

THE GOODSYARD

Environmental Statement Addendum Volume 2

September 2019 – Chapter 5 of 21

ballymore.



Hammerson

CHAPTER 5: THE REVISED SCHEME AND CONSTRUCTION OVERVIEW

5.1 INTRODUCTION

- 5.1.1 This chapter describes the key elements of the Revised Scheme, including those features which may lead to significant environmental effects and includes a summary of the key construction activities and associated construction programme.
- 5.1.2 The key drawings which have formed the basis of the EIA assessment are listed in **ES Addendum, Volume 4, Appendix A.4**. For the full list of plans, sections and elevations refer to the accompanying planning application documents.

5.2 THE REVISED SCHEME

- 5.2.1 The layout of the Revised Scheme at ground level is shown in **Figure 5.1**. The layout at podium level is shown in **Figure 5.2** and basements are shown in **Figure 5.3**. Additional visualisations of the Revised Scheme are provided throughout this chapter to aid the reader with the understanding of the Revised Scheme design.
- 5.2.2 The range of uses proposed in the Application comprises the following:
- Residential (Class C3);
 - Business (Class B1);
 - Retail (Class A1, A2, A3 and A5);
 - Non-residential Institutions, Assembly and Leisure (Class D1 and D2);
 - Hotel (Class);
 - Public Conveniences; and
 - Public open space and landscaping.
- 5.2.3 The Application divides the site up into 10 Building Plots (known as Plots 1 to 11 – there is no Plot 9). The listed elements (Plots 7A-D) in addition to the tallest building (Plot 2) are submitted in detail.
- Plot 1 (Formerly Plots A and B)**
- 5.2.4 The Application proposes a building of 12-16 storeys plus ground in height comprising office and ground floor retail floorspace. The building straddles the boundary between LBH and LBTH and also bridges over the London Overground box.
- 5.2.5 The Revised Scheme maintains the height of the building and the type of uses and retains the bridging over the London Overground box. The building massing is proposed to be revised to include setbacks at the upper levels.
- Plot 2 (Formerly Plots F and G)**
- 5.2.6 The Revised Scheme replaces the two tallest residential buildings with a commercial building with retail at the ground floor. The building would extend from 17 up to 29 storeys, would be the tallest building proposed in the Revised Scheme and is submitted in detail.
- Plot 3 (Formerly Plot K)**
- 5.2.7 The Application proposes a 7-storey building comprising office and retail floorspace. The building straddles the boundary between LBH and LBTH and also bridges over the open cut railway line. The Revised Scheme maintains the height, footprint and type of uses proposed.
- Plot 4 (Formerly Plot C)**
- 5.2.8 The Revised Scheme maintains the uses within this building and comprise retail at ground floor with residential above. The height of the building is proposed to be 11-19 storeys (with retail at ground floor).
- Plot 5 (Formerly Plot D)**
- 5.2.9 The Revised Scheme maintains the uses within this building and comprises retail at ground floor with residential above. The height of the building is proposed to be reduced to between 6 -13 storeys (with retail at ground floor). The existing Weavers Cottage and the Mission Chapel are to be retained.
- Plot 6 (Formerly Plot E)**
- 5.2.10 The Revised Scheme changes the use of this building to a cultural use with retail use. The height of the building is proposed to be 5 storeys.

Plots 7, (Formerly Plots H, I, J), 8, 8A, 8B, 8C, and 11 (the Pavilion)

- 5.2.11 The Revised Scheme maintains the mix of retail uses within the arches with public open space above, as currently proposed (Plot 7). Plot 8 introduces hotel and residential use with access at ground floor level within a 25 storey building to the west of Braithwaite Street, plus 4 storey buildings on top of the existing arches. The Revised Scheme introduces hotel use within Plot 8.

Plot 10

- 5.2.12 The Revised Scheme proposes three plots (Plots 10A, 10B and 10C) ranging from 3 to 11 storeys with retail use at the ground floor and residential use above.
- Public Open Space**
- 5.2.13 The overall amount of public space as part of the Revised Scheme would increase to 12,627 m² at platform level, including an area of consolidated open space at the eastern end of the platform, and 12,958 m² at ground level.

Land Use Mix and Areas

- 5.2.14 **Table 5.3** below presents the breakdown of maximum parameter areas by land use type for all plots within the Revised Scheme. It presents two alternative use area options for Plots 1 and 3, one option with more retail and one with more office space. **Table 5.4** shows the same information for the minimum parameters.
- 5.2.15 **Table 5.1** presents the proposed dwelling mix for the residential component of the maximum parameter scheme.

Table 5.1 Dwelling Mix based on the Maximum Parameter

MAXIMUM (Parameter) SCHEME – Number of Units						
Unit Type	Studio	1 Bed	2 Bed	3 Bed	4 Bed	Total
Social	0	21	27	28	14	90
Shared Ownership	0	12	39	44	0	95
Private	0	242	72	1	0	315
Total	0	275	138	73	14	500

- 5.2.16 **Table 5.2** presents the proposed dwelling mix for the residential component of the minimum parameter scheme.

Table 5.2 Dwelling Mix based upon the Minimum Parameter

MINIMUM (Parameter) SCHEME – Number of Units						
Unit Type	Studio	1 Bed	2 Bed	3 Bed	4 Bed	Total
Social	0	18	16	19	10	63
Shared Ownership	0	18	39	19	0	76
Private	0	151	49	7	0	207
Total	0	187	104	45	10	346

- 5.2.17 The basements will continue to be provided in Plots 1 and 2, as demonstrated in **Figure 5.3**. An existing basement will be restored and retained in Plot 7. There will be no other basements on site.

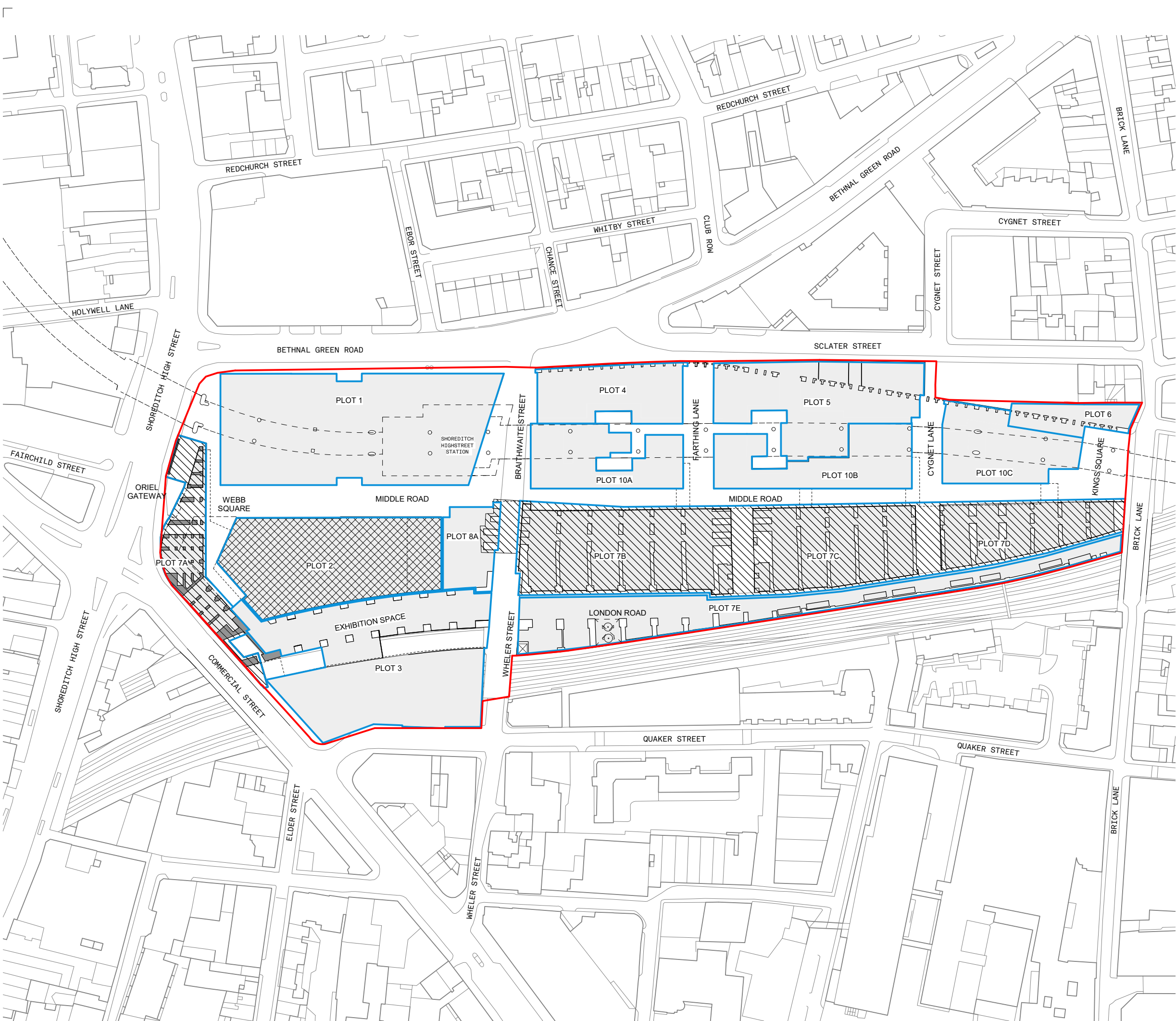


DIAGRAM KEY:

APPLICATION BOUNDARY

EXTENTS ABOVE (PROJECTION)

BUILDING PLOTS (MAXIMUM EXTENTS)

EXISTING RETAINED STRUCTURE

LONDON OVERGROUND ABOVE

FULL DETAILS SUBMITTED

FULL DETAILS AND LISTED BUILDING APPLICATION SUBMITTED

MAXIMUM PLOT BOUNDARY FIXED

notes:

rev	date	by

drawing and design copyright of:

FAULKNERBROWNS ARCHITECTS

client:

project:

BISHOPGATE GOODSYARD

north:

site address:

BRAITHWAITE ST LONDON E1 6GJ

plot key:

do not scale this drawing
do not derive measurements from digital media

drawing status:

PLANNING : FOR APPROVAL

title:

PARAMETERS - MAXIMUM DEVELOPMENT PLOTS (GROUND)

scale:

1 : 750

size:

A1

scale bar:

0m10m20m30m40m50m60m

drawing no:

BGY-FBA-00-00-DR-A-00-0023

rev	suit	drawn by	checked by
P1	S0	AM	CE

Figure 5.1 Proposed Ground Floor Layout

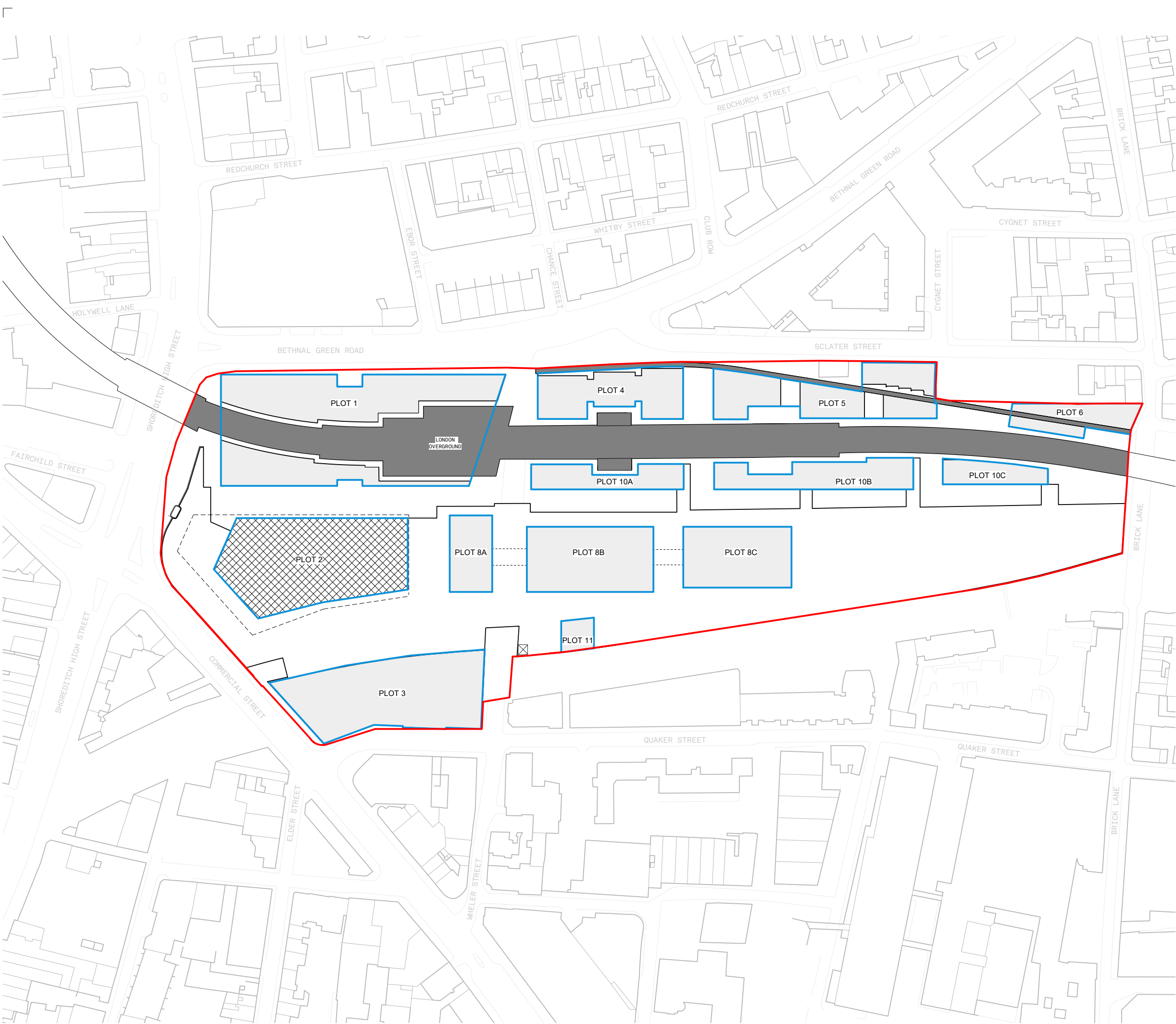


Figure 5.2 Revised Scheme Layout at Podium Level

DIAGRAM KEY:

