Pentavia, Mill Hill

London NW7 2ET

Environmental Statement: Non-Technical Summary

Date: 22/03/19

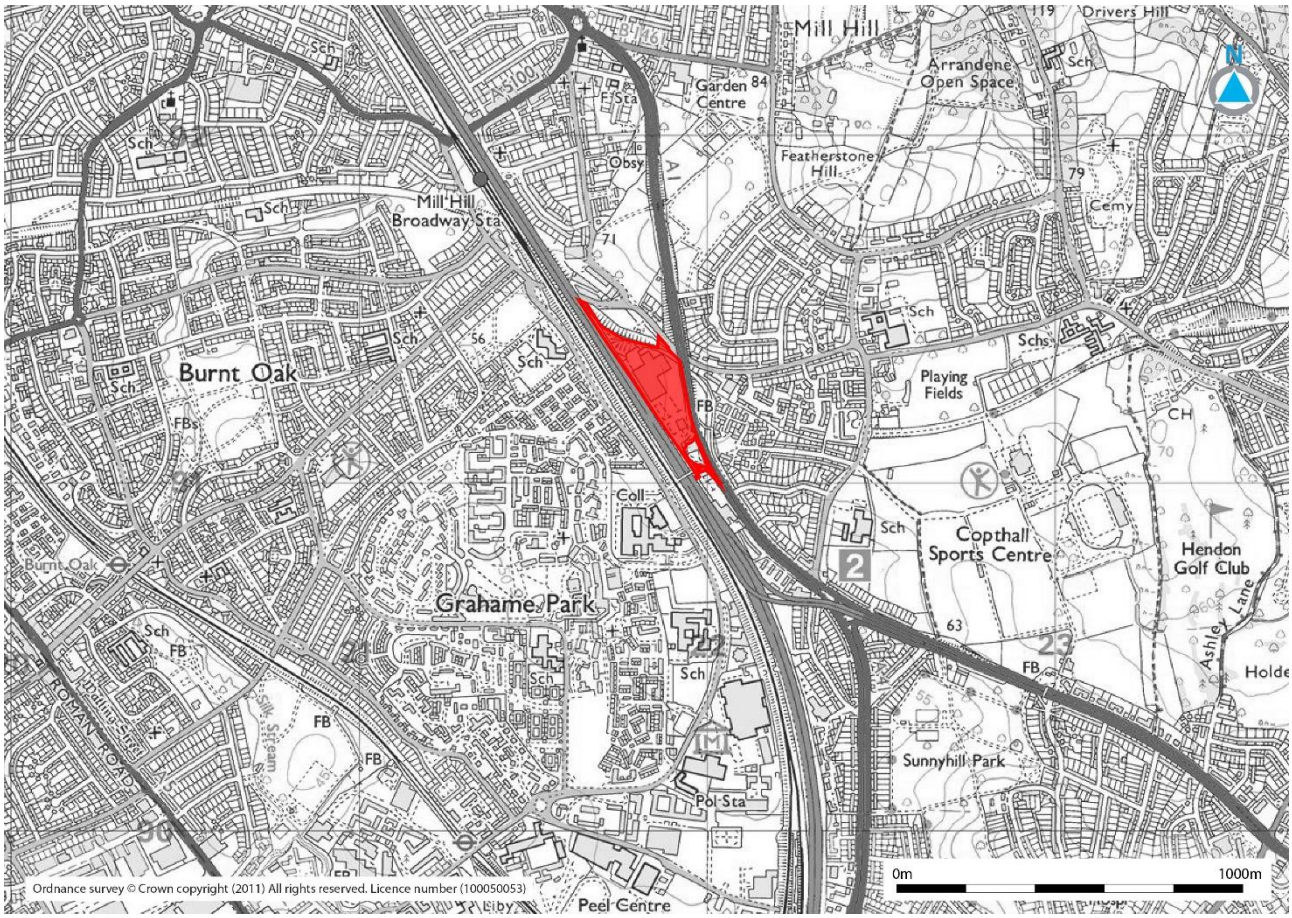
Contents

1 Introduction

1.1 This Non-Technical Summary presents a summary of the findings of an Environmental Impact Assessment (EIA) process. The EIA has been undertaken on behalf of Meadow Residential (the 'Applicant') to accompany a detailed planning application for the development of Pentavia Retail Park, London, NW7 2ET, totalling 3.64 hectares ('ha') (the 'Site'). The findings of the EIA process are presented in an Environmental Statement ('ES') which accompanies the planning application.

1.2 The Site is situated in the Mill Hill ward within the London Borough of Barnet (LB Barnet), situated between the M1 Motorway and A1 Watford Way. Figure 1.1 shows the location of the Site.

Figure 1.1: Site Location



1.3 The redevelopment of the Site would provide 844 Built to Rent and conventional housing units, situated within 18 building blocks, with retail, food and community uses, a new pedestrian access off Bunns Lane and associated areas of green open space and hardstanding. The proposals are subsequently referred to as the 'Development'. A full description of the Development is provided in Section 5.

1.4 The Site comprises one large retail building (class use A1/A4) in the north of the Site and a smaller restaurant building (class use A3) in the south of the Site with associated car parking in between. A small area of scrub land is located in the north western extent of the Site. Currently, the large retail building is temporarily occupied by Kosher Outlet Store and the charity Together Plan.

1.5 The ES describes the proposals which were considered and identifies the environmental effects of the Development which are likely to be significant. The ES was prepared in line with the UK legal requirements[1,2]

and good practice. The purpose of the ES is to inform decision making by identifying the likely significant effects that the Development may have on the environment and setting out how they can be avoided or reduced.

Planning History

Planning History: Introduction

1.6 The Applicant submitted a detailed planning application for the Site in December 2017 for a residential-led mixed-use scheme made up of 717 new Build to Rent residential units, with commercial, leisure and community uses (LB Barnet reference 17/8102/FUL, GLA reference GLA/3736a/VH02). This is referred to here as the '2017 Detailed Application'.

1.7 The 2017 Detailed Application was accompanied by an Environmental Statement (2017 ES), prepared by Quod. In June 2018, an update to the 2017 ES was submitted to reflect changes to the design of the 2017 Detailed Application (2017 ES (as amended)). In July 2018, Barnet Council refused permission for this application. In November 2018, a Direction was made by the Mayor of London pursuant to Article 7 of the Mayor of London Order 2008 that he should be the local planning authority and determine the application.

1.8 Following the Mayor's decision to determine (or 'call in') the application, the Applicant took the opportunity to review the Development, and has increased the number of affordable housing units within the Development. To do so, and to create more variation in the scheme, buildings heights have increased or decreased by one to three storeys. The tallest building (15-storey tower) at the southern end of the Development will not change.

Planning History: Previous Applications

1.9 Prior to the 2017 Detailed Application being submitted, three retail applications were approved in 2016:

- Planning permission ref: 14/08075/FUL, date approved 05/08/16;
- Planning permission ref: 15/01820/FUL, date approved 05/08/16; and
- Planning Permission ref: 15/01825/FUL, date approved 05/08/16.

1.10 The approved retailed applications proposed to create seven retail units, two restaurant units and one unit for the purposes of entertainment and/or leisure. All three applications did not propose any additional floorspace, but rearrange the site layout. These applications would have involved the demolition or partial demolition of the retail units that currently exist on the Site.

1.11 The Applicant submitted a planning application in October 2017 to redevelop the Site to provide 695 Built to Rent Class residential units. The residential units were located within four blocks, and included commercial, leisure and community uses, with areas of green open space. This application is referred to as the 2016 Detailed Application. The 2016 Detailed Application was submitted with an ES (the '2016 ES'). In January 2017, an update of the 2016 ES was submitted to reflect changes to the design of the 2016 Detailed Application (2016 ES (as amended)). The 2016 Detailed Application was withdrawn in November 2017.

Site Description

1.12 Vehicle access to the Site is from the slip road off the northbound carriageway of the A1 Watford Way. Pedestrian access to the Site is possible from the western side of the A1 Watford Way via the existing footway, from a footbridge over the M1, and from a subway below the Midlands Mainline Railway line which is located approximately 70m to the south of the Site. There is an off-road cycle route situated 400m

south west of the Site, which extends south to Hendon and on to Brent Cross. Grahame Park Way Road, 50m west of the Site, which runs parallel to M1 is also signed for cyclists.

1.13 The nearest bus stops to the Site are located on the A1 Watford Way, which service routes 113 and N113, and Bunns Lane which services route 221. The nearest railway station is Mill Hill Broadway located approximately 550m to the north of the site, which connects to London St Pancras, St Albans City, Luton and Bedford to the north.

1.14 The former A1/M1 slip road runs along the north eastern boundary of the Site, which backs to a vegetated area adjoining 'Rosebery Place', 'Dove Close' and Bunns Lane. The A1 Watford Way runs along the eastern boundary. A roundabout, slip road and petrol filling station are located next to the south of the Site. The M1 motorway and Midlands Mainline Railway run along the western boundary of the Site. The nearest residential properties to the Site are along 'Rosebery Place', which is 30m north of the Site boundary.

1.15 The Site is located within Flood Zone 1, which means that it is at low risk from flooding. The EA Flood Zone mapping shows that the Site is located within a very low risk of surface water flooding.

1.16 The Site is not subject to any statutory cultural heritage designations, and is not located within a Conservation Area, however two Conservation Areas are located in the surrounding area. These are the Watling Estate Conservation Area, located approximately 300m west of the Site, and the Mill Hill Conservation Area, approximately 750m north east of the Site. The Site does not contain any built heritage resources designated as being of national importance, such as Scheduled Monuments, World Heritage Sites, listed buildings or Registered Parks and Gardens.

