices would be devised and implemented and would be undertaken according to typical dismantling techniques prevalent at the time.

5.226 The site would be hoarded and the cladding system would be removed from within the floor plate. Soft stripping works would then commence, removing all fixtures and fittings bringing the structure back to its shell.

5.227 Tower cranes would be installed at predetermined locations, to move large elements of construction plant, redundant building plant; prefabricated cladding/pre-cast panels etc. and distribute materials and plant around the buildings.

5.228 As well as the buildings, the scaffold protection would be dismantled as the development is lowered. When the development is at an appropriate level, long arm track mounted shear cutters would be used. The site would then be taken down to basement level and temporary works installed to make the perimeter retaining walls stable and the site left safe.

Cumulative Demolition and Construction Effects

5.229 A number of cumulative schemes are located within a 1 km radius of the site, or are spatially connected to the site via the local road network. The development works for these schemes may overlap the demolition and construction of the 2022 amended proposed development so have been considered in the cumulative impact assessments of ES Volume 1(R) Chapters 6(R)-10(R) and ES Volume 2(R).

5.230 Chapter 2(R): EIA Process and Methodology provides the list of cumulative schemes that have been considered.

[26] Security of State, 1990. Environmental Protection Act 1990. London. HMSO.
[27] Department of the Environment, Food and Rural Affairs (DEFRA), 2012. Controlled Waste (Amended) Regulations 2012. London. HMSO.
[28] Security of State, 2011. The Waste (England and Wales) Regulations. London. HMSO.
[29] Department of the Environment, Food and Rural Affairs (DEFRA), 2005. Hazardous Waste (England and Wales) Regulations, 2005. London. HMSO.
[30] Department of the Environment, Food and Rural Affairs (DEFRA), 2003. The Environmental Protection (Duty of Care) (England) (Amendment) Regulations 2003, London. HMSO.
[31] Security of State, 2015. Environmental Permitting (England and Wales) (Amended) Regulations, London. HMSO.

Summary

5.231 The development programme for the site comprises the demolition of the existing on-site building (and constituent built forms) and basement, the construction of the 2022 amended proposed development as described in ES Chapter 4(R): Proposed Development Description, including the stopping up of Newcastle Place, public realm woks. The development programme for the 2022 amended proposed development as a whole is projected to be completed by Q3 2030.

5.232 The proposed demolition and construction works would have the potential to cause environmental impacts. Mitigation and management measures have been developed during the course of the iterative EIA process.

5.233 The information contained in this chapter would inform the framework for a CEMP to be secured by an appropriately worded planning condition and/or obligations by means of a Section 106 legal agreement.

5.234 The CEMP would be developed and agreed with WCC and other relevant authorities, prior to the commencement of works and would comply with the mitigation measures set out within this chapter. In addition, works would be delivered under the Considerate Constructors Scheme.

5.235 The implementation of mitigation and management measures set out in appropriate documents and relevant chapters of this ES, in conjunction with periodic monitoring to ensure the implementation and effectiveness of proposed measures, would assist in avoiding significant effects from demolition and construction works and in controlling residual effects.

5.236 The framework presented within this chapter is embedded mitigation and has formed the basis for the technical impact assessments presented in ES Volume 1(R) Chapters 6(R)-10(R) and ES Volume 2(R).

6(R) SOCIO-ECONOMICS

Introduction

6.1 This chapter of the ES reports on the likely significant socio-economic effects to arise from the demolition and construction stage and from the completed development stage of the 2022 amended proposed development.

6.2 The chapter describes the socio-economic policy context; the methods used to assess the potential impacts and likely effects; the baseline conditions at the site and in the study area; the likely socio-economic effects arising as a result of the 2022 amended proposed development taking into consideration embedded mitigation; the need for additional mitigation and enhancement; the significance of residual effects; and inter-project cumulative effects.

6.3 The chapter is supported by the following technical appendices in ES Volume 3(R):

- Appendix 6.1(R): Socio-Economic Legislation and Policy;
- Appendix 6.2(R): Socio-Economic Magnitude Thresholds; and
- Appendix 6.3(R): Socio-Economic Cumulative Schemes Details.

Methodology

6.4 The assessment has been informed by the following legislation, policies and published guidance:

- National Policy:
  - NPPF (2021)[1].
- Regional Policy:
  - London Plan (2021)[2] in particular policies 'GG1 - Building strong and inclusive communities', 'GG4 - Delivering the homes Londoners need', 'GG5 - Growing a good economy', 'H1 – Increasing housing supply', 'H10 - Housing size mix', 'S1 - Developing London's social infrastructure', 'S2 - Health and social care facilities', 'S3 - Education and childcare facilities', 'S4 - Play and informal recreation', and 'G4 - Open space'.
- Local Policy:
  - Westminster City Plan 2019 - 2040 (2021[3]) in particular policies '8 - Housing delivery', '13 - Supporting economic growth', '17 - Community infrastructure and facilities' and '18 - Education and skills';
  - Westminster Code of Construction Practice (2022)[4]; and
  - Westminster Open Space Strategy (2007)[5].
- National Guidance and Industry Standards:
  - PPG[6];
  - GLA Social Infrastructure SPG (2015)[7]; and
  - GLA Shaping Neighbourhoods: Play and Informal Recreation SPG (2012)[8].

6.5 Further details are provided in ES Volume 3(R): Technical Appendix 6.1(R).

[1] Ministry of Housing, Communities and Local Government, 2021. National Planning Policy Framework. London. HMSO.
[2] Greater London Authority, 2021. The London Plan. The Spatial Development Strategy for Greater London. London. GLA.
[3] Westminster City Council, 2021. City Plan 2019-2040. London. WCC.
[4] Westminster City Council, 2022. Westminster Code of Construction Practice. London. WCC.
[5] Westminster City Council, 2007. City of Westminster Open Space Strategy. WCC - Departments of Environment and Leisure and Planning and City Development. London. WCC.

Consultation

Pre-Submission Consultation

6.6 An EIA Scoping Opinion Report was submitted to the WCC in September 2020 in support of a request for a formal EIA Scoping Opinion (Technical Appendix 2.1, ES Volume 3(R)). Avison Young was appointed by WCC to undertake an independent review of the EIA Scoping Opinion Report. Correspondence was undertaken with Avison and Young as part of this review. The final Avison and Young report is presented in Technical Appendix 2.2, ES Volume 3(R).

6.7 The WCC adopted their EIA Scoping Opinion on 25 March 2021 (Technical Appendix 2.3, ES Volume 3(R)), informed by Avison Young's Independent Review.

Post-Submission Consultations

6.8 Following the submission of the 2021 ES, Avison Young completed an Independent Environmental Statement Review Report in June 2021 (Technical Appendix 2.3 (N), ES Volume 3(R)). No matters were raised in this review that would require alterations to be made to the scope and methodology of this updated assessment.

6.9 Following the 'call in' by the GLA, no further consultation comments have been provided by the GLA.

6.10 Table 6.1 summarises the key consultation comments, as well as the Avison Young Scoping responses (for ease) with respect to the socio-economic assessment.

Table 6.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
WCC Scoping Opinion (March 2021)	Agreement that socio-economics should be scoped into the ES as a technical assessment chapter.	This 2021 ES Chapter as a whole now updated in this replacement chapter.
Avison Young Independent Review (March 2021)	Clarification is required as to how the ES will deal with the assessment of flexible commercial floorspace (class E) so as to ensure the robust assessment of all likely significant environmental effects arising from the 2021 proposed development assessed within the 2021 ES. This will be particularly important for assessments which are dependent upon floorspace areas.	The introduction of Class E was intended to provide flexible use. The use class by definition is wide-ranging to allow variance in the end use. As with all matters of potential variance the worst-case scenario for each specific specialism have been assessed. However, in this instance, pre-application consultation with WCC in respect of the 2021 proposed development concluded that specific uses would be delivered within Class E, and that office space, affordable workspace and flexible commercial space were to be delivered. For the

[6] Ministry of Housing Communities and Local Government, 2021. Planning Practice Guidance. London. HMSO. https://www.gov.uk/government/collections/planning-practice-guidance.
[7] Greater London Authority, 2015, Social Infrastructure Supplementary Planning Guidance. London. GLA.
[8] Greater London Authority, 2012, Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance. London. GLA.

Table 6.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
		2022 amended proposed development, the specific Class E uses have been updated following consultation with the GLA and assessed accordingly in this replacement chapter.
Avison Young Independent Review (March 2021)	Clarification is required as to whether the assessment of housing delivery will be undertaken at the neighbourhood and / or local authority and / or Regional (London wide) level. Clarification is required regarding the intended methodology to be employed to derive the likely number of construction employees. Clarification is required as to whether the assessment of completed and operational jobs will focus on net employees.	For the 2021 ES, the assessment of housing delivery was undertaken at the neighbourhood and local authority level. The reference to the London Plan was due to the document containing housing targets for each of the London Boroughs. The neighbourhood level of assessment was based on the actual number of residential units to be brought forward on-site. The local authority level of assessment was based on the proportion of residential units to be brought forward on-site over the plan period (taking both the targets set out within WCC policy and the London Plan into consideration). The likely number of construction employees was assessed using the latest published results in the Annual Business Survey. To provide further detail, by using the latest published results of the Annual Business Survey, the ratio of total UK annual construction costs compared to total UK annual construction employment was applied to the capital construction cost provided by the Applicant. This gave the total construction employment for the 2021 proposed development assuming a single year of construction which has then been pro-rated to account for the duration of the demolition and construction stage. Both the gross employment, as well as net additional above any existing employment levels on-site were considered. The net employee calculation was established in accordance with the Additionality Guide. The same approach has been adopted for the updated assessment of the 2022 amended proposed development.

Assessment Scope

6.11 There is no published assessment guidance for socio-economic assessments in EIA. Standard, best practice methods have been used to determine the sensitivity of receptors and to predict the magnitude of impact. Professional experience and judgment have been applied in determining the scale, nature and significance of the socio-economic effects.

Technical Scope

6.12 The technical scope of the assessment has considered the following:

- Generation of demolition and construction employment and the anticipated direct and indirect effects within the local economy;
- Provision of new housing;
- Introduction of new residential population and the associated demand for community facilities (including primary and secondary schools, healthcare facilities, open space and playspace);
- Generation of employment during the completed development stage considering the gross and net employment;
- Generation of additional spending by new residents and employees and impact on local economy; and
- Change in the site conditions with regard to surveillance, activity and lighting.

Spatial Scope

6.13 It is important when undertaking an assessment of the 2022 amended proposed development's likely social and economic effects that the geographical scope of the assessment is clearly understood.

6.14 Thus, the assessment of the 2022 amended proposed development has been undertaken against the existing socio-economic conditions at the following spatial levels:

- Neighbourhood Level – Little Venice Ward (refer to Figure 6.1);
- Local Authority Level – City of Westminster (CoW) administered by WCC;
- Regional Level – Greater London; and
- National Level – England or Great Britain (depending on data availability).

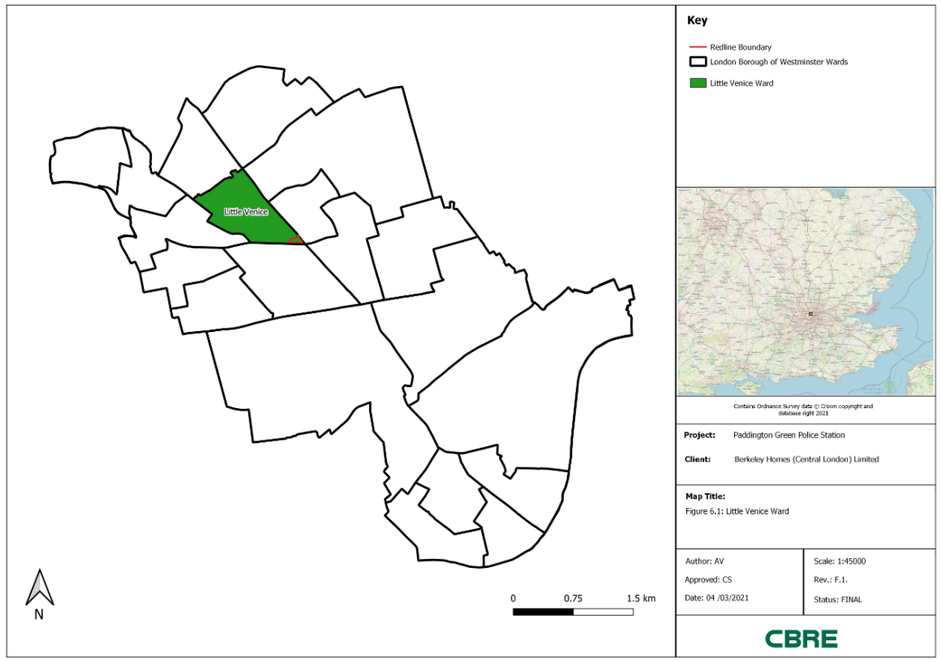


Figure 6.1: Little Venice Ward

6.15 Table 6.2 provides a breakdown of the spatial levels that have been considered for each assessment, as well as the spatial extent of the study areas considered for each assessment, as appropriate.

Table 6.2: Summary of Spatial Level for Socio-Economic Assessment

Assessment	Spatial Level	Study Area Extent (Distance from Site Boundary)
Demolition and construction employment	Local Authority Level	N/A
Housing	Neighbourhood Level and Local Authority Level	N/A
Education	Primary: Neighbourhood Level Secondary: Local Authority Level	Primary: 1.6 km Secondary: 3.2 km
Primary Healthcare (General Practitioner surgeries)	Neighbourhood Level	1.6 km
Open Space	Neighbourhood Level and Local Authority Level	800 m
Playspace	Neighbourhood Level	Under 5 years: 100 m 5-11 years: 400 m 12+ years: 800 m

Table 6.2: Summary of Spatial Level for Socio-Economic Assessment

Assessment	Spatial Level	Study Area Extent (Distance from Site Boundary)
Completed Development Employment	Local Authority Level	N/A
Additional Spending	Local Authority Level	N/A
Crime - improvements in site safety	Neighbourhood Level	N/A

6.16 It should be noted that for community infrastructure, education and healthcare facilities, the Department for Education Transport Guidance (2014)[9] states that these should be considered on a propensity to travel radius which has been set as within 1.6 km and 3.2 km of the site, as appropriate for the specific assessment. In addition, playspace has its own propensity to travel distances based on standard practice as described in the GLA Play and Informal Recreation Supplementary Planning Guidance (SPG)[10] of within 100 m, 400 m and 800 m distance from the site.

Temporal Scope

6.17 The assessment has considered impacts arising during the demolition and construction stage which would be expected to be temporary and short-term (0-5 years) to medium-term (5-10 years) in nature and from the completed development stage which would be expected to be permanent and long-term in nature (i.e. more than 10 years).

6.18 The majority of the assessment has been undertaken against the existing baseline, with the exception of the education assessment which has been undertaken against the future baseline (2028 – which is expected to be the first year of residential occupation) due to school forecast data being publicly available.

Baseline Characterisation Method

Desk Study

6.19 In order to establish baseline socio-economic conditions in the study area, relevant data was reviewed and assessed. Data was obtained from the following sources:

- Census Data (2011/2021)[11];
- Indices of Multiple Deprivation (2019)[12];
- School data on local facilities and capacity (2020/21)[13,14];
- NHS data on local services and capacity (2022)[15,16];
- Shaping Neighbourhoods: Play and Informal Recreation SPG (2012)[10];
- Labour Market Profile Data (2022)[17];
- Annual Survey of Hours and Earnings (ASHE) Provisional Results (2022)[18];
- UK Construction and Infrastructure Monitor (2022)[19]; and
- Police UK and Metropolitan Police Crime Statistics (2022)[20, 21].

[9] Department for Education, 2014. New Home to School Travel and Transport Guidance. DfE.
[10] Greater London Authority, 2012. Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance. London. GLA.
[11] Office for National Statistics, 2011/2021. Census 2011/2021. ONS.
[12] Ministry of Housing, Communities and Local Government, 2019. Indices of Multiple Deprivation. London. MHCLG.
[13] GOV.UK, 2022. Find and compare schools in England. GOV.
[14] Department for Education, 2022. School Capacity 2020/2021. DfE.
[15] National Health Service, 2022. NHS – Find GP Services [W2 1XJ]. NHS. [Accessed 27/09/2022].
[16] National Health Service, 2022. NHS Digital – General Practice Workforce [December 2020]. NHS.
[17] Office for National Statistics, 2022. Labour Market Profile: NOMIS Official Labour Market Statistics. ONS.
[18] Office for National Statistics, 2021. Annual Survey of Hours and Earnings (ASHE) Provisional 2022 Results. ONS.
[19] Royal Institution of Chartered Surveyors, 2022. UK Construction & Infrastructure Monitor. RICS.
[20] Police UK, 2022. What's happening in your area? Police.UK.
[21] Metropolitan Police Service, 2022. What's happening in your area? Police.UK.

Field Study

6.20 Field study/data collection was not required as the data provided by other sources was deemed to be adequate and representative of the site conditions.

Assessment Method

Methodology

6.21 The following section outlines the methodologies applied to identify and assess the potential socio-economic effects likely to result from the 2022 amended proposed development. The demographic profile is based solely on quantitative data and the housing, community infrastructure, economic and crime profiles are based on a combination of quantitative and qualitative data.

Demolition and Construction Stage

6.22 The demolition and construction stage assessment has been based on the following approach:

- Employment
  - Assessment of the employment expected to be generated by the demolition and construction works by using the capital construction cost provided by the Applicant and applying a ratio of the total value of construction work to construction labour as provided in the latest published results of the Annual Business Survey (ABS) (2021)[22]. The scale of construction employment is a direct function of the scale and type of construction project being undertaken, which in turn is reflected in the overall capital construction costs. Thus, it is generally accepted that the scale of employment is a direct function of the overall capital construction costs. To calculate the construction employment generation, the ratio of total UK annual construction costs compared to total UK annual construction employment as provided in the ABS is applied to the 2022 amended proposed development's capital construction cost. This gives total construction employment for the 2022 amended proposed development assuming a single year of construction which has then been pro-rated to account for the duration of the demolition and construction stage; and
  - Assessment of additionality to consider the net effects of the 2022 amended proposed development's demolition and construction employment generation once leakage, displacement and multiplier effect have been accounted for, using the Additionality Guide[23] published by the Homes and Communities Agency (HCA), now Homes England. The concept of 'additionality' combines the direct and indirect employment effects of a proposal against the baseline position or reference case to identify the overall 'net' effect. By undertaking an appraisal of the additional benefits using the adjustment factors from the Additionality Guide[23], estimations of the indirect and induced employment levels can be calculated.

Completed Development Stage

6.23 The completed development stage assessment has been based on the following approaches.

- Housing and Population:
  - Review and interpretation of relevant data and baseline information from a variety of sources listed within the previous section. As most of the latest published Census data is still from 2011[11], where available and appropriate, more recent data has been used to supplement this (refer to desk study list); and
  - Delivery of housing has been evaluated using the quantum of proposed residential units against the identified housing targets set out in the London Plan[2].
- Education:
  - Residential population has been modelled by entering the residential accommodation schedule into the GLA's Population Yield Calculator[24];
  - Child yield has been modelled by entering the residential accommodation schedule into the GLA's Population Yield Calculator[24]; and
  - Establishment of current capacity in schools by review of the most recently available Annual School Capacity data published by the Department of Education[14]; within a 1.6 km radius of the site boundary and secondary schools within a 3.2 km radius as advised. Within Government guidance[25] admissions to primary schools are most commonly determined on the basis of proximity, after factors such as siblings on the roll and special needs have been taken into account. This information has been analysed against the expected demand for school places from the new population of the 2022 amended proposed development.
- Primary Healthcare:
  - Estimation of the existing capacity of and demand for local primary healthcare by referring to the Healthy Urban Development Unit[26] (HUDU) benchmark of 1,800 registered patients per NHS General Practitioner (GP) and a search of local GP surgeries using the NHS website[15,] and most recently published capacity data[16]. This has been assessed against the current capacity of GP surgeries within 1.6 km of the site.
- Open and Playspace:
  - Assessment of provision of open space as specified within WCC's Open Space Strategy[27] in the context of the existing and proposed level of provision on-site and the assessment of provision of playspace as specified within the GLA's Population Yield Calculator[24] in the context of the existing and proposed level of provision on-site.
- Employment and Economy:
  - Calculation of employment expected to be generated by the commercial floorspace during the completed development stage of the 2022 amended proposed development by applying standard job density ratios based on the Employment Density Guide published by the HCA[28];
  - Assessment of additionality to consider the net effects of the 2022 amended proposed development's employment generation once leakage, displacement and multiplier effect have been accounted for, using the Additionality Guide[23] published by the HCA; and
  - Calculation of spending likely to be generated as a result of the 2022 amended proposed development by using an average household expenditure figure of £669.30 per week, derived from the Office for National Statistics (ONS) Family Spending in the UK Statistical Bulletin[29] and £11.55 per day on food and drink by employees based on a UK Working Day Spend Report average daily expenditure by workers figure[30] within an inflation rate of 19.29 % applied[31].
- Crime and Community Safety:
  - Review of crime risk in the area from Police UK[20,21] data and application of professional judgement.

Cumulative Stage

6.24 In regard to the cumulative stage, consideration has been given to inter-project cumulative effects where quantitative socio-economic information is available within the public domain.

6.25 In regard to the WEG and 14-17 PG development, it is noted that the WEG is fully completed and occupied; and that 14-17 PG is currently under construction and would be completed by the time the

[22] Office for National Statistics, 2021. Annual Business Survey: UK Non-Financial Business Economy, 2019 Revised Results. ONS.
[23] Homes and Communities Agency, 2014. Additionality Guide (Fourth Edition). London. HCA. (While it is noted that this publication was withdrawn on the 24th May 2022 no alternative guidance has been produced to replace the Additionality Guide and therefore it is still considered that this guidance represents best practice.)
[24] Greater London Authority, 2019. GLA Population Yield Calculator. GLA. London.
[25] HM Government Web Portal, 2015. Free School Transport. HM Government.
[26] National Health Service, 2009. London Healthy Urban Development Unit Model and Planning Contributions Tool. London. NHS.
[27] Westminster City Council, 2007. City of Westminster Open Space Strategy. WCC - Departments of Environment and Leisure and Planning and City Development. London. WCC.
[28] Homes and Communities Agency, 2015. Employment Density Guide, 3rd Edition. London. HCA. (While it is noted that this publication was withdrawn on the 23rd February 2022 no alternative guidance has been produced to replace the Employment Density Guide and therefore it is still considered that this guidance represents best practice.)
[29] Office for National Statistics, 2022. Family Spending in the UK: April 2019 to March 2021. ONS.
[30] Visa Europe, 2015. UK Working Day Spend Report. London. Loudhouse.
[31] This is Money, 2020. Historic inflation calculator: how the value of money has changed since 1900. DMG Media.

development works commence on-site. The degree to which the 14-17 PG scheme has been accounted for in existing and future baseline socio-economic data, cannot be established with a high degree of certainty and therefore a worst-case has been adopted by assessing this scheme in combination with the 2022 amended proposed development, as well as the list of 10 cumulative schemes in Chapter 2: EIA Process and Methodology. It is noted that each scheme has its own specific mitigation measures for dealing with any socio-economic adverse effects related to the population being brought forward, and details of the S106 and Community Infrastructure Levy (CIL) contributions have been provided within the cumulative assessment. Furthermore, the scheme would only add to the socio-economic beneficial effects related to demolition and construction employment, housing delivery, operational employment and crime.

Assessment Criteria

6.26 The criteria used to assess if an effect is significant or not, is set out in the following sub-sections.

6.27 The assessment has been based upon the consideration of the sensitivity of the receptor, magnitude of impact and scale of the effect. In considering the significance of an effect, consideration has been given to the duration of the effect, the geographical extent of the effect and the application of professional judgement.

6.28 The assessment of the likely and residual effects was made by reference to the following criteria:

- The character and duration of the potential impact: temporary/permanent, direct/indirect/ secondary;
- The geographical context of the potential impact: national, regional, local authority, and neighbourhood;
- The magnitude of the potential impact;
- The sensitivity of the receptor to the potential impact; and
- Notwithstanding the above sensitivity of the receptor criteria, the scope for adjustment or mitigation is also considered, which takes account of the capacity of receptors to adjust to changes, as well as the effectiveness of measures to mitigate the potential adverse effects and to enhance the potential beneficial effects of the 2022 amended proposed development.

Receptor Sensitivity/Value Criteria

6.29 The sensitivity of receptors has been classified as low, medium or high, in accordance with the criteria set out in Table 6.3.

Table 6.3: Receptor Sensitivity Criteria

Sensitivity	Criteria
Low	National population, economy, and social and community infrastructure (with abundant available capacity and high resilience).
Medium	Local authority and regional population, economy, and social and community infrastructure (with some available capacity and medium resilience).
High	Neighbourhood population, economy, and social and community infrastructure (especially where there is no available capacity and low resilience).

Impact Magnitude Criteria

6.30 The magnitude of impact has been classified as low, medium or high, in accordance with the criteria set out in Table 6.4.

Table 6.4: Impact Magnitude Criteria

Magnitude of Impact	Criteria
Low	Hardly perceptible change to socio-economic context and low number of receptors affected.
Medium	Noticeable change to socio-economic context and medium number of receptors affected.
High	Substantial change to socio-economic context and high number of receptors affected.

6.31 In addition, refer to ES Volume 3(R): Technical Appendix 6.2(R) for the thresholds used to determine magnitude of impact.

Scale of Effect Criteria

6.32 Impacts have been assessed on the basis of the value/sensitivity of receptors against the magnitude of impact to determine the scale of effect as presented in Table 6.5.

Table 6.5: Scale of Effect Criteria

Magnitude of Impact	Sensitivity of Receptors		
	Low	Medium	High
Low	Negligible	Negligible – Minor	Minor
Medium	Negligible – Minor	Minor	Moderate
High	Minor	Moderate	Major

6.33 Based on professional judgement, moderate and major effects are considered significant in EIA terms.

6.34 Where adverse or beneficial effects have been identified, the scale of significance has been defined as follows:

- Negligible: where no discernible effect is expected as a result of the 2022 amended proposed development on the socio-economic conditions of the local area (i.e. the study area);
- Minor: where the 2022 amended proposed development could be expected to result in a small, barely noticeable effect (either adverse or beneficial) on the socio-economic conditions of the local area (i.e. the study area);
- Moderate: where the 2022 amended proposed development could be expected to have a noticeable effect (either adverse or beneficial) on the socio-economic conditions of the local area (i.e. the study area); and
- Major: where the 2022 amended proposed development could be expected to have a substantial effect (either adverse or beneficial) on the socio-economic conditions of the local area (i.e. the study area).

6.35 Effects have been defined as either 'significant' or 'not significant'. 'Not significant' effects would not be considered material to the planning decision process (i.e. negligible or minor residual effect) and 'significant' effects would be considered material to the planning decision process (i.e. moderate or major residual effect).

6.36 In determining the significance of reported effects, consideration has been given to the type of effect i.e. direct, indirect or secondary, the geographical extent of the effect and the duration of the effect i.e. temporary which is considered to be either short-term (0-5 years) or medium-term (5-10 years) or permanent (10 years or more).

Nature of Effect Criteria

6.37 The nature of the effect has been described as either adverse, neutral or beneficial as follows:

- Beneficial – an advantageous effect to a receptor;
- Neutral – an effect that on balance, is neither beneficial nor adverse to a receptor OR an effect that is equally beneficial and adverse to a receptor; or
- Adverse – a detrimental effect to a receptor.

Assumptions and Limitations

6.38 The assessment of effects has been undertaken against the most recent, publicly available data; the progress of emerging data was tracked throughout to ensure an up-to-date assessment is presented. The spatial levels have been assessed where data is available and/or where it is considered most informative based on professional judgement. Where data has not been available at the identified levels, alternative spatial data deemed relevant and appropriate has been used.