APPLICATION
BOUNDARY

BUILDING
EXTENTS
ABOVE
(PROJECTION)

BUILDING
PLOTS
(MAXIMUM
EXTENTS)

EXISTING
RETAINED
STRUCTURE

LONDON
OVERGROUND
ABOVE

MAXIMUM PLOT
BOUNDARY

FULL DETAILS
SUBMITTED

notes:

rev	date	by

drawing and design copyright of:

FAULKNERBROWNS
ARCHITECTS

client:

Hammerston

ballymore.

project:

BISHOPGATE GOODSYARD

north:

site address: BRAITHWAITE ST
LONDON
E1 6GJ

plot key:

do not scale this drawing
do no derive measurements from digital media

drawing status:

PLANNING : FOR APPROVAL

title:

PARAMETERS - MAXIMUM
DEVELOPMENT PLOTS (PLATFORM
LEVEL)

scale:

1 : 750

size:

A1

scale bar:

0m10m20m30m40m50m60m

drawing no:

BGY-FBA-00-00-DR-A-00-0024

rev:

P1

suit:

S0

drawn by:

AM

checked by:

PR

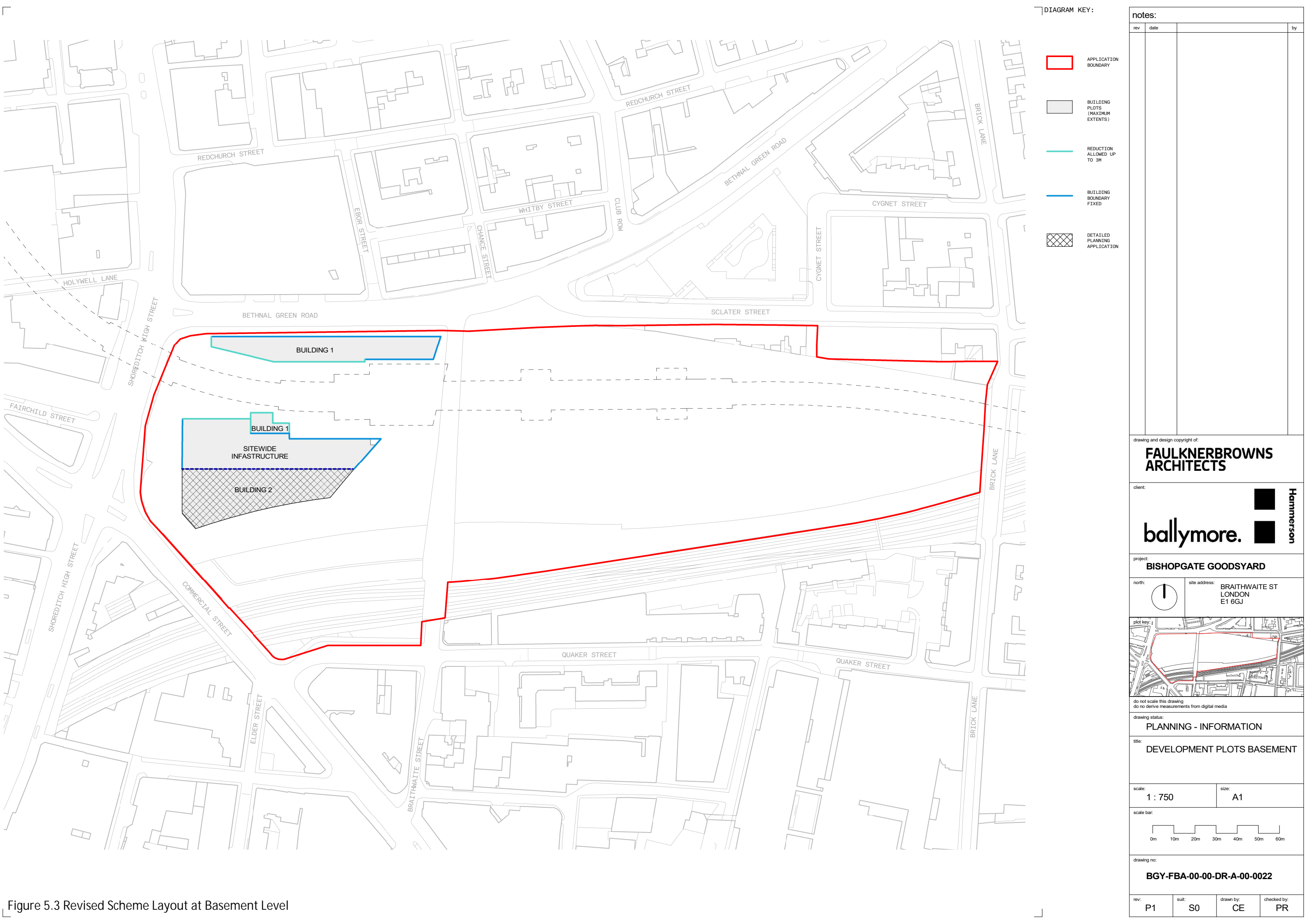


Figure 5.3 Revised Scheme Layout at Basement Level

Table 5.3 Use Area GEA Totals at Maximum Parameters

Use class	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 10	Plot 11	SITE USE TOTAL M²
A1, A2, A3, A5 (Retail) m²	945	2,350	2,470	587	1,004	0	5,878	2,578	3,565	170	19,547
B1 (Office) m²	54,230	66,930	17,342	0	521	0	0	0	0	0	139,023
C1 (Hotel) m²	0	0	0	0	0	0	0	11,595	0	0	11,595
C3 (Residential) m²	0	0	0	13,969	9,518	0	0	11,300	13,721	0	48,508
D1/D2 (Non-Residential/Assembly and Leisure) m²	0	0	3,685	0	315	2,385	390	299	0	0	7,074
Sui-Generis m²	0	0	0	0	0	0	99	0	202	0	301
Plant/Ancillary m²	7,038	7,317	1,134	1,218	423	78	0	2,816	1,192	0	21,216
Service Yard/Ancillary m² (not included within plot)	0	0	0	206	869	0	0	226	499	0	1,800
TOTAL PER PLOT M²	61,572	76,597	20,363	15,980	12,650	2,463	6,367	28,515	19,179	170	
Total Site GEA (m²)											243,856

Table 5.4 Use Area GEA Totals at Minimum Parameters

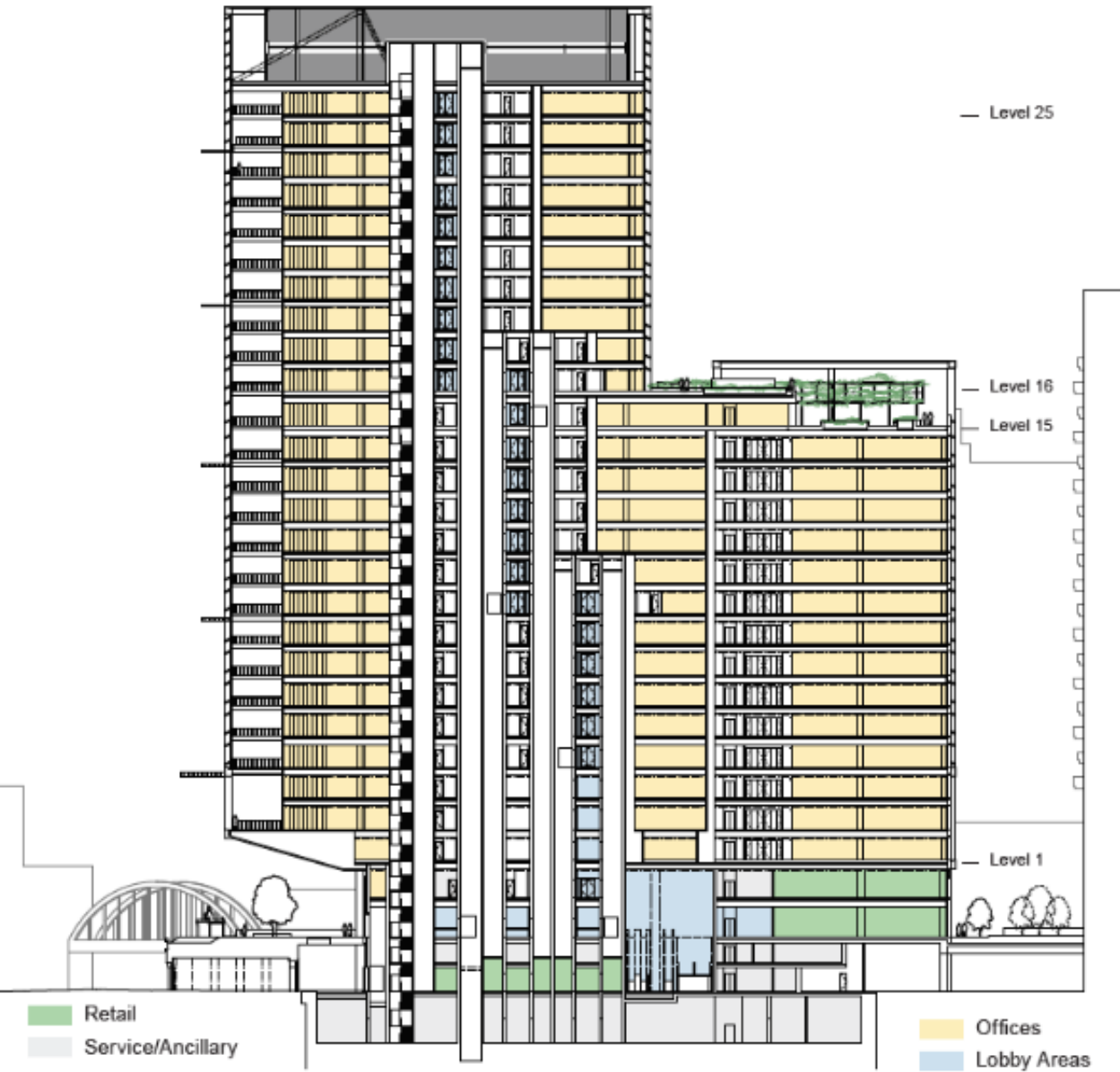
	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 10	Plot 11	SITE USE TOTAL M²
A1, A2, A3, A5 (Retail) m²	631	2,350	2,035	587	1,004	0	5,878	2,123	2,771	170	17,549
B1 (Office) m²	36,504	66,930	10,029	0	521	0	0	0	0	0	113,984
C1 (Hotel) m²	0	0	0	0	0	0	0	10,135	0	0	10,135
C3 (Residential) m²	0	0	0	12,151	7,615	0	0	7,323	7,743	0	34,832
D1/D2 (Non-Residential/Assembly and Leisure) m²	0	0	1,694	0	315	1,768	390	295	0	0	4,462
Sui-Generis m²	0	0	0	0	0	0	99	0	159	0	258
Plant/Ancillary m²	4,637	7,317	1,018	1,218	394	78	0	2,678	895	0	18,235
Service Yard/Ancillary m² (not included within plot)	0	0	0	206	869	0	0	226	499	0	1,800
TOTAL PER PLOT M²	41,344	76,597	14,776	14,162	10,718	1,846	6,367	22,780	12,067	170	
Site Use (per Plot) MAXIMUM GEA (m²)											200,827

Description of Plots and Building Typologies

Detailed Development - Plot 2

- 5.2.18
- Plot 2 is located on the western edge of the site and consists of a single building, which would be the tallest building in the Goodsyrd Masterplan at 142.4 m AOD.
- 5.2.19
- The building is staged with a taller western side consisting 29 storeys and a shorter eastern side of 17 storeys with roof terrace above. It consists of ground floor and podium level (including a podium mezzanine level) retail units with office space above. To the west the building is cantilevered over the oriel gateway.
- 5.2.20
- Building 2 would provide 66,930 m² GEA of office space over 25 floors.
- 5.2.21
- The number of storeys, location of office and retail uses, and the staging and roof terrace are shown in **Figure 5.4**.

Figure 5.4 Long Section of Building 2



- 5.2.22
- The building will be framed in a red-oxide “super-cladding” with glass and white horizontal brize soleil beneath, as shown in **Figure 5.5**.