1.17 The Site is not located within an Archaeological Priority Area. A desk-based archaeological assessment carried out on the Site in November 2017 to establish the significance and value of known buried heritage assets and the potential for the presence of unknown buried heritage assets concluded that the likelihood for significant effects on archaeology was low.

1.18 Two conservation areas are located in the surrounding area, these are the Watling Estate Conservation Area, which is approximately 300m to the west of the Site, and the Mill Hill Conservation Area, which is approximately 750m to the north east of the Site. There are no statutorily designated nature conservation sites within the Site or within 500m of the Site. Surveys undertaken in January 2016 and June 2018 showed the Site to be of negligible important in nature conservation terms and as having a low ecological value. The Site is not subject to any Tree Preservation Orders and does not support ancient woodland or veteran trees.

1.19 LB Barnet have declared an Air Quality Management Area (AQMA) for the entire borough due to poor air quality.

ES Availability

1.20 The ES comprises:

- Volume I: Main document – provides the full text of the ES along with figures; and
- Volume II: Appendices – contains technical surveys, reports and supporting documents to Volume I.

1.21 The ES and the planning application can be viewed at the offices of the GLA. Electronic copies of the planning application and ES are available to view on the GLA's website at https://www.london.gov.uk/what-we-do/planning/planning-application-and-decisions/.

1.22 Copies of the ES can also be purchased from Quod. Please email reception@quod.com quoting reference no. Q090681 for further details or contact 020 3597 1000.

2 EIA Methodology

2.1 EIA is a formal process that must be followed for certain types and scales of development projects, where the significant environmental effects of a project are systematically assessed and reported. The purpose of the EIA process is to identify how people and the environment could be affected by the Development. It also ensures that information about the environmental effects of a project is available for relevant decision makers and the public to consider before the planning application is determined. The EIA provides measures (often referred to as 'mitigation') that would avoid, minimise or offset any negative effects and to enhance beneficial effects.

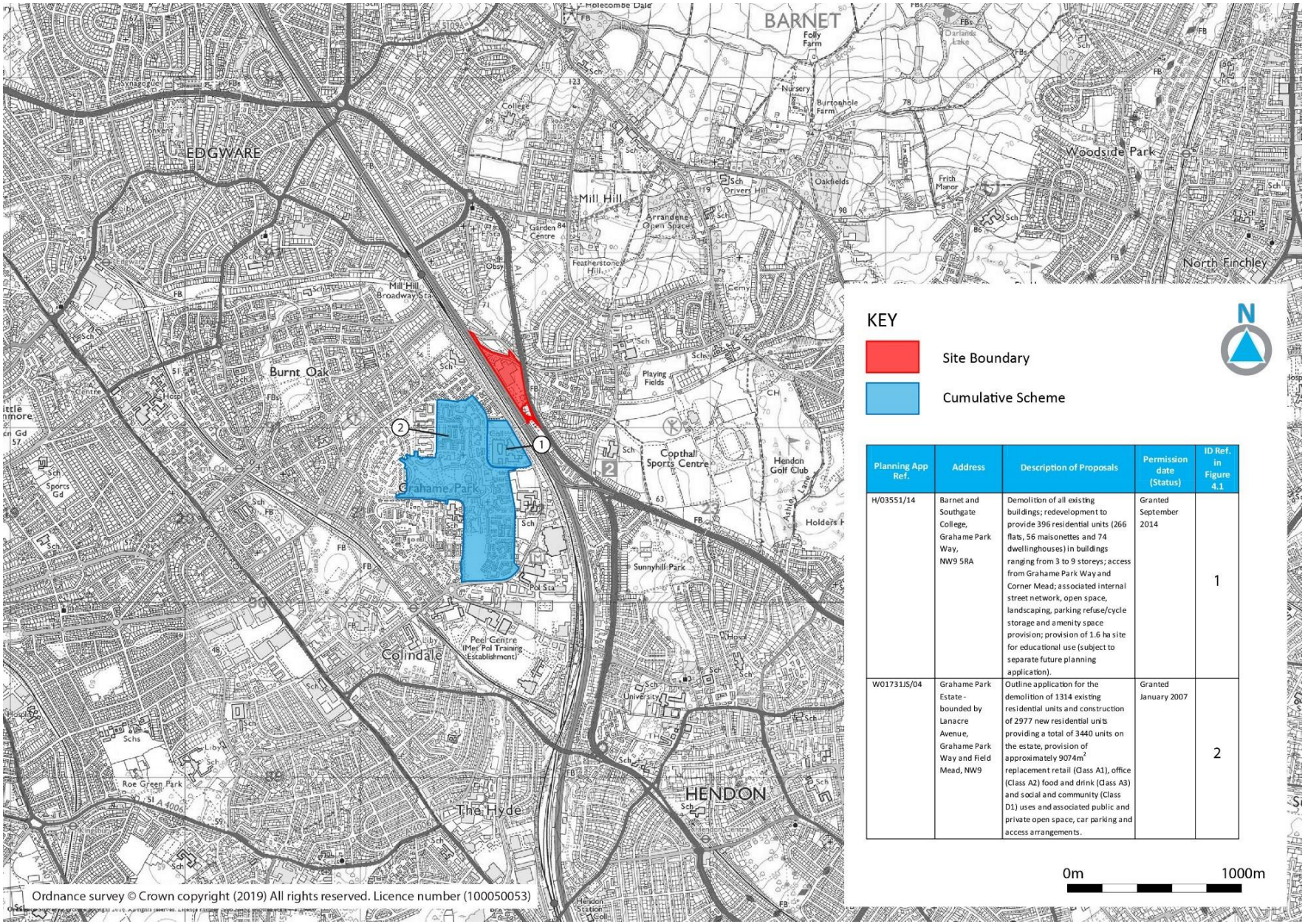
2.2 The 'scope' or focus of the EIA has been informed by policy, guidance, consultation with LB Barnet and the earlier scoping studies for the 2017 ES and the 2018 ES Addendum. Through this approach, it has been established that the following topics are not likely to give rise to significant effects: archaeology, built heritage, ecology, ground conditions and contamination, water resources and flood risk, daylight, sunlight, overshadowing and solar glare, carbon emissions, light pollution, waste, human health, vulnerability to major accidents, telecommunications, electromagnetic fields, sustainability and climate change adaption and resilience. As such, these topics are not considered further in the ES.

2.3 The ES considers the likely effects of the Development on its neighbours, local environment, local and regional economy, as well as the wider area. The environmental effects of the Development are predicted in relation to sensitive receptors, including human beings, built resources and natural resources. The sensitive receptors considered in the ES include local residents and businesses, heritage assets and designations, construction workers and future occupiers of the Site.

2.4 Effects are identified and assessed using a variety of methods. Each assessment attaches a level of 'significance' to the effects which were identified, i.e. either major, moderate, minor or negligible. Short and long-term (temporary and permanent), direct and indirect effects were assessed. The nature of the effects are expressed as being either adverse (negative), negligible or beneficial (positive). The significance of effects was determined using good practice and published standards. Professional judgment was also applied by the technical specialists in situations/circumstances where no legislation, definitive standards or/and industry guidance is available. Where adverse effects were are predicted, mitigation measures were identified to reduce the significance of the effect. 'Residual effects' are the effects that remain after mitigation measures are applied.

2.5 The EIA Regulations require that 'cumulative' effects are considered in the ES. Cumulative effects can arise from individual effects of the Development interacting (e.g. traffic, noise and air quality). These interactions are considered in Section 13 of this NTS. Cumulative effects which may result from the Development in combination with other development schemes in the vicinity of the Site are considered in each technical section of the NTS (sections 7-12). The Development schemes considered in the cumulative assessment are shown in Figure 3.1.

Figure 3.1: Cumulative Schemes



KEY

Site Boundary

Cumulative Scheme

N

Planning App Ref.	Address	Description of Proposals	Permission date (Status)	ID Ref. in Figure 4.1
H/03551/14	Barnet and Southgate College, Grahame Park Way, NW9 5RA	Demolition of all existing buildings; redevelopment to provide 396 residential units (266 flats, 56 maisonettes and 74 dwellinghouses) in buildings ranging from 3 to 9 storeys; access from Grahame Park Way and Corner Mead; associated internal street network, open space, landscaping, parking refuse/cycle storage and amenity space provision; provision of 1.6 ha site for educational use (subject to separate future planning application).	Granted September 2014	1
W01731JS/04	Grahame Park Estate - bounded by Lanacre Avenue, Grahame Park Way and Field Mead, NW9	Outline application for the demolition of 1314 existing residential units and construction of 2977 new residential units providing a total of 3440 units on the estate, provision of approximately 9074m² replacement retail (Class A1), office (Class A2) food and drink (Class A3) and social and community (Class D1) uses and associated public and private open space, car parking and access arrangements.	Granted January 2007	2

0m 1000m

3 Alternatives

3.1 The ES is required to present a description of the main alternatives considered by the Applicant and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

3.2 No alternative sites were considered by the Applicant. The Development opportunity for the Site arose due to the Applicant's ownership of the Site. Given its location within the borough and potential for regeneration, the redevelopment of the Site would contribute to the new homes, in accordance with the GLA and LB Barnet planning policy.