6.39 In relation to educational facilities, it should be noted that Ark Paddington Green Primary Academy permanently closed and merged with Ark King Solomon Academy, an all-through school, in 2020. In addition, as Ark King Solomon Academy is an all-through school and the number on roll is not split between primary and secondary, the figure has been calculated proportionally based on the number of school places.

6.40 In terms of primary forecast data, it should be noted that 2025/2026 has been used as it is the closest year with available data to 2028 (when the residential units of the first phase of the 2022 amended proposed development would likely become occupied).

6.41 In relation to healthcare facilities, it should be noted that Lees Place Medical Centre is a branch of Victoria Medical Centre, which is located 3.78 km from the site, and the capacity data for both facilities are combined.

6.42 The existing site is predominantly vacant and does not support any existing residents or on-site employment.

6.43 In relation to operational employment generation, the assessment methodology is based on the Employment Density Guide published by the HCA (now Homes England), which relies on old use classes. Accordingly, the following has been assumed when assessing the employment effects of the proposed development:

- Use Class E Commercial, Business and Service – Flexible Commercial (1,000 m^2 NIA)
  - 100 % A1-A3 Retail

6.44 It should be noted that in order to ensure a conservative assessment the proposed community floorspace (Use Class F2) has been excluded from the employment calculation as it is considered it would generate minimal employment.

6.45 In relation to employee additional spending, it should be noted that the use of a combined multiplier within the additionality assessment includes consideration of secondary spending leading to further job creation. This leads to the potential double accounting of the benefits.

Baseline Conditions

Existing Baseline

6.46 This section summarises the characteristics of the existing socio-economic conditions of the site and the surrounding study areas. These conditions are considered in the context of wider neighbourhood, local authority, regional and national socio-economic climates. The information provides the existing baseline against which the potential impacts of the 2022 amended proposed development have been assessed. Figure 6.2 shows the site location.

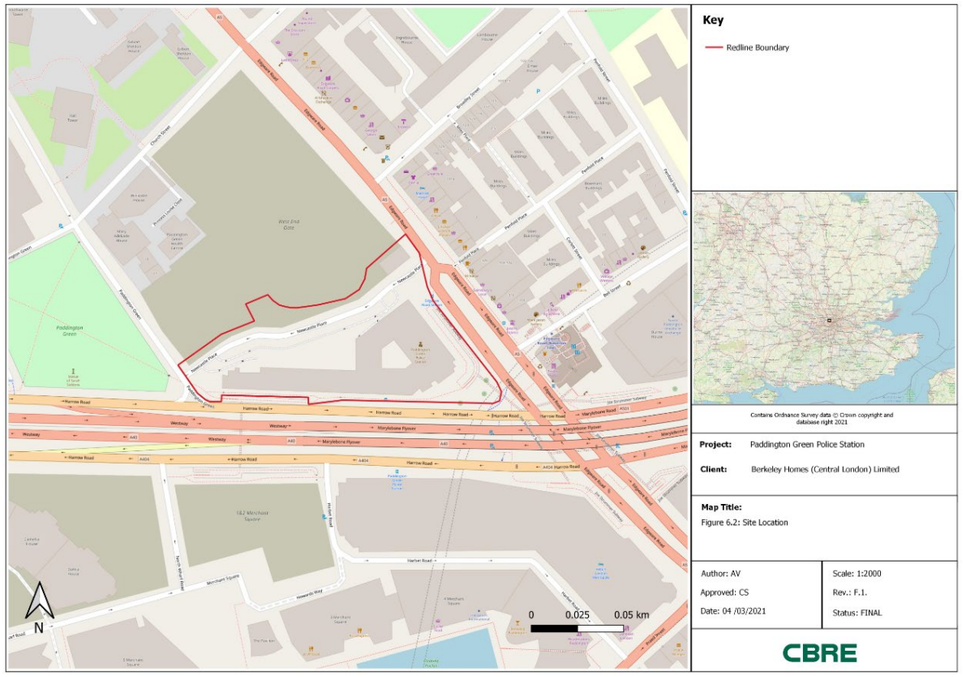


Figure 6.2: Site Location

Existing Uses

6.47 The site is currently occupied by the Paddington Green Police Station (but this is not currently in use having been vacated in 2020), which has been in this location since the 1970s. The building was acquired by the Applicant in 2020 following the relocation of the police station.

6.48 There are no residents on-site and the existing site does not support any employment.

Future Baseline

6.49 The majority of the assessment has been undertaken against the existing baseline, with the exception of the education assessment which has been undertaken against the future baseline (i.e. 2026, the closest year to when the residential units of the first phase of the 2022 amended proposed development would likely become occupied in 2028).

Demographic Profile

6.50 According to 2021 Census data, the local authority population is 204,300, representing a decrease of 6.9 % from the 2011 Census (219,396) and a growth of 12.7 % from the 2001 Census (181,286)[11]. However, it is considered that the latest Census results may have been skewed due to the fact the survey was undertaken during the third national CoVID-19 lockdown with thousands of households temporarily living elsewhere in the country[32]. The local authority is still expected to see an increase in population, as the City Plan (adopted in 2021) states that by 2040 it is expected to increase to 284,300 inhabitants which would represent a 29.6 % increase from 2011 over a nearly 30 year period[5].

6.51 According to the 2011 Census data, the population at the neighbourhood level (i.e. Little Venice Ward) is 10,633, which translates to a population density of 167.3 persons per hectare (ha)[11]. This is higher

[32] City of Westminster, 2022. Help us find the Census Lost Londoners. WCC.

than the local authority population density (102.2 persons per ha) and substantially higher than the regional population density (52.0 persons per ha) and national levels (4.1 persons per ha)[11].

Age

6.52 According to the 2011 Census data, the neighbourhood has a relatively similar age structure to both the local authority and the region, with a slightly larger working age population and smaller older population.

6.53 The under 15 year olds represent 16.6 % of the resident population at the neighbourhood level, compared with 15 % in the local authority and 18 % across the region. The working age residents (15-64 year olds) account for 73.6 % of the population living at the neighbourhood level, compared to 70.2 % in the local authority and 73.3 % across the region. Those aged 65 and over account for 9.8 % of the population living at the neighbourhood level, compared to 11.2 % across the local authority and 11.1 % across the region[11].

6.54 According to the 2021 Census data[11], the age demographic within the local authority has remained relatively similar, with the population consisting of 12.2 % aged 14 years and younger, 75.7 % at working age and 12.1 % 65 years old and over. The data shows there has been a slight reduction in the younger population and an increase in the working age population.

Ethnicity

6.55 According to the 2011 Census data, approximately 64 % of the residents at the neighbourhood level report themselves as being of white ethnicity, compared to 62 % in the local authority and 60 % across the region. This indicates that the local site level has a slightly lower degree of ethnic diversity.

6.56 Residents reporting themselves as people from ethnic minority backgrounds comprise the remainder of the population, constituting 36 % within the neighbourhood, 38 % within the local authority and 40 % within the region.

Qualifications

6.57 According to 2021 data from the Office for National Statistics (ONS) National Online Manpower Information System (NOMIS), the percentage of adult residents (16 years and over) that are educated to degree level (or above) at the local authority level is 68.9 %, which is considerably higher than the regional (59 %) and national (43.6 %) levels. Approximately 6 % of residents at the local authority level have no formal qualifications, which is higher than the regional level (5.5 %) and lower than the national level (6.6 %).

Deprivation

6.58 The Indices of Multiple Deprivation (IMD) are the principal official Government measures of the spatial distribution of deprivation across the country and provides a key ranking of local authorities. Levels of deprivation are also calculated for the neighbourhood level.

6.59 There are six Lower Super Output Areas (LSOAs) within the neighbourhood and the average deprivation score across these LSOAs have been provided in this section to represent the deprivation within the neighbourhood. Each LSOA encompasses a minimum population of 1,000 residents (400 households) although typically averages 1,500 residents.

6.60 The English Indices of Deprivation 2019[12] data shows that the neighbourhood level (Little Venice Ward) is within the 37 % least deprived LSOAs nationally on average, with an average IMD rank of 20,868 (out of a total of 32,844). As shown in Table 6.6, the neighbourhood level ranks within the most deprived 20 % on a national level for the 'living environment' indicator (5,445 of 32,844) and ranks within the least deprived 20 % on a national level for the 'health deprivation & disability' indicator (27,189 of 32,844).

Table 6.6: Domains of Deprivation for Neighbourhood Level – Little Venice Ward

Rank	IMD	Income	Employ-ment	Education, Skills & Training	Health Deprivation & Disability	Crime	Barriers to Housing & Services	Living Environ-ment
	20,868	19,620	22,411	26,176	27,189	15,720	17,709	5,445
Decile	7	7	7	8	9	5	6	2

*where 1 is most deprived 10 % of LSOAs in England

Housing

Housing Size

6.61 The 2011 Census shows that there are around 4,943 households in the neighbourhood and 105,772 in the local authority as a whole. The neighbourhood has a high proportion of flats, maisonettes and apartments, which comprise 90 % of the housing stock. In comparison, flats, maisonettes and apartments make up 52 % of the regional housing stock overall, with a further 48 % comprising whole houses or bungalows. This correlates to the high population density discussed in paragraph 6.51.

Housing Tenure

6.62 In terms of tenure, 40 % of households in the neighbourhood are privately rented which is the same level as the local authority. This compares to 25 % across the region. A further 39 % of households at the neighbourhood level own their homes outright or with a mortgage or loan, compared with 31 % at the local authority level and 48 % at the regional level. Approximately, 18 % of households at the neighbourhood level occupy social rented accommodation which is lower than both the local authority (26 %) and regional (24 %) levels.

6.63 The Westminster Housing Markets Analysis[33] indicates that the predominant requirement for market housing in the local authority area is for one-bed properties, with little need for larger properties. The document also states that, in 2014, there were almost 4,500 households on the waiting list for social housing within the local authority area.

Community Infrastructure

Education Facilities

6.64 The school data analysis excludes privately funded schools, special educational needs (SEN) schools, pupil referral unit (PRU) schools and schools which are outside of CoW, due to common restrictions on admissions policies. Figure 6.3 shows the primary and secondary schools that are located in close proximity to the site.

[33] Westminster City Council, 2014. Westminster Housing Markets Analysis. London. WCC.

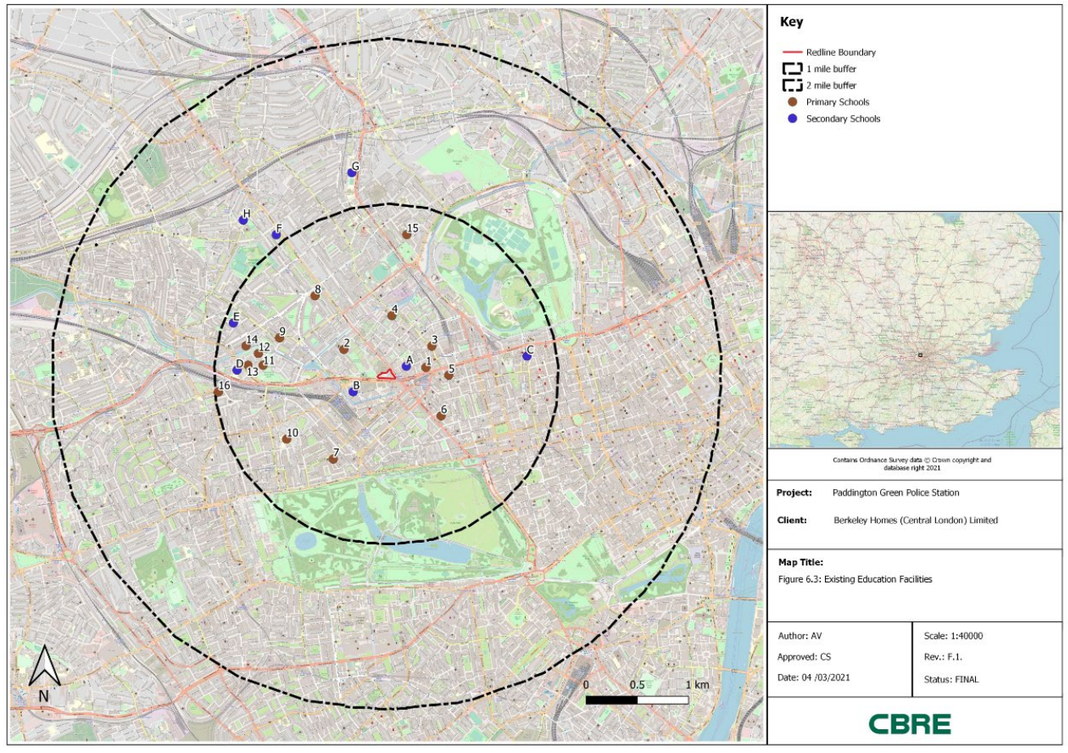


Figure 6.3: Existing Education Facilities

Primary

6.65 As shown in Table 6.7, there are 16 primary schools within 1.6 km of the site. The nearest is Christ Church Bentinck CofE Primary School, located approximately 0.30 km north-east of the site[13].

Table 6.7: Existing Primary School Capacity within 1.6 km of Site

Reference	Primary School Name	Approximate Distance (km)	School Places	Number on Roll (NOR)	Net Capacity
1	Christ Church Bentinck CofE Primary School	0.30	420	192	228
2	Ark King Solomon Academy (including Ark Paddington Green Primary Academy)	0.40	630	636	-6
3	St Edward's Catholic Primary School	0.47	420	229	191
4	Gateway Academy	0.51	630	571	59
5	St Mary's Bryanston Square CofE School	0.53	210	137	73
6	Hampden Gurney CofE Primary School	0.57	210	201	9
7	St James and St John Church of England Primary School	0.90	175	153	22
8	St Joseph's RC Primary School	0.98	294	237	57
9	St Saviour's CofE Primary School	1.04	210	189	21
10	Hallfield Primary School	1.08	420	302	118
11	Edward Wilson Primary School	1.13	392	295	97
12	St Mary Magdalene CofE Primary School	1.19	210	157	53
13	Our Lady of Dolours Catholic Primary	1.28	315	165	150
14	Ark Atwood Primary Academy	1.32	420	399	21
15	Barrow Hill Junior School	1.32	240	218	22
16	St Stephen's CofE Primary School	1.55	210	124	86
Total			**5,406**	**4,205**	**1,201**

6.66 It should be noted that Ark Paddington Green Primary Academy permanently closed and merged with Ark King Solomon Academy, an all-through school, in 2020. In Addition, as Ark King Solomon Academy is an all-through school and the number on roll is not split between primary and secondary, the figure has been calculated proportionally based on the number of school places.

6.67 Table 6.7 shows the level of surplus capacity available at primary schools within 1.6 km of the site. The most recent publicly available data for the academic year 2020 to 2021 indicates that there is net capacity of 1,201 primary school places at these schools[14].

6.68 The primary forecast data for 2025/2026 (the closest year to when the residential units of the first phase of the 2022 amended proposed development would likely become occupied in 2028) shows that within the four relevant primary planning areas (Maida Vale Primary, Marylebone Primary, St John's Wood Primary and Bayswater Primary) there would be a surplus of 3,552 primary school places[34].

Secondary

6.69 As shown in Table 6.8, there are eight secondary schools within 3.2 km of the site. The nearest is Marylebone Boys' School, located approximately 0.24 km south-west of the site[13].

Table 6.8: Existing Secondary School[35] Capacity within 3.2 km of Site

Reference	Secondary School Name	Approximate Distance (km)	School Places	Number on Roll (NOR)	Net Capacity
A	Ark King Solomon Academy	0.15	500	504	23
B	Marylebone Boys' School	0.28	900	668	335
C	The St Marylebone CofE School	1.31	1,202	1,153	-69
D	Westminster Academy	1.37	1,160	1,124	34
E	Paddington Academy	1.50	1,240	1,235	-61
F	St George's Catholic School	1.68	1,090	1,058	-96
G	Harris Academy St John's Wood	1.94	1,450	1,324	222
H	St Augustine's Federated Schools: CE High School	2.00	960	1,023	-93
Total			**8,502**	**8,089**	**413**

[34] Department for Education, 2022. School Place Planning Estimates 2020/2021. DfE.

[35] The City of Westminster College on Paddington Green has not been considered as it is a further education college rather than a secondary school.

6.70 Table 6.8 shows the level of surplus capacity available at secondary schools within 3.2 km of the site. The most recent publicly available data for the academic year 2020 to 2021 indicates that there is net capacity of 413 secondary school places at these schools[14].

6.71 As noted previously, as Ark King Solomon Academy is an all-through school and the number on roll is not split between primary and secondary, the figure has been calculated proportionally based on the number of school places.

6.72 The secondary forecast data for 2027/2028 (when the first residential units of the 2022 amended proposed development would likely become occupied) shows that within the relevant secondary planning area (All Secondary) there would be a surplus of 290 secondary school places[34].

Healthcare Facilities

6.73 Using the NHS website[15] (the national database for finding primary healthcare providers), 20 General Practitioners (GP) surgeries have been identified within 1.6 km of the site as illustrated in Figure 6.4.

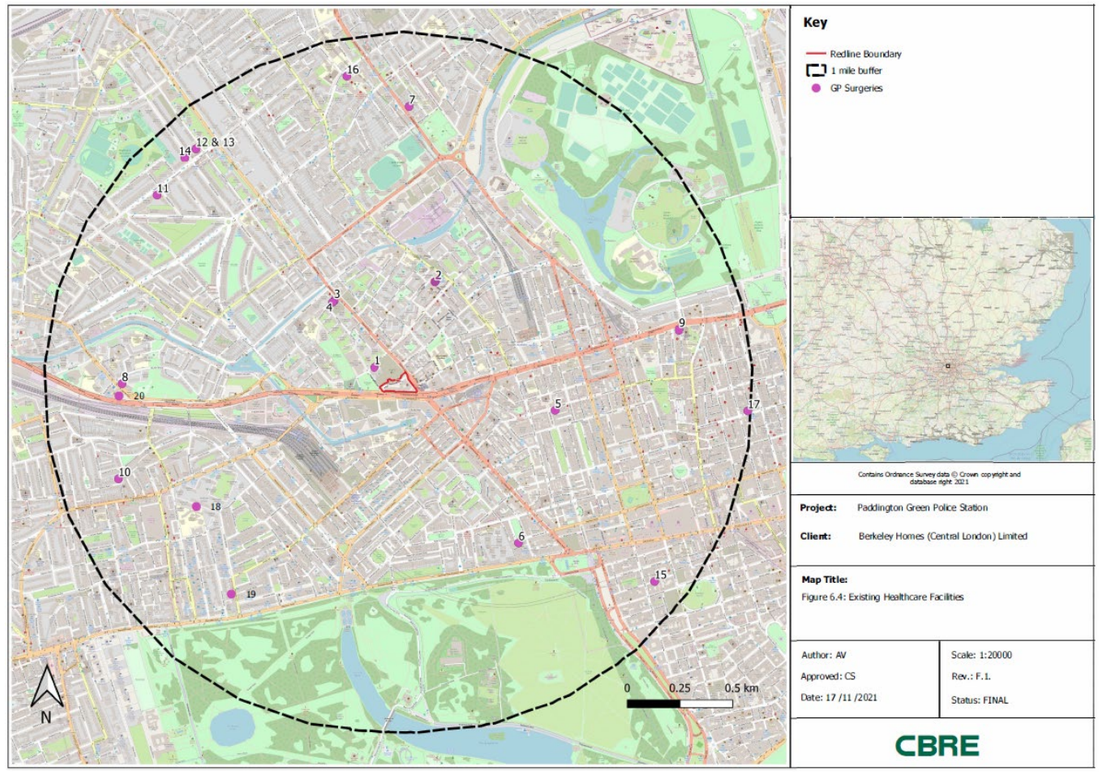


Figure 6.4: Existing Healthcare Facilities

6.74 However, the identified GP surgeries have an average list size of 2,705 patients per GP (refer to Table 6.9)[16]. This is above the benchmark of 1,800 patients per GP, commonly used in healthcare planning and recommended by the HUDU[36] which means the facilities are currently substantially overcapacity.

Table 6.9: Existing GP Surgeries within 3.2 km of Site – Patient List Size and Capacity

Reference	GP Surgery Name	Approximate Distance (km)	No. of GPs	Current Ratio (Patients/GPs)	Capacity
1	Dr Creme & Partners (Listed as Paddington Green Health Centre)	0.2	6.34	1,658	899
2	Lisson Grove Health Centre	0.5	5.97	1,182	3,689
3	Crompton Medical Centre	0.5	1.31	2,850	-1,372
4	Little Venice Medical Centre	0.5	2.07	2,198	-823
5	Crawford Street Surgery	0.8	1.98	3,916	-4,184
6	The Connaught Square Practice	1.0	2.99	3,830	-6,063
7	The Wellington Health Centre	1.3	2.59	2,597	-2,063
8	Dr Philip Olufunwa (Listed as The Westbourne Green Surgery)	1.5	1.00	3,910	-2,110
9	Marylebone Health Centre	1.5	6.43	1,559	1,547
10	Newton Medical Centre	1.5	4.80	3,044	-5,970
11	Maida Vale Medical Centre	1.5	1.69	3,820	-3,420
12	Ground Floor Lanark Medical Centre	1.5	0.67	5,772	-2,648
13	Third Floor Lanark Road Medical Centre	1.5	1.92	1,722	149
14	The Randolph Surgery	1.5	3.61	3,360	-5,635
15	Lees Place Medical Centre (Listed as Victoria Medical Centre)	1.5	8.72	2,087	-2,499
16	St Johns Wood Medical Practice	1.5	7.81	2,643	-6,585
17	Cavendish Health Centre	1.6	7.33	1,320	3,518
18	Dr Jedth Phornnarit (Listed as The Garway Medical Practice)	1.1	2.13	1,820	-43
19	Lancaster Gate Medical Centre	1.3	2.27	3,087	-2,918
20	Grand Union Health Centre	1.3	10.73	1,708	986
Total					**-35,545**

6.75 It should be noted that Lees Place Medical Centre is a branch of Victoria Medical Centre, which is located 3.78 km from the site, and the capacity data for both facilities are combined.

Open Space and Playspace

Open Space Provision

6.76 According to the WCC's Open Space Strategy, there are 527 ha of open space in the CoW, 454 ha of which are publicly accessible. The average amount of open space provision per 1,000 residents is approximately 2.32 ha, with 2 ha for public open space.

6.77 The strategy requires 1.6 ha of open space per 1,000 of the population. The majority of open space within the local authority area lies within the Royal Parks, which are distant from the main residential areas, resulting in many areas being deficient in nearby accessible space. Correspondingly, the strategy

[36] NHS Healthy Urban Development Unit (HUDU), 2009. HUDU Planning Contribution Model Guidance Notes. London. NHS.

emphasises the need to consider each area independently. The site is located within Maida Vale Forum Area.

6.78 The site's immediate surroundings are deemed to have sufficient open space by the local authority. Paddington Green, which is a publicly accessible green space, is adjacent to the site approximately 10 m from the south-western boundary. The strategy also found that the site is located in an area that has sufficient access to public playspace and publicly accessible open space larger than 0.4 ha which is considered suitable for informal play.

6.79 There are five children's playgrounds within 400 m of the site, the closest being located within St Mary's Churchyard which is situated approximately 140 m north-west of the site. In addition, the 14-17 PG development, adjacent to the site, would bring forward playspace areas catering for all age groups.

6.80 However, it should be noted that the wider area surrounding the site within Maida Vale Forum Area is considered to be deficient in public accessible open space and playspace, with 0.46 ha of open space per 1,000 residents. Although many of the open spaces are underutilised and there are opportunities to bring them back into use, such as improving access[27].

Economic Profile

Employment and Economic Activity

6.81 Economic activity relates to the percentage of the working age population that are either in employment or actively seeking employment. The 2011 Census data shows that the neighbourhood level had a higher rate of people in employment (69.4 %) compared to the local authority level (66.1 %)[37].

6.82 Based on the labour market statistics from the Office for National Statistics (ONS) National Online Manpower Information System (NOMIS)[17], between July 2021 – June 2022, approximately 71.1 % of the local authority level population are economically active, approximately 9 % lower than the regional average and 8 % lower than the Great Britain average. Of the economically active population at the local authority level, 4.6 % are unemployed, which is approximately equal to the regional average (4.7 %) and higher than the Great Britain average (3.8 %)[17].

6.83 Whilst 'economically active' includes both employed and unemployed, the NOMIS[17] unemployed definition only includes people currently without a job but that would be available to start work in the two weeks following an interview (and who had either looked for work in the four weeks prior to interview or were waiting to start a job they had already obtained). The unemployed definition's stipulation of readiness to work within two weeks following an interview precludes many whose personal circumstances would not permit an immediate return to work (e.g. lone parents who would have to make arrangements for childcare that could require a longer period than two weeks). Such persons are captured under the economically inactive banner, although may view themselves as unemployed by virtue of the fact that they are lacking but wanting work.

6.84 Of the economically inactive, a higher proportion of the population within the local authority are long-term sick (24.8 %), when compared to the regional average (19.8 %) and slightly lower that the Great Britain average (25.4 %)[17].

6.85 In terms of benefits, such as Job Seekers Allowance (JSA), the local authority level rate (3.3 %) is lower than both the regional level (4.8 %) and Great Britain level (3.7 %)[17].

6.86 In the ASHE Provisional 2022 Results[18], the average income for the local authority is £63,488 compared to the regional average of £52,355. The average wage per week in the local authority is £1,082 which is higher than the regional (£933) and national (£766) averages. Therefore, average income within the local authority area is one of the highest in London.

Occupation and Industry

Occupational Class - Residents

6.87 At the time of the 2011 Census, the majority of residents in the neighbourhood worked in managerial and professional occupations (75.3 % compared to the local authority average of 69.1 % and regional average of 50.3 %)[11].

6.88 The sales, processing and elementary occupations comprise a low proportion of employment for residents in the neighbourhood (9.7 % compared to the local authority average of 12.9 % and regional average of 21.8 %)[11].

Industry of Employment and Business Structure

6.89 Overall employment in the neighbourhood is dominated by the professional, scientific and technical and financial and insurance sectors (37.6 %). Employment within these sectors would typically equate to more highly skilled and consequently more highly paid professionals.

6.90 Figure 6.5 shows the industries of employment at the ward level, compared to the local authority and regional levels.

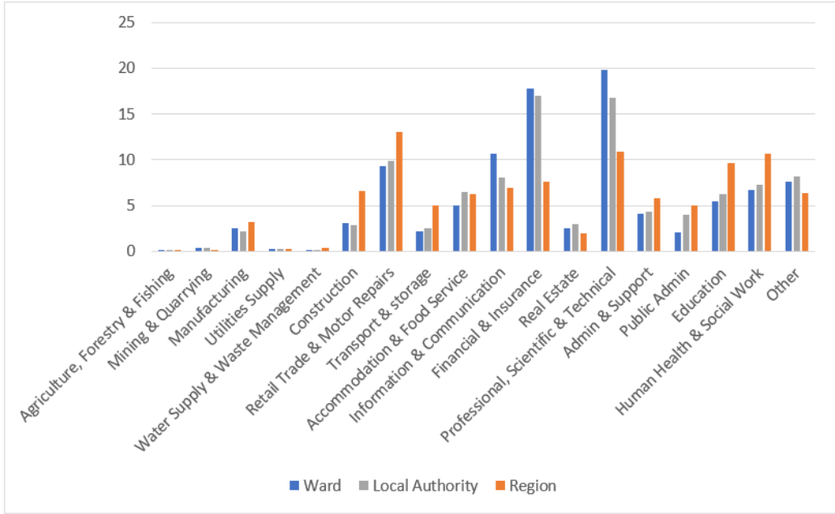


Figure 6.5: Little Venice Ward, City of Westminster and London Total Employment by Industry (%)

Construction

6.91 The construction industry provides approximately 3 % of employment in the local authority. The Royal Institution of Chartered Surveyors (RICS) produces a quarterly Construction Market and Infrastructure Monitor[19].From the second quarter of 2022, results have suggested that workloads are continuing to grow firmly across the industry. Moreover, expectations for the next 12 months are still firm, albeit that momentum is viewed as likely to be a little slower when compared with what was anticipated in Q1 2022. Even though workloads are continuing to grow firmly, the difficulty of accessing both building materials and labour remain key challenges for the industry (refer to Figure 6.6). Material and labour costs have on average risen over the past 12 months and are projected to continue increasing through the course of this year. Whilst this is not indicative of a major knock to profitability, it does suggest that some adverse impact is probable.