Figure 5.5 Rendition of the view of Building 2 from Commercial Street

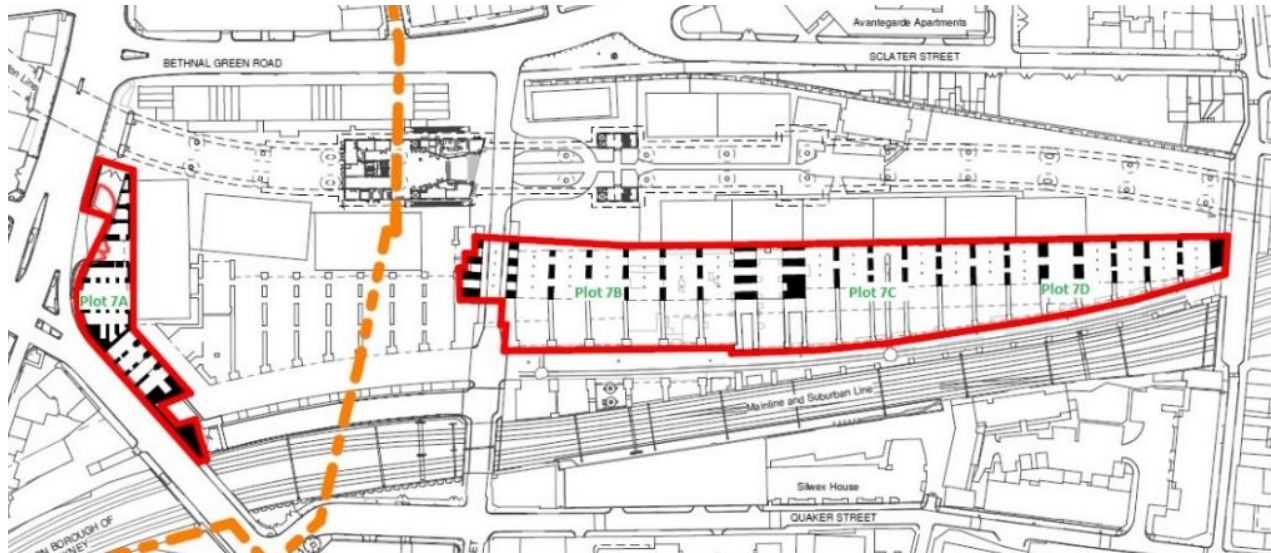


- 5.2.23
- Access to the building would be via the ground floor foyer facing the new east-west pedestrian street (Middle Road) or through the podium landscape to a reception at podium level. Building 2 would have 18 passenger lifts, three staircases and three goods lifts. There would be a cycle store with a dedicated secure street level entrance.

Detailed Planning and Listed Building Consent - Plot 7

- 5.2.24
- Plot 7 consists of retail units located in a number of the site’s heritage assets. The Plot is divided in three areas, the first represented by Plot 7A at the western edge of the site, the second represented by Plot 7 B,C, and D underneath the listed Braithwaite Viaduct, and Plot E incorporating London Road and non-listed arches to the south of London Road at the southern edge of the site. **Figure 5.6** shows the location of the various areas of Plot 7. Plot 7E is not included within the Listed Building Consent application and is therefore submitted in outline.

Figure 5.6 Plot 7 Plan



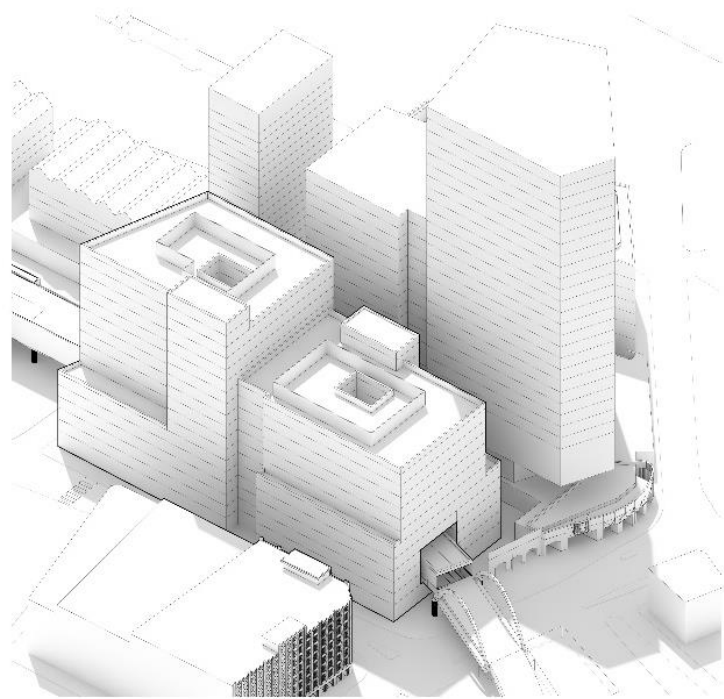
Plot 7A

- 5.2.25 Plot 7A consists of retail units which will be situated in the arches at the western entrance to the site fronting onto Shoreditch High Street. This area currently houses the Grade II listed Oriel, Gates to the Goods Station, gateposts and arches. This area will function as the western gateway to the site, with pedestrian access through three arches beneath and either side of the Oriel. The Oriel Gateway will be restored as shown in **Figure 5.7**.

Figure 5.7 Rendition of the Oriel Gateway in Plot 7A from Shoreditch High Street



Figure 5.8 The Proposed Massing of Building 1 (showing the location of the London Overground as it enters Building 1)



Plot 3

- 5.2.32 Plot 3 (**Figure 5.9**) sits at the South West corner of The Goodsyard on Quaker Street between the Commercial Street and Wheler Street / Braithwaite Street intersections. The Network Rail line runs in the East/West direction through Plot 3, leading into Liverpool Street Station.

Figure 5.9 Rendition of Building 3 (right) at Podium level



Plots 7B, C and D

- 5.2.26 Some retail units will be situated under the arches of the Grade II listed Braithwaite Viaduct (1838-1842) and adjoining unlisted arches along London Road. These arches will be reinforced to support the podium level park above.
- 5.2.27 The historic alignment of the existing London Road, which travels east-west through Plots 7B, C and D between Brick Lane and Braithwaite Street, has been maintained in its entirety with retail units on either side. Retail units will also face onto Braithwaite Street as well as three thoroughfares created by the Revised Scheme – Middle Road, Cygnet Lane and Farthing Lane (as shown in the Masterplan Plot Layout at ground level in **Figure 5.1**).
- 5.2.28 The retail use will be predominantly A1 (shops), A1 (café) and A3 (food and drink).

Elements of the Outline Planning Application

Plot 1

- 5.2.29 Plot 1 comprises a commercial (office) building with retail at the ground floor at the north-west corner of the site.
- 5.2.30 Building 1 would be 89.2 m AOD at its tallest point. The proposed massing has been composed to allow the office building to appear as two separate buildings at 16 and 12 storeys tall when viewed from Bethnal Green Road and Shoreditch Place. The base of the building would be comprised of brick cladding with vertical fins of patinated steel on the upper floor.
- 5.2.31 Building 1 would straddle the London Overground and Shoreditch High Street Station. On the ground floor reception space would run beneath the London Overground structure in the centre of the building with retail on the outside of the building fitting on either side of the station. Floors 1-5 will fit smaller scale office space either side of the viaduct which would be accessed through the reception space. Upper floors above the London Overground structure span the length of the building. **Figure 5.8** shows the proposed massing storeys and the accommodation of the London Overground box running through Building 1

5.2.33 As the building straddles the Network Rail, it has been designed to accommodate this infrastructure including the gantries above the rail line. A 2.5m offset is required around the gantries. The first floor slab clears the gantries and sits at the same level as the podium. Beneath the first floor slab but between the gantries there is an opportunity for plant space, cycle storage or retail units with frontage onto commercial street.

Plots 4 and 5

5.2.34 Plots 4 and 5 are residential buildings with retail on the ground floor to the north of the site and facing onto Sclater Street. Plot 5 will contain a medical centre in Block A.

5.2.35 The existing boundary wall will be retained and incorporated into the new buildings on Plots 4 and 5. The Goodsyard boundary brick wall (c.1850), three Weavers' cottages (c. 1719), the Mission Hall (1876) and Victorian Building (1877) are all of historical significance and form part of Plot 5. **Figure 5.11** shows the proposed elevation including the restored existing buildings across Sclater street.

5.2.36 Plot 4 consists of a single building expressed as three distinct, vertical elements, all clad in brick but of differing colour and texture. **Figure 5.10** demonstrates the massing and design of Building 4 from the north elevation. The tallest block of Building 4 would be 19 storeys and a maximum of 81.5 m AOD

Figure 5.10 Illustrative view of north elevation (from Sclater Street) of Building 4



5.2.37 The two larger buildings share a brickwork architecture and are visually separated into two blocks of differing height. The smallest building on the plot is made of green glazed bricks, is set back behind the Weavers cottage and is five storeys **Figure 5.11** demonstrates the design, massing and relationships between the three Plot 5 buildings.

Figure 5.11 Illustrative view of North Elevation of Plot 5 from Sclater Street



Plot 6

5.2.38 Plot 6 is the most easterly plot within the Goodsyard masterplan. It is bound to the south by the elevated London Overground viaduct, to the east by Brick Lane, to the north by existing buildings beyond the boundary of the site, and to the west

5.2.39 The plot is organised in 2 blocks, linked by a shared ground floor. These plots will host cultural use types (D2). It will be up to 5 storeys in total with a maximum height of 32.5 m AOD.

5.2.40 The western block is clad in a translucent concertina glass feature wall and the eastern block is clad in brick with perforated brick feature walls. The key frontages are onto Brick Lane to the east (as shown in **Figure 5.12**), the proposed Middle Lane to the south, and a proposed new square off Brick lane to the south-east.

Figure 5.12 Illustrative view of Plot 6 from Brick Lane



5.2.41 Plot 6 straddles the northern boundary wall and will incorporate it into the shared ground floor of Plot 6. Each block is relatively small and houses one, open-plan community space per upper floor,

Plot 7E

- 5.2.42
- Plot 7E consists of the historic London Road from Braithwaite Street westwards, and retail units under non-listed arches to the south of London Road.
- 5.2.43
- The D2 use in Plot 7E will be a visitor/ education space which houses the historic hydraulic accumulator in some existing basements, which will be preserved in the Revised Scheme.
- Plot 8
- 5.2.44
- Plot 8 is located to the centre of The Goodsyard masterplan and is partially sited above the Grade II listed Braithwaite Viaduct. The entire plot sits wholly within the London Borough of Tower Hamlets.
- 5.2.45
- Plot 8 is split into three blocks. The eastern two of these blocks sit directly over the listed viaduct (8B and 8C). The facade of these blocks is clad in timber and is divided into bays by vertical metal channels. They are a maximum 4 storeys in height and are entirely occupied by the hotel function.
- 5.2.46
- The block furthest west (8A), sits on the west side of Wheler Street in an area where the non-listed arches are proposed to be demolished. Block 8A is the only block that comes to ground level and comprises of a single tower. Building 8A is framed by expressed vertical brick piers and horizontal masonry lintels, with a metal window system and bronze panels within.
- 5.2.47
- The hotel function will be split across three blocks, with glazed bridges to connect the two podium level buildings to the larger building 8A as shown in **Figure 5.13**, which house the lobbies at the ground level and level four.
- 5.2.48
- The residential component is limited to Block 8A only and will start from level 6 upwards.

Figure 5.13 Illustrative view of North elevation of Plot 8



Plot 10

- 5.2.49
- Plot 10 is located centrally within The Goodsyard masterplan to the northern edge of Middle Road; the main east-west route through the site. The plot sits entirely within the London Borough of Tower Hamlets.
- 5.2.50
- The plot is organised into 3 separate blocks of residential use with retail underneath. Blocks A and B are staged at three separate heights whereas Block C is staged at two separate heights and is reduced in scale relative to Blocks A and B. The heights of buildings in Plot 10 is outlined in Table 5.5 below.

Table 5.5 Number of storeys of buildings in Plot 10

Building	Number of Storeys
A	Tallest western block – 10 storeys Shortest middle block – 6 storeys Mid-height eastern block – 9 storeys
B	Mid-height western block – 10 storeys Shortest middle block – 6 storeys Tallest eastern block – 11 storeys (maximum height 57.3 m AOD)
C	Taller western block – 7 storeys Shorter eastern block – 3 storeys

- 5.2.51
- Frontages to Plot 10 buildings will be on to roads internal to the site - the east-west Middle Street and the north-south Braithwaite Street, Farthing Lane and Cygnet Lane. The buildings will be clad in brick of varying colours with crital windows.

Plot 11

- 5.2.52
- This plot consists of a single storey building, “The Pavilion”, located in the park at podium level providing 170 m² of retail space.

Open Space

- 5.2.53
- The total public realm across the ground and platform levels will be 25,812 m². There will be further private open space for residents, office workers and hotel guests, and inaccessible biodiversity space including green roofs.
- 5.2.54
- Landscaping on the site is divided into four levels – ground, platform, roof terrace and biodiverse roof.
- 5.2.55
- The ground level will provide both covered (under the existing viaduct) and open publicly accessible open space consisting of gateways, streets and squares. The total public realm at the ground level will be 12,958 m². Stairways and adjacent lifts provide access to the podium level. **Figure 5.17** shows the ground level public realm.
- 5.2.56
- The total public realm at the platform level will be 12,854 m². Landscaping at the platform level consists of:
 - The Balconies – above the eastern and western gateways to the site.
 - The Gardens – three smaller spaces between the podium buildings (Buildings 2, 8A, 8B and 8C), including a private communal play garden for building 8A residents.
 - The Field – the largest consolidated open space at the eastern end, consisting of an open lawn area and wooded play garden, together 4133 m².
 - The Banks – a linear route running east to west connecting the Balconies, Gardens and Field at the southern edge of the site reflecting the podiums of the original Goodsyard. The southern boundary is formed by the railway lines and the required safety barrier which is to be 3 m high and set back from the rail edge by minimum of 3 m (to provide for utilities service zone the actual dimension varies up to 4.25 m).
- 5.2.57
- The landscape masterplan at the platform level is shown in **Figure 5.18**.