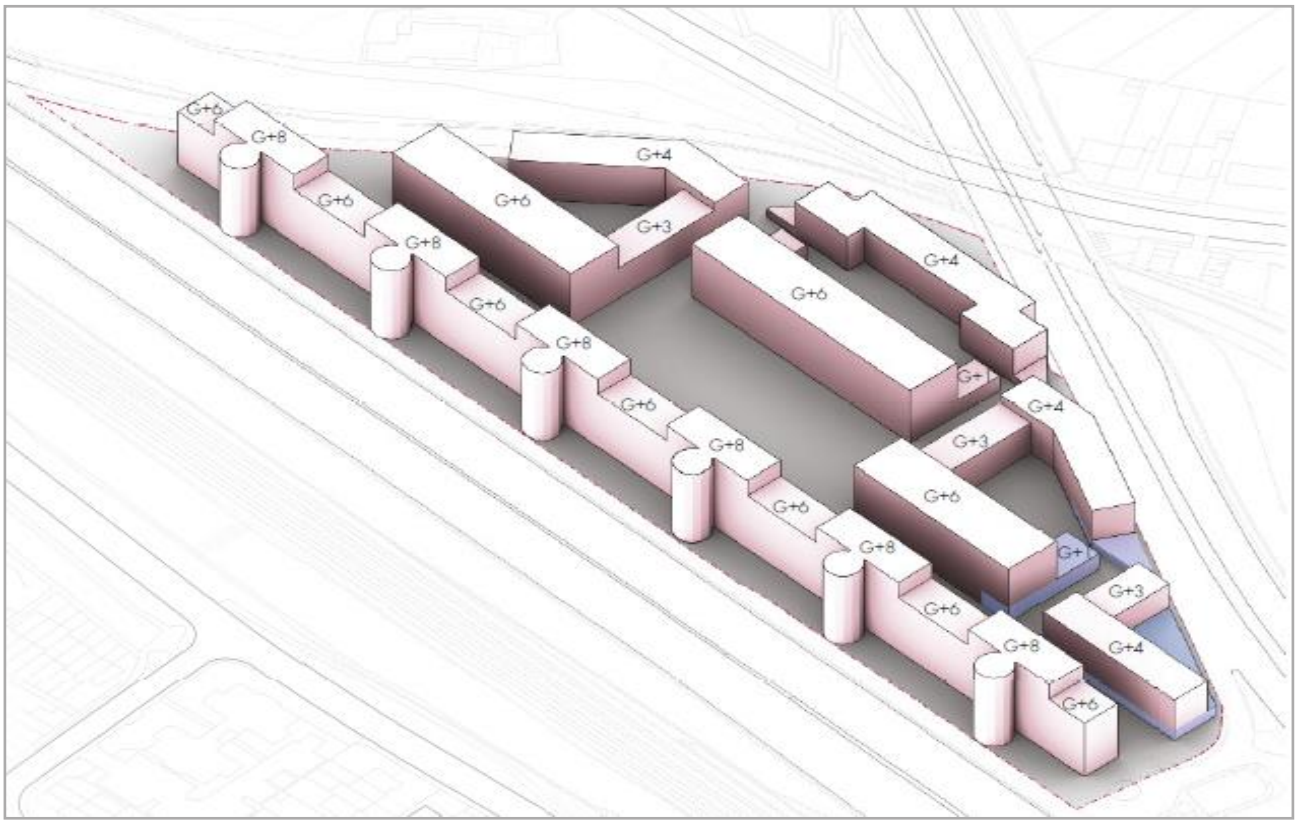
3.3 If the Site was not developed, the Site would remain its current use as a retail park, and localised disruption from demolition and construction would not arise, e.g. construction traffic, noise and vibration, and habitat loss. Adverse effects associated with the completed Development would also not arise, e.g. displacement of commercial tenants (the Kosher Outlet Store and Together Plan) and no townscape and visual effect. However, the beneficial effects associated with the opportunity to provide new homes, including affordable homes, improvement of pedestrian and cycle permeability to, from and through the Site and introduction of new buildings of architectural quality which could enhance the visual appearance of the Site and locality.

3.4 The 'No Development' scenario is not considered a realistic prospect, as it is likely the Applicant would bring forward one of the three retail planning permission approved for the Site. Due to investment and survey work carried out to date, it is unlikely that the Site would not be developed in some capacity.

3.5 The Site boundary has remained relatively unchanged throughout design development. There were limited options for the Site layout as the design needs to minimise the noise and vibration and air quality effects of the adjacent M1 and A1. Fundamentally, there were no drastic changes to the Site layout or the location and orientation of respective buildings. A long building has remained in place along the frontage to the M1 motorway throughout design development to shield the inner spaces of the Development while the remaining blocks have remained in their approximate locations to enclose the Site with frontages onto the A1 (Watford Way) and Bunns Lane.

3.6 Initial designs, produced by Allies and Morrison in September 2015, proposed a high-density residential-led development consisting of 750 dwelling units, as shown in Figure 3.1. The proposed blocks ranged in height from four to nine storeys and created an enclosed development which had one long building affronting the M1 and smaller blocks behind it.

Figure 3.1: Concept Design, September 2015 (Allies and Morrison)



3.7 New proposals provided by Arney Fender Katsalidis (AFK) in early 2016 (January – March) enhanced the principles laid out within the Allies and Morrison scheme but made some distinct and crucial design changes. Iterations of these proposals are provided in Figures 3.2 and 3.3.

Figure 3.2: First iteration – February 2016 (AFK)

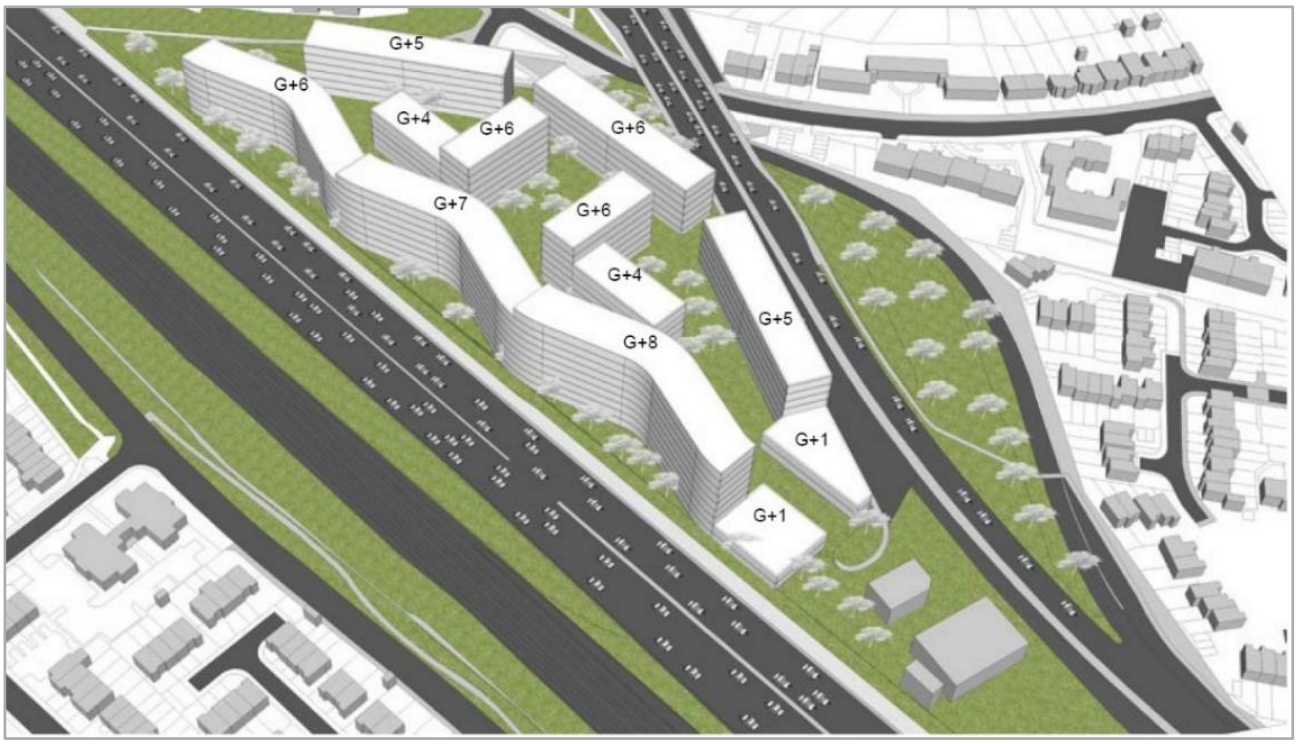
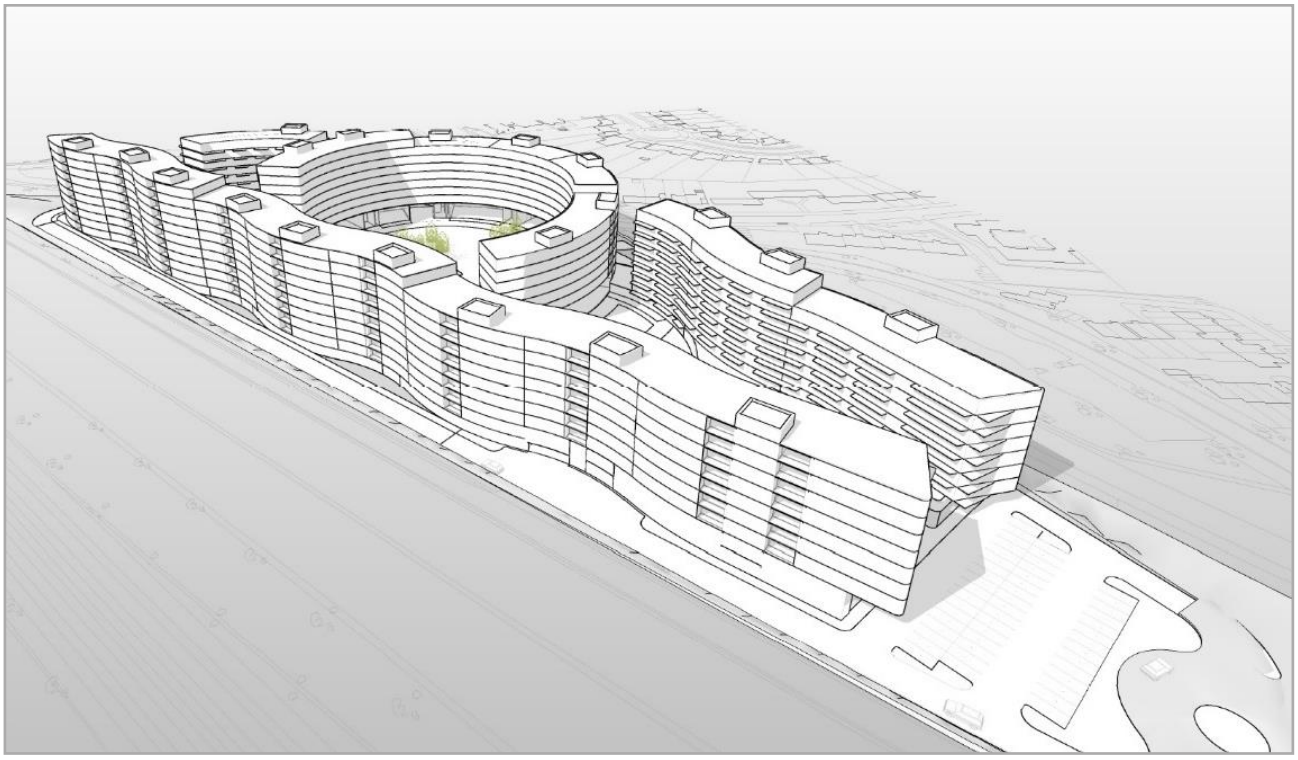