[37] Office for National Statistics, 2011. NOMIS Official Labour Market Statistics – 2011 Ward Labour Market Profile E36007668: Little Venice. ONS.

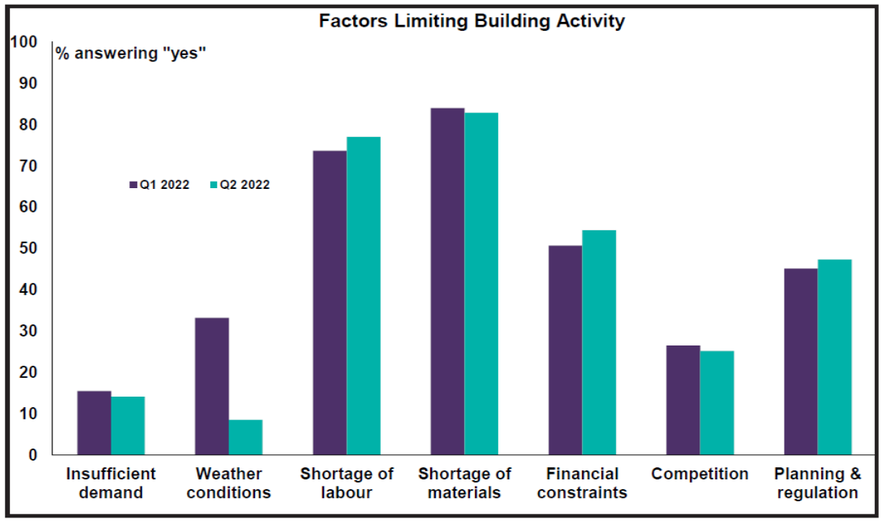


Figure 6.6: Factors Limiting Building Activity

Crime

6.92 Crime imposes economic costs, reinforces social exclusion and can hasten the environmental decline of neighbourhoods, as fear of crime can make people reluctant to walk, use public transport, or go out after dark; and can be a cause of mental distress and social exclusion. In particular, women and older people tend to worry more about becoming victims and this may prevent them from engaging in social activities[38].

6.93 Not everyone is at equal risk of becoming a victim of crime. People who suffer from poor health are more likely to be victims of crime than those in good health[39]; however, this may be because of the association of disadvantage with victimisation and poor health, rather than poor health causing victimisation. Young men, as well as being the most common perpetrators of crime, are also the most likely victims of street crime, especially physical assaults[40]. Older people, especially women, are more likely to be victims of theft from the person, with much acquisitive crime, such as shoplifting and burglary, committed by drug-misusing offenders to feed their habits[39].

6.94 Studies have shown that perceived dimensions of neighbouring, such as neighbourhood attachment and annoyance, are influenced by the environmental attributes of the neighbourhood, such as surveillance, visual appearance and dwelling density[41]. Thus, socio-economic characteristics of the residents and the physical form of the environment can affect neighbourhood problems and by extension residents' perceptions and attitudes towards crime[41].

6.95 Table 6.10 provides a summary of reported crime types at the neighbourhood level between September 2021 and August 2022, of which there were 1,280 reported crimes in total[20]. The most common type of reported crime at the neighbourhood level is anti-social behaviour (28.3 %), with violence and sexual offences being the second most common (20.6 %).

6.96 The online police crime map for the neighbourhood shows 129 reported crimes in August 2022[20]. Of these crimes, five were reported in the immediate vicinity of the site.

6.97 The crime rate reported for the neighbourhood is 13 crimes per 1,000 residents which is lower than the local authority (23 crimes per 1,000 residents) and higher than the region (eight per 1,000 residents)[21].

[38] Public Health England, 2011. Indicator 4.4 – Number of domestic burglaries recorded per 1,000 households. London. LHO.
[39] Victim Support and Mind, 2013. At risk, yet dismissed. London: Victim Support and Mind.
[40] Health and Social Care Information Centre, 2014. Indicator 4.2 – Number of vehicle crimes recorded per 1,000 population. HSCIC.

Table 6.10: Recorded Crime Types at Neighbourhood Level (Little Venice Police Force Area) September 2021 to August 2022

Crime Type	Total	Percentage
Anti-social behaviour	362	28.30 %
Violence and sexual offences	264	20.60 %
Vehicle crime	127	9.90 %
Other theft	121	9.50 %
Public order	98	7.70 %
Burglary	68	5.30 %
Criminal damage and arson	59	4.60 %
Drugs	43	3.40 %
Theft from the person	41	3.20 %
Robbery	39	3.00 %
Shoplifting	25	2.00 %
Bicycle theft	16	1.30 %
Possession of weapons	9	0.70 %
Other crime	8	0.60 %
Total	**1,280**	**100 %**

Sensitive Receptors

6.98 The receptors identified as sensitive to the 2022 amended proposed development and which have been 'scoped-in' to the assessment are summarised in Table 6.11.

Table 6.11: Summary of Sensitive Receptors

Receptor	Sensitivity	Justification
Local Economy Economic Profile –Employment, Economic Activity, Construction, Occupation and Industry	Low	A proportion of temporary construction employment created as a result of construction activity could be expected to be filled by the CoW residents, some of whom could be looking for employment opportunities. The level of construction employment within the CoW is lower than in London, therefore the local economy is less reliant on this industry compared to others.
New Residents Housing – Housing Size and Housing Tenure	Medium	The 2019 IMD identifies the neighbourhood as being within the 50 % least deprived wards nationally for barriers to housing and services.
Local Social Infrastructure, Existing Local Residents and New Residents Community Infrastructure – Education	Primary – Medium Secondary – Medium	The existing baseline analysis of the primary schools that include the site within their catchments indicates that there is currently a surplus in places. It has also been identified that there will be a substantial surplus in places as a result of primary pupil projections within the relevant primary planning areas in 2026 (the closest year to 2028 when the first residential units would likely become occupied).

[41] Marzbali, M., et al., 2012. The influence of crime prevention through environmental design on victimisation and fear of crime. Journal of Environmental Psychology.

Table 6.11: Summary of Sensitive Receptors

Receptor	Sensitivity	Justification
		The existing baseline analysis of secondary schools that include the site within their catchments indicates that there is currently a surplus in places. It has also been identified that there will be a surplus in places as a result of secondary pupil projections within the relevant secondary planning area in 2028 (when the first residential units would likely become occupied).
Local Social Infrastructure, Existing Local Residents and New Residents Community Infrastructure – Healthcare	High	The average patient list size for GP surgeries within 1.6 km of the 2022 amended proposed development (of 2,705 patients per FTE GP) is higher than the HUDU benchmark making the receptor highly sensitive to change.
Existing Local Residents and New Residents Community Infrastructure – Open Space and Playspace	Open Space – Medium Playspace – Medium	Baseline analysis indicates that the open space provision in the immediate vicinity of the site is sufficient. However, the wider area deficient in open space as highlighted within WCC's Open Space Strategy.
Local Economy, Existing Local Residents and New Workers Economic Profile – Qualifications, Employment, Economic Activity, Occupation and Industry	Low	The economic activity in the ward is higher than the local authority level and the average income within the local authority area is one of the highest in London.
Existing Local Residents and Workers and New Residents and Workers Crime	Medium	The 2019 IMD identifies the neighbourhood as being within the 50 % most deprived LSOAs nationally for crime. In addition, the neighbourhood crime rate is lower than the local authority rate and higher than the regional rate.

Assessment of Effects

Demolition and Construction Effects

6.99 The demolition and construction stage of the 2022 amended proposed development is expected to create direct temporary construction related training and employment opportunities, which is considered a potential indirect economic effect.

Direct Employment

6.100 Demolition and construction employment is important as it represents part of the continual supply of work that demolition and construction firms, and local tradesmen, rely upon. Without such schemes, demolition and construction and related employment opportunities can be substantially reduced.

6.101 The scale of demolition and construction employment is a direct function of the scale and type of project being undertaken, which in turn is reflected in the overall capital construction costs. Thus, it is generally accepted that the scale of employment is a direct function of the overall capital construction costs.

6.102 As previously mentioned, to calculate demolition and construction period figures, data from the ABS has been used[22]. The build out period for the 2022 amended proposed development is predicted to be between Q3 2023 and Q3 2030, totalling approximately 85 months. The total employment over a 12-month term would be approximately 1,516 demolition and construction jobs based on the capital construction costs. Based on a total demolition and construction period of approximately 85 months (dependent on the market requirements at the time of construction); the total average employment generated would be approximately 214 construction jobs over the duration of the demolition and construction stage.

6.103 Demolition and construction employment levels are low within the neighbourhood compared to other industries. Consequently, this has been addressed in the additionality assessment undertaken below, where a high level of leakage has been accounted for.

Indirect and Induced Employment

6.104 Further to the direct employment generated from the demolition and construction stage of the 2022 amended proposed development, additional benefits would result from this stage. These secondary effects would arise from the need to purchase supplies for the 2022 amended proposed development (indirect employment), and from the increased expenditure in the locality by the construction workers (induced employment). Together this beneficial economic multiplier effect would sustain and generate further economic activity in the area boosting the local economy.

6.105 As previously mentioned, by undertaking an appraisal of the additional benefits using the adjustment factors from the Additionality Guide[23], estimations of indirect and induced employment levels can be calculated. Three adjustment factors have been applied to understand the employment arising from the demolition and construction stage.

Leakage

6.106 First, a leakage factor has been applied; this estimates the proportion of outputs that benefit those outside the local area, which is the district. In this case, in accordance with guidance, a high level of leakage has been assumed at 50 %, i.e. 50 % of benefits would be retained within the neighbourhood area and the local authority area. This has been informed by the lower level of construction employment in the neighbourhood and the ease of travel to work in the London region.

Multiplier

6.107 The second adjustment factor is a multiplier; this calculates the secondary (indirect and induced) benefits as a result of the demolition and construction stage. The multiplier adjustment factor varies according to the project size and geographic area; the larger the project and geographic area under construction, the greater the multiplier factor. Due to the 2022 amended proposed development's scale and the duration of the demolition and construction programme, it is considered to be at a neighbourhood level of influence. Therefore, a neighbourhood composite multiplier of 1.05 has been applied.

Displacement

6.108 Finally, a displacement adjustment factor is applied. Displacement takes into account the proportion of development outputs accounted for by reduced outputs elsewhere. In respect to demolition and construction, this may result in competition for demolition and construction staff that could result in delays and increased costs. Given there are not many pull factors relating to the proposed development, it is considered that displacement would be low; therefore, for the purposes of this assessment this has been estimated to be 25 %.

6.109 Thus, as set out in Table 6.12 the adjustment factors have been applied and the net additional employment generated during the demolition and construction works arising as a consequence of the 2022 amended proposed development is an estimated total of 84 Full-Time Equivalent (FTE) employment opportunities over 85 months.

Table 6.12: Additionality Assessment – Annual Demolition and Construction Employment over Demolition and Construction Duration

Additionality Steps	Additionality Application
Gross direct construction employment	214
Estimated leakage	107
Gross direct construction employment to a target area	107
Less displacement	27
Net direct construction employment to target area	80
Plus multiplier effects	4
Net Construction Employment to Target Area	**84**

6.110 The local economy would be of low sensitivity and it is considered the magnitude of impact would be medium. Therefore, it is considered that the 2022 amended proposed development would result in a **Minor Beneficial** (not significant) effect on demolition and construction employment on a temporary, medium-term basis at a local authority level.

Completed Development Effects

6.111 The 2022 amended proposed development is expected to generate the following direct social and economic impacts:

- Delivery of new housing;
- Delivery of amenity space on-site;
- Delivery of public realm, including playspace; and
- Delivery of commercial floorspace.

6.112 The associated secondary, or indirect, effects would be as follows:

- Introduction of a new residential and worker community;
- Demand on education facilities;
- Demand on healthcare facilities;
- Demand for open space and playspace;
- Creation of new employment on-site; and
- Changes in natural surveillance due to increased activity on-site.

2022 Amended Proposed Development Forecast Population

Total Population

6.113 The 2022 amended proposed development would deliver 556 residential units in a range of unit sizes and tenure mix as shown in Table 6.13.

Table 6.13: 2022 Amended Proposed Development Unit Mix

Tenure	Studio	1 Bed	2 Bed	3 Bed	4 bed	Total
Private	22	77	139	93	6	337
Intermediate	13	59	38	0	0	110
Social Rented	0	11	50	46	2	109
Total	**35**	**147**	**227**	**139**	**8**	**556**

6.114 The residential population has been modelled by entering the residential accommodation schedule into the GLA's Population Yield Calculator[24] selecting the Geographical Aggregation: Inner London and the Public Transport Accessibility Level (PTAL): 5-6. This has provided an overall population forecast of 1,254 residents for the 2022 amended proposed development.

Child Yield

6.115 The child yield population has been modelled by entering the residential accommodation schedule into the GLA's Population Yield Calculator[24]. This has provided an overall child yield forecast of 231 children for the 2022 amended proposed development.

6.116 Table 6.14 provides a breakdown by age bracket of the child yield.

Table 6.14: GLA Child Yield by Age Bracket

Age	Child Yield*
0-4	99
5-11	77
12-15	36
16-17	19
Total	**231**
*rounded to nearest whole number	

6.117 The new residential population would create increased demand for social infrastructure, including education, primary healthcare, and open space/playspace which has been considered within this assessment.

Demand for Housing

6.118 As set out in London Plan[2], the ten-year housing target for the local authority is 9,850 which equates to 985 per year.

6.119 The 2022 amended proposed development, delivering 556 new homes, would bring forward 5.6 % of the ten-year housing target and 56.4 % of the annual target. These homes would be a range of tenures, including affordable homes, and a range of sizes.

6.120 The housing stock would be of medium sensitivity and it is considered the magnitude of impact would be high at a neighbourhood level and medium at a local authority level. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Moderate Beneficial** (significant) effect at a neighbourhood level and a **Minor Beneficial** (not significant) effect at a local authority level on housing stock.

Primary Educational Facilities

6.121 Table 6.14 indicates that the 2022 amended proposed development forecast child yield would result in an increased demand for 77 primary school places according to the GLA's Population Yield Calculator. The existing baseline analysis of the primary schools that include the site within their catchments indicates that there is currently a surplus in places. In addition, the school forecast data shows that there will be a substantial surplus in local primary schools by 2026 (the closest year to when the first residential units would likely become occupied).

6.122 Therefore, considering the 2022 amended proposed development in the context of the future baseline (2026), it is considered to result in a Minor Adverse effect at the neighbourhood level based on the number of primary aged children it will bring forward resulting in a need for an additional 2.6 primary classes (where a maximum class size is 30 pupils).

6.123 The primary educational facilities would be of medium sensitivity and it is considered the magnitude of impact would be medium. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Minor Adverse** (not significant) effect on primary educational facilities at a neighbourhood level.

Secondary Educational Facilities

6.124 Table 6.14 indicates that the 2022 amended proposed development forecast child yield would result in an increased demand for 36 secondary school places according to the GLA's Population Yield Calculator which would equate to 1.2 secondary classes (where a maximum class is 30 pupils). The existing baseline analysis of the secondary schools that include the site within their catchments indicates that there is currently a surplus in places. In addition, the school forecast data shows that there will still be a surplus in the local secondary schools by 2026 (the closest year to when the first residential units would likely become occupied).

6.125 The secondary educational facilities would be of medium sensitivity and it is considered the magnitude of impact would be low. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Minor Adverse** (not significant) effect on secondary educational facilities at a local authority level.

Primary Healthcare Provision

6.126 The 2022 amended proposed development's additional forecast population of 1,254 would result in the need for the equivalent of approximately 0.7 full-time GPs. As set out in the baseline section, there is currently a significant deficit in capacity of 35,545 places within the 20 GP surgeries within 1.6 km of the site. Therefore, the facilities are currently substantially overcapacity.

6.127 The healthcare facilities would be of high sensitivity and it is considered the magnitude of impact would be medium. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Moderate Adverse** (significant) effect on healthcare facilities at a neighbourhood level.

Open Space and Playspace

Open Space

6.128 There is currently no open space on-site, but the neighbourhood level is not in an area identified as at a deficit for accessible open space. This is due to the close proximity of Paddington Green for open space and five children's playgrounds within 400 m of the site, the nearest of which is located within St Mary's Churchyard.

6.129 The 2022 amended proposed development's forecast population of 1,254 would result in a demand for 2 hectares of open space based on the WCC ratio of 1.6 ha of open space per 1,000 of the population.

6.130 It is considered that the existing open space areas are currently serving the existing resident population, due to the baseline identifying that there is sufficient open space within the local area. The 2022 amended proposed development would bring forward a total of 0.4755 ha (4,755 m^2) of publicly accessible open space to serve the proposed population. This would not achieve the policy requirements for open space but due to the constrained nature of the site, it is considered to be bringing forward a beneficial amount as the current site is not providing any open space.

6.131 The open space facilities would be of medium sensitivity and it is considered the magnitude of impact would be low. The effect would be both beneficial and adverse. Accordingly, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Negligible Neutral** (not significant) effect on open space facilities at a neighbourhood level and local authority level.

Playspace

6.132 Table 6.15 sets out the calculated child yield and corresponding playspace demands by age bracket as a result of the 2022 amended proposed development.

6.133 In total, approximately 231 children aged 0 – 17 years would be introduced to the site with a corresponding demand for approximately 2,308 m^2 of playable space.

Table 6.15: GLA 2022 Amended Proposed Development Playspace Requirements

Age	Child Yield*	Playspace Requirement (m^2)
0-4	99	988
5-11	77	766
12-17	55	554
Total	**231**	**2,308**

*rounded to nearest whole number

6.134 The 2022 amended proposed development would bring forward a total of 840 m^2 of playspace across the age ranges as follows:

- Ages 0-4 – 360 m^2;
- Ages 5-11 – 300 m^2; and
- Ages 12-17 – 180 m^2.

6.135 An additional 310m^2 of play space has been allocated to the site as part of the WEG development. Accordingly a total of 1,150m^2 of playspace would be brought forward on site.

6.136 The 2022 amended proposed development would fall short of the GLA plays pace requirements across all the age ranges. However, the WEG and 14-17 PG development, adjacent to the site, would bring forward play space areas catering for all age groups

6.137 The playspace facilities would be of medium sensitivity and it is considered the magnitude of impact would be low. As the delivery of playspace on-site would be both beneficial and adverse, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Negligible Neutral** (not significant) effect on playspace facilities at a neighbourhood level.

Direct Employment

6.138 The 2022 amended proposed development is residential-led mixed-use, bringing forward flexible commercial floorspace which would create direct employment. As noted previously, the community floorspace has been excluded from the employment calculation as it is considered it would generate minimal employment.

6.139 Based on the standard employment densities[28], the non-residential space would create an estimated 50 – 67 FTE jobs as set out in Table 6.16.

6.140 Given the potential for these types of employment uses to provide part-time and flexible work opportunities, the actual employment headcount that could be created on-site has the potential to be higher.

Table 6.16: 2022 Amended Proposed Development Gross Direct Employment Uplift

Employment Use	Area*	Number of FTE Jobs
100% A1-A3 Retail (Flexible Commercial)	1,000 m^2 NIA	50 – 67**
Total		**50 – 67**

Note: *NIA/GIA has been used in line with assessment methodology in the Employment Density Guide published by the HCA.

**The Employment Density Guide has identified a range.

Net Direct and Indirect Employment

6.141 To ascertain the net direct and indirect employment benefits to the target area of the local authority, an additionality assessment has been undertaken.

6.142 The additionality assessment has identified the net new employment created as a result of the 2022 amended proposed. As shown in Table 6.17, the 2022 amended proposed development is considered to result in a net gain of 20 – 26 operational employment opportunities to the local area.

Table 6.17: Operational Employment Additionality Assessment

Additionality Steps	Additionality Application
Gross direct operational employment	50 – 67
Estimated leakage	25 – 34
Gross direct operational employment to a target area	25 – 34
Less displacement	6 – 8
Net direct operational employment to target area	19 – 25
Plus multiplier effects	1
Net operational employment to target area	20 – 26

6.143 The local economy would be of low sensitivity and it is considered the magnitude of impact would be low. Therefore, it is considered that the 2022 amended proposed development would result in a **Negligible Beneficial** (not significant) effect on operational employment at a local authority level.

Additional Spending

6.144 In addition to the additional homes and employment on-site, the 2022 amended proposed development would generate economic benefits for the local economy through indirect spending impacts.

6.145 The 2022 amended proposed development would introduce 556 new residential units. This would result in an annual expenditure of approximately £19.4 million.

6.146 The 50 – 67 direct new employment opportunities created during the operation of the 2022 amended proposed development would result in a potential uplift in employee spending of approximately £151,580 – £203,117 annually (based on a 220 day working year).

6.147 The local economy would be of low sensitivity and it is considered the magnitude of impact would be high. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Minor Beneficial** (not significant) effect on additional spending at a local authority level.

Crime

6.148 The introduction of residential uses on the site would increase the diversity of uses in the surrounding area. A new residential population along with the provision of high quality public realm would likely have a beneficial effect on safety and perceptions of security by increasing activity on-site and increasing levels of natural surveillance. The mix of residential uses with the surrounding commercial uses would activate the area in the evenings and at the weekends, creating a more balanced mix of land uses and levels of activity throughout the day and week. In addition, improved permeability and accessibility would be delivered across the site, supplemented by night time illumination to facilitate safe and easy navigation.

6.149 In considering the required elements for a conjunction of criminal activity (CCO)[42], a likely offender and a suitable target come together in a conducive place (refer to Figure 6.7). It is considered that with the average footfall that a mixed-use location presents and an average likelihood of potential offenders, the site does not provide many significant suitable targets. There is potential for crime to be committed as there is a moderate level of crime in the neighbourhood and the site is a conducive environment for crime due to the mixed-use nature of the 2022 amended proposed development.

[42] Design Against Crime Research, 2008. Conjunction of Criminal Opportunity – Classic. http://www.designagainstcrime.com/files/crimeframeworks/06_cco_classic.pdf

Figure 6.7: Conjunction of Criminal Opportunity Triangle

6.150 Even though introducing a new resident and employee population would also introduce targets, the 2022 amended proposed development has been designed with security in mind in order to meet Secured by Design (SbD) standards and would bring forward high quality public realm. This means that the 2022 amended proposed development would not be conducive to crime through the implementation of crime prevention measures and the current moderate levels of crime can be minimised.

6.151 The Secured by Design Safer Places Report[43] states that crime and fear of crime can be reduced "*…by designing the wider environment through layout of housing estates, city centres and transport interchanges, to avoid concentration of attractive targets, to reduce conflicts; and to make surveillance and pursuit of offenders easier, and concealment and escape harder…*".

6.152 The new population would be of medium sensitivity and it is considered the magnitude of impact would be medium. Therefore, it is considered that the 2022 amended proposed development would result in a permanent, long-term **Minor Beneficial** (not significant) effect on crime at a neighbourhood level.

Assessment of Residual Effects

Additional Mitigation and Enhancement Measures

Demolition and Construction Stage

6.153 The following enhancement measure for the demolition and construction stage is proposed:

- Local advertisement of job vacancies and local provision of skills training to be secured by means of an appropriately worded planning condition.

Completed Development Stage

6.154 The following additional mitigation measures for the completed development stage is proposed for the 2022 amended proposed development:

- Financial contributions towards primary educational facilities, secondary educational facilities, healthcare facilities and playspace facilities. The financial contributions are likely to be secured through CIL. The CIL contributions collected from the 2022 amended proposed development can be used at the discretion of WCC to fund provision, improvement or operation of new or existing community facilities and other types of social infrastructure.

Demolition and Construction Residual Effects

6.155 This section considers the additional mitigation and enhancement measures (over and above those already integrated into the 2022 amended proposed development) that would be secured by means of appropriately worded planning conditions and financial contributions to reduce or enhance likely effects as reported in the previous section.

[43] Office of the Deputy Prime Minister. Safer Places - The Planning System and Crime Prevention. s.l. : Home Office, 2004.

Demolition and Construction Employment

6.156 The net direct demolition and construction employment brought to the local authority area as a result of the 2022 amended proposed development is considered to result in a permanent, long-term **Minor Beneficial** (not significant) effect. However, to maximise local recruitment, enhancement measures would comprise commitment to advertise job vacancies in local job agencies and newspapers in accordance with 'local and relevant postcodes' to maximise those employed locally.

6.157 In addition to the generation of 214 gross (84 net) demolition and construction employment opportunities for the local authority area, the Applicant can also seek to promote skills training. The principal contractor would be required to work with local education and training centres, and industry bodies, to provide apprenticeships and training opportunities, particularly for those in the NEET category (not in employment, education or training).

6.158 With the enhancement in place, the residual completed development effects would be temporary, medium-term **Moderate Beneficial** (significant) for demolition and construction employment at the local authority level.

Completed Development Residual Effects

6.159 This section considers the additional mitigation and enhancement measures (over and above those already integrated into the 2022 amended proposed development) that would be secured by means of appropriately worded planning conditions and financial contributions to reduce or enhance likely effects as reported in the previous section.

Demand for Housing

6.160 As no additional mitigation would be required, the residual completed development effects remain as reported in the assessment of effects section, permanent, long-term **Moderate Beneficial** (significant) at a neighbourhood level and permanent, long-term **Minor Beneficial** (not significant) at a local authority level for housing stock.

Primary Educational Facilities

6.161 The 2022 amended proposed development is considered to result in a **Minor Adverse** effect on primary education provision as the new population that would be brought forward as a result of the 2022 amended proposed development would put pressure on the future capacity. Financial contributions towards primary educational facilities would be agreed as appropriate with the WCC.

6.162 With additional mitigation in place, the residual completed development effects would be permanent, long-term **Negligible Neutral** (not significant) on primary educational facilities.

Secondary Educational Facilities

6.163 The 2022 amended proposed development is considered to result in a **Minor Adverse** effect on secondary education provision as the new population that would be brought forward as a result of the 2022 amended proposed development would put pressure on the future capacity. Financial contributions towards secondary educational facilities would be agreed as appropriate with the WCC.

6.164 With additional mitigation in place, the residual completed development effects would be permanent, long-term **Negligible Neutral** (not significant) on secondary educational facilities.

Primary Healthcare Facilities

6.165 The 2022 amended proposed development is considered to result in a **Moderate Adverse** effect on healthcare provision as the new population that would be brought forward as a result of the 2022 amended proposed development would put more pressure on the already insufficient capacity. Financial contributions towards primary healthcare facilities would be agreed as appropriate with the WCC.

6.166 With additional mitigation in place, the residual completed development effects would be permanent, long-term **Negligible Neutral** (not significant) on primary healthcare facilities.

Open Space and Playspace

6.167 As no additional mitigation would be required for open space, the residual completed development effects remain as reported in the assessment of effects section, permanent, long-term **Negligible Neutral** (not significant) for open space provision.

6.168 The 2022 amended proposed development is considered to result in a **Negligible Neutral** effect on playspace provision. Financial contributions towards playspace facilities would be agreed as appropriate with the WCC. With additional mitigation in place, the residual completed development effect would be permanent, long-term **Minor Beneficial** (not significant) for playspace provision.

Operational Employment

6.169 As no additional mitigation would be required, the residual completed development effects remain as reported in the assessment of effects section, **Negligible Beneficial** (not significant) for operational employment.

Additional Spending

6.170 As no additional mitigation would be required, the residual completed development effects remain as reported in the assessment of effects section, permanent, long-term **Minor Beneficial** (not significant) for additional spending.