Figure 5.14 Illustrative view of platform level open space looking west



5.2.58 Roof garden terraces will provide privately accessed communal space for residents (on Buildings 4, 5, 10A, 10B and 10C), office workers (on Buildings 1, 2 and 3) and the hotel. Private residential roof terraces will include space for children's play. The landscape masterplan at the roof level is shown in **Figure 5.18**.

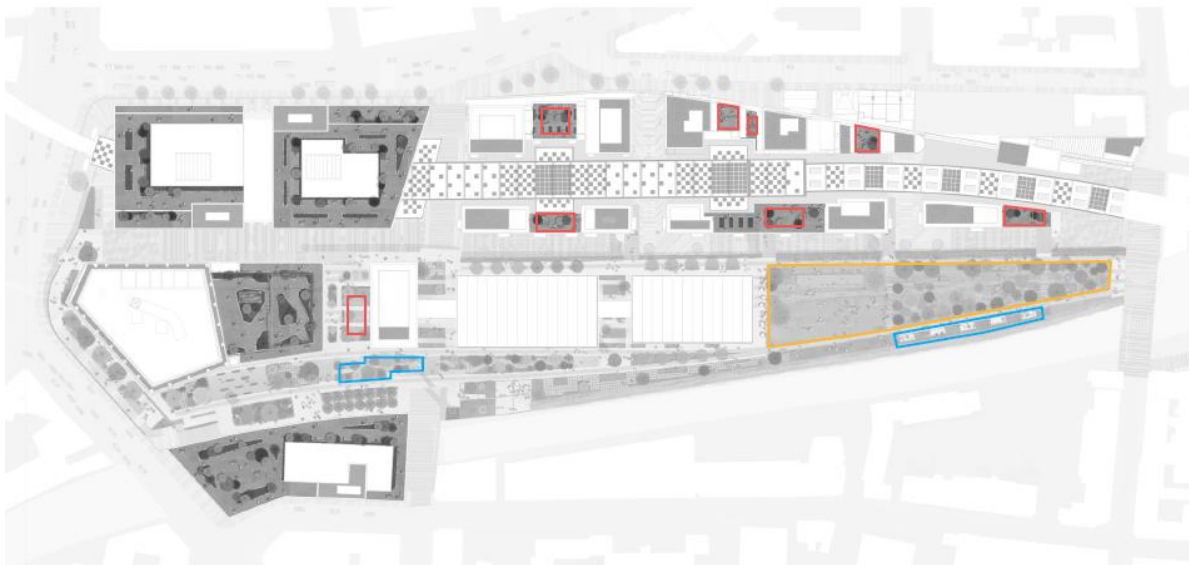
5.2.59 There will also be non-accessible biodiverse roof (see paragraph 5.2.163 Green Infrastructure, below).

Play and Recreation

5.2.60 The Revised Scheme will incorporate 3,970 m² of play space.

5.2.61 The private communal residents' garden roof terrace of the residential buildings will provide doorstep playable space for children aged 0-5. The podium level public realm, especially the wooded play garden in the Field will provide local playable space for ages 5-11 as well as youth space for children ages 12+. The location of onsite play provision is shown in **Figure 5.15**.

Figure 5.15 Playable Space Distribution

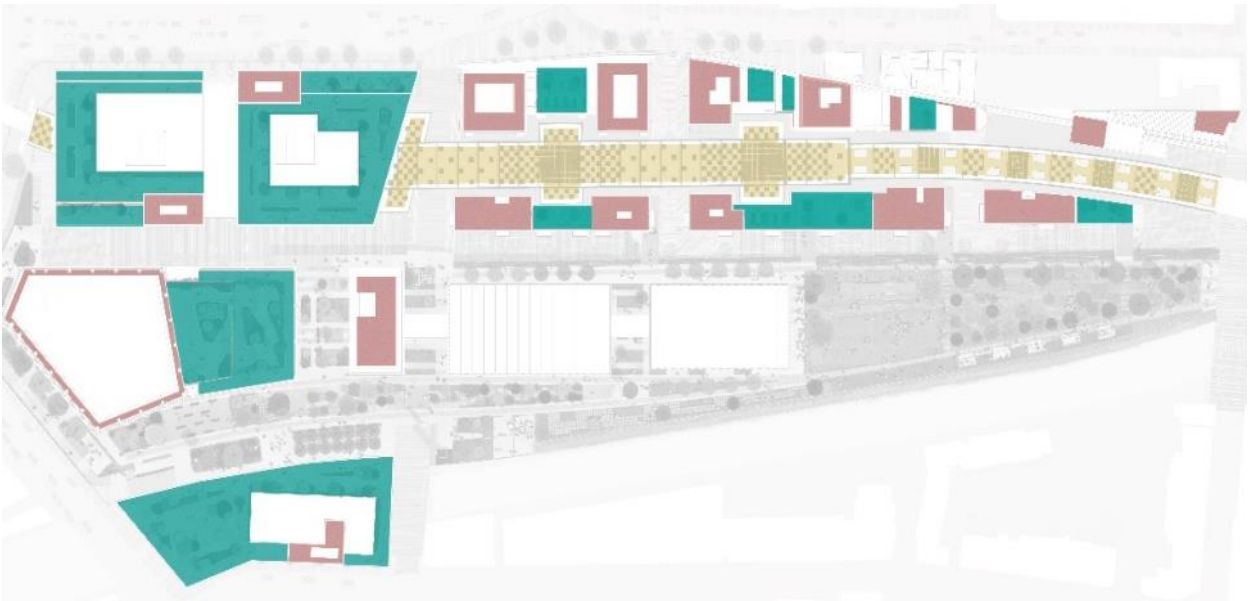


5.2.62 Areas outlined in red represent doorstep playable space. Areas outlined in yellow represent local playable space. Areas outlined in blue represent youth play space.

Green Infrastructure

5.2.63 2,079 m² of biodiverse roof will be provided where roof space is not required for mechanical plant. This will be on Buildings 1, 2, 3, 4, 5, 8A, 10A, 10B and 10C. This will include wildflower rich and drought tolerating planting, bare stony ground left to be colonised naturally by plants, and areas to be colonised by bird and invertebrates. **Figure 5.16** shows the opportunities for biodiverse roofs across the site.

Figure 5.16 Biodiverse roof opportunities



5.2.64 Areas in teal are accessible roof gardens and terraces. Areas in pink are biodiverse roofs providing Open Mosaic Habitat. Areas in yellow are further biodiverse roof opportunity subject to TfL.

5.2.65 1000 m² of Open Mosaic Habitat will be provided to replace the existing habitat identified in the phase 1 ecology report. Of this, 500 m² is within the accessible public realm in the Banks at podium level and 500 m² is inaccessible and located within the 3 m setback from the railway line.

5.2.66 The podium level will also include mixed native tree planting and wildflower grassland as well as woodland glade areas.

5.2.67 At ground level, street trees will predominantly be planted along the northern edge into Sclater Street. Potential opportunities for vertical greening will be explored.

Figure 5.17 Ground level public realm – illustrative masterplan



Podium and roof terrace levels landscape – illustrative masterplan



Sustainability Strategy

- 5.2.68 An outline BREEAM strategy for the Revised Scheme has been prepared which described the site's overall ambitions. All new-build commercial areas will be assessed under the applicable BREEAM scheme as they come forward in detail
- 5.2.69 The decision to pursue formal WELL Building Standard certification will be made on a plot by plot basis, but the sustainability strategy incorporates some of the key principles of these standards
- 5.2.70 The Sustainability Strategy has been applied to the detailed application for Plot 2. Examples of applications include the following:
- Social Aspect – An open, accessible and well-connected place that delivers social value to local communities designed in consultation with the local community and to satisfy the requirements of the five principles of inclusive design;
 - Human Aspect – Distinctive spaces that enhance health and wellbeing designed as to satisfy the ten principles for active design formulated by Public Health England and Sports England; 100% high efficiency external lighting with limited upward light transmission; an indoor thermal environment supporting occupant health, wellbeing and productivity; and incorporating key recommendations provided by the Metropolitan Police Designing Out Crime Officer;
 - Natural Aspect – Seamless integration of built and natural environment which promotes resource efficiency, including roof terraces planted with species chosen to reduce water demand; a designated recycling area in line with BREAMM requirements; a pre-demolition audit of the unlisted arches to maximise the recovery of material for reuse; surface water attenuation achieved through storage including geo-cellular systems located at podium level;
 - Physical Aspect – A low-carbon place which preserves the site's heritage while also embracing innovative solutions such as Be Lean, Be Clean and Be Green measures for energy; a travel plan which includes 900 long-stay cycle storage spaces within Plot 2; and a car free site with on-site parking limited to delivery vehicle loading bays.
 - Economic Aspect – Inclusive growth which creates opportunities for local communities and improves quality of life including; a priority for local procurement; and working with the Borough Councils to develop a strategy including an Employment Skill Plan.

Energy Strategy

- 5.2.71 The London Plan (2016), LBH Local Plan (2015) and the LBTH Core Strategy (2010) set a target of 100% reduction in regulated CO2 emissions for dwellings and a 35% reduction for non-dwelling areas. The London Plan Energy Hierarchy - Be Lean, Be Clean and Be Green – aims to reduce regulated CO2 emissions in a cost effective, viable and technically appropriate manner.
- 5.2.72 Implementing Be Lean measures will lead to a 2% net carbon reduction beyond the 'gas boiler baseline' prior to the consideration of any Low or Zero Carbon technologies.
- 5.2.73 No additional carbon reductions are anticipated at the Be Clean stage as there are no district heating networks to connect to and on site CHP is not possible.
- 5.2.74 The Be Green stage proposes that the masterplan will adopt an electric focussed strategy for heating, cooling and hot water. Photovoltaic (PV) panels are considered the preferred technology for the renewable generation of electricity on site.
- 5.2.75 The strategy proposes individual Air Source Heat Pumps (ASHPs) to serve each plot. The ability to share thermal energy through an energy loop has been investigated and enabled for the Revised Scheme.
- 5.2.76 Considering the cumulative energy savings at the 'Be lean', 'Be clean' and 'Be green' stages within the Plot 2 building, a 35% carbon reduction over the gas boiler baseline is predicted. Energy sharing opportunities as the plots come forward in detail may increase this net reduction further.

Crime Reduction Strategy

- 5.2.77 The following security and crime reduction measures have been incorporated into the Illustrative Proposed Masterplan:
- Well defined site boundaries including the boundary walls and viaducts.
 - Routes through the site will be well lit and car free.
 - Secure cycle storage is provided throughout the site.
 - Liaison with the Met Police, Designing Out Crime officers and CTSA officers throughout the design process.
 - Constantly monitored CCTV provision across site to be connected to a sitewide Building Management System. Trees will not obscure CCTV.
 - Concrete feature benches, bollards and planting as Hostile Vehicle Mitigation measures.
 - Active frontages throughout the site to provide passive security at ground level. Buildings face on to public open space at podium level.
 - Clear definition between public and private spaces.
 - Secured by Design Commercial 2015 version 2 accreditation to be achieved.

- All buildings to have dynamic lockdown procedures, dedicated post rooms.
- Sitewide management once the site is operational, and a security control room.

- 5.2.78 Detailed Crime Reduction Statements have been provided for Plots 2 and 7.

Lighting Strategy

- 5.2.79 The lighting strategy has three principal elements, as follows:
- Operational lighting to provide for safety and security, wayfinding, orientation and visitor comfort. Lighting will integrated into the architecture (around Plots 1,2,3,4,5, 8, 10 and 11), uplighting of vertical planes, low level pathway lighting (throughout the podium level) and illuminated bollard lights.
 - Feature lighting elements to highlight certain features within the public realm, the landscape and the architecture including uplighting to feature elements such as trees and gateways lighting integrated into street furniture such as bench seating (throughout the podium level).
 - Seasonal or temporary installations can be erected for specific events or periods of time. Examples of installations include suspended light webs, fibre optics and fairy lights.

Fire Safety Strategy

- 5.2.80 The fire safety strategy will be designed in accordance with BS 9999:2017 for the retail, office hotel and assembly and recreation.
- 5.2.81 Sprinkler systems will be provided throughout the buildings with a height over 30m. Commercial sprinklers would also be provided in those areas of Plot 7 and 8 that have non-code-compliant access.
- 5.2.82 The development should be provided with a generator as power back up for life safety systems.
- 5.2.83 An external fire spread assessment has been undertaken for the ground floor and podium level. Recommendations are outlined in the Site-Wide Fire Safety Strategy.
- 5.2.84 All plots more than 18 m in height should be provided with a fire-fighting shaft. For buildings greater than 50 m in height a wet riser will be installed. Further site wide fire main outlets and wet risers will be provided. All points within the plots will be a maximum 45 m from a fire main if not sprinklered and a maximum of 60 m if the building is sprinklered Fire main inlets will be provided within 18m of a pumping appliance access route.
- 5.2.85 There is no direct firefighting access to Plots 8B and C and Plot 11 as there is no vehicle access on the podium. Additional measures to address this deviation from standard guidance have been outlined in the Site-Wide Fire Safety Strategy.