Figure 3.3: Second iteration – March 2016 (AFK)

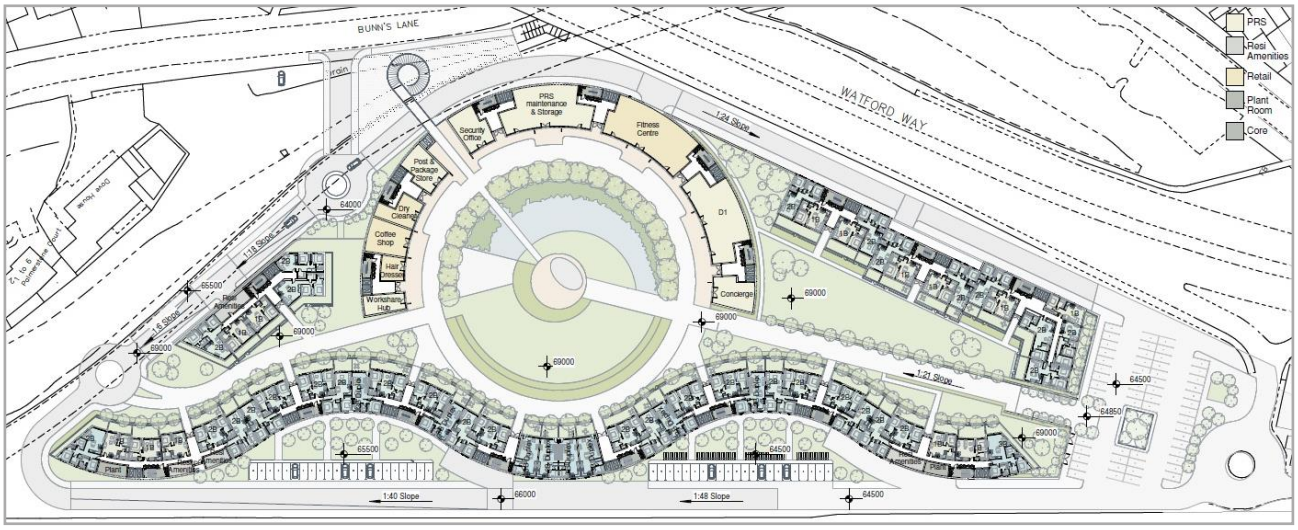


3.8 The February 2016, Figure 3.2, iteration replaced the straight block along the M1 frontage with a curved 'wave' building which tapered down in height from G+8 storeys to G+6 storeys from south to north. This reduced the visual impact of this massing from the M1 and beyond while retaining the emissions and noise barrier to the motorway. The remaining buildings were altered in size and locations adjusted within the Site, however the concept of three buildings positioned along boundary of the Site adjacent to the A1 and wrapping around towards Bunn's Lane was maintained.

3.9 The March 2016, Figure 3.3, iteration further accentuated the 'wave' effect in the building fronting the M1, while increasing the number of levels of the building from south to north resulting in a tapered building of G+7 storeys to G+10 storeys. The previously distinct 'block' layout was redefined throughout the Development within the introduction of a crescent shaped building towards the centre of the Site that created an enclosed area of public realm (referred to as the 'Circus') and increased permeability through the Site. The general block heights were also closer aligned, with a reduced stepping effect. These changes provided a greater area of public open space, more natural accessibility into the Site and increased daylight penetration to the Site. A route of pedestrian and vehicular access was added connecting the Site to Bunns Lane along with a pedestrian access onto the A1 and upgrades to the pedestrian bridge at the southern end of the Site which connects to the M1.

3.10 Public consultation events held in May 2016 and, along with further consultation with the LB Barnet and GLA over the subsequent months, resulted in further refinement in light of the comments raised, and an initial fixed design created at the end of July 2016 (Figure 3.4). As a result, there was a reduction in the number of residential units to 722, an increase to 670 residential car parking spaces to get closer to LB Barnet policy requirements, and 1,196 cycle spaces (in accordance with London Plan standards).

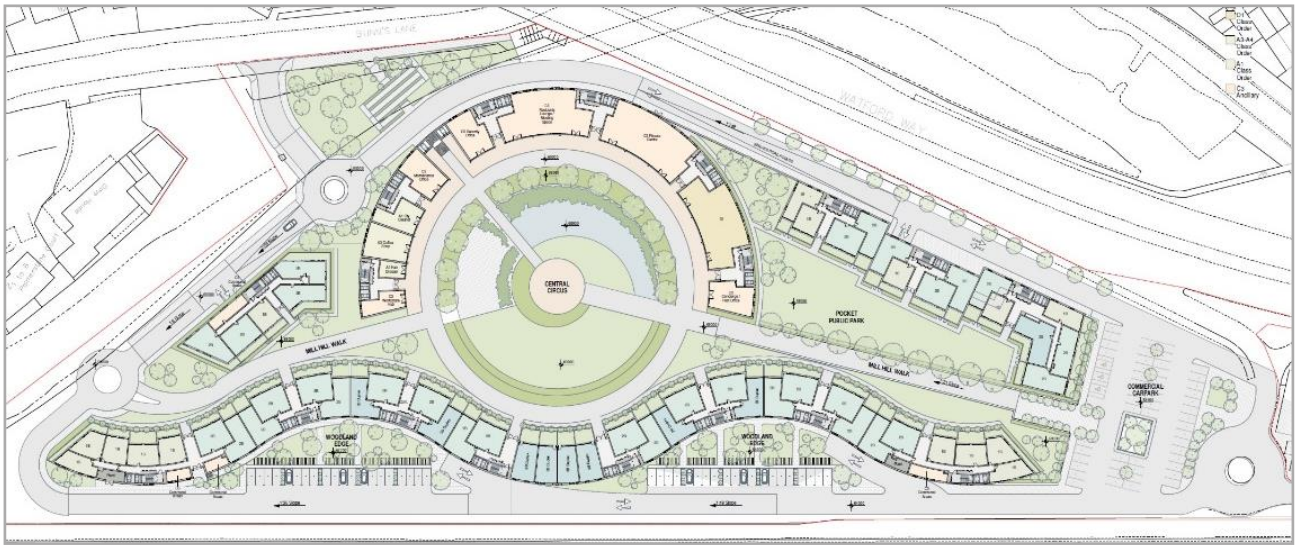
Figure 3.4: Initial design fix scheme, July 2016



2016 Detailed Application Scheme – August 2016

3.11 The changes from the July 2016 to August 2016 scheme reintroduced the stepped massing approach, with a reduction in height of the two standalone buildings situated either side of the centre crescent building. The building to the north east of the crescent building was decreased to G+6 storeys, while the building to the south west tapered from G+8 storeys to G+6 storeys. This was primarily to assist in breaking up the wider mass of the Development. The lower level of the undercroft basement was also removed which reduced the number of car parking spaces proposed by the Development from 670 to 479 spaces.