Crime

6.171 As no additional mitigation would be required, the residual completed development effects remain as reported in the assessment of effects section, permanent, long-term **Minor Beneficial** (not significant) for crime.

Summary of Residual Effects

6.172 Table 6.18 provides a tabulated summary of the outcomes of the socio-economic assessment of the 2022 amended proposed development.

Table 6.18: Summary of Residual Socio-Economic Effects

Receptor	Description of Residual Effect	Additional Mitigation/ Enhancement	Scale and Significance of Effect **	Nature of Residual Effect*				
				+ -	D I	P T	R IR	St Mt Lt
Demolition and Construction								
Local Economy, Existing Local Residents and New Workers	Generation of demolition and construction employment	Advertisement of job vacancies and provision of skills training locally	Local Authority Level: Moderate (significant)	+	D	T	R	Mt
Completed Development								
New Residents	Provision of new housing	None required	Neighbourhood Level: Moderate (significant) Local Authority Level: Minor (not significant)	+	D	P	IR	Lt
Local Social Infrastructure, Existing Local	Increased demand for primary education facilities	Financial contributions	Negligible (not significant)	+/-	D	P	IR	Lt

Table 6.18: Summary of Residual Socio-Economic Effects

Receptor	Description of Residual Effect	Additional Mitigation/ Enhancement	Scale and Significance of Effect **	Nature of Residual Effect*				
				+ -	D I	P T	R IR	St Mt Lt
Residents and New Residents								
Local Social Infrastructure, Existing Local Residents and New Residents	Increased demand for secondary education facilities	Financial contributions	Negligible (not significant)	+/-	D	P	IR	Lt
Local Social Infrastructure, Existing Local Residents and New Residents	Increased demand for healthcare facilities	Financial contributions	Negligible (not significant)	+/-	D	P	IR	Lt
Existing Local Residents and New Residents	Provision of open space	None required	Negligible (not significant)	+/-	D	P	IR	Lt
Existing Local Residents and New Residents	Provision of playspace	Financial contributions	Minor (not significant)	+	D	P	IR	Lt
Local Economy, Existing Local Residents and New Workers	Generation of operational employment	None required	Negligible (not significant)	+	D	P	IR	Lt
Local Economy, Existing Local Residents and New Workers	Generation of resident and employee expenditure	None required	Minor (not significant)	+	D	P	IR	Lt
Existing Local Residents, Workers, New Residents and Workers	Crime - improvements in site safety	None required	Minor (not significant)	+	D	P	IR	Lt

Notes:

* - = Adverse/ + = Beneficial/ +/- Neutral; D = Direct/ I = Indirect; P = Permanent/ T = Temporary; R=Reversible/ IR= Irreversible; St = Short-term/ Mt = Medium-term/ Lt = Long-term.

**Negligible/Minor/Moderate/Major

Cumulative Effects

Intra-Project Effects

6.173 As explained in Chapter 2(R): EIA Process and Methodology, intra-project cumulative effects are discussed in Chapter 11(R): Cumulative Effects.

Inter-Project Effects

Demolition and Construction Cumulative Effects

6.174 As noted before the WEG and 14-17 PG scheme would be completed by the time that development works commence on-site. Based on the limited demolition and construction information that is publicly available, it has been assumed that the demolition and construction stages of the other cumulative schemes considered could overlap with that of the 2022 amended proposed development.

6.175 The cumulative schemes would generate demolition and construction employment, as noted within the assessment, there may be some competition for locally sourced skilled construction employment with the potential for construction workers to be employed from outside the local area. For general demolition and construction employment this is considered to result in a Moderate Beneficial cumulative effect. However, with the likely overlap in demolition and construction stages of the cumulative schemes there is potential for apprentices to move between schemes and complete their apprenticeships within the local authority area. These are particularly beneficial as many apprenticeships require a three-year duration which can be difficult to achieve on shorter duration build projects. Therefore, having overlapping projects within the local authority area is considered to be a temporary, medium-term **Major Beneficial** (significant) cumulative effect at the local authority level.

Completed Development Cumulative Effects

6.176 As noted before the WEG and 14-17 PG scheme would be completed by the time that development works commence on-site.

6.177 From ES Volume 3(R): Technical Appendix 6.3(R), it can be seen that in addition to the 556 residential units the 2022 amended proposed development would bring forward, the cumulative schemes considered would bring forward at least an additional 1,535 residential units in a mix of size and tenures that would deliver beneficial effects for the local authority. Therefore, it is considered that this would be a permanent, long-term **Moderate Beneficial** (significant) cumulative effect at a Local Authority Level for housing stock.

6.178 The cumulative schemes which will bring forward residential units would increase demand on the school and healthcare capacities in addition to the 2022 amended proposed development. It can be assumed with a reasonable level of confidence that financial contributions towards school places and GP services would have been secured for these schemes as part of the planning process, if no educational or healthcare facilities are being brought forward as part of the developments. In regard to WEG and 14-17 PG both S106 and CIL financial contributions have been agreed. The S106 contributions include £631,000 (index linked) towards school places, £850,000 (index linked) towards social and community facilities, £100,000 (index linked) towards improvements to Paddington Green and £13,630 (index linked) towards open space. The CIL payments comprise a total of approximately £12 million which WCC will spend on infrastructure at their discretion; this could include social infrastructure such as education facilities/healthcare facilities, open space, etc depending on how it is allocated. Therefore, it is considered that the cumulative effects on primary education and secondary education would be permanent, long-term **Negligible Neutral** (not significant) at the neighbourhood and local authority levels respectively and on healthcare provision would be permanent, long-term **Negligible Neutral** (not significant) at the neighbourhood level.

6.179 It is considered that collectively the cumulative schemes would bring forward new open space and playspace in the local area either through provision on-site and/or financial contributions creating beneficial effects at the local authority level. Therefore, it is considered that the cumulative effect would be permanent, long-term **Minor Beneficial** (not significant) for both open space at the neighbourhood and local authority levels and playspace at the neighbourhood level.

6.180 In addition to the 50 – 67 direct gross operational jobs to be generated by the 2022 amended proposed development, the selected cumulative schemes, where data was available or where reasonable assumptions were made, would bring forward at least an additional 11,560 operational employment

opportunities. It is considered that the cumulative schemes bringing forward operational employment opportunities, through a mixture of commercial uses, would deliver beneficial effects for the local authority. Therefore, it is considered this would result in a permanent, long-term **Moderate Beneficial** (significant) cumulative effect for operational employment at the local authority level.

6.181 It is considered that crime would be dealt with appropriately within each cumulative scheme in response to the WCC requirements. Therefore, it is considered that this would result in a permanent, long-term **Minor Beneficial** (not significant) cumulative effect for crime at the neighbourhood level.

Summary of Assessment

Background

6.182 This chapter has detailed the potential socio-economic effects due to the construction and completed development stages of the 2022 amended proposed development. The assessment of construction and completed development stages has been undertaken taking into account the relevant national and local guidance and regulations.

Demolition and Construction Effects

6.183 During demolition and construction works, the 2022 amended proposed development would:

- generate 214 gross direct construction jobs which, when taking into account leakage, displacement and induced/indirect jobs, would be equivalent to 84 net demolition and construction jobs over the 85 month development programme. To maximise local recruitment, enhancement measures would comprise commitment to advertise job vacancies in local job agencies and newspapers in accordance with 'local and relevant postcodes' to maximise those employed locally as well as local provision of skills training. These measures would be secured by means of an appropriately worded planning condition. In the context of the size and mobility of the construction workforce, the effect would be temporary, medium-term **Moderate Beneficial** (significant).

Completed Development Effects

6.184 During the completed development stage, the 2022 amended proposed development would:

- deliver 556 new residential units which would represent 5.6 % of the ten-year London Plan housing target and 56.4 % of the annual target, which would result in a permanent, long-term **Moderate Beneficial** (significant) residual effect at neighbourhood level and permanent, long-term **Minor Beneficial** (not significant) at local authority level;
- introduce a new residential population of 1,254 people which would create a demand for the equivalent of approximately 0.7 of full time GPs. There is currently a substantial deficit in the capacity of the local GP surgeries; with the 2022 amended proposed development adding further pressure. Financial contributions towards healthcare would be agreed with WCC to take account of the population increase, resulting in a permanent, long-term **Negligible Neutral** (not significant) residual effect. In terms of increased demand for primary and secondary school places, the new population would have permanent, long-term **Negligible Neutral** (not significant) residual effects at both primary and secondary levels taking into account the forecasted figures for 2026 and financial contributions towards education which would be agreed with the WCC to take account of the child yield increase;
- deliver 0.4755 ha (4,755 m^2) of open space, and although this would fall short of WCC policy requirements it is considered a beneficial amount due to the constrained nature of the site resulting in a permanent, long-term **Negligible Neutral** (not significant) residual effect;
- deliver 840 m^2 of playspace, which would fall short of the GLA policy requirements for the new population. Financial contributions towards playspace would be agreed with the WCC to take account of the population increase, resulting in a permanent, long-term **Minor Beneficial** (not significant) residual effect;
- deliver non-residential floorspace which would create employment. Based on standard employment densities for reasonable worst-case use classes, this space would create approximately 50 – 67 gross direct operational jobs which, when taking into account leakage, displacement and induced/indirect jobs, would be equivalent to 20 – 26 net operational jobs. In the context of the local economy this would have a **Negligible Beneficial** (not significant) residual effect;
- increase local expenditure as a result of the residents and employees, which would have a permanent, long-term **Minor Beneficial** (not significant) residual effect; and
- deliver a safe and secure development implementing appropriate secured by design principles considered to result in a permanent, long-term **Minor Beneficial** (not significant) residual effect.

6.185 Financial contributions are likely to be secured by CIL. The CIL contributions collected from the 2022 amended proposed development can be used at the discretion of WCC to fund provision, improvement or operation of new or existing community facilities and other types of social infrastructure.

Cumulative Effects

6.186 It is considered the 2022 amended proposed development would result in the following cumulative effects:

- Construction Employment – **Major Beneficial** (not significant);
- Housing Provision – **Moderate Beneficial** (not significant);
- Education Provision – **Negligible Neutral** (not significant);
- Healthcare Provision – **Negligible Neutral** (not significant);
- Open Space and Playspace – **Minor Beneficial** (not significant);
- Operational Employment – **Moderate Beneficial** (not significant); and
- Crime – **Minor Beneficial** (not significant).

6.187 The significant cumulative effects would be in relation to construction employment, housing provision, operational employment and crime and would all be beneficial.

7(R) AIR QUALITY

Introduction

7.1 This chapter of the 2022 Replacement ES reports on the likely significant air quality effects to arise from the demolition and construction stage and from the completed development stage of the 2022 amended proposed development.

7.2 The chapter describes the air quality policy context; the methods used to assess the potential impacts and likely effects; the baseline conditions at the site and in the study area; the likely air quality effects taking into consideration embedded mitigation; the need for additional mitigation and enhancement; the significance of residual effects; and inter-project cumulative effects.

7.3 The main air pollutants of concern are dust and particulate matter with an aerodynamic diameter of less than 10 µm (PM_{10}), typically generated during demolition and construction activities and from industrial sources, and nitrogen dioxide (NO_2), PM_{10} and particulate matter with an aerodynamic diameter of less than 2.5 µm ($PM_{2.5}$), typically generated by road traffic and combustion engine emissions. Potential sources of emissions have been identified and assessed in the context of existing air quality and the nature and location of receptors, both existing and future as part of the 2022 amended proposed development.

7.4 The chapter is supported by the following technical appendices in ES Volume 3(R):

- Appendix 7.1(R): Air Quality Legislation, Policy and Guidance;
- Appendix 7.2: Air Quality EHO Consultation;
- Appendix 7.3(R): Air Quality Model Inputs, Transport Data and Results Processing Tools;
- Appendix 7.4(R): Air Quality Background Concentrations and Model Verification; and
- Appendix 7.5(N): Air Quality Modelling Results.

Methodology

7.5 The assessment has been informed by the following legislation, policies and published guidance:

- International Legislation:
  - The European Air Quality Framework Directive and Daughter Directives[1, 2] which set out a series of limit values for the protection of human health.
- National Legislation and Policy:
  - Part IV of the Environment Act (1995 (as amended))[3];
  - Clean Air Strategy[4];
  - NPPF (2021)[5]; and
  - Environment Act (2021)[6]
- Regional Policy:
  - The London Plan (2021)[7], in particular policy 'SI 1 - Improving Air Quality';
  - London Environment Strategy (2018)[8], in particular Chapter 4: Air Quality which states at policy 4.3.1 that "*The Mayor will set new concentration targets for $PM_{2.5}$, with the aim of meeting World Health Organization guidelines by 2030"*;
  - Sustainable Design and Construction SPG (2014)[9];
  - Control of Dust and Emissions During Construction and Demolition SPG (2014)[10];
  - London Councils Air Quality and Planning Guidance (2007)[11]; and
  - Air Quality Neutral Planning Support Update: GLA80391' guidance (2014)[12].
- Local Policy:
  - Westminster City Plan[13], in particular policy 'Policy 32 - Air Quality';
  - Westminster Air Quality Action Plan 2019 - 2024[14], in particular the commitment to target compliance with World Health Organisation (WHO) guidelines for PM_{10} and $PM_{2.5}$ by 2030;
  - Westminster Code of Construction Practice (2022)[15]; and
  - Westminster Environmental Supplementary Planning Document (SPD) (2022)[16]
- National Guidance and Industry Standards:
  - PPG[17];
  - Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)[18], which implements the European Union's Directives and sets out the air quality objectives (AQOs) and Government policy on achieving these objectives;
  - Air Quality Standards (Amendment) Regulations (2016)[19], which amended the Standard Regulations 2010[20];
  - Defra's Local Air Quality Management Technical Guidance (LAQM TG22) (2022)[21] and London Local Air Quality Management Technical Guidance (LLAQMA)[22];
  - Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (2014)[23]; and
  - Environmental Protection UK/Institute of Air Quality Management Guidance (IAQM/EPUK), Land Use Planning Guidance (2017)[24].

7.6 Further details are provided in ES Volume 3(R): Technical Appendix 7.1(R).

[1] European Commission. Directive 2008/50/EC. Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.
[2] European Air Quality Directive 2004/107/EC. European Air Quality Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.
[3] Secretary of State, The Environment Act 1995 part IV Air Quality. HMSO.
[4] Department for Environment, Food and Rural Affairs (Defra), 2019. Clean Air Strategy.
[5] Ministry of Housing, Communities and Local Government, 2021. National Planning Policy Framework. HMSO.
[6] Secretary of State, 2021. Environment Act 2021.. HMSO.
[7] Greater London Authority, 2021. The London Plan. The Spatial Development Strategy for Greater London. March 2021. London. GLA.
[8] Greater London Authority, 2018. London Environment Strategy. Published 31 May 2018.
[9] Greater London Authority, 2014. Sustainable Design and Construction Supplementary Planning Guidance. London. GLA. Available: https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Sustainable%20Design%20%26%20Construction%20SPG.pdf.
[10] Greater London Authority, 2014. The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance. London. GLA.
[11] The London Air Pollution Planning and the Local Environment (APPLE) working group, Revised version January 2007, London Councils Air Quality and Planning Guidance.
[12] Air Quality Consultants, 2014. Air Quality Neutral Planning Support Update: GLA80391.
[13] Westminster City Council, 2021. Westminster City Plan. London. WWC.
[14] Westminster City Council, 2020. Air Quality Action Plan 2019 – 2024. London. WWC.
[15] Westminster City Council, 2022. Westminster Code of Construction Practice. London. WCC.
[16] Westminster City Council, 2022. Environmental Supplementary Planning Document. London, WCC.
[17] Ministry of Housing, Communities and Local Government, 2019. Planning Practice Guidance [online]. Available from: https://www.gov.uk/government/collections/planning-practice-guidance.
[18] Department of the Environment, Transport and the Regions in Partnership with the Welsh Office, Scottish Office and Department of the Environment for Northern Ireland, 2007. The Air Quality Strategy for England, Scotland, Wales, Northern Ireland. London. HMSO.
[19] Secretary of State, 2016. Statutory Instrument 2016, No. 1184, The Air Quality Standards (Amendment) Regulations 2016. London. HMSO.
[20] Secretary of State, 2010. Statutory Instrument 2010, No. 1001, The Air Quality Standards Regulations 2010. London. HMSO.
[21] Department of the Environment, Food and Rural Affairs in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland, 2022. Local Air Quality Management Technical Guidance, LAQM.TG(22). London. HMSO.
[22] Greater London Authority, 2019. London Local Air Quality Management Technical Guidance (LLAQM.TG(19)). London. GLA.
[23] Holman et al, 2014. IAQM Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, London
[24] IAQM and EPUK, 2017. Land-Use Planning & Development Control: Planning for Air Quality.

Consultation

Pre-Submission Consultation

7.7 An EIA Scoping Opinion Report was submitted to the WCC in September 2020 in support of a request for a formal EIA Scoping Opinion (Technical Appendix 2.1, ES Volume 3(R)). Avison Young was appointed by WCC to undertake an independent review of the EIA Scoping Opinion Report. Correspondence was undertaken with Avison Young as part of this review. The final Avison Young report is presented in Technical Appendix 2.2, ES Volume 3(R).

7.8 The WCC adopted their EIA Scoping Opinion on 25 March 2021 (Technical Appendix 2.3, ES Volume 3(R)), informed by Avison Young's Independent Review.

7.9 Additional consultation was undertaken with WCC Environmental Health Officer (EHO) to agree the scope of the assessment as specified in the EIA Scoping Opinion Report (see Technical Appendix 7.2, ES Volume 3(R) for more information).

Post-Submission Consultation

7.10 Following the submission of the 2021 ES, Avison Young completed an Independent Environmental Statement Review Report in June 2021. Avison Young's review included comments requesting clarification on the Daylight, Sunlight, Overshadowing and Solar Glare ES Chapter of the 2021 ES. Responses to this review were provided by the Applicant team (Technical Appendix 2.3(N)).

7.11 Following the 'call in' by the GLA, no further consultation comments have been provided by the GLA.

7.12 The consultations are summarised in Table 7.1.

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
EHO email 11 September 2020	Traffic uplift (including construction traffic) should be screened against the IAQM EPUK criteria and should be taken from the approved transport assessment and include servicing and delivery trips. In addition, the following needs to be considered: • Impacts to future occupiers should be assessed against London Councils Air Quality and Planning Guidance. • Regarding verification, similar placed diffusion tubes in a different borough, e.g. RBKC Ladbroke Grove or possibly Cromwell Road should be considered as it may be more representative. • Should any proposed on-site combustion plant be present, the impacts should be assessed using ADMS 5 dispersion modelling software or equivalent. Three years data is recommended for any combustion modelling required. • An air quality neutral calculation will be required for both building and transport emissions. The calculation should use transport data taken from the approved transport assessment. For building emissions, this should assume worst-case scenario and assume all plant operating for 365 days a year at maximum capacity and should include a standard testing cycle for any emergency plant. • On the target $PM_{2.5}$ objective the CoW Action Plan (AQAP) commits WCC to target compliance with WHO Guidelines for PM_{10} and $PM_{2.5}$ by 2030.[25]	The traffic flows uplift for the demolition and construction and completed development stages were presented in Technical Appendix 7.3 of the 2021 ES. Impacts on on-site receptors were assessed against the National Air Quality Objectives (NAQOs) and the London Council's Air Quality Guidance in the 2021 ES. Diffusion tube and automatic sites located along Marylebone Road, Cromwell Road and along A5 Kilburn High Street (north of Edgware Road) were included in the verification process with detailed information presented in Technical Appendix 7.4 of the 2021 ES. It was confirmed that no point sources would be introduced as part of the 2021 proposed development. The 2021 proposed development was proposed to connect into the energy centre within the adjacent WEG development which includes high efficiency condensing gas boilers and a combined Heat and Power (CHP) plant. It was confirmed that the WEG CHP would operate at a capacity capable of serving WEG, 14-17 PG and the 2021 proposed development. The WEG energy centre stack is located north of site at the top of WEG Block A (. The impacts of the WEG energy centre on existing (off-site) receptors were considered as part of the EIAs undertaken for WEG and 14-17 PG and therefore no assessment of the energy centre emissions on off-site receptors was carried out in the 2021 ES. It was confirmed that the stack emissions previously modelled remained valid for the 2021 proposed development, that is, the increased number of units to be delivered by the 2021 proposed development would be accommodated within the existing capacity of the WEG energy centre. The WEG energy centre emissions impacts and associated effects on on-site human health receptors (site suitability) were therefore assessed in the 2021 ES. The WEG energy centre emissions and methodology were provided in the Methodology section of the 2021 Air Quality chapter and detailed in Technical Appendix 7.3 of the 2021 ES. An air quality neutral assessment was provided in the Assessment of Effects section of the 2021 Air Quality chapter. Particulate Matter (PM_{10} and $PM_{2.5}$) with the 2021 proposed development in place was assessed against UK National Air Quality Objectives and against WHO Guidelines. The above responses remain valid for the 2022 amended proposed development with updated information presented in corresponding Replacement ES

[25] Westminster City Council, 2020. Air Quality Action Plan 2019 - 2024

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
		documents. However it is noted that the 2022 amended proposed development's energy strategy now comprises an air source heat pump (ASHP) system and connection to the WEG energy centre is only to provide for resilience.
EHO email 6 October 2020	Operational air quality impacts should be considered.	For the 2021 ES, operational air quality impacts were assessed in respect of site suitability for the proposed on-site residential units only, as the operational traffic flows were below the EPUK/IAQM screening thresholds. For the 2022 replacement chapter an assessment of the loop road north of WEG Block A has been undertaken on account of the amended proposals for Newcastle Place and is reported in the Assessment of Effects section of this chapter.
Avison Young Independent Review (March 2021)	Clarification is required as to how the ES will deal with the assessment of flexible commercial floorspace (class E) so as to ensure the robust assessment of all likely significant environmental effects arising from the proposed development. This will be particularly important for assessments which are dependent upon floorspace areas.	The introduction of Class E was intended to provide flexible use. The use class by definition is wide-ranging to allow variance in the end use. As with all matters of potential variance the worst-case scenario for each specific specialism would be assessed. However, in the instance of the 2021 proposed development, pre-application consultation with WCC concluded that specific uses were to be delivered within Class E, namely office space, affordable workspace and flexible commercial space For the 2022 amended proposed development, the specific Class E uses have been updated following consultation with the GLA and assessed accordingly in this replacement chapter.
	Further quantified information is required with respect to likely traffic volumes and flows associated with the proposed development (both in isolation and with relevant cumulative schemes) to allow a more robust and informed judgement as to whether it is appropriate to scope an	In respect of the 2021 ES, Technical Appendix 2.2 and 2.3 ES Volume 3 included summaries of the Applicant's responses to the independent review comments (10-12). Avison Young concluded that, based on the responses provided,

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
	assessment of competed and operational traffic emissions out of the air quality assessment.	and subject to reconfirmation at the conclusion of the EIA, the scope, methodology and proposed approach for the air quality assessment was appropriate. This included omitting an assessment of emissions arising from the WEG energy centre. The confirmed traffic flows uplift for demolition and construction and completed development stage were presented in Technical Appendix 7.3 of the 2021 ES. Traffic uplift for both stages was predicted to be below the IAQM EPUK criteria. This was consistent with the data presented during consultation with Avison Young.
	Clarification is required as to whether the ES will include for a full assessment of the additional emissions arising from the increased energy loading of the WEG CHP plant.	A full assessment of the WEG energy centre plant was not undertaken in the 2021 ES as the impacts of the energy centre on existing (off-site) receptors were fully considered within historical EIAs. It was confirmed by the Applicant's MEP consultants that there is sufficient spare capacity to service the 2021 proposed development. The energy centre emissions impacts and associated effects on on-site human health receptors (site suitability) were assessed in the 2021 Air Quality chapter. The existing energy centre emissions and methodology were provided in the Methodology section of 2021 Air Quality chapter and detailed in Technical Appendix 7.3 of the 2021 ES. This remains the case for the 2022 replacement chapter and appendices.
	Clarification is sought regarding the rationale for the use of an existing baseline year of 2019.	As was recognised by the Avison Young independent review, 2019 is the latest year of fully available air quality monitoring data, also representative of a pre-COVID 19 pandemic baseline, and therefore 2019 was the most appropriate baseline year to consider in the 2021 ES.

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
		This remains the case for the 2022 replacement chapter.
EHO Input to Scoping Opinion	When assessing impacts, it is recommended that pre-construction baselines of the WEG should be considered to ensure that impact magnitude against a true baseline are fully considered, rather than against an enhanced background.	Data for the year 2019 was used to inform the baseline of the 2021 ES. 2019 is the latest year of fully available air quality monitoring data, also representative of a pre-COVID19 pandemic baseline, and therefore 2019 was considered to be the most appropriate baseline year to consider. This remains the case for the 2022 replacement chapter.
	Current baselines for noise, vibration and air quality parameters have all been impacted by current COVID19 restrictions and lockdowns and therefore may be reduced compared to a pre-COVID19 scenario. It is recommended that cross referencing with representative data from other projects in proximity to the site is utilised, specifically for generating the noise and vibration baselines.	
	When assessing the magnitude of any impacts the Applicant is encouraged to use a worst-case scenario when assessing future impacts. When assessing the site suitability and any impacts to sensitive receptors within and adjacent to the development, the worst-case use classes included in Class E should be considered (for example nurseries and other air quality sensitive uses).	As indicated above, pre-application consultation with WCC in respect of the 2021 proposed development concluded that specific uses would be delivered within Class E and that office space, affordable workspace and flexible commercial space were to be delivered. For the 2022 amended proposed development, the specific Class E uses have been updated following consultation with the GLA and assessed accordingly in this replacement chapter.
EHO Input to Scoping Opinion	Non road mobile machinery should be screened and scoped into the assessment where possible.	Information regarding the demolition and construction works including best practice mitigation measures for site plant and Non-Road Mobile Machinery (NRMM), was presented in ES Chapter 5: Demolition and Construction Description of the 2021 ES. NRMM should be compliant with the current standards stage IV for construction machinery operating in the Central Activities Zone, as set out in the Control of Dust and Emissions during Construction and Demolition SPG and NRMM Practical Guide[26].

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
EHO Input to Scoping Opinion		This remains the case for the updated Chapter 5(R): Demolition and Construction.
	Relevant air quality objectives for assessment should follow Box 1.1 of LLAQN TG19.	Box 1.1 of LLAQN TG19/LAQM TG(16) was reproduced in Table 7.4 of the 2021 Air Quality Chapter. The locations where the objectives apply were determined as outlined in LLAQN TG19/LAQM TG(16). For the updated assessment, Box 1.1 of LLAQN TG19/LAQM TG(22) has been reproduced in Table 7.4 of this replacement chapter.
	Outdoor seating areas for commercial uses should be assessed against the 1 Hour Mean where they are proposed.	The site suitability, including outdoor seating areas, was assessed in the Assessment of Effects section of the 2021 Air Quality chapter. This remains the case for this 2022 replacement chapter.
	Process contribution from the district heating energy centre need to be considered for future users and occupiers of the proposed development and should include impacts to the residential roof terrace garden areas.	The energy centre process contribution impacts and associated effects on on-site human health receptors (site suitability), including roof terrace garden areas, was assessed in the Assessment of Effects section of the 2021 Air Quality chapter. This remains the case for the 2022 replacement chapter.
	Impacts from traffic cannot be scoped out of assessment unless there is robust traffic data to demonstrate that proposed vehicle trips including any cumulative scheme trips fall below the threshold set out in the EPUK and IAQM. In the absence of any restrictions to the proposed private car ownership travelling to the site and parking in nearby streets/within the neighbouring development, impacts from vehicle traffic will still need to be considered further.	The 2021 proposed development operational impacts were assessed against EPUK/ IAQM guidance and was discussed in the Assessment Scope section of the 2021 Air Quality chapter. Technical Appendix 7.2 of the 2021 ES highlighted that while the Applicant would take steps to encourage future residents not to own personal cars (e.g. implementation of residential travel plan), it is unavoidable that some would still elect to own vehicles. Where these residents choose to park these vehicles, would be beyond the control of the Applicant. It would not be possible for the Applicant to prevent future residents from owning a vehicle and

[26] Cleaner Construction for London, 2020. Non-Road Mobile Machinery (NRMM) Practical Guide. V4. September 2020.