Drainage Strategy

- 5.2.86 The Revised Scheme will restrict surface water flows to a total runoff rate of 206.6l/s, for up to the 1 in 100 + 40% cc allowance event.
- 5.2.87 The hydraulic modelling results undertaken for the site shows that the drainage proposals can potentially achieve a reduction of up to 90% in surface water discharge runoff when compared to the existing brownfield runoff rate of the site.
- 5.2.88 In order to achieve the required attenuation for the 1 in 100 year + 40% cc event, attenuation storage will be provided within tanks located at podium and lower ground levels, with the provision of SuDS in the form of blue roof systems at roof level across the majority of the plots.
- 5.2.89 The outline drainage strategy has considered a worst-case scenario, assuming the site is 100% impermeable to ensure sufficient attenuation volume space is allocated within the site. However, during detailed design stages, when landscaped areas extents are confirmed, there may be a possibility for reducing the draining areas positively draining to the attenuation systems and therefore, a possible reduction in the spaces required for attenuation volumes, to achieve a reduction from the existing rates.

Operational Waste Strategy

- 5.2.90 In total, the Revised Scheme is anticipated to generate approximately 714,500L of waste per week: 9101,000L from residential uses, and 7613,500L from non-residential uses. This equates to approximately 7,803 tonnes of waste per year generated as a result of the operational uses associated with the Revised Scheme.

Residential Waste

- 5.2.91 Sufficient waste storage has been provided within the Revised Scheme for the storage of residential waste and recycling. Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.

- 5.2.92

Residential waste stores will contain sufficient waste storage for one weeks’ worth of waste for food, residual (i.e. general) and recyclable waste streams. The store will be easily accessible to all residents, and the bins inside the store will be appropriately laid out to be completely accessible to residents.
- 5.2.93

Appropriate servicing arrangements have been made for the collection of residential waste by the LBTH waste collection vehicle.
- 5.2.94

Bulky waste storage will also be available to residents of each residential plot.
- Non- Residential Waste**
- 5.2.95

The Revised Scheme provides a mix of non-residential use classes:
- 5.2.96

Waste generated from these uses has been calculated using British Standards 5906:2005 and LBTH methodology. The non-residential waste storage calculation methodology splits the waste arisings into three waste streams: recyclable, residual, and food waste (plot and use-class dependant). Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.
- 5.2.97

Storage Requirements have predominantly been based on a twice-weekly or daily collection frequency (plot and use-class dependant).

5.3 CONSTRUCTION OVERVIEW

5.3.1 The Revised Scheme will be constructed in the phases outlined in **Table 5.6**. The locations of each phase can be shown in **Figure 5.19**.

Table 5.6 Proposed Construction Phasing

Phase	Plots / Buildings	Start Date	End Date
Phase 1	Plot 2 (Office) & Plot 7A (Retail)	Q1 2021	Q2 2024
Phase 2	Plot 7B, 7C, 7D, 7E (Retail) & Plot 11 & Park	Q1 2021	Q4 2023
Phase 3	Plot 5 (Residential), Plot 10B (Residential) and Plot 6	Q4 2022	Q1 2025
Phase 4	Plot 8A, 8B, 8C (Hotel & Retail)	Q3 2025	Q3 2028
Phase 5	Plot 10C (Residential)	Q3 2028	Q3 2030
Phase 6	Plot 1 (Office)	Q4 2028	Q3 2031
Phase 7	Plot 4 (Residential) & Plot 10A (Residential)	Q2 2030	Q1 2033
Phase 8	Plot 3 (Office)	Q3 2031	Q1 2034

Description of Works

- 5.3.2

The construction methodology for the Revised Scheme will be prepared subject to approval of the Revised Scheme, following the appointment of a main contractor.
- 5.3.3

The broad construction methodology for the Revised scheme is described in the following section. This is currently indicative subject to detailed development by the appointed construction contractor.
- 5.3.4

It is proposed that the construction works will constitute the following main phases:

•

Substructure works;

•

Super Structure works

•

External Envelope; and

•

Internal Fit Out.

Substructure works

- 5.3.5

The majority of foundations will be piled. Where the buildings above span over an underground rail asset a transfer structure will be constructed to span over the top of the rail asset. Piling operations will be planned to complete a pile within the working shift. The ground bearing slab will be constructed in sequence with the piling operations. This will provide a clear working area to work from for subsequent construction activities.
- 5.3.6

Two main categories of piles proposed based on the ground conditions are:

•

Straight shafted piles founded in London Clay: these pile types are typically used for medium-sized towers in central London. They offer moderate load bearing capacity. Straight-shafted London Clay piles can be formed in several ways, including traditional bored pile methods and continuous flight augured (CFA). Bored piling is preferable where there are likely to be buried obstructions in the ground.

•

Piles founded in Thanet Sand: these piles offer high load bearing capacities. Large, heavy rigs are required to install the piles which will need support fluid (typically bentonite).
- 5.3.7

Due to the significant vertical loads generated on both Plots 1 and 2, bored piles using bentonite fluid to stabilise the bore shaft will have to extend into the Thanet Sand some 42 m below ground.
- 5.3.8

The piles adjacent to the Central Line tunnel may need to be sleeved to the invert level of the tunnel to avoid shedding load on to the cast iron tunnel lining. The introduction of the sleeves to some of these piles adjacent to the LUL tunnel will reduce their load-carrying capacity.
- 5.3.9

It’s anticipated subject to further design development that the remainder of the buildings where not supported off existing arch / viaduct structures, will be either bored or CFA piles terminating in the London Clay with the possible exception being plot 8A, which subject to further design development and based on the final vertical loads may be better suited to Thanet Sand piles which would reduce the number of piles compared to piles founding in the London Clay.
- 5.3.10

Within the arches, the substructure works will be restricted to appropriate underpinning (where necessary) and replacement of the ground floor slab.

Superstructure works

- 5.3.11

The residential buildings (Plots 4, 5, 6, 2, 7, 8 A, B, C and 10 A-C) are to be constructed as a post tensioned concrete frame, whilst the office building (Plot 1) will be constructed as a steel frame with a composite floor slab. Plot 3 will be constructed as a hybrid pre-fabricated solution due to its location spanning over the railway.
- 5.3.12

Where the buildings span across the London Overground a steel transfer structure will be constructed so as not to apply any load to the rail asset.

External Envelope

- 5.3.13

The cladding to all buildings will be panelised and will be taken up the building utilising good hoists.
- 5.3.14

The cladding will be fixed in position utilising either a monorail fixed to the edge of the floor slab or floor cranes positioned 2 floors above the panel fixing; completion to external facades will be by gantry access.

Internal Fit Out

- 5.3.15

It is envisaged that both the residential and office blocks will be fitted out i.e. commercial buildings finished to category A level of fit out including lobby/stairwells and management services; the residential blocks will be fully finished, excluding loose fixtures and fittings. The retail units in the Revised Scheme will be fitted out to a shell and core only, allowing a retail tenant to complete their own internal fit out works.

Plant and Equipment

- 5.3.16

During the excavation, enabling works and the construction of the Revised Scheme a range of plant and equipment will be utilised. This is outlined in **Table 5.7**.

Table 5.7 Plant Type and Equipment used during Demolition and Construction Activities

Plant	Stage					
	Site Clearance	Enabling Works	Foundations and Sub-structure	Super-structure	Cladding	Internal Fit-out
Tracked excavator	✓					
Tower cranes			✓	✓	✓	
Cutters, drills and small tools	✓	✓	✓	✓		
Fork lift truck		✓	✓	✓		✓
Benders and cutters			✓	✓		
Lorries and vans	✓	✓	✓	✓	✓	✓
Mobile lorry mounted concrete pump			✓	✓		
Ready mixed concrete lorry			✓	✓		
Concrete crusher	✓					
Scaffolding and mobile hydraulic podiums	✓		✓	✓	✓	✓
Tipper lorry	✓	✓	✓	✓		
Flat bed articulated lorry	✓	✓	✓	✓	✓	✓
Large rigid lorry	✓	✓	✓	✓	✓	✓
Piling rigs			✓			
Mobile attendance crane			✓			
Dust suppression equipment	✓		✓			
Haulage and muck away vehicles	✓		✓			
Jet wash	✓	✓	✓	✓	✓	✓
Lifting equipment	✓	✓	✓	✓	✓	✓
Mobile elevating work podiums (MEWPS) – boom and scissor				✓	✓	✓
Mortar silos			✓	✓		
Pallet trucks					✓	✓

Plant	Stage					
	Site Clearance	Enabling Works	Foundations and Sub-structure	Super-structure	Cladding	Internal Fit-out
Placing booms			✓	✓		
Skips (placing and waste removal – boat skips)	✓	✓	✓	✓	✓	✓
Survey equipment – levels – lasers – total stations etc	✓	✓	✓	✓	✓	✓
Temporary support materials – props, tables	✓	✓	✓	✓		
Tower lights	✓	✓	✓	✓	✓	✓
Waste compactor	✓	✓	✓	✓	✓	✓
Water pumps			✓			
Welding equipment			✓	✓		
Wheel wash	✓	✓	✓	✓	✓	✓

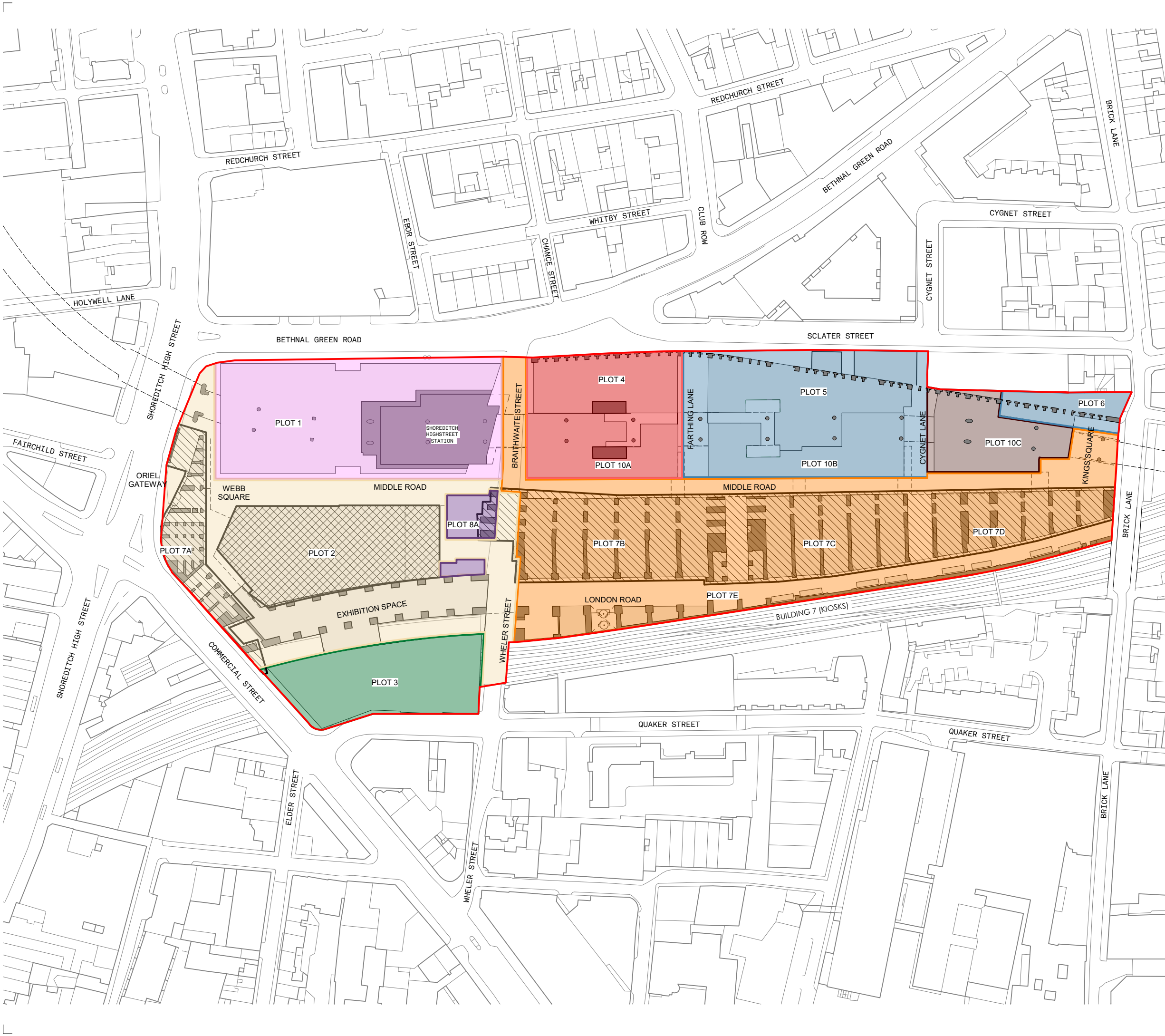


DIAGRAM KEY:

- EXTENTS ABOVE (PROJECTION)
- EXISTING RETAINED STRUCTURE
- LONDON OVERGROUND ABOVE
- FULL DETAILS SUBMITTED
- FULL DETAILS AND LISTED BUILDING APPLICATION SUBMITTED
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- PHASE 5
- PHASE 6
- PHASE 7
- PHASE 8

notes:

rev	date	by

drawing and design copyright of:
FAULKNERBROWNS ARCHITECTS

client:

ballymore.