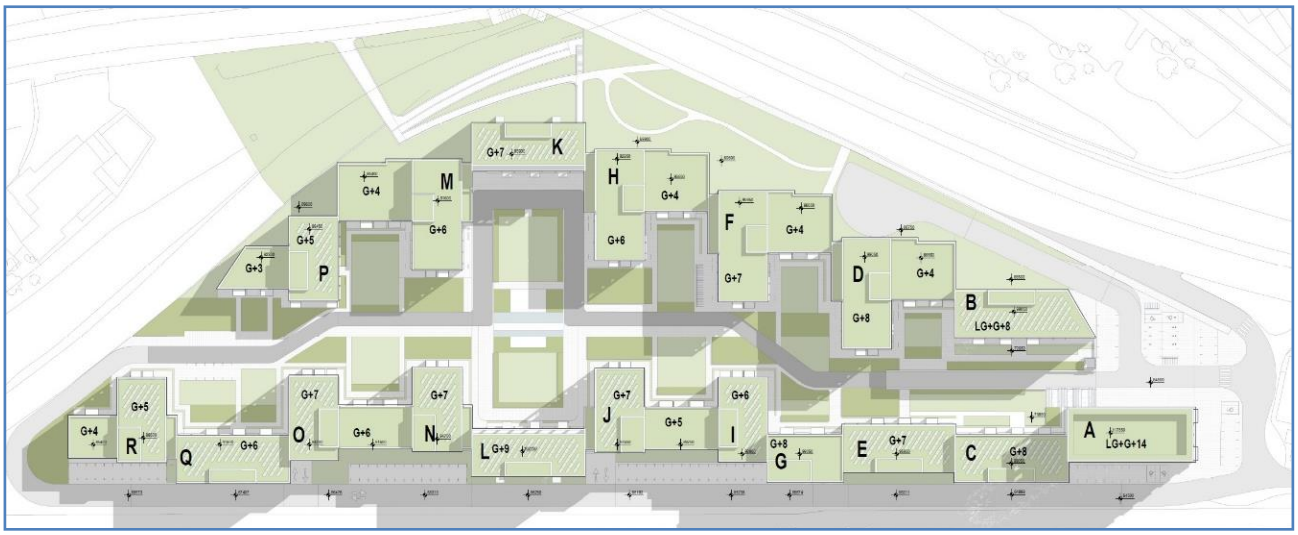
Figure 3.5: 2016 Detailed Application Scheme, August 2016



2017 Submitted Scheme – December 2017

3.12 Following submission of the proposed design changes to the 2016 Submitted Scheme in January 2017, further consultation occurred with the LB Barnet, GLA and local stakeholders. The 2016 Submitted Scheme was subsequently 'withdrawn' in November 2017, and the Applicant redesigned the scheme to take account of the comment raised through this consultation.

Figure 3.6: 2017 Submitted Scheme



3.13 The main changes from the August 2016 to November 2017 scheme comprised:

- Increasing the number of building blocks from four to 18, and varying the heights of the 18 blocks;
- Reducing the height in the north of the Site and increasing the height in the south of the Site;
- Changing the second vehicle access proposed by the August 2016 scheme, and replacing it with pedestrian and cyclist access only;
- Increasing the number of homes to 717; and
- Changing the landscaping proposals to reflect the above changes which have led to an increase in amenity space.

3.14 On 2015 July 2018, LB Barnet resolved to refuse permission for this application. Having regard to the detail of the application, the Mayor of London considered that the Development was of a nature or scale that it would have a significant impact on the implementation of the London Plan policies on housing and affordable housing. The Mayor of London subsequently issued a Direction pursuant to Article 7 of the Mayor of London Order 2008 ("the 2008 Order") that he should be the local planning authority and determine the application.

2019 Detailed Application Scheme

3.15 Further to the Mayor's decision to call in the application, the Applicant took the opportunity to review the Development with a view to increasing the delivery of on-site affordable housing. Scope was identified to increase/decrease building heights within the Development by one to three storeys, thereby retaining the accepted design principles which the Mayor supported in the 2017 Submitted Scheme and all of the benefits of the submitted application.

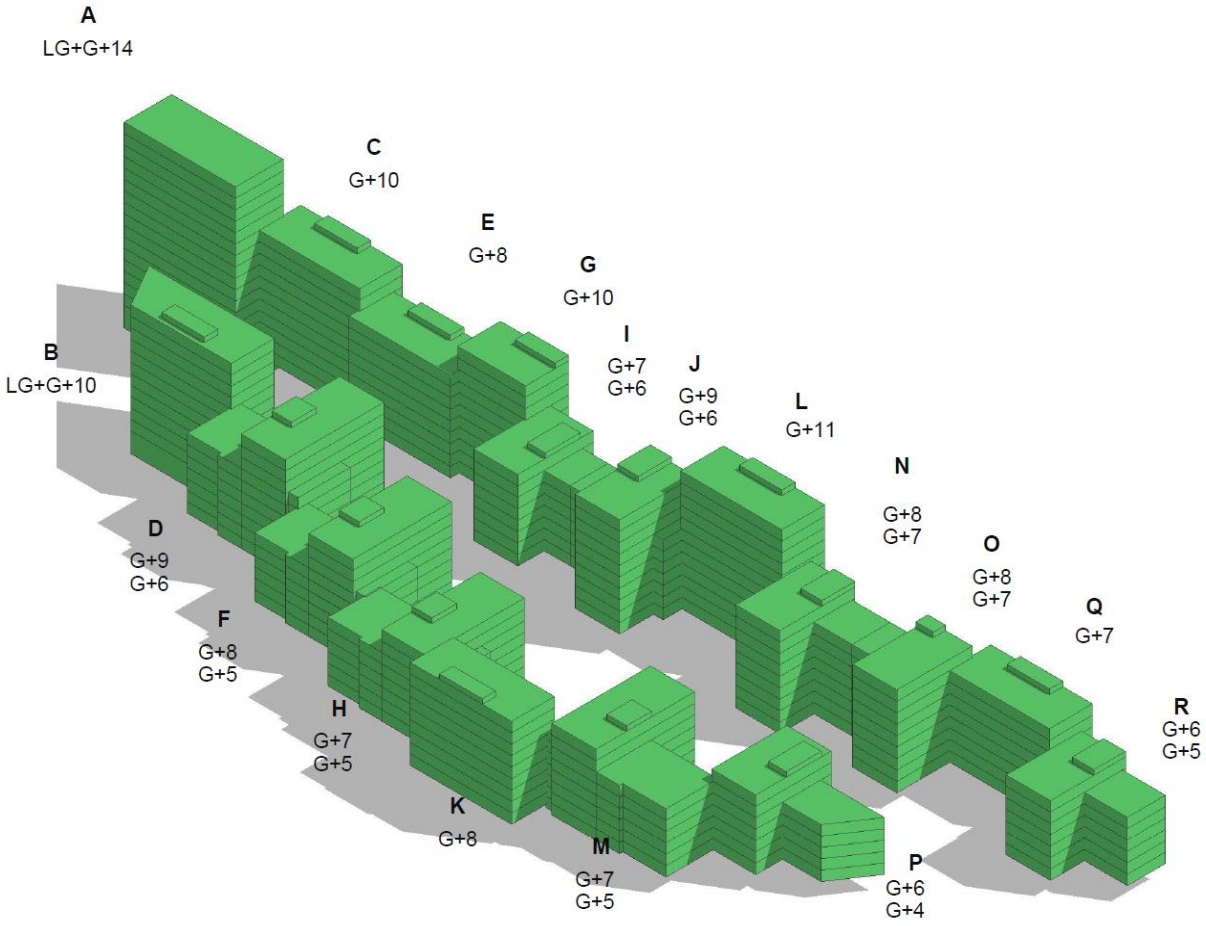
2019 Detailed Application: Initial Design (January 2019)

3.16 The main design changes comprise:

- An increase of 120 residential units, from 724 to 844 units;
- A 50:50 split between Built to Rent and conventional housing in order to increase the level of affordable housing. The submitted scheme was a Build to Rent scheme, including 35% affordable housing, comprising Discount Market Rent (DMR) and London Living Rent (LLR) units. The Development's Build to Rent element comprises a similar mix of private rent, DMR and LLR to the 2017 Submitted Scheme. The conventional element comprises a mix of private sale, affordable rent and shared ownership;

- An increase or decrease in building heights by one to three storeys across all building blocks, apart from the 15-storey tower (consisting of LG+G+14 storeys) at the southern end of the Development. This is change was to optimise the density and affordable housing delivery, whilst bringing additional benefits to the visual effects of the Development;
- The reorientation and an increased in size of the pedestrian access on Bunns Lane, creating a direct visual link to the central courtyard from the bottom of the entrance steps;
- A decrease in the residential car-parking provision; and
- An increase in private amenity space in line with the overall increase in unit numbers.