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
EHO Input to Scoping Opinion		attempting to park on nearby streets. However, it seems reasonable that were this to be the case, those who elect to purchase a local parking permit would only do so if it were possible for them to park in the immediate vicinity of their residence. If the surrounding streets are extremely busy, residents are likely to not opt for this inconvenient and inconsistent approach and will seek more appropriate methods. For example a long stay private garage or not owning a car. The number of cars that can be parked on the surrounding roads is finite and therefore not subject to change if the proposal is approved. Furthermore, it would be beyond the scope of the transport consultants to predict the number and location of these additional vehicles. Therefore it would not be possible to take account of these operational traffic movements in the air quality assessment. This remains the case for the 2022 amended proposed development and the 2022 replacement chapter.
	The impacts from any increases in CHP emissions to both existing and receptors should be considered to reflect any changes. A true worst-case scenario should be used (CHP operating continually for 365 days at maximum capacity). It is recommended that 3 years metrological data is used when modelling point sources to avoid any seasonal variability. Back-up generators also need to be considered and included in the detailed assessment.	The existing WEG energy centre emissions and methodology were provided in the Methodology section of the 2021 Air Quality chapter and detailed in Technical Appendix 7.3 of the 2021 ES. The approved energy centre equipment and emissions are considered to remain the same as assessed for the historical WEG and 14-17 PG EIAs, including the operational profile. This remains the case for the 2022 replacement chapter.
	Where extraction from the basement is proposed this can act as a point source for vehicle emissions. Assessment should be scoped in.	The 2021 proposed development car park extraction system was assessed in the 2021 Air Quality chapter against EPUK/ IAQM guidance and was discussed in the Assessment Scope section of that chapter. This remains the case for the 2022 replacement chapter.
	The assessment of the suitability of the site should consider the London Councils guidance where it applies a 5 % buffer to the national air quality objectives and it is recommended that this is used.	The site suitability of the 2021 proposed development considered the London Councils Guidance and was presented in the Assessment of Effects section of the 2021 Air Quality chapter. This remains the case for the 2022 replacement chapter.
	The air quality neutral assessment should include combustion plant associated with the WEG development and include any other point sources for example backup generators (testing and maintenance cycles only). The assessment should be based on data from the approved transport assessment for vehicle emissions and from building emissions accurate energy demand from vehicle emissions and for building emissions accurate demand for the CHP or where this is not available assumed 365 days for 24 hours a day usage.	The air quality neutral assessment for the 2021 proposed development was presented in the Assessment of Effects section of the 2021 Air Quality chapter. The energy strategy and connection to WEG Energy Centre was discussed in the Assessment Scope section of the 2021 Air Quality chapter. This remains the case for the 2022 replacement chapter.
	Impacts from back-up generators will need to be screened and where emissions exceed criteria than they should be included in the detailed assessment.	The need to undertake an assessment of the back-up generators was discussed in the Assessment Scope section of the 2021 Air Quality chapter. This remains the case for the 2022 replacement chapter.
	Air quality positive is included in the new London Plan. Should further information become available before submission of the EIA then air quality positive should be included.	For the 2021 proposed development it was considered premature to include an air quality positive statement. Guidance to assist developers in the preparation of Air Quality Positive (AQP) statements was at a pre-consultation stage at the time of the 2021 ES. The AQP Guidance is currently at consultation stage[27] and is therefore not adopted. The AQP Consultation Guidance expects that air quality expertise is engaged from an early stage and throughout the design process to

[27] Greater London Authority, 2021. London Plan Guidance – Air Quality Positive. Consultation draft. November 2021. London

Table 7.1: Summary of Pre- and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
EHO Input to Scoping Opinion		ensure that new developments are designed and built, as far as it is possible, to improve local air quality and reduce the extent to which the public is exposed to poor air quality. The proposed development design process was initiated prior to the 2021 London Plan and the introduction of the AQP concept, and therefore the AQP approach could not be applied retrospectively. Although a specific AQP approach was not followed during the design process, the proposed development masterplan was arrived at after thorough design evolution processes during which a range of options and alternatives were considered, as presented in ES Chapter 3(R): Alternatives and Design Evolution. The design process for both the 2021 and 2022 proposals has actively sought to reduce impacts to local air quality and to minimise exposure of the new on-site population to poor air quality.
Avison Young Report and Independent Review of 2021 ES (June 2021)	Minor clarification responses in respect of the 2021 Air Quality chapter.	See Technical Appendix 2.3(N) of ES Volume 3(R) for responses.

7.13 No further consultation relating to the air quality assessment has been undertaken since the previous submission. Due to the similar nature of the 2022 amended proposed development, the scope and methodology agreed in March 2021 are considered to remain valid.

7.14 In addition, there has been no request for amendments to the previously adopted scoping opinion and in accordance with Regulation 18(4)(a), the updated EIA has been undertaken and the 2022 Replacement ES prepared based on the EIA Scoping Opinion issued on 25 March 2021.

7.15 However, in respect of road traffic emissions previously scoped out of the EIA, a targeted assessment of traffic emissions have been undertaken in light of the amended proposals for Newcastle Place, for completeness.

Assessment Scope

7.16 The updated assessment has been based on the information presented in ES Chapter 4(R): 2022 Amended Proposed Development Description and ES Chapter 5(R): Demolition and Construction Description, as well as the 3D height and massing model the traffic data provided by the Applicant's transport consultant (Arup) and the WEG CHP plant emission data re-confirmed to be valid by the Applicant's MEP consultants (WSP/Buro Happold) for a robust site suitability assessment at on-site receptors.

7.17 The assessment has been undertaken in accordance with the relevant guidance for each stage and account has been taken of all applicable legislation, guidance and policy.

Technical Scope

7.18 The technical scope has been informed by the EIA Scoping Report along with the consultation summarised in the Consultation Section.

7.19 The assessment considers the impacts and effects of the 2022 amended proposed development in isolation and in combination with cumulative schemes in respect of the following:

- Demolition and construction stage activity dust emissions following the London SPG, identifying appropriate demolition and construction mitigation measures based on the identified level of risk;
- Demolition and construction traffic emissions on the main road network;
- Completed development road traffic emissions and the associated effects on human health receptors both on-site and off-site;
- Impacts to existing receptors using the EPUK/IAQM Guidance on Planning for Air Quality;
- The site's suitability for the 2022 amended proposed development including the impacts from the WEG energy centre emissions; and
- An air quality neutral assessment to demonstrate compliance with the Mayor of London's Sustainable Design and Construction SPG.

7.20 Information regarding the demolition and construction works and weekly traffic flows for the 2022 amended proposed development and specific activities, is presented in ES Chapter 5(R): Demolition and Construction Description of this Volume. Information regarding the demolition and construction stage AADT flows is presented in Technical Appendix 7.3(R), ES Volume 3(R). The maximum demolition and construction stage AADT flows are predicted to be five heavy goods vehicles (HGVs) along A404 Harrow Road eastbound (west and east of Paddington Green). Demolition and construction works' traffic flows would therefore not be expected to exceed the threshold of 25 AADT HGV movements within an AQMA for an assessment to be necessary according to EPUK/IAQM Guidance. HGV movements would be controlled through the implementation of a CEMP and CLP, which would be secured by means of appropriately worded planning conditions. The effects of demolition and construction related traffic emissions would be temporary and not of a scale that would give rise to significant effects. Overall, considering the IAQM criteria for assessing significance, the air quality effects of the 2022 amended proposed development on existing receptors from construction and demolition traffic would be temporary, medium-term and Not Significant. Accordingly, demolition and construction traffic emissions have not been considered further within this assessment.

7.21 The traffic volumes and flows associated with the completed development stage are detailed in Technical Appendix 7.3(R), Volume 3(R). The 2022 amended proposed development would be car free, except for the provision of nominal disabled car parking. The 2022 amended proposed development is expected to generate a maximum of 83 AADT vehicle movements as a result of car-parking for the mobility impaired, taxis and servicing. However, AADT flows are expected to increase by 544 along the loop road (north of WEG Block A), due to the stopping up of Newcastle Place, causing the traffic to reroute. During the completed development stage, the change in traffic flows brought about by the 2022 amended proposed development on the loop road would be above the threshold of 100 AADT within an Air Quality Management Area (AQMA) for an assessment to be necessary according EPUK/IAQM Guidance.

7.22 The 2022 amended proposed development's Ventilation Statement[28] shows that the basement exhaust vent would be located at ground level at Block J facing Newcastle Place, with the vent likely to be placed horizontally within landscaping. Final intake and exhaust positions in the landscape are to be established during the detailed design phase. The 2022 amended proposed development is expected to generate 50 AADT trips to the basement car park. The 2022 amended proposed development would therefore generate less than the EPUK/IAQM criteria for when a detailed assessment is required. The traffic flows

[28] Buro Happold, 2022. Paddington Green Police Station Ventilation Statement. 0049340-BHE-XX-XX-RP-VS-0001. October 2022

and vent location are such that the emissions would not be expected to have a noticeable impact on air quality on-site. Accordingly, the car park extraction emissions have not been considered further within this assessment.

7.23 At the time of writing this chapter, a life safety emergency diesel back-up generator with net thermal input of approximately 1.4 MWth is proposed within the plant space of Block J with exhaust at roof level. The generator equipment model and exact testing regime times are not currently known, but the generator would be expected to follow a testing regime of monthly run test and six monthly load test. Based on professional experience, the monthly test would be expected run for a short period of time between 30 minutes to one hour. Given the expected short period of testing operation (less than 18 hours a year) and the expected location of the exhaust away from sensitive residential receptors, there is no potential that the annual mean and hourly mean NO_2 objectives would be exceeded. Significant plant emissions are therefore unlikely. Accordingly, assessment of the generator emissions has not been considered further within this chapter.

7.24 The 2022 amended proposed development's Energy Strategy, proposes the installation of high temperature air source heat pumps (ASHP), to provide the heating and cooling load to residential and non-residential uses, and photovoltaic panels (PV) on the roofs of the proposed buildings. In addition, the proposed development connects to the WEG energy centre delivered as part of the WEG consented scheme, for resilience purposes only.

7.25 WSP has undertaken an assessment of the WEG energy centre which indicate that there is sufficient capacity to serve the 2022 amended proposed development on the assumption that some of the increased energy demand would be provided from the ASHP and PV to be included with the 2022 amended proposed development. As discussed in Table 7.1, a full assessment of the WEG energy centre plant has not been undertaken as the impacts of the energy centre on existing (off-site) receptors and air quality neutral building emissions were fully considered within the previous EIAs undertaken for WEG and 14-17 PG. It has been confirmed that there is sufficient spare capacity to service the 2022 amended proposed development.

7.26 Given the proximity of the 2022 amended proposed development to the WEG energy centre, the energy centre emissions, impacts and associated effects on human health receptors introduced by the 2022 amended proposed development (on-site receptors and site suitability) have been assessed.

Spatial Scope

7.27 The study area encompasses the area where significant effects on air quality could arise from the 2022 amended proposed development. It comprises the site and the surrounding road network within the study area and incorporates on-site sensitive receptors located adjacent to these roads and off and on-site receptors overlapping with the proposed demolition and construction phases.

7.28 The study area for the demolition and construction stage assessment is defined as up to 350 m from the site boundary for the assessment of demolition and construction dust emissions, and 50 m of the route(s) used by demolition and construction vehicles on the public highway, up to 500 m from the site entrance(s) as per the Sustainable Design and Construction London SPG.

7.29 For the completed development stage assessment, the modelling study area for human health receptors for road traffic emissions is defined as roads within 250 m of the site, on-site and off-site receptors and those roads which experience an increase in development traffic leading to potential adverse effects on local air quality, as per EPUK/IAQM Guidance[29]. The study area is showed in Figure 7.1.

7.30 No designated ecological sites or other sensitive ecological receptors have been identified within the study area.

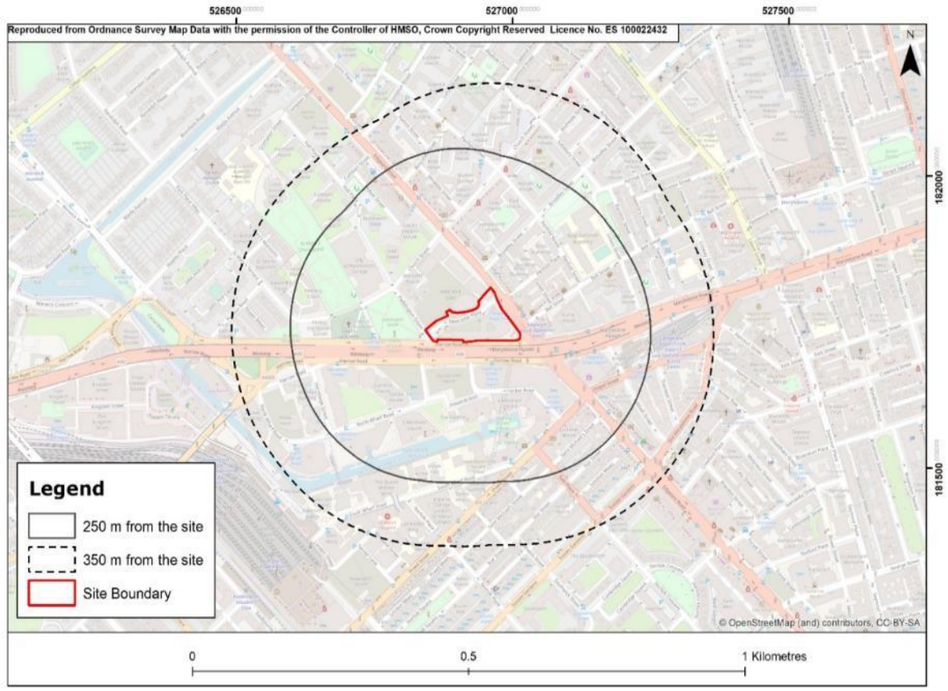


Figure 7.1: Study Area

Temporal Scope

7.31 The 2022 amended proposed development programme is based on the assumption that demolition commences on-site in Q3 2023. For the purpose of this EIA, based on commencement of works in Q3 2023, the development works are anticipated to be undertaken over a seven year period, with completion targeted for Q3 2030.

7.32 The assessment has considered impacts arising during the demolition and construction stage which would be expected to be temporary and medium-term (5-10 years) in nature and from the completed development stage which would be expected to be permanent and long-term in nature (i.e. more than 10 years).

7.33 The baseline has been informed by continuous and passive air quality monitoring conducted by the Royal Borough of Kensington and Chelsea (RBKC), the London Borough of Brent (LBB) and WCC covering up to 2019.

7.34 Traffic data was provided by the Applicant's transport consultant, Arup, and complemented with data from the Department of Transport (DfT) road traffic statistics[30] and London Atmospheric Emissions Inventory (LAEI)[31]. Arup assumed background traffic growth is generally not expected in Central London locations and therefore no TEMPRO growth has been applied to future year scenario. Traffic growth has been accounted for by applying traffic from the list of identified cumulative schemes in the local area.

7.35 Subject to the grant of planning permission, the 2022 amended proposed development's earliest first occupation would be expected in Q1 2027 following fit out and landscaping works of Block I; with full completion in 2030. Although, road traffic emissions are predicted to decline with time, to present a robust assessment and to take account of uncertainties relating to future vehicle emissions, emission

[30] https://roadtraffic.dft.gov.uk/#6/53.318/-10.580/basemap-regions-countpoints.

[31] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2016.

factors and background concentrations for the expected first occupation year of 2027 have been combined with full proposed development traffic flows for 2030 to inform the air quality assessment.

7.36 The modelling assessment was based on 2019 monitoring as 2019 was the latest pre-pandemic year with full monitoring results available.

7.37 In carrying out the assessment of completed development stage traffic impacts, the following temporal scope for the assessment scenarios has been assessed:

- Scenario 1: 2019 Existing Baseline (for model verification);
- Scenario 2: 2030 Future Baseline (combined with 2027 emissions factors and backgrounds);
- Scenario 3: 2030 Future Baseline + Proposed Development (combined with 2027 emissions factors and backgrounds); and
- Scenario 4: 2030 Future Baseline + + Proposed Development + Cumulative Development (combined with 2027 emissions factors and backgrounds).

7.38 The need for mitigation has been based on Scenario 4 described above, which is considered to be the worst-case traffic scenario.

7.39 To assess the potential impacts and associated likely effects of the WEG energy centre on the future on-site receptors of the 2022 amended proposed development, the modelled concentration of nitrogen dioxide (NO_2), known as process contribution (PC), has been added to the completed development stage road traffic emissions Scenario 4 predicted concentrations to obtain the predicted environmental concentration (PEC).

Baseline Characterisation Method

Desk Study

7.40 In order to establish the existing baseline (discipline) conditions in the study area, relevant data was reviewed and assessed. The data sets and associated sources can be summarised as follows:

- Continuous and passive air quality monitoring conducted by WCC covering up to 2020 and reported in the 2021 Air Quality Annual Status Report (ASR)[32];
- Continuous air quality monitoring conducted by RBKC covering up to 2020 and reported in the 2021 Air Quality ASR[33];
- Continuous air quality monitoring conducted by LBB covering up to 2020 and reported in the 2021 Air Quality ASR[34];
- Defra's UK Air Automatic Urban and Rural Network (AURN)[35]; and
- National pollution maps published by Defra[36]. These cover the whole country on a 1x1 km grid.

Field Study

7.41 Field study/data collection was not required at the site as the data provided by other sources was deemed to be adequate and representative of the site conditions.

Assessment Method

7.42 The assessment has been based on the information and planning application drawings as presented in ES Chapter 4(R): 2022 Amended Proposed Development Description, as well as the framework CEMP reported in ES Chapter 5(R): Demolition and Construction Description.

Methodology

7.43 Full details of both demolition and construction stage and completed development stage assessment methodology, data and modelling parameters are provided in Technical Appendix 7.3(R), ES Volume 3(R).

Demolition and Construction Stage

Dust Emissions

7.44 During the demolition and construction stage, the main potential impacts would be dust annoyance and locally elevated concentrations of PM_{10}. The suspension of particles in the air is dependent on surface characteristics, weather conditions and on-site activities. These 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. Separation distance is also an important factor as significant dust annoyance is usually limited to within a few hundred metres of its source. This is due to the rapid decrease in concentrations with distance from the source caused by dispersion.

7.45 Likely effects as a result of construction dust emissions, unlike other air borne pollutants, cannot be accurately predicted and quantified because they are highly dependent on local weather conditions and mitigation measures implemented at source.

7.46 This assessment has followed the London SPG on Control of Dust and Emissions during Construction and Demolition[37] which was based on IAQM guidance[38] published in 2014 and updated in 2016. The assessment methodology considers three separate dust effects and defines their significance according to the sensitivity of the study area, as follows:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM_{10}.

7.47 The assessment has been carried out in a number of steps:

- Step 1: the need for a construction assessment was screened, based on the proximity of receptors;
- Step 2: the risk of dust impacts was assessed taking into account the level of activity and the proximity of sensitive receptors;
- Step 3: site specific mitigation integral to/embedded within the development proposals was reviewed and supplemented where necessary; and
- Step 4: the significance of the dust effects, after applying the site-specific mitigation, was assessed.

7.48 The guidance recommends that no assessment of the significance of effects is made without mitigation in place, as mitigation is assumed to be secured by legislation, planning conditions, or by policy requirement.

7.49 With appropriate mitigation in place, the residual effect of demolition and construction impacts on air quality is always assessed as not significant. The purpose of the construction dust assessment is therefore to identify the appropriate level of mitigation to employ.

7.50 Full details of the dust risk assessment methodology which includes the assessment criteria are provided in Technical Appendix 7.1(R), ES Volume 3(R).

Completed Development Stage

Road Traffic Emissions

7.51 In carrying out the assessment of completed development stage traffic impacts, the scenarios described in the Temporal Scope section have been assessed.

[32] Westminster City Council, 2021. Westminster City Council Air Quality Annual Status Report for 2020.
[33] London Borough of Kensington and Chelsea, 2021. The Royal Borough of Kensington & Chelsea Air Quality Annual Status Report for 2020.
[34] London Borough of Brent, 2021. London Borough of Brent Air Quality Annual Status Report for 2020.
[35] Defra, 2021. Site Information for London N. Kensington (UKA00253). https://uk-air.defra.gov.uk/networks/site-info?uka_id=UKA00253.
[36] Department for the Environment, Food and Rural Affairs (Defra), 2019. 2017 Based Background Maps for NOx, NO_2, PM_{10} and $PM_{2.5}$.
[37] Greater London Authority, 2014. The Control of Dust and Emissions during Construction and Demolition.
[38] Holman et al, 2016. IAQM Guidance on the assessment of dust from demolition and construction V1.1. Institute of Air Quality Management, London.

7.52 The changes to air quality due to traffic emissions have been predicted using the ADMS Roads[39] (Version 5.0.0.1) dispersion model. This model has been extensively validated against both field and laboratory data sets and against monitoring data in cities throughout the UK.

7.53 The model requires the user to provide various input data, including meteorological data, AADT flows, the proportion of HGVs, road characteristics (including road width and street canyon height, where applicable), vehicle speed, etc. The terrain within 250 m of the modelled network is relatively flat with slopes less than 10 %, and therefore terrain effects have not been included within the modelling. A street canyon module has been added due to the built up nature and likely canyons occurring within the study area.

7.54 The model was run using appropriate and representative meteorological data from Heathrow Airport meteorological station. Traffic emissions were calculated using the Emission Factor Toolkit (EFT) v11, which utilises nitrogen oxides (NO_x), PM_{10} and $PM_{2.5}$ emission factors from the European Environment Agency COPERT 5 emission tool[40]. The traffic data was entered into the ADMS roads model, along with speed data to provide combined emission rates for each of the modelled road links. The predicted concentrations of roadside NO_x were converted to roadside NO_2 using the LAQM conversion calculator available from the Defra air quality website[41].

7.55 The accuracy of the modelled concentrations was verified by comparing the concentrations predicted for the 2019 existing baseline scenario with measured concentrations. Where the model is observed to be under predicting the modelled concentrations are adjusted following the methodology outlined in LAQM TG(22)[21].

Site Suitability

7.56 In carrying out the assessment of potential on-site impacts from road traffic emissions, the scenarios described in the Temporal Scope section have been assessed following the methodology described above for road traffic emissions.

Energy Centre Emissions

7.57 There is no energy centre included within the 2022 amended proposed development; however, a connection would be made into the wider WEG energy centre for resilience purposes only. Consideration has been given to emissions arising from this source which could impact air quality at the proposed future receptors. No other significant point source emissions of pollutants are anticipated.

7.58 The WEG energy centre dispersion model parameters and emissions have been extracted from the WEG EIA Chapter 9 Air Quality assessment[42] submitted as part of the planning application reference 16/12162/FULL. This assessed the energy centre impacts on the site.

7.59 The energy centre emissions were modelled using the ADMS5 (v5.2) air quality dispersion model with 2017-2019 Heathrow meteorological data. To ensure a worst-case assessment, it was assumed that 35 % of oxides of nitrogen was present as nitrogen dioxide for the purposes of modelling short-term mean concentrations, and 70 % for long-term mean concentrations. In practice, the proportion present as nitrogen dioxide would be significantly lower.

Cumulative Stage

7.60 The same process as indicated for the completed development stage has been followed for the cumulative assessment. Cumulative schemes in the local area have been accounted for in the traffic data. Full details of the cumulative schemes included are provided in ES Chapter 2(R): EIA Approach and Methodology.

Air Quality Neutral

7.61 The WCC SPD outlines expected content of air quality assessments and air quality neutral assessments submitted as part of a planning application. The planning document requires the appropriate GLA guidance to be followed when assessing air quality neutral. The London Plan Guidance Air Quality Neutral Consultation Draft published in 2021[16] provides an update to the Air Quality Neutral benchmarks considering the most up-to-date evidence and provides clarification on how to apply the benchmarks to support planning applications. The guidance states that:

- where developments meet the definition of 'car-free', they can be assumed to meet the Transport Emissions Benchmark (TEB). Developments that are defined as 'car-free' may include provision for disabled persons parking, in line with the London Plan; and
- the TEB does not include trips generated by deliveries and servicing, taxis or heavy vehicle movements from non-occupiers.

7.62 In line with the 2021 Air Quality Neutral Consultation Draft, the 2022 amended proposed development would be considered air quality neutral. However, as the final revised guidance has not been published, an air quality neutral assessment has been carried out in line with the 2014 'Air Quality Neutral Planning Support Update: GLA80391' guidance[43].

Assessment Criteria

7.63 The criteria used to assess if an effect is significant or not, is set out in subsequent sub-sections. This is determined by consideration of the sensitivity of the receptor and magnitude of impact. In considering the significance of an effect, consideration has been given to the duration of the effect, the geographical extent of the effect and the application of professional judgement.

7.64 The air quality significance criteria have been informed by specific published EPUK/IAQM Guidance, which differs from that used in other assessments within the 2022 Replacement ES, as highlighted in ES Chapter 2(R): EIA Process and Methodology.

7.65 The air quality neutral assessment follows published guidance which does not require reporting on the significance of effects. Accordingly, the air quality neutral assessment has not been considered in the following sub-sections.

Receptor Sensitivity/Value Criteria

Demolition and Construction Stage

7.66 The sensitivity of receptors has been classified as low, medium or high, in accordance with the criteria set out in Table 7.2.

Table 7.2: Receptor Sensitivity Criteria

Sensitivity	Criteria
Low	• The enjoyment of amenity would not reasonably be expected by users; or • The property would not reasonably be expected to be diminished in appearance, aesthetics or value by dust soiling; or • There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short-term car parks and roads.
Medium	• The users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or • The first occupants moving into residential dwellings on a large phased housing development; or • The appearance, aesthetics or value of their property could be diminished by soiling; or

[39] https://www.cerc.co.uk/environmental-software/ADMS-Roads-model.html.
[40] Department for Environment Food and Rural Affairs. Emissions Factors Toolkit. https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.htm.
[41] Department for Environment Food and Rural Affairs. NO_x to NO_2 calculator. https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc.
[42] Available at: https://idoxpa.westminster.gov.uk/online-applications/applicationDetails.do?previousCaseType=Property&keyVal=OIJOCGRPKP500&previousCaseNumber=KI73YURP0QQ00&previousCaseUprn=0100036081555&activeTab=summary&previousKeyVal=KI73ZQRP0QQ00
[43] Air Quality Consultants, 2014. Air Quality Neutral Planning Support Update: GLA80391.

Table 7.2: Receptor Sensitivity Criteria	
Sensitivity	**Criteria**
	• The people or property would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Indicative examples include parks and places of work.
High	• The users can reasonably expect enjoyment of a high level of amenity; or • The appearance, aesthetics or value of their property would be diminished by soiling; or • The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Indicative examples include dwellings, museums and other culturally important collections, medium- and long-term car parks and car showrooms.

Completed Development Stage

Human Health Air Quality Objectives

7.67 The Air Quality Objectives (AQOs) are the concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects on human health (including sensitive sub-groups) or ecosystems. In general, these are concentration thresholds, above which sensitive members of the public (e.g. children, the elderly and the unwell) might experience adverse health effects. Objectives are policy targets often expressed as maximum concentrations not to be exceeded either without exception or with a limited number of exceedances within a specified timescale.

7.68 For some pollutants, there are both a long-term (e.g. annual mean) objectives and a short-term (e.g. one hour mean) objectives. These periods reflect the varying impacts on health of differing exposures to pollutants. Long-term objectives are lower concentrations than short-term objectives owing to the chronic health effects associated with exposure to low concentrations of pollutants for longer periods of time.