Hammerston

project:
BISHOPGATE GOODSYARD

north:

site address:
**BRAITHWAITE ST
LONDON
E1 6GJ**

plot key:

do not scale this drawing
do no derive measurements from digital media

drawing status:
PLANNING - FOR APPROVAL

title:
**PARAMETERS - PHASING
(GROUND)**

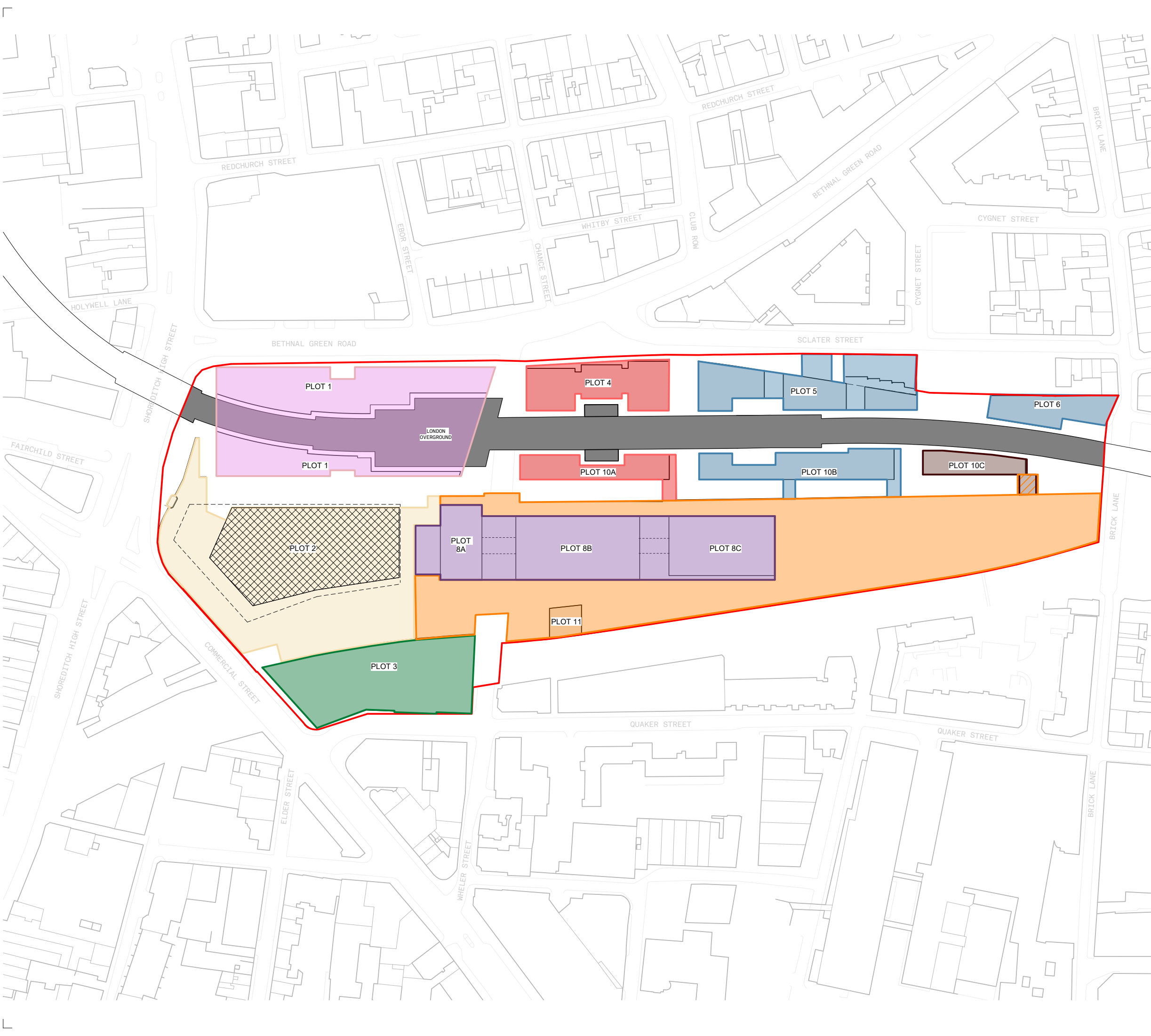
scale:
1 : 750

size:
A1

scale bar:

drawing no:
BGY-FBA-00-00-DR-A-00-0038

rev:	suit:	drawn by:	checked by:
P1	S0	AM	CE



- DIAGRAM KEY:
- EXTENTS ABOVE (PROJECTION)
 - EXISTING RETAINED STRUCTURE
 - FULL DETAILS SUBMITTED
 - PHASE 1
 - PHASE 2
 - PHASE 2 TEMPORARY VERTICAL CIRCULATION
 - PHASE 3
 - PHASE 4
 - PHASE 5
 - PHASE 6
 - PHASE 7
 - PHASE 8

notes:

rev	date	by

drawing and design copyright of:

FAULKNERBROWNS ARCHITECTS

client:

Hammerston

ballymore.

project:

BISHOPGATE GOODSYARD

north:

site address:

BRAITHWAITE ST
LONDON
E1 6GJ

plot key:

do not scale this drawing
do no derive measurements from digital media

drawing status:

PLANNING : FOR APPROVAL

title:

PARAMETERS - PHASING
(PLATFORM LEVEL)

scale:

1 : 750

size:

A1

scale bar:

0m 10m 20m 30m 40m 50m 60m

drawing no:

BGY-FBA-00-00-DR-A-00-0039

rev:	suit:	drawn by:	checked by:
P1	S0	AM	CE

Figure 5.21 Construction Programme Overview

	2021				2022				2023				2024				2025				2026				2027				2028				2029				2030				2031				2032				2033				2034
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1								
Phase 1 Plot 2 (Office) & Plot 7A (Retail)																																																					
Phase 2 Plot 7B, 7C, 7D, 7E (Retail) & Plot 11 & Park																																																					
Phase 3 Plot 5 (Residential) & Plot 10B (Residential)																																																					
Phase 4 Plot 8A, 8B, 8C (Hotel & Retail)																																																					
Phase 5 Plot 10C (Residential)																																																					
Phase 6 Plot 1 (Office)																																																					
Phase 7 Plot 4 (Residential) & Plot 10A (Residential)																																																					
Phase 8 - Plot 3 (Office)																																																					

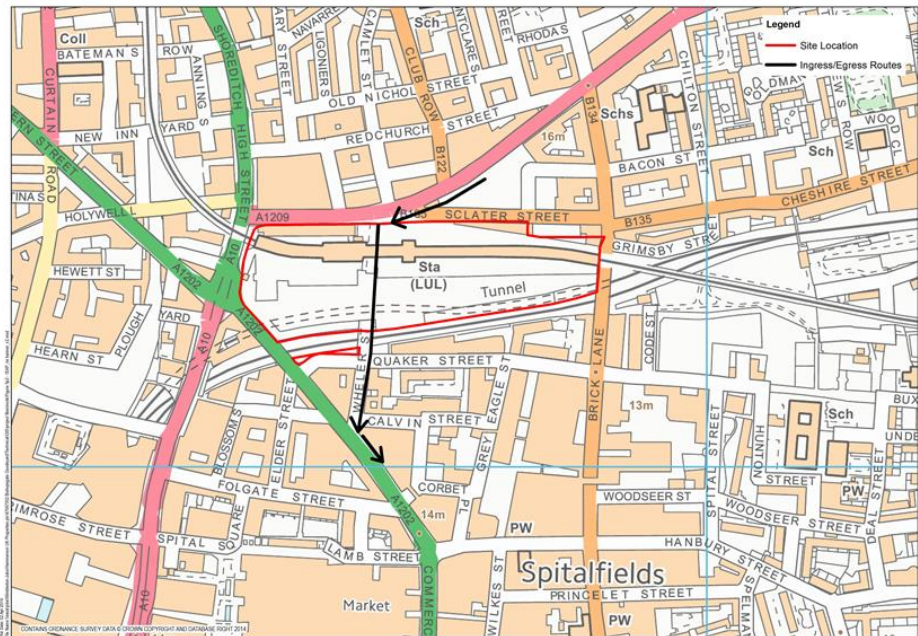
Construction Traffic Access and Management

5.3.17 Access routes to and from the site to be used by Heavy Goods Vehicles (HGVs), for deliveries of material to the site and for removal of wastes, will be agreed with the LBH and LBTH prior to initiation of demolition and construction works. It is envisaged that the most heavily used HGV's on the site will be ready mix concrete trucks for the delivery of concrete and flatbed lorries for the delivery of cladding panels. Construction vehicle impacts will be mitigated through management measures (such as control of vehicles on the site, and timing of deliveries) and operational vehicles will enter and exit the site in a forward gear.

Phase 1,2 and 3 - Site Access and Egress

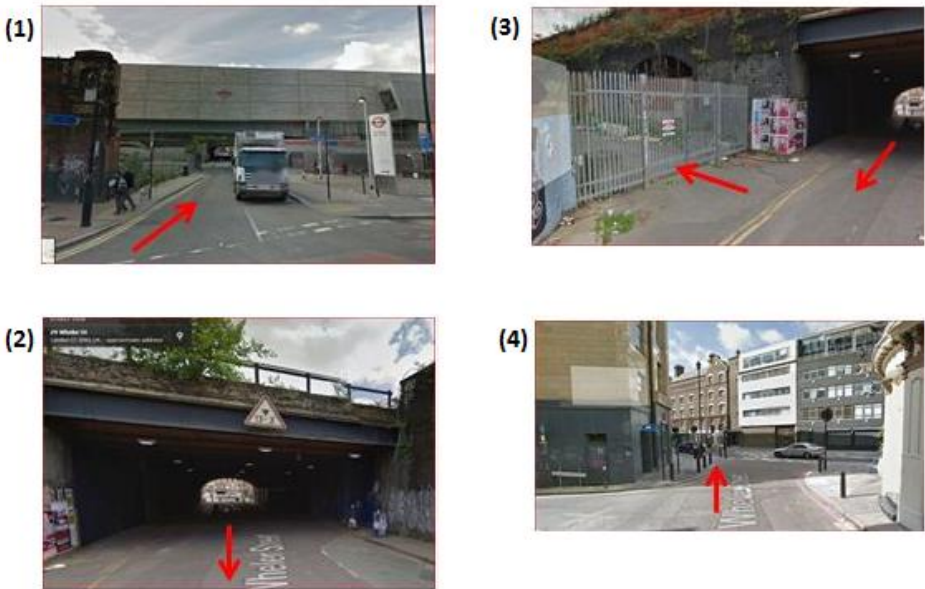
5.3.18 An indicative Phase 1, 2, 3, 6 and 8 site access plan is shown in **Figure 5.23**, showing the primary access points for the Revised Scheme. Ingress to the site is via the A1209, turning left into Braithwaite St (**Figure 5.24** - Image 1).

Figure 5.22 Indicative Site Access Points for construction traffic (Phase 1, 2, 3, 6 and 8)



5.3.19 Access across the site is along Braithwaite Street / Wheler Street through the viaduct which has 13' 3" or 4m headroom to allow tipper trucks 3.5 m high to pass through into Braithwaite Street / Wheler Street (**Figure 5.24** - Image 2). Access to the top of the viaduct can also be along this route turning right after passing under the viaduct (**Figure 5.24** - Image 3). Egress will be via Braithwaite Street / Wheeler Street turning left on to Commercial Street (**Figure 5.24** - Image 4).

Figure 5.23 Images showing Phase 1, 2, 3, 6 and 8 Ingress and Egress



Phase 4, 5 - Site Access and Egress

5.3.20 An indicative Phase 4 and 5 site access plan is shown in **Figure 5.24**, showing the primary access points for the Revised Scheme.