Figure 3.7: 2019 Detailed Application Scheme

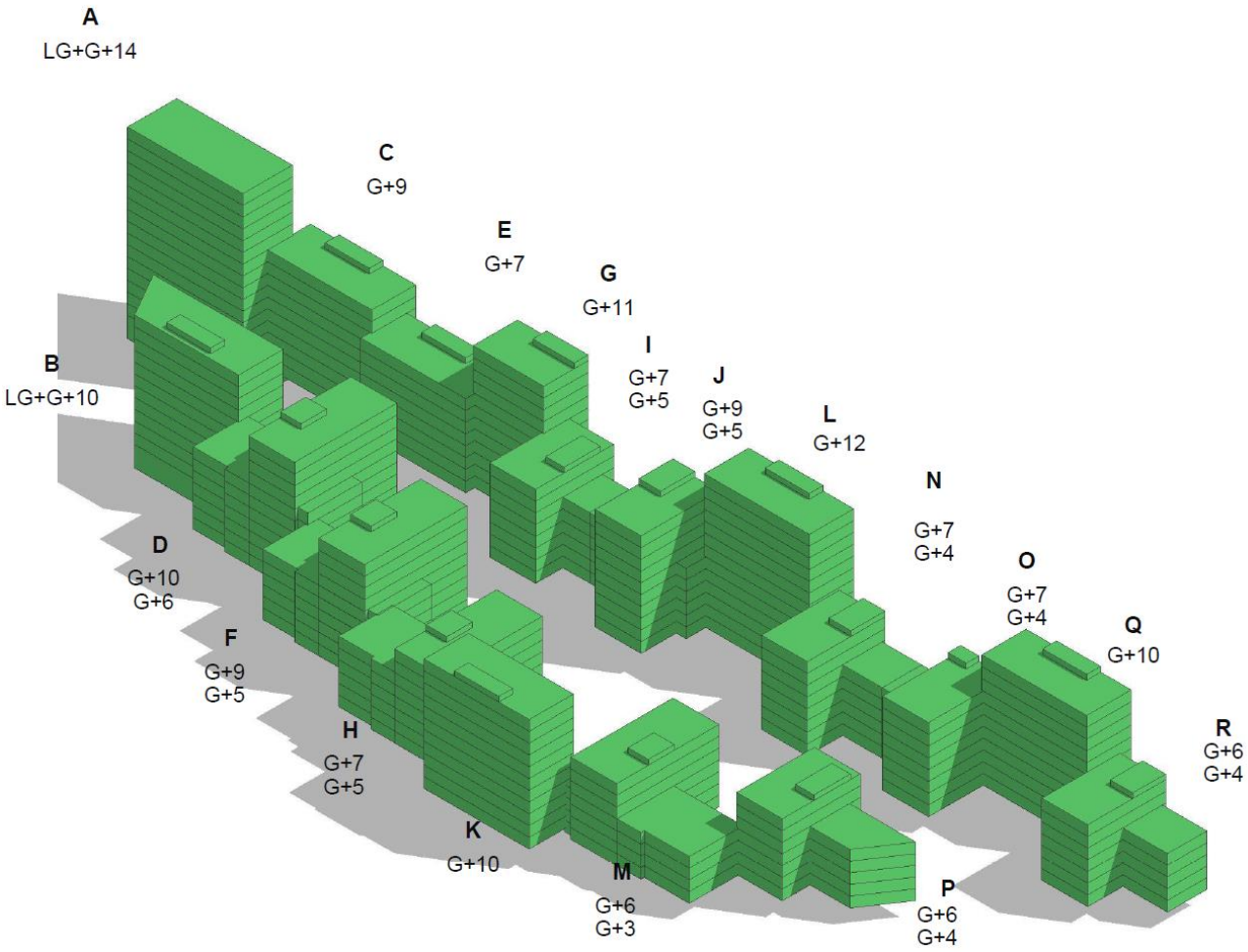


2019 Detailed Application: Preferred Option (February 2019)

3.17 Following the Design Review Panel, the GLA elected to refine the design of the buildings to create more variation in building height, whilst maintaining the number of units.

3.18 As shown in Figure 3.8, building heights have increased or decreased by one storey across building blocks, apart from the 15-storey tower (consisting of LG+G+14 storeys) at the southern end of the Development which remains the same height.

Figure 3.8: Preferred Option (February 2019)



4 Description of the Development

4.1 The full planning application proposes the comprehensive redevelopment of the Site as a mixed-use, residential led development. The key elements of the Development comprise:

- clearance of Site and demolition of the existing retail and restaurant buildings;
- erection of eighteen buildings (Blocks A to R) of varying heights;
- Delivery of 844 Build to Rent units; 405 sqm of retail, 326 sqm of food and 297 sqm of community floor space; 894 sqm of ancillary Build to Rent floor space; new pedestrian access off Bunns Lane; open space, landscaping; car parking; acoustic mitigation and highway/pedestrian improvements.

4.2 The Development will bring forward the components outlined within Table 5.1.

Table 5.1: Components of the Development

Type	Proposed Area/Unit
Residential (Use Class C3)	
Total Units	844
Unit Mix	4 studio apartments, 281 1-bedroom apartments, 436 2-bedroom apartments); and 123 3-bedroom apartments.
Wheelchair Adaptable Units	92
Total Floorspace (Gross Internal Area (GIA))	76,291 sqm
Non-Residential (Use classes A1/A3-A4/D1)	
A1 Use (GIA)	405 sqm
A3 Use (GIA)	326 sqm
C3 Use (GIA)	894 sqm
D1 (GIA)	297 sqm
Total Floorspace (GIA)	1,922 sqm
Amenity Space	
Private Amenity Space (Roof Floor Gardens, Balconies and Winter Gardens)	9,527 sqm
Public Courtyard	6,623 sqm
Parking	
Residential Car Parking	366 spaces (of which 85 are disabled spaces)
Resident Visitors	10 spaces
Retail/Commercial/Community	9 spaces (of which 2 are disabled spaces)
Car Club	5
Total Car Parking	390 spaces
Cycle Spaces	1,544
Short-term residential cycle spaces	30
Long-term retail/commercial/community cycle spaces	8

Type	Proposed Area/Unit
Short-term retail/commercial/community cycle spaces	21

Design Layout and Architectural Form

4.3 The Development principally consists of eighteen individual buildings of varying heights situated adjacent to each other to form two buildings, as shown within Figure 5.X. Blocks A, C, E, G, I, J, L, N, O, Q and R form a long straight building stretching along the western boundary of the Site fronting the M1 motorway. Blocks B, D, F, H, K, M and P form a crescent shape building which follows the perimeter of the Site boundary with the A1 and Bunn's Lane to enclose the Site. Contained within the central of these two buildings are areas of public open space for the Development. The external facade of the blocks form a protective barrier and urban line along the M1, A1 and Bunn's Lane.

4.4 Figure 5.1 Ground floor plan of the Development

4.5 The individual heights of the buildings are presented in Table 5.2.

Table 5.2: Building Summary

Block	Use	Building Height (Storeys/Meters)
Block A	75 residential units comprising 30 1-bedroom apartments, 19 2-bedroom apartments, and 26 3-bedroom apartments.	LG+G+14
Block B	54 residential units comprising 20 1-bedroom apartments, 33 2-bedroom apartments, and 1 3-bedroom apartment.	LG+G+10
Block C	49 residential units comprising 18 1-bedroom apartments, 30 2-bedroom apartments, and 1 3-bedroom apartment.	G+9
Block D	70 residential units comprising 25 1-bedroom apartments, 27 2-bedroom apartments, and 18 3-bedroom apartments. 153 sqm Workshare Hub (Use Class C3)	G+10 G+6
Block E	39 residential units comprising 14 1-bedroom apartments, 24 2-bedroom apartments, and 1 3-bedroom apartment.	G+7
Block F	62 residential units comprising 22 1-bedroom apartments, 24 2-bedroom apartments, and 16 3-bedroom apartments. 151 sqm Commercial (Use Class A1)	G+9 G+5
Block G	36 residential units comprising 2 1-bedroom apartments and 34 2-bedroom apartments.	G+11
Block H	52 residential units comprising 19 1-bedroom apartments; 20 2-bedroom apartments; and 13 3-bedroom apartments. 153 sqm Commercial (Use Class D1) 129 sqm Ancillary (Use Class C3)	G+7 G+5
Block I	30 residential units comprising 9 1-bedroom apartments and 21 2-bedroom apartments.	G+7 G+5
Block J	42 residential units comprising 7 1-bedroom apartments, 23 2-bedroom apartments and 12 3-bedroom apartments.	G+9 G+5

Block	Use	Building Height (Storeys/Meters)
Block K	50 residential units comprising 2 studio apartments, 20 1-bedroom apartments and 28 2-bedroom apartments. 141 sqm Commercial (Use Class D1/A1) 169 sqm Commercial (Use Class A3)	G+10
Block L	64 residential units comprising 3 studio apartments, 24 1-bedroom apartments, 36 2-bedroom apartments and 1 3-bedroom apartment.	G+12
Block M	47 residential units comprising 20 1-bedroom apartments, 17 2-bedroom apartments and 10 3-bedroom apartments. 132 sqm Commercial (Use Class C3) 153 sqm Commercial (Use Class A3)	G+6 G+3
Block N	34 residential units comprising 6 1-bedroom apartments, 18 2-bedroom apartments and 10 3-bedroom apartments.	G+7 G+4
Block O	29 residential units comprising 9 1-bedroom apartments and 20 2-bedroom apartments.	G+7 G+4
Block P	26 residential units comprising 10 1-bedroom apartments, 13 2-bedroom apartments and 3 3-bedroom apartments. 246 sqm Ancillary (Use Class C3)	G+6 G+4
Block Q	54 residential units comprising 20 1-bedroom apartments, 33 2-bedroom apartments and 1 3-bedroom apartment.	G+10
Block R	31 residential units comprising 6 1-bedroom apartments, 15 2-bedroom apartments and 10 3-bedroom apartments.	G+6 G+4

4.6 All floors from ground level upwards will be for residential use. The ground floor will comprise a combination of residential, commercial and retail uses. The lower ground floor would be primarily used for vehicle and cycle parking, refuse storage and auxiliary rooms. An energy centre would be located beneath Block C. Access to the lower ground would be gained via three entrances beneath Blocks E, J and O.

Figure 4.1: Site Plan (Drawing A01-00-03)

KEY PLAN

Ref. North

REV	DATE	DESCRIPTION
P1	01.02.19	For information

SITE BOUNDARY

APPLICATION BOUNDARY

NOTES

Check and verify all dimensions prior to commencement of work.
This drawing shall be read in conjunction with all other contract documents including those by other consultants, and including specifications.
Seek clarification of inconsistancies/ conflicts.
Figured dimensions shall take precedence to scaled dimensions.