7.69 The AQOs relevant for this assessment are presented in Table 7.3.

Table 7.3: Human Health Air Quality Objectives		
Pollutant	**Time Period**	**Objective**
NO_2	Annual Mean	40 µg/m^3
	1-hour mean	200 µg/m^3 not to be exceeded more than 18 times a year
PM_{10}	Annual mean	40 µg/m^3
	24-hour mean	50 µg/m^3 not to be exceeded more than 35 times a year
$PM_{2.5}$	Annual Mean	20 µg/m^3 (to be achieved by 2020)

7.70 There are no degrees of sensitivity of receptors to poor air quality, rather, the assessment is based on whether or not members of the public are likely to be present for the proposed averaging period of the objective. This is dependent on the land use at a particular location, i.e. the annual objective is applicable at residential, schools and hospitals, whilst the short-term objectives apply to locations where people are present for shorter periods such as commercial buildings, gardens, parks and shopping streets.

7.71 The AQOs have been applied to external air where there is relevant exposure to the public over the associated averaging periods within each AQO, as detailed in Table 7.4 and specified by LAQM TG(22)[21]. The AQOs have not been applied in indoor workplace locations, to internal air or where people are unlikely to be regularly exposed (i.e. centre of roadways).

[44] Greater London Authority, 2018. London Environment Strategy. London.

Table 7.4: Locations Where Air Quality Objectives Apply		
Averaging Period	**Objectives Should Apply at**	**Objectives Should Generally Not Apply at**
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties.
24-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties.	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term.
1-hour mean	All locations where the annual mean and 24-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably expect to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

World Health Organization

7.72 The London Environmental Strategy[44], published in May 2018, Policy 4.3.1.a states that "…*The Mayor will set new concentration targets for* $PM_{2.5}$*, with the aim of meeting World Health Organization guidelines by 2030…*" and WCC Air Quality Action Plan commits to target compliance with the 2005 WHO guidelines[45] for PM_{10} and $PM_{2.5}$ by 2030 as well.

7.73 The WHO guidelines relevant for this assessment are presented in Table 7.5.

Table 7.5: 2005 World Health Organisation Guidelines		
Pollutant	**Time Period**	**2005 Recommended Guidelines**
NO_2	Annual Mean	40 µg/m^3
PM_{10}		20 µg/m^3
$PM_{2.5}$		10 µg/m^3

Impact Magnitude Criteria

Demolition and Construction Stage

Dust Emissions

7.74 The criteria provided in the guidance produced by the IAQM was used to assess the potential risk of impacts to air quality from demolition and construction activity in the absence of mitigation during demolition and construction stage of the 2022 amended proposed development as outlined in Technical Appendix 7.1(R), ES Volume 3(R). The methodology combines the magnitude of dust emissions together with the sensitivity of the receptor to identify low, medium or high risk of dust impacts in the absence of mitigation for the four stages of construction: demolition, earthworks, construction and trackout.

[45] The World Health Organisation (WHO), 2005. Air Quality Guidelines.

Completed Development Stage

Road Traffic

7.75 The assessment of the 2022 amended proposed development impacts on local air quality has used the approach outlined by the EPUK/IAQM Guidance[24], which considers the change in air quality as a result of a proposed development on existing receptors. The guidance has produced a matrix which is used to calculate the impacts at individual receptor locations, as shown in Table 7.6.

7.76 The guidance takes into account both the magnitude of change at each receptor and the resulting overall concentration. The absolute concentration at the receptor is also taken into consideration i.e. if the receptor is close to or above the UK AQO, marginal changes in magnitude may be determined to be moderate; however if the receptor is less than 75 % of the UK AQO marginal changes in magnitude may be determined to be negligible.

Table 7.6: IAQM/EPUK Impact Descriptors for Individual High Sensitivity Receptors

Long-Term Average Concentration at Receptor with Development	Percentage (%) Change in Concentration Relative to Annual Mean Air Quality Objective (AQO)			
	<1	2 – 5	6 – 10	>10
75 % or less of AQO	Negligible	Negligible	Slight	Moderate
76 – 94 % of AQO	Negligible	Slight	Moderate	Moderate
95 – 102 % of AQO	Slight	Moderate	Moderate	Substantial
103 – 109 % of AQO	Moderate	Moderate	Substantial	Substantial
110 % of more of AQO	Moderate	Substantial	Substantial	Substantial

Notes:
Where concentrations increase, the impact is described as adverse, and beneficial where it decreases.
*% change rounded to nearest whole number. Where the % change is less than 0.5 % the impact would be Negligible.

7.77 It is difficult to predict impacts on short-term objectives from traffic impacts as the air quality model (as set up for the assessment) does not provide reliable prediction of one-hour mean NO_2 concentrations. However, research has concluded that exceedances of the one-hour mean objective are unlikely to occur where annual mean concentrations do not exceed 60 µg/m^3 [46,47]. This relationship was used to assess whether exceedances of the hourly mean objective are likely. Similarly, PM_{10} annual mean concentrations below 32 µg/m^3 was used to screen the 24 hour PM_{10} mean objective.

Site Suitability

7.78 There is no official guidance in the UK on how to assess the significance of air quality impacts of existing sources on proposed receptors introduced by a new development. In accordance with standard industry practice, the assessment of the site suitability for the 2022 amended proposed development uses has been scoped to predict air quality at the site and the significance of this is based on whether the AQOs for each pollutant are exceeded or not. In the event that predicted pollutant concentrations exceed the AQOs mitigation would be required to bring pollutant concentrations down to protect new receptors from poor air quality.

7.79 The ADMS Roads model has been used to predict annual average concentrations with compliance with the short-term objectives assessed.

Scale of Effect Criteria

Demolition and Construction Stage

Dust Emissions

7.80 Following the IAQM assessment methodology, with mitigation in place, demolition and construction residual effects would be temporary, medium-term due to the seven years of the demolition and construction programme and not significant.

Completed Development Stage

7.81 The IAQM Guidance states that the overall significance of the effect on air quality should be based on professional judgement, taking into account the predicted impacts at the modelled receptor locations and "*…will need to take into account such factors as:*

- *The existing and future air quality in the absence of the development;*
- *The extent of current and future population exposure to the impacts; and*
- *The influence and validity of any assumptions adopted when undertaking the prediction of impacts*."

7.82 The IAQM guidance states that the overall significance of the effect on local air quality, is a binary judgement, i.e. the overall effect is either significant or it is not significant, and there are no degrees of significance scale of the overall effect. At individual receptor locations, a moderate or substantial impact is judged to be significant, where-as a negligible or slight impact is not significant.

7.83 In the case of air quality, completed development effects are expected to be permanent and long-term, i.e. to persist for more than ten years.

7.84 In addition, as requested by WCC consideration has been given to the significance criteria outlined in the London Councils Air Quality and Planning Guidance[48] to determine the need for mitigation as detailed in Figure 7.2. The level of mitigation is further defined by the Air Pollution Exposure Criteria (APEC) table provided in Figure 7.3.

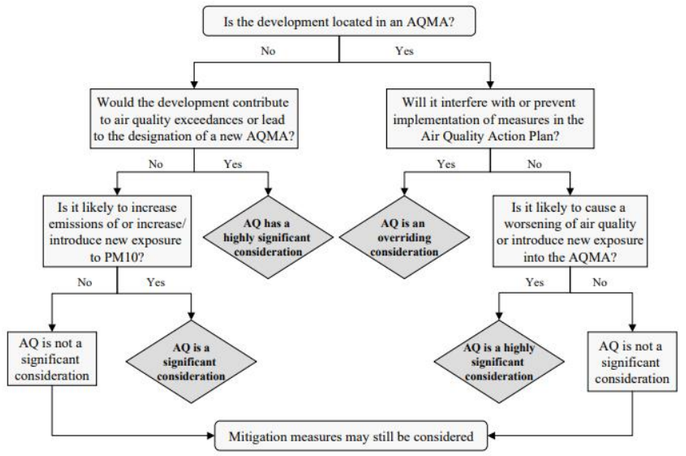


Figure 7.2: London Councils Significance Criteria

[46] A Cook, 2008. Analysis of the relationship between annual mean nitrogen dioxide concentration and exceedances of the one-hour mean.
[47] Laxen D. and Marner B., 2003. Analysis of the relationship between one-hour and annual mean nitrogen dioxide at UK roadside and kerbside monitoring sites.

[48] The London Air Pollution Planning and the Local Environment (APPLE) working group, Revised version January 2007, London Councils Air Quality and Planning Guidance.

	Applicable Range Nitrogen Dioxide Annual Mean	Applicable Range PM10	Recommendation
APEC – A	> 5% below national objective	**Annual Mean:** > 5% below national objective **24 hr:** > 1-day less thannational objective	No air quality grounds for refusal; however mitigation of any emissions should be considered.
APEC – B	Between 5% below or above national objective	**Annual Mean:** Between 5% above or below national objective **24 hr:** Between 1-day above or below national objective.	May not be sufficient air quality grounds for refusal, however appropriate mitigation must be considered e.g., Maximise distance from pollutant source, proven ventilation systems, parking considerations, winter gardens, internal layout considered and internal pollutant emissions minimised.
APEC – C	> 5% above national objective	**Annual Mean:** > 5% above national objective **24 hr:** > 1-day more than national objective.	Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures.

Figure 7.3: APEC Classes Defining Mitigation Recommendations

Assumptions and Limitations

7.85 The ADMS Roads model has been extensively validated against field data sets and their use has gained wide acceptance throughout the UK. However, no computer-based model is able to totally replicate actual conditions as it is required to simplify real-world conditions into a series of algorithms. The model used in this assessment is also dependent upon several sources of data which can have inherent uncertainties associated with them. The model uncertainty has been estimated using the root mean square error and is presented in Technical Appendix 7.3(R), ES Volume 3(R).

7.86 The assessment has relied on data provided by WCC, RBKC, LBB and Defra to characterise baseline conditions at the site. It has been assumed that these data have been reported correctly and the instruments used have been calibrated.

7.87 Potential on-site impacts from road traffic emissions have been assessed using traffic data provided by the Applicant's transport consultant, Arup, complemented with DfT and LAEI traffic flows.

7.88 The modelling has used 2019 background data, monitoring data, meteorological data and traffic data to verify the model. This was the latest year with full monitoring results available. The verification factor is therefore assumed to reduce the uncertainty regarding the vehicle emission factors for the 2019 baseline year.

7.89 The terrain within 250 m of the modelled network is relatively flat with slopes less than 10 %, and therefore terrain effects have not been included within the modelling.

7.90 The assessment has assumed air quality at background and roadside locations is expected to improve in future years due to the gradual renewal of the vehicle fleet with less polluting and more efficient models. Air Quality Consultants (AQC), an independent consultancy, has published three studies that support the overall assumption that air quality is anticipated to improve in the future and that the tools and methodology used in this assessment are conservative. In 2020, AQC published a study looking at trends in nitrogen oxides in the UK between 2013 to 2019[49]. The study concluded that there is an overall reduction trend in NO_x concentrations that have continued through 2019, stating "… *NO_x concentrations at roadside sites have reduced by an average of 5.14 % per year since 2013…*". Another study by AQC shows that EFT is most likely to over-predict drive-cycle average NO_x emissions from Euro 6 diesel cars in the future[50]. A further study concluded that the latest version of the EFT was suitable for the prediction of future pollutant concentrations without the need to undertake a sensitivity test[51]. National policies and London specific policies, such as London's Ultra Low Emission Zone (ULEZ),would further encourage vehicle fleet renewal in London and would hasten and the gradual renewal of the vehicle fleet. Evidence has suggested that since the introduction of the ULEZ in February 2017, there has been an overall reduction of 44 % in NO_2 concentrations at roadside sites in the central zone[52].

7.91 The completed development modelling has been based on 2027 emission factors and background concentrations, whilst utilising traffic flows for 2030. As road traffic emissions are predicted to decline with time, this is considered to provide an appropriately conservative assessment taking into account the uncertainties regarding future vehicle emission factors.

7.92 The WEG energy centre emissions assumed that 35 % of oxides of nitrogen was present as nitrogen dioxide for the purposes of modelling short-term mean concentrations, and 70 % for long-term mean concentrations.

Baseline Conditions

Existing Baseline

Local Air Quality Management

7.93 WCC has investigated air quality within its administrative area as part of its responsibilities under the LAQM regime. WCC has declared a borough wide Air Quality Management Area (AQMA), due to exceedances of the annual mean and 1 hour mean NO_2 objectives and annual mean and 24 hour mean PM_{10} objectives. The site is located within the AQMA and within the Edgware Road / Marylebone Road Air Quality Focus Area and is within the Ultra Low Emission Zone (ULEZ), expanded in 2021.

7.94 The WCC and LBB operate continuous automatic monitoring and passive diffusion tube monitoring of air quality at a number of locations within their boroughs. A summary of the closest and most representative monitoring locations is presented in Table 7.7 and the locations shown in Figure 7.4.

Table 7.7: Measured Annual Mean NO_2 Concentrations

Site ID	Type	Distance to Site (km)	Annual Mean (µg/m³)				
			2016	2017	2018	2019	2020
WCC							
Automatic							
Marylebone Road	K	1.2	87	84	85	63	44
Oxford Street, Selfridges	K	1.5	87	72	63	55	34
Duke Street	R	1.6	-	-	-	41	28
Cavendish Square	R	1.8	-	-	64	50	32

[49] Air Quality Consultants, 2020. Nitrogen Oxides Trends in the UK 2013 to 2019. January 2020. Available at: https://www.aqconsultants.co.uk/resources.
[50] Air Quality Consultants, 2020. Performance of Defra's Emission Factor Toolkit 2013-2019. February 2020. Available at: https://www.aqconsultants.co.uk/resources.
[51] Air Quality Consultants, 2020. Comparison of EFT v10 with EFT v9. September 2020. Available at: https://www.aqconsultants.co.uk/resources.
[52] https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/central-london-ulez-ten-month-report.

Table 7.7: Measured Annual Mean NO_2 Concentrations

Site ID	Type	Distance to Site (km)	Annual Mean (µg/m³)				
			2016	2017	2018	2019	2020
LBB							
Diffusion Tube							
BRT 57	R	2.3	85.3	84.2	64.4	LD	48.7
Objective			40				

Notes: Exceedances highlighted in **bold**. NO_2 annual means in excess of 60 µg/m³, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in **bold and underlined**
LD: Low Data Capture.
K: Kerbside; R: roadside

7.95 The results of NO_2 automatic monitoring which record hourly mean (short-term) concentrations are presented in Table 7.8.

Table 7.8: Measured Exceedances of Hourly Mean NO_2 Objective

Site ID	Number of Hours >200 (µg/m³)				
	2016	2017	2018	2019	2020
Marylebone Road	56	49	38	29	0
Oxford Street, Selfridges	1,391	168	1	3	0
Duke Street	-	-	-	-	0
Cavendish Square	-	-	-	0	0
Objective	18				

7.96 The results of PM_{10} and $PM_{2.5}$ monitoring at relevant automatic monitoring sites are presented in Table 7.9.

Table 7.9: Measured PM_{10} and $PM_{2.5}$ Concentrations

Site ID	2016	2017	2018	2019	2020
PM_{10} Annual Mean PM_{10} (µg/m³)					
Marylebone Road	29	27	26	24	N/A
Oxford Street, Selfridges	-	-	28	27	22
Cavendish Square	-	-	28	25	17
Objective	40				
PM_{10} Number of 24-hours exceeding 50 (µg/m³)					
Marylebone Road	15	12	5	11	N/A
Oxford Street, Selfridges	-	-	3	17	6
Cavendish Square	-	-	3	10	0
Objective	35				
$PM_{2.5}$ Annual mean (µg/m³)					
Marylebone Road	16	15	16	14	9
Objective	25				

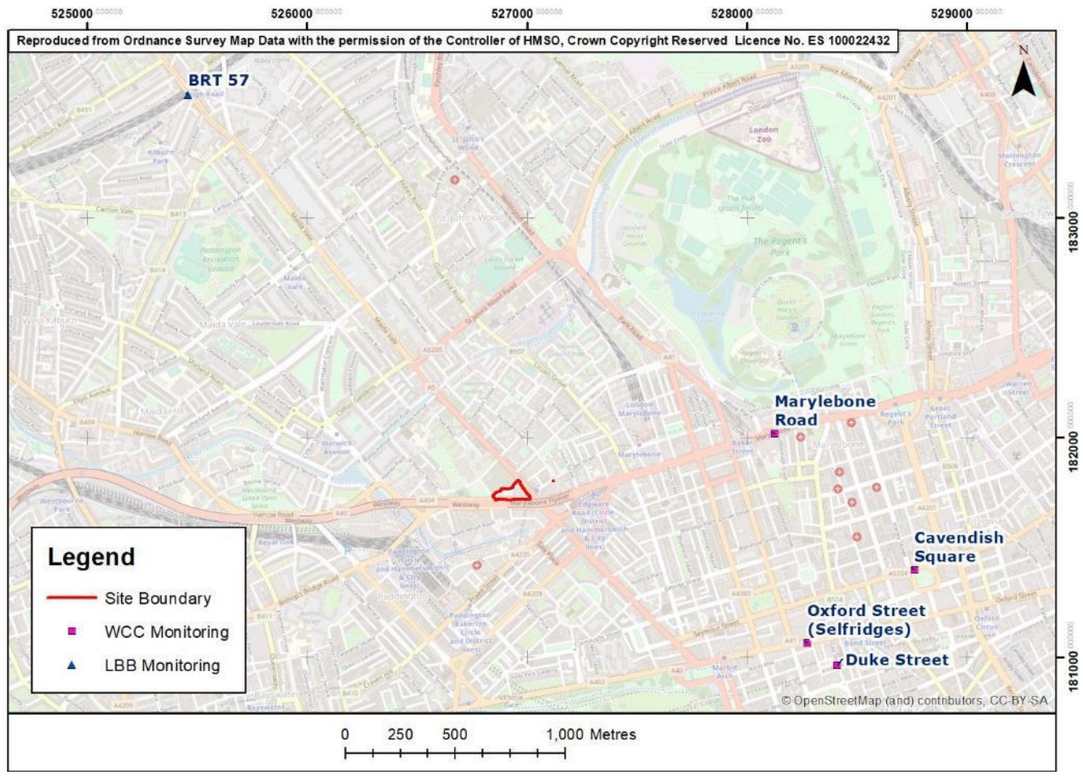


Figure 7.4: Air Quality Monitoring Locations

7.97 Roadside and kerbside measured NO_2 concentrations in the vicinity of the site demonstrate that there have been significant exceedances of the annual mean NO_2 NAQO at all locations from 2015 to 2019. There is evidence of reducing concentrations between 2016 and 2019, with a significant reduction in concentration recorded in 2019.

7.98 Exceedances of the 1-hour mean NO_2 objective have been reported at the automatic site on Marylebone Road between 2016-2018 and at Oxford Street in 2016. No exceedances of the short-term objective have been reported at these automatic sites in 2019.

7.99 Measured PM_{10} concentrations indicate that concentrations have been in compliance with the long and short-term objectives from 2016 to 2019. Measured $PM_{2.5}$ concentrations also comply with the annual mean NAQO. However, monitored concentrations at the roadside sites of both PM_{10} and $PM_{2.5}$ currently exceed the WHO guideline values.

Background Maps

7.100 Background concentrations are those levels that would be observed away from specific sources such as roads and industry. Defra provides modelled predictions of background concentrations of air pollutants over the whole of the UK with a grid resolution of 1x1 km.

7.101 In order to more accurately reflect background concentrations across the study area, Defra's mapped background concentrations have been compared against concentrations measured at North Kensington AURN and London Bloomsbury automatic urban background stations in 2019 to produce a calibration factor, which then has been applied to background concentrations across the study area. Full details of the background adjustment process are presented in Technical Appendix 7.4(R), Volume 3(R). Table 7.10 details the NO_2, PM_{10} and $PM_{2.5}$ background levels within the study area for 2019.

7.102 Concentrations measured in 2020 are significantly lower, this is likely due to the impacts of the Coronavirus (Covid-19) pandemic causing reduced travel.

7.103 NO_2, PM_{10} and $PM_{2.5}$ background concentrations are below the AQOs in 2019.

Table 7.10: Defra's 2019 Mapped Annual Mean Background Concentrations (µg/m³)

Year	Grid Reference (x, y)	NO_2	PM_{10}	$PM_{2.5}$
2019	526500, 181500	31.8	16.1	10.1
Objective		40	40	25

Assessment of Baseline Data

7.104 NO_2 concentrations at the site would be expected to be less than measured concentrations at the kerbside Marylebone Road automatic site; however, they are still likely to exceed the relevant AQOs.

7.105 As concentrations fall-off rapidly on moving away from an emissions source, such as a main road, some variation in NO_2, PM_{10} and $PM_{2.5}$ concentrations across the site is expected. Concentrations at the site are likely to be highest closest to Harrow Road and Edgware Road, reducing gradually as distance from the main roads increases.

Future Baseline

7.106 Air quality at background and roadside locations is expected to improve in future years due to the gradual renewal of the vehicle fleet with less polluting and more efficient models. National policies such as the intention to ban new combustion engine private vehicle sales by 2030[53] will hasten and enforce this process. London specific policies such as the Ultra Low Emission Zone and Zero Emission Zone will further encourage vehicle fleet renewal in London.

7.107 Table 7.11 provides the projected NO_2, PM_{10} and $PM_{2.5}$ Defra background levels at the site in 2027 when the amended proposed development would potentially be first occupied.

7.108 The background concentrations are all below the relevant national objectives and WHO guidelines and confirm an expected decrease in background concentrations between 2019 and 2027.

Table 7.11: Defra's 2027 Mapped Annual Mean Background Concentrations (µg/m³)

Year	Grid Reference (x, y)	NO_2	PM_{10}	$PM_{2.5}$
2027	526500, 181500	24.6	14.8	9.2
Objective		40	40, 20*	20, 10*

* WHO recommended guideline. WCC pledge to commit to meeting the WHO recommended guidelines by 2030[54].

Sensitive Receptors

Existing and Future Receptors

7.109 The site is located in an urban area, with numerous sensitive receptors located in the study area. Sensitive receptors were selected to reflect places where members of the public would receive relevant exposure to annual mean and hourly pollutant concentrations from road traffic. When identifying road traffic sensitive receptors, particular attention has been paid to assessing impacts close to junctions, where traffic may become congested, where there is a combined effect of several road links and where the traffic flows brought about by the amended proposed development exceed the IAQM thresholds presented in the spatial scope. Particular attention has also been paid to locations representative of relevant sensitive exposure exceeding the NAQOs within the AQMA.

7.110 The closing of Newcastle Place re-routes existing and servicing vehicles to the new loop road north of WEG Block A where numerous residential receptors were identified.

7.111 The existing and future representative receptors identified as being sensitive to the 2022 amended proposed development and which have been 'scoped-in' to the assessment are displayed on Figure 7.5 and summarised in Table 7.12.

7.112 The existing receptor locations were modelled at different heights representative of ground floor, to the fourth floor, and the top two floors of the buildings.

Table 7.12: Summary of Existing and Future Sensitive Receptors

Receptor ID	Location	Type	X (m)	Y (m)	Modelled floors
PG_1	Paddington Green 14-17	Ground floor residential amenity and residential fronting Newcastle Place. Remaining floors residential	526847	181742	Ground floor (1.5 m) to 7th floor (26.1 m)
PG_2	Paddington Green 14-17		526864	181754	
PG_3	Paddington Green 14-17		526878	181771	
PG_4	Paddington Green 14-17		526882	181761	
WEG_1	Block A	Ground floor commercial and residential amenity. Remaining floors residential.	526886	181772	Ground floor (1.5 m) to 4th Floor (17.16 m) and 28th (94.16 m) – 30th (102.32 m) floor
WEG_2	Block A		526902	181797	
WEG_3	Block A		526935	181789	

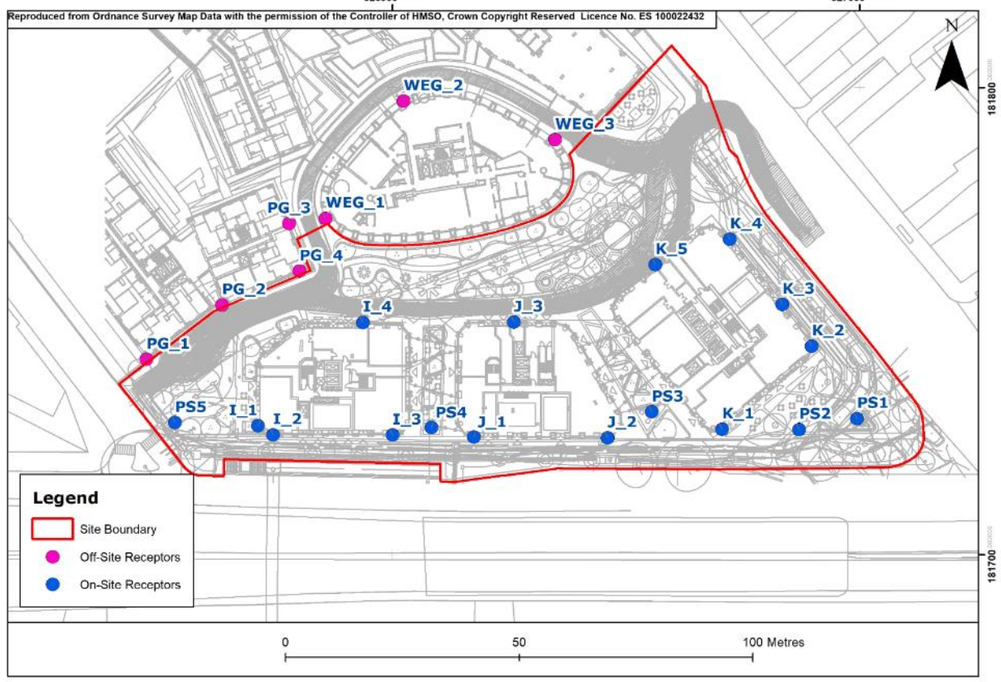


Figure 7.5: Air Quality Receptor Locations

[53] HM Government, 2020. The Ten Point Plan for a Green Industrial Revolution. Available ta: https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution.

[54] London Environment Strategy, Greater London Authority, 2018.

Future Receptors

7.113 To assess the site suitability of the 2022 amended proposed development, concentrations were predicted at a number of proposed residential facade locations representative of worst-case locations. Particular attention was paid to assessing worst-case impacts where there is a combined effect of road links and other potential off-site sources such as the WEG energy centre. The future receptors identified as being sensitive within the 2022 amended proposed development and which have been 'scoped-in' to the assessment are summarised in Table 7.13 and shown in Figure 7.5.

7.114 Proposed receptor locations were modelled at several heights representing exposure from ground floor level to top floor level.

Table 7.13: Summary of Future Sensitive Receptors

Receptor ID	Location	Type	X (m)	Y (m)	Modelled floors
I_1	Block I	Ground floor commercial and residential amenity. Remaining floors residential	526871	181728	Ground floor (1.5 m) to 4th floor (18.2 m); 22nd (76.5 m) - 24th(83 m) top floors.
I_2	Block I		526874	181726	
I_3	Block I		526899	181725	
I_4	Block I		526894	181750	
J_1	Block J	Ground floor commercial and residential amenity. Remaining floors residential.	526917	181725	Ground floor (1.5 m) to 4th (18.1 m), 15th (53.9 m) to 17th (61.34 m) top floors.
J_2	Block J		526946	181725	
J_3	Block J		526926	181750	
K_1	Block K	Ground floor commercial and residential amenity. Remaining floors residential.	526971	181727	Ground floor (1.5 m) to 4th floor (18.65 m), 27th (92.89.6 m) to 38th (129.8 m) top floors.
K_2	Block K		526989	181745	
K_3	Block K		526983	181753	
K_4	Block K		526972	181767	
K_5	Block K		526957	181761	
PS1	Public space north of Harrow Road, near Block K	Public Space	526999	181729	Ground level (1.5 m)
PS2	Public space north of Harrow Road, near Block K	Public Space	526987	181727	Ground level (1.5 m)
PS3	Public space north of Harrow Road, between Block J and K.	Public Space	526956	181731	Ground level (1.5 m)
PS4	Public space north of Harrow Road, between Block I and J	Public Space	526908	181727	Ground level (1.5 m)
PS5	Public space east of Paddington green, near Block I.	Public Space	526853	181728	Ground level (1.5 m)

Assessment of Effects

Demolition and Construction Effects

7.115 In the absence of mitigation, there are two potential significant sources of emissions that could affect air quality during demolition and construction stage:

- Coarse and fine dust from demolition and construction activities; and
- Exhaust emissions from demolition and construction related traffic.