5.3.21 Ingress is via a newly formed access off Sclater Street and Cygnet Lane junction (**Figure 5.25** – Image 1).

5.3.22 Egress is via the newly formed access off Sclater Street (**Figure 5.26** – Image 2).

Figure 5.24 Indicative Site Access Points for construction traffic (Phase 4 and 5)

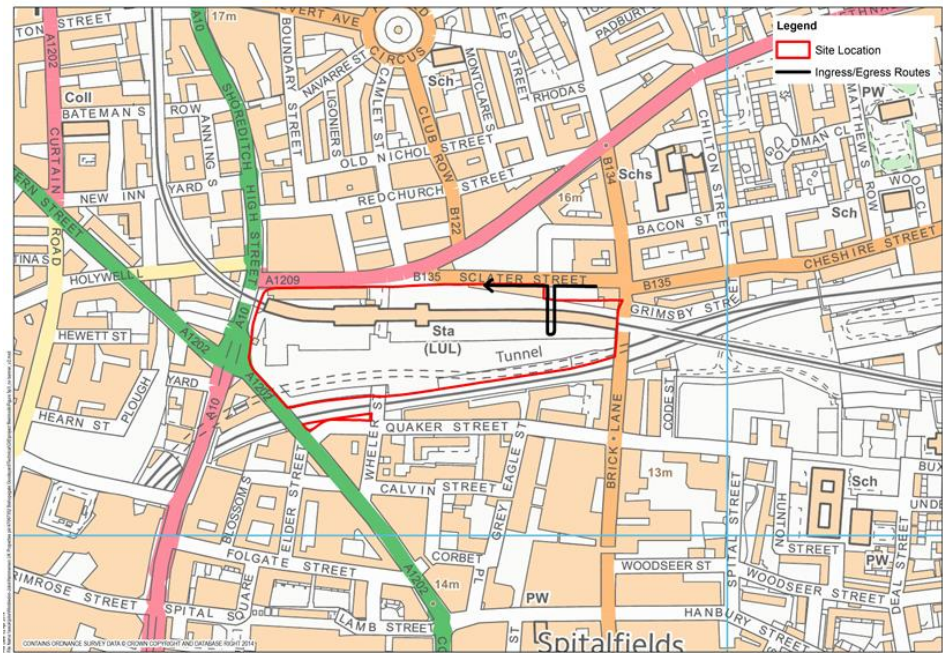
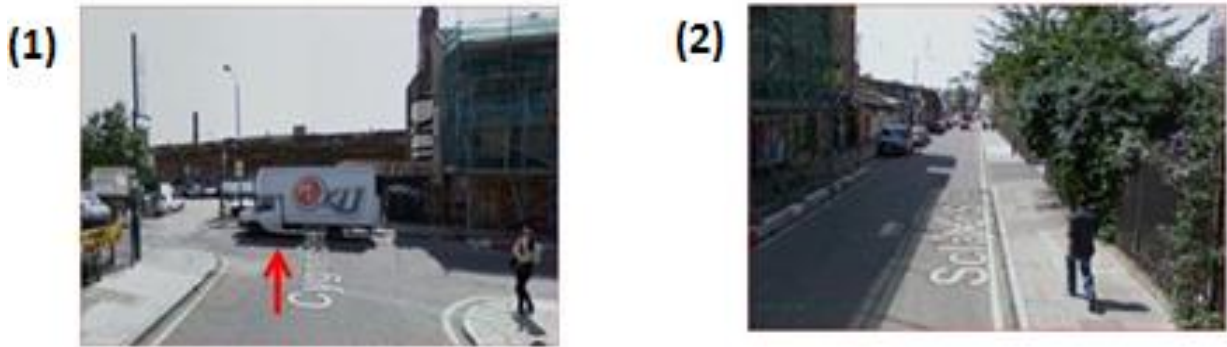


Figure 5.25 Images showing Phase 4 and 5 Ingress and Egress



5.3.23 A Construction Environmental Management Plan (CEMP) and Construction Logistics Plan (CLP) will be prepared which will identify the duration of the phases and will also identify methods and routes for delivery of construction materials and removal of waste materials. Indicative construction traffic routes are shown in **Figures 5.26, 5.27 and 5.28**. The CLP will be prepared in accordance with Transport for London's CLP guidance document, 'Building a Better Future for Freight: Construction Logistics Plans'.

Figure 5.26 Indicative Construction Traffic Route

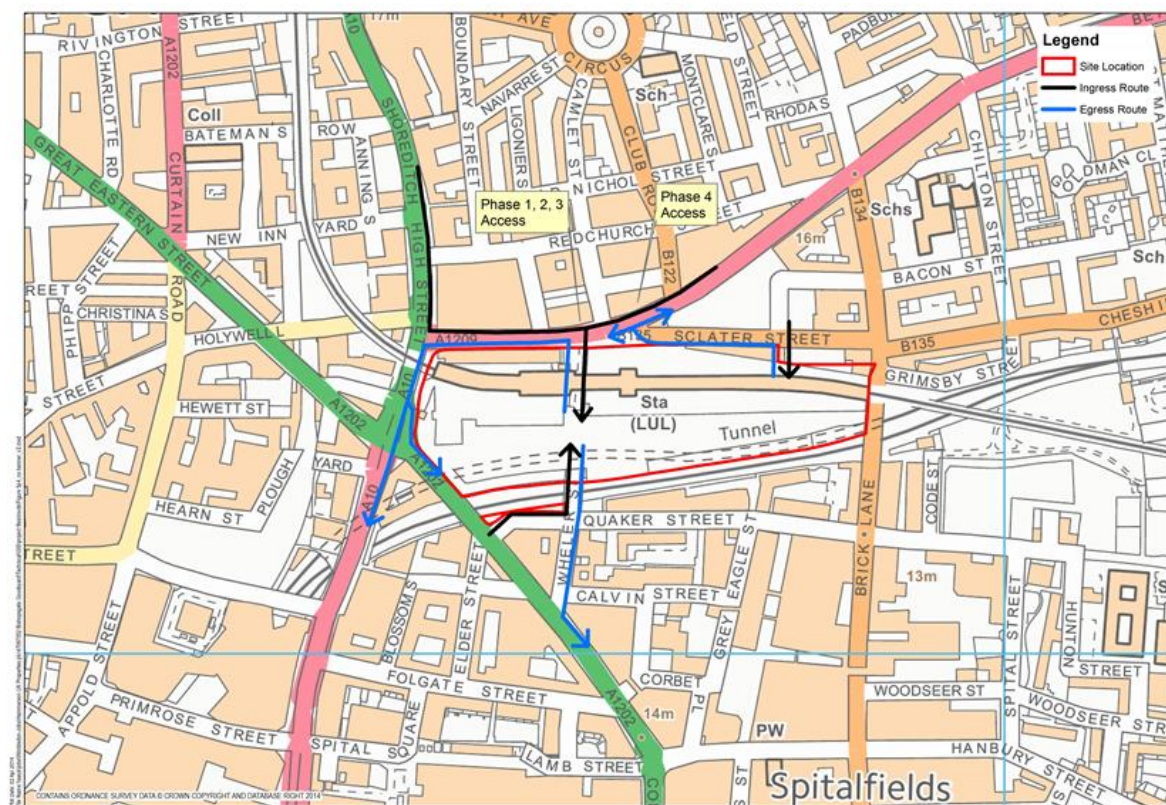


Figure 5.27 Indicative Construction Traffic Route from Site to Silvertown

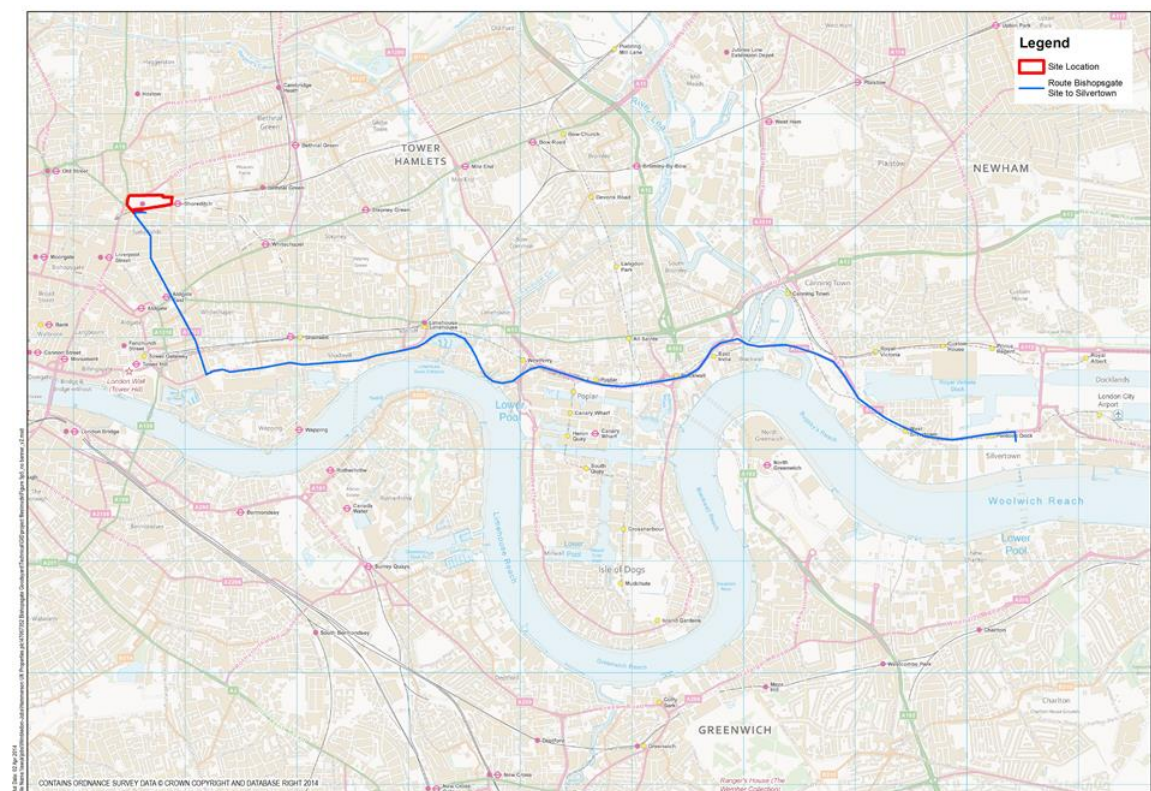
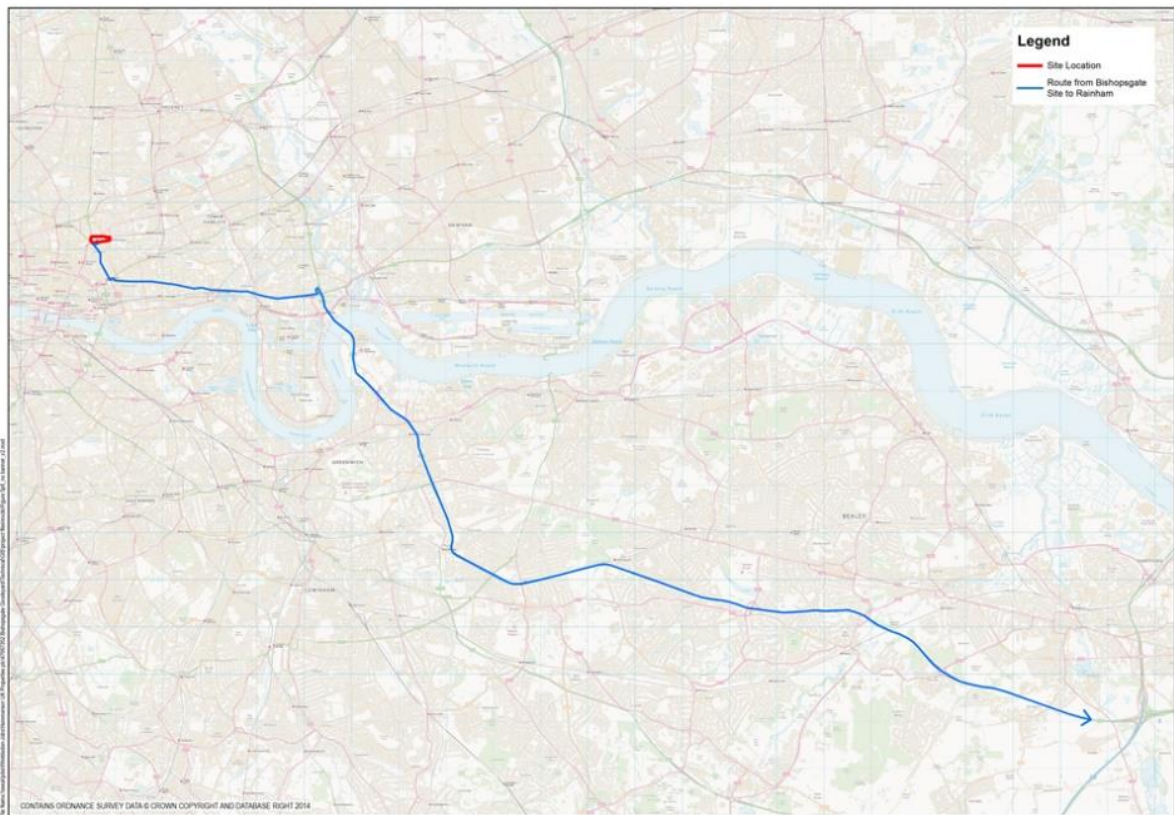


Figure 5.28 Indicative Construction Traffic Route from Site to Rainham



5.3.24 Estimated numbers of vehicle movements for demolition and construction periods have been produced by the Applicant and the impact of this on total traffic flows estimated within **Volume 2, Chapter 9: Traffic and Transport** of this ES Addendum. A full impact assessment of the construction vehicle movements on the surrounding road network is presented within **Volume 2, Chapter 9: Traffic and Transport** of this ES Addendum. Associated effects of the Revised Scheme relating to road traffic emissions and road traffic noise are assessed in **Volume 2, Chapter 12: Air Quality** and **Volume 2, Chapter 13: Noise and Vibration of this ES Addendum**, respectively.

5.3.25 The estimated average number of vehicle movements per day during each of the demolition and construction phases is shown in **Table 5.8**. These are based on a worse case daily average.