DRAWN	CHECKED	JOB NO.
Author	Checker	44032

CLIENT
Meadow Residential

PROJECT
Mill Hill - London

ARCHITECTS:
AFK ARCHITECTURE + INTERIORS
44-46 SCRUTTON STREET, LEVEL 1
LONDON, EC2A 4HH, UNITED KINGDOM.

CLIENT:
MEADOW RESIDENTIAL
FIRST FLOOR, 50 GREAT MARLBOROUGH STREET, LONDON, W1F 7JS.

STRUCTURAL ENGINEER:
HTS
4 PEAR TREE COURT, LONDON, EC1R 0DS.

MECHANICAL / ELECTRICAL ENGINEER:
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LANDSCAPE ARCHITECT:
OUTERSPACE
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Arney Fender Katsalidis

DRAWING TITLE
SITE PLAN

SCALE
1 : 1000@ A1

REVISION / DRAWING No.

P1	PLANNING	A01-00-03

Figure 4.2: Visual representation of the Development from Barnet By-Pass at Watford Way footpath

Figure 4.3: Visual representation of the Development at Flower Lane before the junction with Bunns Lane

Figure 4.4: Visual representation of the Development from Bunns Lane at Rowlands Close

Figure 4.5: Visual representation of the Development from the pedestrian cross over (west side)

Figure 4.6 Visual representation of the Development via the proposed pedestrian access on Bunns Lane

Amenity Space

4.4.7 The Development includes significant areas of public realm and amenity space, including communal gardens, a new landscape square to the southern entrance and a woodland edge which will act as a buffer between the Development and Watford Way. A courtyard will provide a large public space (6,623 sqm) in the centre of the scheme, which would comprise both hard and soft landscaping.

4.4.8 Each residential unit will have private amenity space either in the form of balconies or winter gardens. Private communal amenity space is provided on the roofs of Blocks D, F, H, I, J, K, M, N, O, P and R in the form of roof floor gardens. The quantum of private and community space within the Development is detailed in Table 4.3. Provision of 1,152 sqm of dedicated playspace will be incorporated into the open space across the Development, exceeding the level of space required based on the demand arising from the Development.

4.8 The Development provides a total of 9,527 sqm private amenity space, and 6,623 sqm public amenity space. This total includes 1,152 sqm dedicated playspace incorporated into the open space across the Development.

4.9 All residential buildings have access to communal residential amenity space which would comprise both hard and soft landscaping, accessed via communal stairs and lift cores. Private amenity space is provided for all residential units through the provision of balconies, roof floor gardens or winter gardens.

4.10 Public amenity space is provided in the form of communal gardens, a new landscape square to the southern entrance, and a large central courtyard. A woodland edge will act as a buffer between the Development and Watford Way.

Table 5.3: Amenity and Play Space Provision

Amenity Space (sqm)	
Balconies	1,561
Winter Gardens	4,162
Roof Floor Gardens	3,804
Play Space (sqm)	
Under 5 years	1,152
5-11 years	
12-18 years	

4.11 There is established pedestrian infrastructure within the surrounding area of the Site on Bunns Lane and the A1, which provides the primary Site access. A new ramped walkway will be created to the north of the Site to provide a new point of access to the Site off Bunns Lane. This ramped walkway will create a direct visual link to the central courtyard from the bottom of the entrance steps. The Development provides 390 car parking spaces, of which 85 of these spaces will be for disabled use and 5 allocated for car club bays. Ten of these spaces will be for residential visitors, and nine will be for retail, commercial and community visitors accessing the Site.

4.12 Cycle access to the Site is currently off the A1. The Development proposes to bring forward 1,552 long stay cycle parking spaces on the Lower Ground Floor, and 51 short stay cycle spaces on the ground floor for residential, retail, commercial and community cycle spaces.

4.13 An on-site Combined Heat and Power (CHP) engine will be installed within an Energy Centre which will be located on the Lower Ground Floor. Mechanical ventilation and heat recovery (MVHR) systems will provide summer cooling and filtering of the air entering the apartments. This is a low energy ventilation solution that can reuse heat that would otherwise have been lost.

5 Demolition and Construction

5.1 It is expected that the Development would be fully built-out over approximately 48 months. Demolition and construction works are expected to start in 2019 and 2024 is assumed as the full year of completion and occupation, although this may be subject to change.

5.2 Demolition and construction of the Development will be undertaken in one continuous phase. Enabling works, demolition, ground engineering and road infrastructure and services will be undertaken first. Construction of the foundations would be followed by construction of the sub-structure and undercroft, superstructure, facade and lastly public realm and landscaping.

5.3 It is anticipated that the core working hours for the Development will be as follows:

- 08:00 – 18:00 hours weekdays;
- 08:00 – 13:00 hours Saturday; and
- no working normally undertaken on Sundays or bank holidays.

5.4 A Construction Environmental Management Plan (CEMP) will be prepared prior to starting the enabling, demolition and construction works and will be implemented during all works to manage and minimise construction effects. The CEMP provides management procedures and protocols for the project to avoid, minimise or mitigate effects on the environment and surrounding area during the enabling, demolition and construction works. A draft Construction Travel Management Plan (CTMP) has been prepared which deals with traffic related issues associated with the construction works.

5.5 Likely significant environmental issues associated with the demolition and construction works, and measures identified to mitigate these effects are discussed within each technical section (sections 7 – 12).

5.6 The Development will seek to reuse materials and minimise waste production, including that of energy and water, wherever possible. Management of waste will be undertaken in accordance with the 'Duty of Care' under the Environmental Protection Act 1990[2].

6 Socio-Economics

6.1 A socio-economic assessment was undertaken using a wide range of nationally recognised research and survey information and previous professional experience of similar schemes.

6.2 The Site is located in the Mill Hill ward of LB Barnet; however, given the Site's proximity to the ward boundary, four neighbouring wards have been considered in order to represent an 'inner impact area' (IIA) of study surrounding the Site. The ward has a population is 18,000 and the IIA, 90,000. Residents are ethnically diverse in the ward and IIA, reflecting the borough, and highly qualified. The housing stock in the local area is primarily comprised of whole houses and is well served by community facilities such as schools, primary healthcare, open space and play space.

6.3 Pockets of deprivation exist in the area surrounding the Site. Deprivation is concentrated to the west of the Site in the wards of Burnt Oak and Colindale. Pockets of this area fall among the top 10% and 20% most deprived across England.

6.4 The Site was occupied by major national retailers including Homebase, Comet and Argos until 2015. The buildings have since been vacated. However, a number of retail buildings are temporarily occupied by Kosher Outlet Store and the charity Together Plan. These occupiers are aware of the plans to redevelop the Site. The potential effect caused by the Development would be the disruption to employment associated with moving. It is therefore assessed that the Development would have a temporary, **minor adverse** effect at the Site level.

6.5 The demolition and construction works associated with the Development would generate a monthly average of approximately 550 FTE jobs. Additional on-site construction employment would give rise to additional spending in the local area and supply chain benefits, which could have a **negligible** effect at the regional level.

6.6 The Development would provide 844 new residential units across a range of tenures. These would accommodate an estimated population of 1,357. It is estimated that these households would create a benefit of approximately £12.3 million in household spending annually, a significant proportion of which would be spent within the local area. This would have a **moderate beneficial** effect at the local and borough level, and a **negligible** effect at the regional level.

6.7 The delivery of new housing would have a **moderate beneficial** effect at the local and borough level and a **negligible** effect at the regional level. Additional spending by residents would have a **moderate beneficial** effect at the local and borough level and **negligible** at the regional level.

6.8 The residents of the Development would result in a need for the equivalent of 0.8 GPs. There is currently capacity in the surgeries within 1 km therefore it is assessed that the Development would have a **negligible** effect at all spatial scales.

6.9 Child yield modelling reveals demand for 34 school places from the Development – 26 primary school places and 8 secondary school places. There is currently limited surplus capacity within primary schools locally and it is likely that some of this capacity may be taken up by the time the Development is occupied. It is therefore assessed that the Development would have a **minor adverse** effect at the local level without mitigation. A financial contribution towards the primary school places would be made through a planning condition. The residual effect after this mitigation would be **negligible** at the local level.

6.10 For secondary education, there is currently surplus capacity across the borough therefore the additional demand generated by the Development would not place significant pressure on existing facilities. It is therefore assessed that the Development would have a **negligible** effect at all spatial scales.

6.11 It has been estimated that the commercial floorspace proposed within the Development would accommodate approximately 47 to 70 FTE jobs. Such jobs would also give rise to additional local expenditure, estimated to be in the region of £110,000 to £162,000 per year. Therefore, the employment generated by the Development would have a **minor beneficial** effect at the local level and **negligible** effect at all other spatial scales. Additional spending by employees would have a have a **moderate beneficial** effect at the local and borough levels and **negligible** at the regional level.

6.12 The Development would deliver 6,623 sqm of public amenity, 9,527 sqm of private amenity and 1,152 sqm of play space. This meets the policy requirements set out by LB Barnet and the GLA. It is therefore assessed that the Development would have a **minor beneficial** effect at the site and local level and **negligible** at the borough and regional scale.

6.13 Overall, the residual socio-economic effects of the Development are deemed to be temporary **minor adverse** to **moderate beneficial** during the demolition, construction and operational stages.

6.14 In addition, the cumulative schemes in the local area, along with the Development, would deliver new housing, generate employment and have a positive impact on the local economy through additional spending, which together would have a beneficial effect in terms of socio-economics.