7.116 There are numerous off-site residential properties within 350 m of the site and within 50 m of the routes proposed to be used by demolition and construction traffic; therefore, using London's SPG and the IAQM's guidance, a detailed assessment of demolition and construction impacts is required.

7.117 The assessment of effects associated with demolition and construction road traffic have been scoped out of the assessment (as detailed within the Methodology Section) as the predicted number of HDV is below the IAQM/EPUK criteria requiring detailed assessment.

Dust Emissions

Risk Assessment

7.118 Using the evaluation criteria within the London's SPG and the IAQM's guidance, the potential dust emission magnitude has been identified for each stage of the 2022 amended proposed development as shown in Table 7.14, based on information presented in ES Chapter 5(R): Demolition and Construction Description.

Table 7.14: Dust Emission Impact Magnitude for Amended Proposed Development Works

Activity	Dust Emission Magnitude	Justification
Demolition	Large	Demolition of the entire former Paddington Green Police station. The total building volume is estimated to be greater than 50,000 m^3. Material with high potential for dust release (e.g. concrete), and on-site crushing. Demolition activities would occur at height of more than 20 m above ground level.
Earthworks	Medium	Total site area between 2,500 m^2 and 10,000 m^2.
Construction	Large	The 2022 amended proposed development would have a total estimated construction volume of over 100,000 m^3.
Trackout	Small	Maximum HDV movements over the course of the worst-case phase would be up to five HDV AADT. Unpaved road length would be between <50 m.

7.119 The closest sensitive receptors to construction activity within 350 m of the site would be residential properties directly adjacent to the northern boundary of the site within WEG Block A and B, 14-17 PG Blocks G and H, as well as future on-site residential receptors within the amended proposed development. These residential properties are considered to be high sensitivity receptors.

7.120 The next stage of the process is to define the sensitivity of the assessment area to dust soiling and human health impacts. This process combines the sensitivity of the receptor with the distance from the source to determine the overall sensitivity. The sensitivity of the area to dust impacts (taking into account distance to construction activity) is provided in Table 7.15.

Table 7.15: Sensitivity of Study Area to Dust Impacts

Sensitivity to Dust Soiling	Sensitivity to Human Health Impacts
High: More than 100 existing residential receptors located within 20 m of the site; first occupants within the site overlapping with demolition and construction phases.	Medium: More than 100 residential properties within 20 m of the site boundary and its trackout routes. 2019 baseline predicted PM_{10} concentrations are below 24 µg/m^3 (see Table 7.9).

7.121 The dust emission magnitude determined in Table 7.14 has been combined with the sensitivity assessment in Table 7.15 to define the risk of impacts for each stage of the amended proposed development works in the absence of mitigation, as shown in Table 7.16.

Table 7.16: Risk of Dust Impacts in Absence of Mitigation at 2022 Amended Proposed Development

Sensitivity of Study Area	Dust Emission Magnitude for Each Phase of Works			
	Demolition (Large)	Earthworks (Medium)	Construction (Large)	Trackout (Small)
Dust Soiling (High)	High Risk	Medium Risk	High Risk	Low Risk
Human Health (Medium)	Medium Risk	Medium Risk	Medium Risk	Medium Risk

7.122 Therefore, using professional judgement, the overall risk of dust impacts in the absence of mitigation has been assessed as the highest risk, i.e. as being High Risk.

Embedded Mitigation and Standard Good Practice

7.123 The control of dust and construction traffic emissions from a demolition and construction site relies upon good site management and mitigation techniques to reduce emissions of dust and limit dispersion. A summary of the mitigation measures recommended in the Mayor of London's 'Control of Dust and Emissions during Construction and Demolition SPG' to reduce impacts from high risk sites is provided in Table 7.17. As indicated in ES Chapter 5(R), these measures would be adopted by the 2022 amended proposed development.

7.124 The mitigation measures for both direct impacts and those from traffic would be detailed within the site's CEMP, which would be submitted to WCC prior with the application. The CEMP also includes mitigation measures to minimise impacts from HGV traffic and non-road mobile machinery (NRMM) associated with the proposed works on the site. It is noted that these measures have already been accounted for in ES Chapter 5(R): Demolition and Construction Description of this Volume.

Table 7.17: Dust Mitigation Measures for High Risk Sites

Phase	Mitigation Measure
Communications	• Display name and contact details of responsible person for dust issues on the site boundary (e.g. hoarding) in addition to head/regional office contact information. • Display the head or regional office contact information.
Dust Management Plan	• Develop and implement a Dust Management Plan (DMP) which is included as part of the CEMP, to be approved by the WCC.
Site Management	• Record all complaints and incidents in a site log. • Take appropriate measures to reduce emissions in a timely manner, and record the measures taken within the log. • Make the complaints log available to the WCC if requested. • Record any exceptional dust incidents on- or off-site.
	• Hold regular liaison meeting with other high-risk construction sites within 500 m.
Monitoring	• Undertake daily on and off-site visual inspections where there are nearby receptors. • Carry out regular inspections to ensure compliance with the DMP and record results in the site logbook. • Increase the frequency of inspections during activities with a high potential to create dust or in prolonged dry weather. • Confirm with the WCC if dust deposition, dust flux, or real-time PM_{10} continuous monitoring is required. However, given that predicted PM_{10} within the study area are well below the objective, exceedances of the PM_{10} objectives at relevant receptors are unlikely and therefore a real-time monitoring programme is not considered to be required.
Preparing and Maintaining the Site	• Plan site layout to locate dust generating activities as far as possible from receptors. • Use solid screens around dusty activities and around stockpiles. • Avoid site runoff of water and mud. • Fully enclose the site or specific operations where there is a high potential for dust production and the site is active for an extensive period. • Keep site fencing barriers and scaffolding clean using wet methods. • Remove dusty materials from site as soon as possible. • Minimise emissions from stockpiles by covering, seeding, fencing or damping down.
Operating Vehicle/ Machinery and Sustainable Travel	• Ensure all NRMM comply with the standards set in the Mayor of London's Control of Dust and Emissions During Construction and Demolition SPG. • Include a statement of compliance with the GLA's NRMM Low Emission Zone emissions requirements as set out in the Control of Dust and Emissions during Construction and Demolition SPG, within the air quality section of the CMP. • Site manager to maintain a list of all on-site NRMM using the GLA's NRMM London database[55]. • Enforce an on-site speed limit of 15 mph on surfaced roads and 10 mph on unsurfaced areas. • Ensure vehicles switch off engines when stationary. • Avoid use of generators where possible. • Produce a Construction Logistics Plan (CLP) to manage the sustainable delivery of goods and materials. • Implement a Travel Plan that supports and encourages sustainable travel.
Operations	• Only undertake cutting, grinding or sawing equipment with suitable dust suppression equipment or techniques. • Ensure adequate water supply for effective dust and particulate matter suppression. • Use enclosed chutes, conveyors and covered skips. • Minimise drop heights of materials. • Ensure suitable cleaning material is available at all times to clean up spills.
Waste Management	• Avoid bonfires. • Avoid explosive blasting using appropriate manual or mechanical techniques. • Bag and remove any biological debris.

[55] Mayor of London, 2020. Pollution and Air Quality: Non-Road Mobile Machinery Register [online]. Available: https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/non-road-mobile-machinery-register/login.

Table 7.17: Dust Mitigation Measures for High Risk Sites

Phase	Mitigation Measure
Measures Specific to Demolition	• Soft strip buildings before demolition. • Ensure effective water suppression during demolition. • Avoid explosive blasting, using appropriate manual or mechanical alternatives. • Bag and remove any biological debris or damp down such material before demolition.
Measures Specific to Construction	• Ensure aggregates are stored in bunded areas and are not allowed to dry out. • Avoid concrete scabbling where possible. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos. • For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
Measures Specific to Trackout	• Use water-assisted dust sweepers to clean access and local roads. • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving the site are appropriately covered. • Record inspections of haul roads in site log, including any remedial action taken. • Implement a wheel washing system. • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit. • Access gates to be located at least 10 m from the receptors where possible.
Measures Specific to Earthworks	• Re-vegetate earthworks and exposed areas / soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil. • Only remove the cover in small areas during work and not all at once.

Significance of Dust Emissions

7.125 The London's SPG and the IAQM's guidance recommends that no assessment of the significance of demolition and construction stage effects is made without mitigation in place. With the implementation of the CEMP, CLP (i.e. the measures outlined in ES Chapter 5(R): Demolition and Construction Description), the demolition and construction dust and on-site vehicle emissions impacts would be slight adverse. Accordingly, the effects in the study would be direct, temporary, medium-term, **Not Significant**.

Completed Development Effects

Traffic Emissions

Existing Receptors

7.126 The results of the dispersion modelling at existing receptors are presented in Technical Appendix 7.5(N): Air Quality Modelling Results, ES Volume 3(R).

7.127 The predicted annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations without and with the 2022 amended proposed development in place would be below the relevant objectives at all assessed existing receptor locations. The largest concentration increase is at WEG_3, at ground floor level, where traffic is re-routed from Newcastle Place.

7.128 The predicted annual mean NO_2 concentrations for all receptors is below 60 µg/m^3, which indicates that the hourly mean objective is unlikely to be exceeded.

7.129 None of the predicted annual mean PM_{10} concentrations exceed 32 µg/m^3 and therefore the 24-hour mean PM_{10} objective is not predicted to be exceeded.

7.130 The impact on annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations is described as negligible at all receptors.

7.131 Overall, considering the conservative nature of the assessment, combining 2027 emission factors and backgrounds with 2030 traffic data, and the EPUK/IAQM criteria for assessing significance, the air quality effects of the 2022 amended proposed development on existing receptors would be permanent, long-term, **Not Significant**.

Site Suitability

7.132 Emissions from road traffic are the major contributor to poor air quality in urban areas within the UK and could contribute to exceedance of the current air quality objectives within the vicinity of the site. Future air quality could impact the occupants of the 2022 amended proposed development, through the introduction of new sensitive receptors into an area of potential poor air quality.

7.133 The predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations at the on-site receptors with the 2022 amended proposed development in place would be below the relevant annual mean AQOs at all floor levels.

7.134 The predicted annual mean NO_2 concentrations for all receptors would be well below 60 µg/m^3. This demonstrates that the hourly mean objective is unlikely to be exceeded where the hourly mean would apply, such as commercial use and outdoor amenity locations. Similarly, the predicted annual mean PM_{10} concentrations would not exceed 32 µg/m^3 and therefore the 24-hour mean PM_{10} objective would not be expected to be exceeded.

7.135 The site would therefore be suitable for the 2022 amended proposed development's proposed uses without the need for mitigation.

7.136 The predicted $PM_{2.5}$ concentrations in 2030 at future receptors within the 2022 amended proposed development would be slightly above the WHO guideline at up to the 3rd floors of block I, up to the fourth floor at Block J and K, and at every modelled height for receptor K_4, adjacent to Edgeware Road. Emerging policy and WCC commitments indicate that this guideline value will be brought into future regulations. The model has used conservative assumptions using 2027 emission factors and backgrounds levels therefore concentrations may be lower at the time of occupation of the blocks. It is therefore recommended that post demolition and prior to beginning of construction, an up-to-date assessment with the latest monitoring data and modelling tools is submitted to establish the baseline conditions at the time of construction and determine the need for mitigation in the form of $PM_{2.5}$ filtration. The up-to-date assessment could be secured by means of an appropriately worded planning condition and submitted to the WCC prior to works commencing.

Air Quality Neutral

7.137 The Mayor of London's Sustainable Design and Construction SPG, indicates that for all new major developments, an assessment should be undertaken to demonstrate whether the 2022 amended proposed development would meet the relevant air quality neutral emission benchmarks as detailed in the Air Quality Neutral Guidance[56] and thus can be considered to be air quality neutral. Where a development cannot meet the emission benchmarks, additional mitigation may be required either on- or off-site to reduce the air quality impacts. The 'air quality neutral' benchmarks are specified in Technical Appendix 7.1(R), ES Volume 3(R).

Building Emissions

7.138 An energy centre is not proposed on-site. Heating and hot water provision would be provided through connection to the WEG energy centre together with on-site provision of ASHP and PV. The 2022 amended

[56] Air Quality Consultants and Environ, April 2014, Air Quality Neutral Planning Support Update: GLA 80371.

proposed development would not have building emissions from combustion sources and would therefore be considered 'air quality neutral'.

Transport Emissions

7.139 The greatest increase in traffic movements generated by the 2022 amended proposed development is predicted to be 83 AADT flows along Paddington Green. This is as a result of car-parking for the mobility impaired, taxis and servicing. The 2022 amended proposed development maximum flows would be expected to be mainly related with its residential use car-parking as commercial uses would not be expected to generate vehicle trips.

7.140 The 'Air quality neutral' calculations for inner London transport emissions for the 2022 amended proposed development are presented in Table 7.17.

Table 7.17: 2022 Amended Proposed Development Land use/Class and Trip Generation

Land use/Class	No. dwellings	Trips/day	Trips/annum
C3 Residential	556	83	30,295

7.141 A comparison between the developments' benchmarked and total emissions are show in Table 7.18.

Table 7.18: 2022 Amended Proposed Development Benchmark Comparison

Land use/Class	Benchmarked Emissions (kg/annum)		Proposed Development Emissions (kg/annum)		Comparison to Benchmarked Emissions (kg/annum)	
	NO_x	PM_{10}	NO_x	PM_{10}	NO_x	PM_{10}
C3 Residential	566.9	101.7	41.5	7.5	-525 (-93%)	-94 (-93%)

7.142 The transport NO_2 and PM_{10} emissions are both well below the benchmark requirements of the SPG. The 2022 amended proposed development transport emissions would be considered 'air quality neutral'.

London Council's Air Quality and Planning Guidance

7.143 Using the London Councils air quality and planning guidance significance criteria, as requested by the WCC, the site is located within an AQMA and would introduce new receptors, as a result air quality is considered to be a highly significant consideration and therefore mitigation measures should be considered to minimise impacts on air quality.

7.144 The predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations at the site with 2022 amended proposed development in place would be more than 5 % below the relevant NAQOs at sensitive receptors to the annual mean objective, i.e. residential use. In accordance with APEC criteria (Figure 7.3), predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations would be within the APEC-A criteria which recommends "*…No air quality grounds for refusal; however mitigation of any emissions should be considered…"*.

7.145 An Energy Strategy accompanies the application and demonstrates how the 2022 amended proposed development would use passive and low energy design technologies to reduce baseline energy demand, reduce combustion sources and CO_2 emissions followed by the application of low and zero carbon technologies. The combination of high temperature air source heat pumps, air cooled chiller and heat recovery chiller with water source heat pump, maintain highly efficient heating and cooling systems, with the added benefit of reducing the overall roof plant space required and embodied carbon. Unused roof space for the PV would be used as biodiverse roofs/amenity space to attenuate water runoff and increase biodiversity which would provide some additional cooling and reduces surface heat absorption.

7.146 A Sustainability Statement accompanies the application and demonstrates how the 2022 amended proposed development design and construction addresses the various issues that contribute to a sustainable development and reduction of reliance on combustion sources and its emissions. The 2022 amended proposed development would be designed to reduce potential overheating and reliance on air conditioning systems as flows:

- Residential ventilation would have high thermal performance building fabric with low U-values and air permeability;
- Low energy lighting would be specified throughout to reduce internal heat gains from luminaires;
- Mechanical whole house heat recovery (MVHR) ventilation would be provided by centralised air handling units. Tempered fresh air distribution would be provided throughout the office areas;
- All non-residential units would be provided with low energy lighting. Additionally, photoelectric sensors and motion sensors would be applied throughout relevant areas to help reduce lighting demand and turn off lighting when spaces are unoccupied or adequately day-lit reducing internal heat gains from luminaires.

7.147 As noted above all residential units would be provided with MHVR with intake ventilation connected to dedicated façade connection.

7.148 The proposed trees and soft landscaping would provide separation from road traffic emissions to both the building and outdoor spaces.

7.149 In addition to the above, the 2022 amended proposed development would promote the use of more sustainable modes of transport by means of the following embedded mitigation including the provision of:

- CEMP;
- CLP;
- Residential Travel Plan;
- Framework Delivery and Servicing Management Plan;
- The non-residential uses at the site would operate car free;
- The 2022 amended proposed development has been designed as 'car free'. A total of 18 accessible car parking spaces are provided, of these spaces 50 % would be provided with active electric charging point (EVCPs). The remaining 50 % of spaces would be provided with the capacity to be fitted with EVPCs should these be required in the future;
- A total of 960 long stay cycle parking spaces (with an additional 104 to be provided within the WEG basement at a later date); and
- Cycle storage and changing facilities.

Assessment of Residual Effects

Additional Mitigation

Demolition and Construction Stage

7.150 No significant adverse effects are predicted and consequently no additional mitigation is required.

Completed Development Stage

7.151 No significant adverse effects are predicted and consequently no additional mitigation is required.

Enhancement Measures

7.152 Not required/No enhancement measures are proposed in respect of air quality.

Demolition and Construction Residual Effects

7.153 The residual demolition and construction effects would remain as reported in the assessment of effects section:

- Direct, temporary, medium-term **Not Significant** for demolition and construction dust emissions; and
- Direct, temporary, medium-term **Not Significant** for demolition and construction traffic emissions.

Completed Development Residual Effects

7.154 The residual completed development effects would be as follows:

- Direct, permanent, long-term **Not Significant** for completed development traffic emissions at existing off-site receptors.
- Air quality objectives are expected to be met at on-site sensitive receptors and therefore the site is suitable for residential use.
- An assessment to determine the need for mitigation against $PM_{2.5}$ 2005 WHO guidelines is recommended to confirm mitigation measures would be required. This assessment should be secured by means of an appropriately worded planning condition and be submitted to the WCC prior to works commencing.
- The 2022 amended proposed development can be considered air quality neutral for both building and transport emissions.

Summary of Residual Effects

7.155 Table 7.19 provides a tabulated summary of the outcomes of the air quality assessment of the 2022 amended proposed development.

Table 7.19: Summary of Residual Air Quality Effects

Receptor	Description of Residual Effect	Additional Mitigation	Significance of Residual Effect **	Nature of Residual Effect*				
				+ -	D I	P T	R IR	St Mt Lt
Demolition and Construction								
Existing Off-site and Future On-site Human Health and Amenity	Dust Soiling and PM_{10} due to demolition and construction works	None required.	Not Significant	-	D	T	R	Mt
Existing Off-site and Future On-site Human Health	Change in NO_2, PM_{10} and $PM_{2.5}$ levels due to vehicle emissions	None required	Not Significant	-	D	T	R	Mt
Completed Development								
Existing Off-site Human Health	Change in NO_2, PM_{10} and $PM_{2.5}$ levels due to vehicle emissions	None required	Not Significant	-	D	P	IR	Lt
Future On-site Human Health	Change in NO_2, PM_{10} and $PM_{2.5}$ effects due to local air quality	None required. Updated air quality assessment recommended to be secured by means of an appropriately worded planning condition.	N/A Site Suitable for proposed uses.	N/A	N/A	N/A	N/A	N/A

Table 7.19: Summary of Residual Air Quality Effects

Receptor	Description of Residual Effect	Additional Mitigation	Significance of Residual Effect **	Nature of Residual Effect*				
				+ -	D I	P T	R IR	St Mt Lt
		worded planning condition.						

Notes:

* - = Adverse/ + = Beneficial/ +/- Neutral; D = Direct/ I = Indirect; P = Permanent/ T = Temporary; R=Reversible/ IR= Irreversible; St = Short-term/ Mt = Medium-term/ Lt = Long-term.

**There are no degrees of significance of effects in accordance with assessment criteria

Cumulative Effects

Intra-Project Effects

7.156 As explained in ES Chapter 2(R): EIA Process and Methodology, intra-project cumulative effects are discussed in ES Chapter 11(R): Cumulative Effects.

Inter-Project Effects

7.157 Table 7.20 provides a summary of the likely cumulative effects resulting from the amended proposed development and the cumulative developments. It should be noted that the assessment of site suitability completed within the main assessment has been undertaken taking into account the cumulative schemes in the future baseline, so have not been considered in the Table 7.20 exercise.

7.158 The demolition and construction stages cumulative effects exercise has been undertaken for cumulative schemes within 350 m of the 2022 amended proposed development as demolition and construction stage effects of cumulative schemes beyond 350 m are not expected to combine with the demolition and construction effects of the 2022 amended proposed development according to IAQM guidance.

Table 7.20: Inter-Project Cumulative Effects

Cumulative Development	Demolition and Construction		Completed Development	
	Cumulative Effects Likely?	Reason	Cumulative Effects Likely?	Reason
One Merchant Square	No	There would be a potential for overlap with the site's development works. Nevertheless, the scheme is anticipated to employ dust mitigation techniques similar to the amended proposed development and cumulative effects are unlikely.	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
Two Merchant Square	No	There would be a potential for overlap with the site's development works. Nevertheless, the scheme is anticipated to	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.

Table 7.20: Inter-Project Cumulative Effects

Cumulative Development	Demolition and Construction		Completed Development	
	Cumulative Effects Likely?	Reason	Cumulative Effects Likely?	Reason
		employ dust mitigation techniques similar to the amended proposed development and cumulative effects are unlikely.		
Six Merchant Square	No	There would be a potential for overlap with the site's development works. Nevertheless, the scheme is anticipated to employ dust mitigation techniques similar to the amended proposed development and cumulative effects are unlikely.	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
Paddington Triangle	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development.	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
The Landseer 38-44 Lodge Road	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development.	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
36 St John's Wood Road 38-44 Lodge Road	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development.	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
Paddington Cube	No	Distance to cumulative site greater than 350 m	No	Based on traffic data received, this scheme

Table 7.20: Inter-Project Cumulative Effects

Cumulative Development	Demolition and Construction		Completed Development	
	Cumulative Effects Likely?	Reason	Cumulative Effects Likely?	Reason
		where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development		is not predicted to increase traffic levels.
1A Sheldon Square, W2	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
Luton Street/Capland Street/Bedlow Close site, NW8	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.
5 Kingdom Street	No	Distance to cumulative site greater than 350 m where dust impacts may occur from on-site activities. Cumulative scheme anticipated to employ similar dust mitigation techniques as the amended proposed development	No	Based on traffic data received, this scheme is not predicted to increase traffic levels.

Summary of Assessment

Background

7.159 This chapter has detailed the potential air quality effects due to the demolition and construction and completed development stages of the 2022 amended proposed development. The assessment of demolition and construction and completed development stages has been undertaken taking into account the relevant national and local guidance and regulations.

7.160 The potential impacts and likely effects of the 2022 amended proposed development on air quality and the suitability of the site for the 2022 amended proposed development have been assessed. Potential

sources of emissions have been identified and assessed in the context of existing air quality and the nature and location of receptors.

7.161 The main air pollutants of concern are dust and particulate matter with an aerodynamic diameter of less than 10 µm (PM_{10}), typically generated during demolition and construction activities, and nitrogen dioxide (NO_2), PM_{10} and particulate matter with an aerodynamic diameter of less than 2.5 µm ($PM_{2.5}$), typically generated by road traffic and combustion engines emissions.

7.162 The WCC has declared a borough air quality management area (AQMA) wide due to exceedances of the NO_2 and PM_{10} objectives. The site is located within the AQMA and within the Edgware Road / Marylebone Road Air Quality Focus Area and the Ultra Low Emission Zone (ULEZ), expanded in 2021.

7.163 Air quality monitoring data was obtained from WCC, LBB and RBKC monitoring stations as requested during the EIA Scoping process. The data was used as the basis for air quality modelling and predictions.

7.164 NO_2 concentrations within the study area have been above the air quality objectives between 2015-2019. Measured PM_{10} and $PM_{2.5}$ concentrations are below the national objectives but exceed the more stringent WHO guidelines. There is a downwards trend in NO_2 concentrations over time at roadside monitoring sites.

7.165 NO_2 concentrations at the site are likely to exceed the relevant AQOs. As concentrations fall-off rapidly on moving away from an emissions source, such as a main road, some variation in NO_2, PM_{10} and $PM_{2.5}$ concentrations across the site is expected. Concentrations at the site are likely to be highest closest to Harrow Road and Edgware Road, reducing gradually as distance from the main road increases.

7.166 Air quality at background and roadside locations is expected to gradually improve in future years due to the renewal of the vehicle fleet with lower emission factors. National policies such as the intention to ban new combustion engine private vehicle sales by 2030 will hasten and enforce this process. London specific policies such as the Ultra Low Emission Zone and Zero Emission Zone will further encourage vehicle fleet renewal in London.

Demolition and Construction Stage Effects

7.167 During the demolition and construction stage, there is the potential that emissions of dust arising from the site could result in a loss of amenity at nearby existing residential and commercial properties.

7.168 Based on recognised assessment criteria, the demolition and construction works present a high risk of adverse dust impacts in the absence of appropriate mitigation. With the implementation of suitable mitigation measures, which have been set out within the ES and would be incorporated within a CEMP to be secured by a appropriately worded condition, it is anticipated that dust impacts would be appropriately mitigated resulting in temporary, medium-term and **Not Significant** effects.

7.169 Predicted generation of HDV movements during the demolition and construction stage has been estimated to increase local flows by a maximum of five vehicles per day. Such an increase would have an insignificant effect on air quality. Demolition and construction traffic would also be controlled through the CEMP and CLP. As such traffic emissions generated by the demolition and construction stage would have a temporary, medium-term **Not Significant** effect on air quality.

Completed Development Effects

7.170 Concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been predicted for a number of worst-case locations representing existing properties adjacent to the road network, as well as new sensitive receptor locations within the 2022 amended proposed development.

7.171 The predicted modelled concentrations would be well below the relevant air quality objectives at all of the existing receptor locations with the 2022 amended proposed development in place. It is considered that emissions from vehicles associated with the amended proposed development would result in permanent, long-term, **Not Significant** effect on local air quality.

7.172 Concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been predicted at new sensitive receptor locations within the 2022 amended proposed development. At the new residential receptors introduced by the 2022 amended proposed development air quality is predicted to meet all relevant air quality objectives and therefore the 2022 amended proposed development would not introduce new receptors into an area of poor air quality.

7.173 Emerging policy and WCC air quality plan commitments has indicated that the 2005 World Health Organization guideline value for $PM_{2.5}$ should be met by 2030. The conservative future $PM_{2.5}$ concentrations with the completed development are predicted to be slightly above the 2005 WHO guideline at on-site receptors up to the 3rd floors of Block I, up to the fourth floor at Block J and K, and at every modelled height for receptors at Block K, adjacent to Edgeware Road . To ensure appropriate mitigation is provided to those units where façade concentrations are predicted to exceed the guideline, it is recommended that prior to commencement of construction, an up-to-date assessment with the latest monitoring data and modelling tools is submitted to establish the baseline conditions at the time of construction and determine the need for mitigation in the form of $PM_{2.5}$ filtration. The updated assessment could be secured by means of an appropriately worded planning condition.

7.174 The air quality neutral assessment has shown that the 2022 amended proposed development would meet both the building and transport emissions benchmarks and can be considered Air Quality Neutral.

Cumulative Effects

7.175 Demolition and construction stages of approved cumulative schemes within 350 m of the 2022 amended proposed development are anticipated to employ demolition and construction mitigation techniques similar to the 2022 amended proposed development. Significant cumulative effects are unlikely to occur as each scheme is anticipated to employ similar mitigation techniques such that the individual construction stage effects are not significant, alone or in combination.