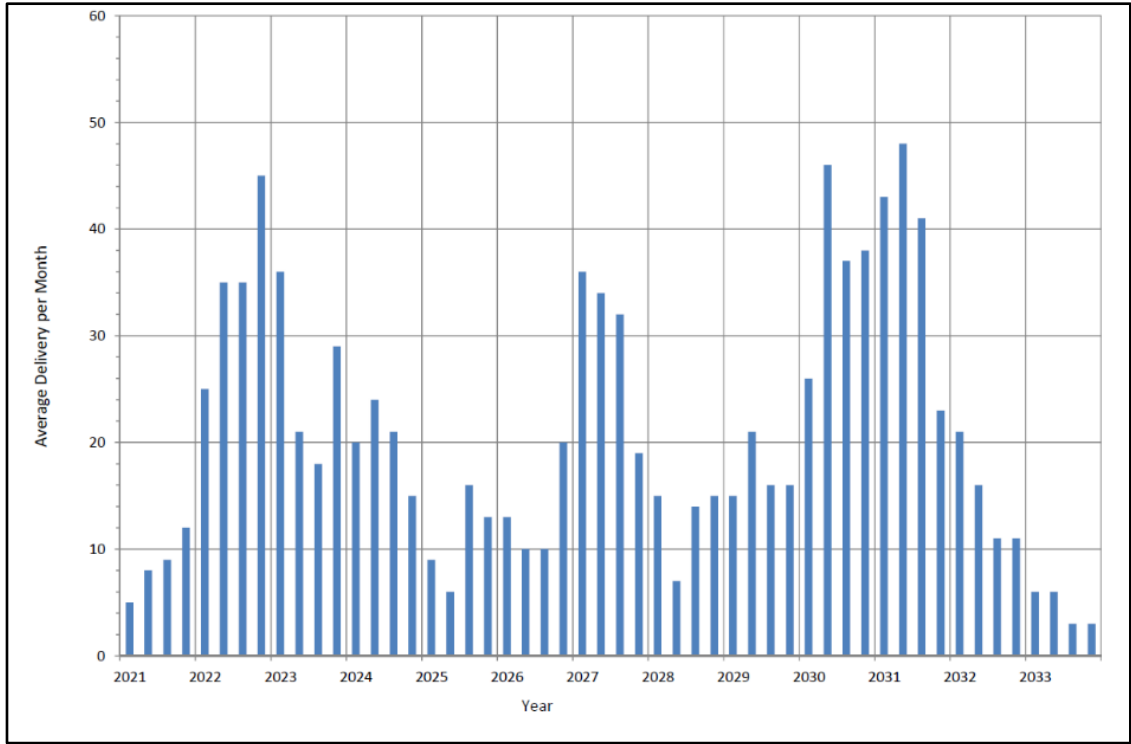
Table 5.8 Average Demolition and Construction Vehicle Movements per day

Table	Average Number of Vehicle Movements per day
Phase 1 – SLT Works + Building 2 + Building 7A	43
Phase 2 – Podium and Building 7B, C, D and E	32
Phase 3 – Buildings 5, 6 & 10B	65
Phase 4 – Buildings 8 A, B and C	26
Phase 5 – Building 10C	30
Phase 6 – Building 1	38
Phase 7 – Building 4	32
Phase 8 – Building 3	27

5.3.26 The number of vehicle movements per day peaks at 65 in 2023 when Phase 1,2 & 3 are in construction.

5.3.27 The estimated number of predicted deliveries during each month is shown in **Figure 5.29**.

Figure 5.29 Predicted Monthly Deliveries During Demolition and Construction Works



5.3.28 Deliveries to the site will be controlled to avoid congestion of the surrounding roads. The Contractor's Logistics Manager (who will be responsible for managing deliveries to site and their distribution to the point of use) will produce a rolling weekly programme of deliveries and a draft of this programme will be presented and discussed at weekly progress meetings to smooth out obvious bottlenecks and clashes. Where possible, deliveries will be taken on site early to allow the vehicles to be offloaded during the peak period and to leave site once the peak period has ended. This will allow greater efficiency in predicting delivery times and reduces haulage costs. Similarly the latest delivery to the site will be scheduled to ensure that it can be offloaded by 18:00 and that the vehicle leaves the site as the evening peak is subsiding. The site will be closed up in accordance with the working hours allowed by the planning consent.

5.3.29 Availability of storage for materials will also be limited with all deliveries on a 'just in time' basis and drivers will be instructed to turn off their vehicles whilst being offloaded. During demolition and construction, a site speed restriction of 5 miles per hour (mph) will be actively enforced for all vehicular movements on-site. All staff will be encouraged to use public transport

Site Working Hours

5.3.30 It is anticipated that the core working hours for both the demolition and construction phases will be as follows:

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

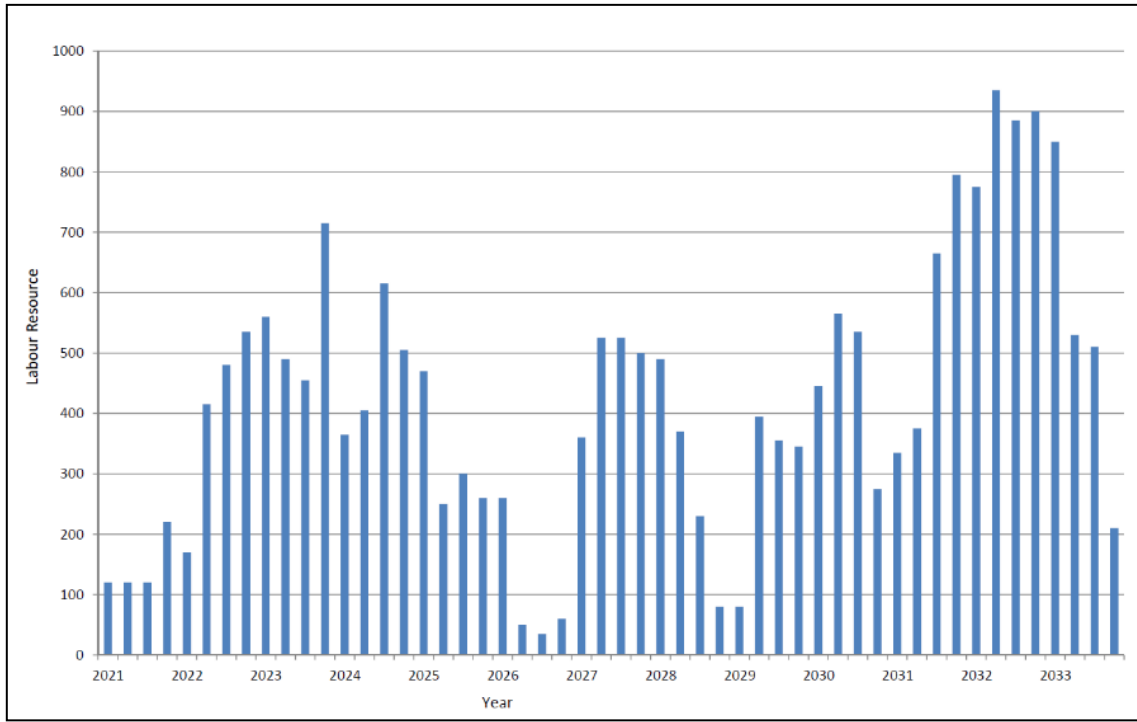
5.3.31 No working normally undertaken on Sundays or Bank Holidays.

5.3.32 It is recognised that approval from the LBH and LBTH will likely be required for any works that need to be undertaken outside these permitted hours, and that LBH and LBTH may vary these hours where the works are in close proximity to sensitive businesses or residential properties.

Construction Workers

5.3.33 The estimated labour resource levels are shown in Figure 5.30.

Figure 5.30 Predicted Labour Resource Levels



Materials and Resource Use

5.3.34 All demolition material generated will be re-used during construction, wherever practicable. Any material identified as being contaminated with asbestos or other such hazardous material will be disposed of, off-site at an appropriately licensed facility by a specialist contractor.

5.3.35 At this stage a conservative initial assessment of the likely material generated on-site by the demolition phase of the Revised Scheme as shown in Table 5.9.

Table 5.9 Indicative Demolition Material Likely to be Generated on-site

Waste Stream	Volume of Waste (m³)
Ground excavation	26,082
Brickwork	9,846
Total	35,928

5.3.36 An initial assessment of the likely construction material generated on-site, in accordance with the current scheme is shown in Table 5.10.

Table 5.10 Indicative Construction Waste Arisings

Waste Stream	Indicative Volume (m³)
Block work	37,650
Plasterboard including Track	850
Flooring	640
Fixtures & Fittings	500
Ductwork	6,100
General	16,060
Total	61,800

5.3.37 The majority of the 9,846 m³ of brickwork will be retained for re-use on site.

- 5.3.38 Waste arising from site clearance, primary infrastructure and earthworks is expected to comprise vegetation, topsoil, rubble, tarmac from former hard standings, gravel and clay material. Material excavated during ground works will be crushed and tested, any suitable materials will be used as back-fill and piling material.
- 5.3.39 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another development site or sent for disposal at appropriately licensed facilities (these are expected to be inert waste landfill sites).
- 5.3.40 Any contaminated material that will require removal from the site will be collected by suitable waste carriers and sent for disposal at appropriately licensed hazardous waste facilities.
- 5.3.41 The Revised Scheme has been designed with detailed consideration given to the below ground constraints and hence the amount of excavation and substructure works that can take place. As a result, excavation to the site is limited to:
- The construction of the 8-track box through Phase 1;
 - Foundations/basement structure to Phase 6,1;
 - Removal of the fill on top of the existing arches in Phase 2;
 - Substructure construction for all plots.
- 5.3.42 The bulk quantities for excavation are shown below in **Table 5.11**.

Table 5.11 Estimated Volume of Excavation Material

Development Plot	Excavation Volume (m³)	Excavation Material
Phase 1	1,860	8 track box, Basement and foundation excavation, piling arising
Phase 2	11,845	Removal of spoil from the top of the arches and structure strengthening
Phase 3	1314	Foundation excavation and piling arising
Phase 4	251	Foundation excavation and piling arising
Phase 5	332	Foundation excavation and piling arising
Phase 6	7005	Basement & Foundation excavation and piling arising
Phase 7	1161	Foundation excavation and piling arising
Phase 8	2314	Foundation excavation and piling arising
Total	26,082	

- 5.3.43 **Table 5.12** provides an overview of the anticipated volumes of construction material expected to be required by the construction of the Revised Scheme.

Table 5.12 Estimated Volume of Construction Material

Material	Quantity	Unit
Block work	26,200	m²
Dry wall	73,640	m²
Soft flooring	64,000	lm
Hardwood flooring	120,004	m²
Cladding	90,378	m²

Waste Strategy

- 5.3.44 A Site Waste Management Plan (SWMP) will be prepared for the Revised Scheme which will include details of the forecast and actual tonnage of each waste stream that will be generated on site and their recycling/disposal route. It will be a condition of contract for the contractors to discuss and agree waste recovery rates to be targeted with the Applicant. A monitoring report will then be generated on a monthly basis which will include details of the progress made in diverting waste materials from landfill, against these pre-agreed targets.
- 5.3.45 Where it is necessary to transport waste to and from the site, transportation will comply with the Duty of Care requirements, including: ensuring waste is transported by registered carriers, disposal to appropriately licensed sites and maintenance of appropriate waste transfer documentation.

Code of Construction Practice (CoCP)

- 5.3.46 A Code for Construction Practice (CoCP) Part A has been prepared to support the planning application which provides detailed guidance to enable the contractor/applicant to develop an appropriate system of work that would be employed for construction activities and documented in detail within the Construction Environmental Management Plan (CEMP), Site Waste Management Plan (SWMP) and other Method Statements (MS) to be prepared prior to construction. This will be secured by a planning condition.

Construction Environmental Management Plan

- 5.3.47 The commitments made within the ES Addendum relating to the Environmental Management Plan (EMP) will be incorporated into a CEMP, which will include roles and responsibilities, detail on control measures and activities to be undertaken to minimise environmental impact, and monitoring and record-keeping requirements. A commitment will be made to periodically review the CEMP and undertake regular environmental audits of its implementation during the construction phase of the Revised Scheme.
- 5.3.48 The CEMP will cover the following main areas:
- Site information – including the location and boundaries of the works, management structure and key contacts, and procedures for environmental training.
 - Construction information – including a description of works to be undertaken, the location of protective tree fencing, proposed working hours, main haulage routes and site access points, road closure requirements, proposed dates and sequence of the works, equipment and plant to be used, and the method of delivery and removal of materials and plant.
 - Environmental management - including an environmental audit programme, risk register, schedule of potential significant effects, procedure for neighbourhood liaison, measures to exclude the public and reduce visual impact, arrangements for the removal of contaminated materials and the storage of raw materials on site, waste management and waste water management, emergency procedures, topic specific management plans, and measures to minimise noise, dust and vibration levels.
 - Monitoring – requirements and procedures for recording and reporting results and taking remedial action; detailed monitoring proposals; and procedures for coordinating monitoring results.
 - Legal requirements – including an up-to-date schedule of appropriate legislation and good practice, a list of objectives and targets imposed by planning conditions, and a register of permissions and consents required.

- 5.3.49 The CEMP will be regularly monitored during construction and revised to reflect any changes to programme and activities on-site.

Considerate Constructors Scheme

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

Public Relations

- 5.3.51 A key aspect of the successful management of the project will be the maintenance of good relations with site neighbours and the general public, as well as future occupiers of the site (who occupy completed earlier phases of the Revised Scheme, whilst other later phases are still being finalised). The project team is already engaged in consultation with a broad range of stakeholders and this will continue through the various phases of the project.

Local residents will be invited to liaison meetings prior to commencement of works on-site. In order to keep the general public informed about the development, appropriate signage and information boards will be displayed on site hoardings. This will include contact details for the site and general construction information. A clear point of contact will be provided to deal with any queries and provide immediate response to any issues raised. It is also proposed that periodic meetings will be held on site to explain the works anticipated for the forthcoming month and how these will impact upon our neighbours.

ballymore.



Hammerson