7.176 The assessment of road traffic effects completed within the main assessment has been undertaken taking into account the cumulative schemes. No significant effects were identified.

8R NOISE AND VIBRATION

Introduction

8.1 This chapter of the 2022 Replacement ES reports on the likely significance of noise and vibration effects to arise from the demolition and construction stage and from the completed development stage of the 2022 amended proposed development.

8.2 The chapter describes the noise and vibration policy context; the methods used to assess the potential impacts and likely effects; the baseline conditions at the site and in the study area; the likely noise and vibration effects taking into consideration embedded mitigation; the need for additional mitigation and design enhancement; the significance of residual effects; and inter-project cumulative effects.

8.3 The chapter is supported by the following technical appendices in ES Volume 3(R):

- Appendix 8.1(R): Noise and Vibration Legislation and Policy;
- Appendix 8.2: Baseline Noise and Vibration Survey;
- Appendix 8.3(R): Construction Noise Assumptions;
- Appendix 8.4(R): Transport Data; and
- Appendix 8.5(R): Site Suitability Assessment for Residential Use.

Methodology

8.4 The assessment has been informed by the following legislation, policies and published guidance:

- National Legislation and Policy:
  - Control of Pollution Act (1974) Part III – Noise;[1]
  - The Environmental Protection Act (1990 as amended);[2]
  - NPPF (2021);[3] and
  - Noise Policy Statement for England (2010)[4].
- Regional Policy:
  - London Plan (2021)[5] in particular policies 'D3 - Optimise site capacity through the design-led approach', 'D8 - Public Realm', 'D9 - Tall Buildings'; 'D13 - Agent of Change', 'D14 - Noise'; D3 - Optimising site capacity through the design-led approach' and 'T7 - Deliveries, servicing and construction';
  - London Environment Strategy (2018)[6] in particular Chapter 9: Ambient Noise; and
  - Sounder City, The Major's Ambient Noise Strategy, 2004[7].
- Local Policy:
  - WCC City Plan 2019 – 2040 (2021[8]) in particular policy '33 - Local Environmental Impacts';
  - Westminster City Council Code of Construction Practice (2022)[9]; and

  Westminster Environmental SPD (2022)[10].
- National Guidance and Industry Standards:
  - PPG[11];
  - British Standard (BS) 4142:2014 + A1 2019[12] - 'Methods for Rating and Assessing Industrial and Commercial Sound' used to assess plant noise including fixed plant installations;
  - BS5228:2009+A1:2014[13] - 'Code of Practice for Noise and Vibration Control on Construction and Open Sites' used to assess construction noise impact on receptors;
  - BS7385-2:1993[14] - 'Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Groundborne Vibration' used to assess vibration impact on buildings;
  - BS8233:2014[15] - 'Guidance on Sound Insulation and Noise Reduction for Buildings' used to assess site suitability including internal ambient noise levels and noise levels in external amenity spaces;
  - BS6472-1:2008[16] - 'Guide to Evaluation of Human Exposure to Vibration in Buildings. Vibration Sources Other Than Blasting' used to assess vibration impact on receptors;
  - Calculation of Road Traffic Noise (CRTN), 1988[17] used to calculate road traffic noise levels;
  - Design Manual for Roads and Bridges (DMRB) LA111, 2020[18] used to assess traffic noise impacts both long and short-term;
  - Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Noise Impact Assessment, 2004[19];
  - World Health Organisation (WHO) Guidelines for Community Health, 1999[20] used to assess site suitability[21];
  - ProPG: Planning and Noise: Professional Practice Guidance on Planning and Noise (2017)[22];
  - European Commission EIA Directive Module 3 on Impact Assessment (2019)[23]; and
- Acoustics Ventilation and Overheating Guidelines[24] and Approved Document O of the Building Regulations[25].

8.5 Further details are provided in ES Volume 3(R): Technical Appendix 8.1(R).

[1] Secretary of State, 1974, Control of Pollution Act, HMSO. Available: http://www.legislation.gov.uk/ukpga/1974/40/contents
[2] Secretary of State, 1990. Environmental Protection Act 1990, The Stationary Office. Available: http://www.legislation.gov.uk/ukpga/1990/43/contents
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[19] Institute of Environmental Management & Assessment (IEMA), 2014, Guidelines for Environmental Noise Impact Assessment.
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[21] It is noted that WHO guidance was also published in 2018; however, the 1999 guidance are considered more relevant for this assessment as it gives guideline noise levels from all sources of noise in totality (not just one mode of transport).
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Consultation

Pre-Submission Consultation

8.6 An EIA Scoping Opinion Report was submitted to the WCC in September 2020 in support of a request for a formal EIA Scoping Opinion (Technical Appendix 2.1, ES Volume 3(R)). Avison Young was appointed by WCC to undertake an independent review of the EIA Scoping Opinion Report. Correspondence was undertaken with Avison Young as part of this review. The final Avison Young report is presented in Technical Appendix 2.2, ES Volume 3(R).

8.7 The WCC adopted their EIA Scoping Opinion on 25 March 2021 (Technical Appendix 2.3, ES Volume 3(R)), informed by Avison Young's Independent Review.

Post-Submission Consultations

8.8 Following the submission of the 2021 ES, Avison Young completed an Independent Environmental Statement Review Report in June 2021. Avison Young's review included comments requesting clarification on the Noise and Vibration ES Chapter of the 2021 ES. Responses to this review were provided by the Applicant team (Technical Appendix 2.3(N)).

8.9 Falling the 'call in' by the GLA, no further consultation comments have been provided by the GLA.

8.10 Table 8.1 summarises the key EIA Scoping Opinion responses and separate consultations that have been undertaken with respect to the noise and vibration assessment.

Table 8.1: Summary of Pre-Submission and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
Environmental Health Officer and Avison Young Independent Review (March 2021)	• Site suitability is often scoped out as a design issue rather than an impact assessment. • Assessment of traffic noise is unlikely to be required as the road traffic links will experience <20 % change in traffic volume.	Assessment of site suitability was provided in Appendix 8.4 of the 2021 ES. Road traffic noise was not assessed in the 2021 ES (as outlined in the EIA Scoping Opinion Report and agreed to by WCC in their adopted EIA Scoping Opinion). An updated site suitability assessment has been prepared for the 2022 amended proposed development and is presented in Technical Appendix 8.4(R) of this 2022 Replacement ES. Road traffic noise effects associated with the 2022 amended proposed development remains scoped out of the assessment due to the similar nature of the development proposals, although an assessment of the loop road north of WEG Block A has been undertaken for completeness and has been reported in the Assessment of Effects section of this chapter.
Avison Young Independent Review (March 2021)	Clarification is required as to how the ES will deal with the assessment of flexible commercial floorspace (class E) so as to ensure the robust assessment of all likely significant environmental effects arising from the proposed development. This will be particularly important for assessments which are dependent upon floorspace areas.	The introduction of Class E was intended to provide flexible use. The use class by definition is wide-ranging to allow variance in the end use. As with all matters of potential variance the worst-case scenario for each specific specialism would be assessed. However, in the instance of the 2021 proposed development, pre-application consultation with WCC concluded that specific uses were to be delivered within Class E, namely office space, affordable workspace and flexible commercial space. For the 2022 amended proposed development, the specific Class E uses have been updated following consultation and assessed accordingly in this replacement chapter.
Avison Young Independent Review (March 2021)	Further quantified information is required with respect to likely traffic volumes and flows associated with the proposed development (both in isolation and with relevant cumulative schemes) to allow a more robust and informed judgement as to whether it is appropriate to scope an assessment of competed and operational traffic emissions out of the noise and vibration assessment.	In respect of the 2021 ES, Technical Appendix 2.2 and 2.3 of ES Volume 3 included summaries of the Applicant's responses to the independent review comments. Avison Young concluded that, based on the responses provided, and subject to reconfirmation at the conclusion of the EIA, the scope, methodology and proposed approach for the noise and vibration assessment was appropriate. Technical Appendices 2.8 and 8.4 of the 2021 ES provided the transport data for the 2021 proposed development. For the 2022 amended proposed development, the responses provided in Technical Appendices 2.2 and 2.3, ES Volume 3(R) remain valid and updated traffic data has been provided in Technical Appendices 2.8(R) and 8.4(R) for completeness.
	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.	In respect of the 2021 ES, it was confirmed that assessment against absolute numerical criteria is standard practice in EIA. Both the air quality and noise and vibration assessments seek to demonstrate that future receptors proposed to be introduced to the site, would not be adversely affected by future environmental baseline conditions. Site suitability is closely related to the consideration of human health impacts. To meet the wide scope and broad purpose of the EIA Directive, it was considered appropriate to consider site suitability within the 2021 EIA. This remains the case for the updated 2022 EIA.
	The Applicant may wish to consider providing quantified information in respect to likely traffic volumes and flows	An assessment of completed development traffic noise effects on existing noise sensitive receptors (NSRs) was undertaken for the 2021 proposed development and

Table 8.1: Summary of Pre-Submission and Post-Submission Consultation

Consultee and Form/ Date of Consultation	Summary of Comments	Where in this Chapter Comments are addressed
	associated with the proposed development (both in isolation and with relevant Cumulative Schemes) to enable more certainty at the EIA Scoping stage as to whether it is appropriate to scope an assessment of completed and operational road traffic noise into or out of the ES.	updated for the 2022 amended proposed development.
Avison Young Report and Independent Review of 2021 ES (June 2021)	Minor clarification requests in respect of the 2021 Noise and Vibration chapter.	See Technical Appendix 2.3(N) of ES Volume 3(R) for responses.
Environmental Health Officer consultation (Mark Walshe via email on 2 September 2020)	• Survey locations and methodology considered suitable; although duration of vibration monitoring to be extended. • With regard to reduced traffic flows due to COVID-19, relevant historic data can also be used. • Plant noise rating levels will need to be 10 dB (15 dB if tonal) below the minimum background noise level at 1 m from any residential or noise-sensitive property	Vibration monitoring was undertaken for a one week duration (see Technical Appendix 8.2(R)). Historic data has also been considered (see Technical Appendix 8.2(R)). The 2020 measured levels were comparable with historic surveys and have been used for this assessment as it is considered to remain valid. Plant noise levels have been assessed as required (see section 'Operational Plant Noise' and 'Completed Development Plant Noise').

8.11 No further consultation relating to the noise and vibration assessment has been undertaken since the previous submission. Due to the similar nature of the 2022 amended proposed development, the scope and methodology agreed in March 2021 are considered to remain valid.

8.12 In addition, there has been no request for amendments to the previously adopted scoping opinion and in accordance with Regulation 18(4)(a), the EIA has been undertaken and the 2022 Replacement ES prepared based on the EIA Scoping Opinion issued on 25 March 2021.

8.13 However, in respect of road traffic emissions previously scoped out of the EIA, a targeted assessment of traffic emissions along the loop road has been undertaken in light of the amended proposals for Newcastle Place, for completeness.

Assessment Scope

8.14 The updated assessment has been based on the information presented in ES Chapter 4(R): 2022 Amended Proposed Development Description and ES Chapter 5(R): Demolition and Construction Description, as well as the 3D height and massing model the traffic data provided by the Applicant's transport consultant (Arup).

8.15 The assessment has been undertaken in accordance with the relevant practice guidance and standards as referenced above, as well as by application of professional judgment.

Technical Scope

8.16 The technical scope of the assessment has considered impacts and effects during the demolition and construction stage in respect of the following:

- Demolition and construction noise and vibration impacts on existing noise sensitive receptors (NSRs) and buildings;
- Demolition and construction noise and vibration impacts on future NSRs within the 2022 amended proposed development i.e. impacts of phase 2 construction on occupants of completed phase 1; and
- Demolition and construction road traffic noise at existing off-site NSRs.

8.17 The technical scope of the assessment has considered impacts and effects during the completed development stage in respect of the following:

- Operational noise from fixed-plant installations;
- Operational noise from servicing at existing off-site and on-site residential NSRs; and
- Operational noise from commercial uses.

8.18 Site suitability for on-site residential use is considered separately and presented within Appendix 8.4. This includes assessment of internal noise levels, internal vibration levels and external noise levels at communal and private amenity areas including balconies.

8.19 Potential effects due to changes in road traffic noise as a result of the operation of the proposed development were 'scoped out' within the 2021 ES as confirmed in the WCC EIA Scoping Opinion. These effects associated with the operation of the 2022 amended proposed development remains scoped out of the assessment due to the similar nature of the development proposals, although an assessment of the loop road north of WEG Block A (Receptor R7) has been undertaken for completeness and has been reported in the Assessment of Effects section of this chapter.

Spatial Scope

8.20 The study area comprises the site and the nearest existing / proposed NSRs to the site boundary as shown in Figure 8.1.

Figure 8.1: Noise-Sensitive Receptors

8.21 Where any significant effects were predicted at the most distant NSRs, additional receptors have been examined.

Temporal Scope

8.22 The assessment considered impacts arising during the demolition and construction stage which would be expected to be temporary and short-term (0-5 years) to medium-term (5-10 years) and from the completed development stage which would be expected to be permanent and long-term in nature (i.e. more than 10 years).

8.23 The scenarios considered within this assessment are:

- Scenario 1: Existing Baseline 2020;
- Scenario 2: Future Baseline (worst-case demolition and construction year 2026/ opening year 2030);
- Scenario 3: Future Baseline + 2022 Amended Proposed Development; and
- Scenario 4: Future Baseline + 2022 Amended Proposed Development + Cumulative Development.

Baseline Characterisation Method

Desk Study

8.24 In order to establish the existing baseline noise and vibration conditions in the study area, relevant data was reviewed and assessed. The data sets and associated sources can be summarised as follows:

- Traffic data as provided by Arup;
- OS mapping; and
- Topographical information.

Field Study

8.25 The existing noise environment was characterised by a baseline noise survey undertaken in accordance with BS7445-1:2003. This was undertaken in and around the site to quantify the prevailing ambient and background noise levels during daytime and night-time periods. The survey was undertaken in September 2020. The baseline noise survey comprised a combination of unattended and attended measurements as outlined in Appendix 8.2. The ambient and background noise levels have been used to inform the assessment criteria for plant noise emissions, building envelope, ventilation strategies and construction noise effects. Data was validated against historical survey data from the same area.

8.26 Road traffic is the main source of noise affecting the area and given the large changes in traffic volume required to make very small changes to the average noise levels, no significant difference between the 2020 survey and 2022 levels is expected. The levels measured are therefore still considered valid and robust to represent current conditions.

Assessment Method

Methodology

8.27 A noise model of the 2022 amended proposed development and the study area was developed using CadnaA® version 2020, a proprietary noise modelling software. The software implements the standard noise prediction methodology detailed in ISO in 9613:1996[26]. This model was used to assess the likely effects of noise sources within the study area. The software utilises standard acoustic principles in conjunction with approved prediction methodologies and is a tried and tested method for accurately predicting and assessing the impact of noise from a variety of sources. This was calibrated to the existing noise climate and adjusted to reflect the future traffic flows.

8.28 Existing mapping and topography for the site were obtained from OS mapping and provided by the design team. The 3D massing was based on the whole site being in use for residential purposes (residential premises being more sensitive to noise than other proposed uses).

8.29 Demolition and construction, as well as completed development traffic flows for the four scenarios, as appropriate, were provided by the Applicant's transport consultant, Arup.

8.30 Upon review of the traffic flow data provided by Arup (see Technical Appendix 8.4(R)), it was noted that the traffic flows for the existing baseline (2022) and the future baselines (2026/2030) would not be materially different (increase of less than 1 dB). On Church Street a 1.8 dB change is predicted. This level change is primarily a result of traffic associated with WEG. Accordingly the background noise levels for the existing and future baselines would be materially the same. Therefore, noise effects have been assessed against the existing baseline for simplicity, unless otherwise stated.

8.31 Noise and vibration due to demolition and construction was assessed in accordance with BS5228:2009+A1:2014 accounting for the following:

- Typical plant equipment and representative periods of operation. Equipment and activity sound power levels were taken from BS5228:2009+A1:2014 as described in Appendix 8.3(R);
- Distance attenuation between source and receiver;
- Percentage operating time of the plant;
- Any relevant barrier attenuation effects;
- Ground absorption; and
- Façade corrections.

8.32 No attenuation from site hoardings was allowed for as many of the identified NSRs are several storeys high and therefore would have direct line of sight to the demolition and construction works.

8.33 The potential effects of demolition and construction vibration on human receptors have been assessed with reference to BS 5228-2:2009+A1:2014, considering only the construction activities most likely to result in perceptible levels of vibration within the nearby receptor buildings. For this development, the worst-case activity would be piling during the Excavation and Remediation stage.

8.34 The potential effects of construction vibration on buildings have also been assessed where demolition or construction activities would occur very close to receptor buildings. Construction vibration effects on buildings were assessed with reference to BS7385-2:1993[27].

Demolition and Construction Stage

8.35 Demolition and construction plant noise and traffic have been assessed against the existing measured baseline (2020). This includes construction traffic to/from WEG at the time of the noise survey. Details of the demolition and construction plant assumptions are given in Technical Appendix 8.3.

Completed Development Stage

8.36 Operational plant noise has been assessed against the existing (2020) background noise climate.

8.37 Operational noise from servicing has been considered against the existing baseline (2020), as this is predicted to be the same as the future baseline in terms of noise.

8.38 Changes in road traffic noise have been assessed through calculations in accordance with CRTN and through a comparison with road traffic noise levels predicted for existing baseline (2020).

Noise Transfer from Commercial Units to Dwellings

8.39 Building Regulations Approved Document E provides minimum quantitative sound insulation performance requirements between dwellings. For separations to "*other parts of the same building*" (i.e. commercial areas) it simply states:

[26] International Organization for Standardization, 1996. ISO 9613: 1996 Part 2 Attenuation of sound during propagation outdoors, ISO.

[27] British Standards Institution, 1993. Evaluation and Measurement of Vibration in Buildings. Guide to Damage Levels from Groundborne Vibration.

"A higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations the appropriate level of sound insulation will depend on the noise generated in the communal or non-domestic space. Specialist advice may be needed to establish if a higher standard of sound insulation is required and, if so, to determine the appropriate level."

8.40 There are no specific acoustic guidance documents which provide an approach to the assessment of noise from commercial spaces to residential areas, or which provide quantitative design criteria to follow for such adjacencies.

8.41 For this reason, limits for noise from commercial spaces have been set within dwellings, based on professional judgement and experience of what has been considered acceptable at similar developments.

8.42 The impact of noise from the commercial units to dwellings above is dependent on the noise levels generated within the commercial space. This would not be known until the detailed design stage and so a full assessment will be undertaken prior to fitout of the units to ensure that the limits would be achieved, in accordance with standard practice. Typically, this involves setting operating noise limits to be included in Heads of Terms for the Tenants of the commercial units and a review of sound insulation provision during the detailed design stages.

Site Suitability

8.43 An acoustic model of the 2022 amended proposed development was produced which encompassed the entirety of the site, in addition to the immediate surrounding road links.

8.44 The model was calibrated based on the measured noise levels on-site, in addition to the Scenario 4 traffic information for the relevant road links present within the model's assessment area.

8.45 Noise levels were calculated at the façade and the noise break-in to the residential units predicted. In order to meet the internal ambient noise criteria, minimum glazing specifications have been provided based on mechanical ventilation with heat recovery (MVHR) being provided. Consideration has been given to preliminary overheating studies undertaken for the 2022 amended proposed development. The final façade and ventilation strategy will be developed during detailed design, in conjunction with the design team.

Cumulative Stage

8.46 A cumulative assessment has been undertaken of the schemes identified within Chapter 2(R): EIA Process and Methodology in combination with the 2022 amended proposed development. WEG and 14-17 PG have been considered as existing receptors, with traffic data included as per the time of assessment i.e. relevant demolition and construction traffic to/from these sites has been included in both the baseline and future baseline years. Full traffic flows are presented in Appendix 8.4(R).

Assessment Criteria

8.47 The criteria used to assess if an effect is significant or not, is set out in subsequent sub-sections. This has been determined by consideration of the sensitivity of the receptor, magnitude of impact and scale of the effect. In considering the significance of an effect, consideration has been given to the duration of the effect, the geographical extent of the effect and the application of professional judgement.

Receptor Sensitivity/Value Criteria

8.48 The sensitivity of receptors has been classified as low, medium or high, in accordance with the criteria set out in Table 8.2.

Table 8.2: Receptor Sensitivity Criteria

Sensitivity	Receptor Type
Low	Commercial
Medium	Offices
High	Residential / hotels / schools/ healthcare/ religious

Impact Magnitude Criteria

8.49 The magnitude of impact has been classified as low, medium or high, in accordance with the criteria set out in Tables 8.3 to 8.8.

8.50 As outlined in detail in Appendix 8.1(R), the effect levels are based on PPG and are defined as:

- No Observed Adverse Effect Level (NOAEL);
- Lowest Observed Adverse Effect Level (LOAEL): noise that can be heard and can cause small changes to behaviour and/or attitudes; and
- Significant Observed Adverse Effect Level (SOAEL): noise that can cause a change in behaviour and/or attitude.

Demolition and Construction Plant Noise

8.51 In order to determine the likely effect of noise during demolition and construction of the 2022 amended proposed development, noise predictions were carried out in accordance with the procedures presented in BS5228, taking full account of Best Practicable Means (BPM) to be adopted by the 2022 amended proposed development (see Chapter 5(R): Demolition and Construction Description).

8.52 Demolition and construction would take place on weekdays (0800-1800) and Saturdays (0800-1300), with no noisy working on Sundays or bank holidays. The demolition and construction traffic flows provided are based upon a 10-hour working day which represents a 'worst-case scenario'.

8.53 The '5 dB change method', as described in BS5228-1:2014, has been applied. The resulting criteria to all receptors are set out in Table 8.3. It should be noted that a cut-off of 65dB L_{Aeq} applies in the daytime i.e. a change in excess of 5dB change would still be considered a low impact if the absolute levels is ≤65dB L_{Aeq}.

Table 8.3: Magnitude of Impact – Demolition and Construction Noise

Description	Adverse Effect Level	Magnitude of Impact
> 10 dB change in noise level between total level and existing ambient noise level	SOAEL	High
5 – 10 dB change in noise level between total level and existing ambient noise level	LOAEL	Medium
< 5 dB change in noise level between total level and existing ambient noise level	NOAEL	Low

Demolition and Construction Traffic

8.54 Demolition and construction traffic to and from the site has been assessed as a percentage change from the existing baseline traffic on the road network.

8.55 Demolition and construction traffic on the site itself has been assessed using the 'haul route method'.

8.56 The magnitude of the predicted change in noise levels has used the scale shown in Table 8.4. The criteria are based on the current guidance on short-term changes in traffic noise levels in the DMRB.

Table 8.4: Magnitude of Impact – Demolition and Construction Road Traffic Noise Changes (short term)

Change in Traffic Basic Noise Level $L_{A10,18h}$ dB	Adverse Effect Level	Magnitude of Impact
≥ 5	SOAEL	High
3 to 4.9	LOAEL	Medium
1 to 2.9	NOAEL	Low
<1	NOEL	Very Low

Demolition and Construction Vibration

8.57 BS5228 states that for the majority of people, vibration levels between 0.14 and 0.3 mm/s Peak Particle Velocity (PPV) are just perceptible. A vibration level of 1.0 mm/s is sufficient to cause complaint, but tolerable with prior warning, whereas a level of 10 mm/s is intolerable for anything more than a very brief exposure.

8.58 Table 8.5 presents the magnitude of impact for levels of demolition and construction vibration in relation to human response.

Table 8.5: Magnitude of Impact - Demolition and Construction Vibration and Human Response

Effect	Vibration Level ppv $mm.s^{-1}$	Adverse Effect Level	Magnitude of Impact
Vibration is likely to be intolerable for any more than a very brief exposure to this level.	10	SOAEL	High
It is likely that vibration of this level in residential environments will cause complaints but can be tolerated if prior warning and explanation has been given to residents.	1.0	LOAEL	Medium
Vibration might be just perceptible in residential environments.	0.3	NOAEL	Low
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.	0.14	NOEL	Very Low

8.59 BS7385 provides suggest vibration guide values for reviewing the risk of vibration-induced cosmetic damage in buildings. This standard recommends that, for residential or light commercial type buildings, transient vibration with a predominant pulse in the frequency range of 4 to 15 Hz should not exceed 15 $mm.s^{-1}$ at 4 Hz increasing to 20 $mm.s^{-1}$ at 15 Hz is stated.

8.60 Table 8.6 presents the magnitude of impact for levels of demolition and construction vibration in relation to potential cosmetic damage to buildings, which have been used in this assessment.

Table 8.6: Magnitude of Impact - Demolition and Construction Vibration and Building Response

Effect	Vibration Level ppv $mm.s^{-1}$	Adverse Effect Level	Magnitude of Impact
Above the guide value for potential cosmetic damage due to vibration (with frequencies between 4 and 15 Hz)	20 or above	SOAEL	High
Above the guide value for potential cosmetic damage due to vibration (with frequency around 4 Hz)	15 to 19.9	LOAEL	Medium

[28] Association of Noise Consultants, 2020. Acoustics, Ventilation and Overheating: Residential Design Guide.

Table 8.6: Magnitude of Impact - Demolition and Construction Vibration and Building Response

Effect	Vibration Level ppv $mm.s^{-1}$	Adverse Effect Level	Magnitude of Impact
Below the guide value for potential cosmetic damage due to vibration (transient vibration only)	7.5 to 14.9	NOAEL	Low
Below the guide value for potential cosmetic damage due to vibration (transient and continuous vibration only)	Below 7.5	NOEL	Very Low

8.61 BS 5228:2009 Part 2 provides historical data for PPV's of continuous flight auger (CFA) piling operations at various distances, as summarised in Table 8.7. This data can be used to provide an indicative assessment of the distance at which significant vibration impacts could occur. However, the ground conditions on-site would affect the propagation and piling methods employed and therefore this method is suitable for initial estimates only.

Table 8.7: Estimated Peak Particle Velocity for Piling

Piling Method	Distance from source (m)			
	1	10	20	30
CFA	12.5 $mm.s^{-1}$	0.38 $mm.s^{-1}$	0.3 $mm.s^{-1}$	0.03 $mm.s^{-1}$

Site Suitability - Noise

8.62 The site suitability assessment for residential use (methodology and results) is detailed in Technical Appendix 8.4(R): Site Suitability.

8.63 This assesses the noise levels as modelled on the building facades in the future baseline scenario (2030) and gives outline guidance on the façade strategy required to meet the BS8223:2014 internal ambient noise level criteria and WHO Guidelines for Community Noise. This is designed to future-proof the scheme against known cumulative schemes. The assessment also considers the Acoustics, Ventilation and Overheating guidance[28], so as to provide an internal environment that is comfortable from an acoustic and thermal perspective. Subject to achievement of these criteria the effect would be Negligible.

Operational Noise from Fixed Plant Installations

8.64 The type, quantity and location of fixed mechanical and electrical (M&E) plant associated with the 2022 amended proposed development has not been finalised at this stage in the design and hence it is not possible to fully quantify the building services plant noise impact at the nearest NSRs.

8.65 As is standard good practice, the design of appropriate noise mitigation for each individual plant item would be undertaken during the detailed design stage. Noise emissions from plant associated with the 2022 amended proposed development would, therefore, be controlled via a suitably worded planning condition.

8.66 Suitable criteria for determining the magnitude of the impact have been based on the guidance in BS4142: 2014. The basis of BS 4142 is a comparison between the existing background noise level at the façade of the nearest NSRs and the plant noise rating level of all new fixed plant sources associated with the 2022 amended proposed development. The relevant parameters in this instance are as follows:

- Background Sound Level – $L_{A90,T}$ – defined in the Standard as the 'A' weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, and quoted to the nearest whole number of decibels;
- Specific Sound Level – $L_{Aeq,Tr}$ – the equivalent continuous 'A' weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T;