7 Traffic and Transport

7.1 Baseline conditions were determined via traffic surveys of the surrounding highway network, observations of existing pedestrian infrastructure, comfort levels, and interrogation of personal injury accident data obtained from TfL.

7.2 Potential sensitive receptors were determined following an assessment of baseline conditions, and dialogue with LB Barnet and TfL, as follows:

- motorised users on the local highway network;
- pedestrians on the footways adjacent to the Site;
- public transport users using public transport facilities around the Site; and more specifically:
- those people travelling by that mode; and
- those people travelling by other modes but which are affected by the mode in question.

7.3 Surveys and Site observations have demonstrated that much of the highway network is a highly sensitive receptor due to the current levels of traffic.

7.4 The footways adjacent to the Site have been demonstrated to be in good condition and score highly in terms of pedestrian comfort due to the current low volume of pedestrian movements that occur.

7.5 Although existing bus patronage data was not made available for interrogation, it is understood from liaison with both TfL and members of the public that the bus network, and more specifically the routes 221 and 113 are likely to be sensitive to changes in demand. It is considered that the bus network is highly sensitive to the effects of the Development.

7.6 Given the amount of London Underground services running both hours before and after the peak hours, and the level of frequency / capacity of the network, it is considered that the London Underground is of medium sensitivity to effects of the Development.

7.7 It is understood from the consultation process with both LB Barnet, TfL and the public that southbound rail services from Mill Hill Broadway are congested. These services are less frequent by comparison to the London Underground network. It is considered that they will be highly sensitive to effects of the Development.

7.8 Demolition and construction activities will take place using the existing access road to the Site, and generate up to four vehicle movements per hour. As a result, its effect on the receptors identified are either **negligible** or **minor adverse**, and temporary in duration.

7.9 The completed Development was demonstrated to have only either **negligible** or **minor adverse**, permanent effects on the receptors identified. No specific additional mitigation measures are required.

7.10 The cumulative effect of other development was considered and is inherent within the data used to assess both the construction and completed Development.

8 Townscape and Visual Assessment

8.1 The Site encompasses the Pentavia Retail Park and is utilitarian in character, making little contribution to townscape quality or visual amenity. Its most valuable landscape feature is an area of woodland adjoining Bunns Lane. The Site is considered to be of low sensitivity to development overall.

8.2 The Barnet Characterisation Study locates the Site within the Edgware and Burnt oak character area. This mainly comprises typologies of low-rise suburban housing and estates, with some medium-rise blocks. Transport infrastructure, notably the M1, the A1/Barnet Bypass and the Midland Main Line, is an important influence on local character. The surrounding townscape is generally considered to be of medium sensitivity, becoming low within the Colindale character area and high within the Mill Hill and Watling Estate conservation areas. Ongoing and future developments at Barnet College and the Grahame Park Estate will introduce taller buildings into the area and reduce the sensitivity of the townscape.

8.3 Local views are determined mainly by the built-up character of the area, although vegetation is also influential. The Site itself is visible mainly from close range and currently is not prominent. The most open public views are typically obtained from areas of open space such as Woodcroft Park, from roads orientated towards the site, from elevated locations such as the M1 footbridge and from higher ground in Mill Hill. The Site lies within the Locally Important View from Mill Hill Field (but currently does not affect it).

8.4 A total of 21 assessment views were identified. These are based on those used for the assessment of the previous scheme (which included seven winter views requested by the LPA), together with additional views from Bunns Lane and the UCL Observatory. Potential receptors (and their assumed sensitivity) comprise residents (high), users of public open space (medium to high) and road users, pedestrians and rail passengers (low).

8.5 During construction, the main sources of impact would comprise demolition of the existing buildings and the introduction of features such as tower cranes. This would give rise to a moderate neutral effect on Site character, a **minor neutral** effect on the Edgware and Burnt Oak character areas and a **negligible adverse** effect on all other character areas and the Watling Estate and Mill Hill conservation areas. The effects on ten of the assessment views would be nominally significant. However, the impacts on off-site receptors would be temporary and would not result in any material effects on character or amenity.

8.6 The completed Development represents a fundamental change in the character of the Site and in the scale of the local townscape, although that change will become less apparent as other schemes are brought forward, particularly redevelopment of the Grahame Park Estate. The magnitude of impact is mitigated by the design quality of the proposals, with the result that the effect on Site character is predicted to be **moderate beneficial** (becoming **substantial beneficial** as landscaping matures).

8.7 The effects on the Edgware and Burnt Oak and Mill Hill East character areas, and on the Watling Estate conservation area, are considered to be moderate neutral. The effects on the remaining character areas are predicted to be **minor neutral** for Hendon, **minor beneficial** for Colindale and **negligible neutral** for the Mill Hill conservation area. The effect on the locally important view from Mill Hill Field is predicted to be **minor adverse**.

8.8 Nominally significant (i.e. moderate and major) effects are predicted for eight of the assessment views, relating mainly to residents in Bunns Lane, the Grahame Park Estate and surrounding streets, and to users of Woodcroft Park and Mill Hill Park. Since the primary source of impact is the introduction of comparatively tall buildings, which will be prominent and will in some cases shorten what are currently relatively open,

suburban views, these effects are assumed to be **adverse**. All the predicted effects are assumed to be residual, since they take account of the mitigation measures that will be adopted during construction, or which have been incorporated into the design.

8.9 Other development schemes in the local area will not change the Development's effect on any of the assessment views. The schemes will, however, increase the perceived impact of construction on the local area, and will contribute to its increasingly urban character. This will result in a slight increase in the adverse construction effect and the beneficial operational effect on the Colindale character area, but not sufficiently to alter the level of significance.

9 Air Quality

9.1 The whole of LB Barnet has been designated an Air Quality Management Area (AQMA) as a result of nitrogen dioxide (NO_2), primarily associated with road traffic emissions. The Site is located within this AQMA and the assessment focuses on this pollutant. This assessment has examined both the suitability of the Site for residential occupation and the potential for any air quality impacts on the wider area, as a result of the Development.

9.2 Extensive study has been undertaken of the baseline conditions at the Site which has included the collection of Site monitoring data. This has indicated that central Site areas experience NO_2 levels within the regulatory levels that are set on the grounds of health and this is taken to be indicative of the likely situation for both PM_{10} and $PM_{2.5}$. Site data has also indicated that the pollutant levels adjacent to the M1 and A1 Watford Way are expected to exceed the regulatory levels.

9.3 Computer modelling of the likely effect of the building has demonstrated a 'barrier' effect, whereby, the central amenity areas are protected from the poor air quality associated with the M1 and A1 Watford Way. It is proposed internal air quality will be protected from poor air quality on these facades by the provision of a mechanical ventilation system which will draw air in from the balconies of the protected internal courtyard areas.

9.4 An assessment was also undertaken of the potential effects of the traffic associated with the Development upon the surrounding AQMA and the residents of Bunns Lane in particular. This was found to show that where any impacts, where detected, these where of **negligible** magnitude and significance.

9.5 Building plant will be chosen in line with requirements of the GLA's Sustainable Design and Construction Supplementary Planning Guidance and the requirements for air quality neutrality, no air quality impacts upon the wider areas are predicted. It is the intention that building technology will be applied which goes beyond the requirements for air quality neutrality and that this will go towards the offsetting of any transport emissions identified.

10 Noise and Vibration

10.1 Baseline noise surveys were carried out to establish the existing baseline conditions in and around the Site. The surveys show the environment noise at the Site is dominated by road traffic from the adjoining major transport infrastructure of the M1 and A1. The Midland Mainline railway is located approximately 65m from the Site and noise from this line also contributes to the ambient noise environment.

10.2 Baseline vibration surveys were carried out to assess the potential for vibration ingress from the nearby trainline on the completed Development. Vibration associated with train movements from the nearby train line was considered unlikely to cause vibration that will be of a sufficient magnitude that would be likely to attract adverse comment from the occupants of the Development or present a risk of cosmetic/structural damage to proposed buildings. An assessment of vibration effects was not undertaken as part of this of the EIA.

10.3 Construction noise effects were calculated using worst-case assumptions about the location of plant and equipment. There will be **negligible** to **moderate adverse** construction noise effects on receptors surrounding the Site (depending on the distance between the locations of works and receptor). Implementation of the proposed CEMP (which includes suitable mitigation measures in the form of site hoarding, regular maintenance of plant, restricted hours of work and traffic routing, etc.) will ensure that the "best practicable means" of noise control, in line with the code of practice embodied in BS 5228 (Parts 1 and 2), are used to minimise and reduce to a minimum construction noise emissions from the site.

10.4 Vibration levels beyond a distance of around 20m from the construction works are normally not considered to be significant. Given that the nearest noise sensitive receptors to the Site are beyond this initial screening distance, it is expected that the magnitude of any vibration effect will be **negligible**.

10.5 The Development includes a number of design and management measures to effectively protect the residential amenity of future occupants in line with industry standard good practice. Particular attention has been paid to the creation of good quality external amenity areas and the selection of appropriate external building fabric elements to control the intrusion of external noise. The effect on receptors in these outdoor amenity spaces and within their dwellings would therefore be **negligible adverse**.

10.6 The noise levels outlined in the noise models are based on an operational year of 2021 and therefore take account of future traffic growth and other development schemes in the area. The assessment clearly shows that the massing of buildings will substantially reduce noise levels and that residual noise levels within the majority of the central area would result in a **negligible adverse** effect.

10.7 A comparison of the baseline and operational models indicates that the Development will generally result in 'no change' in existing traffic noise levels, whilst some properties may experience a sound level reduction due to the increased screening offered by the proposed massing of the buildings. Such changes (beneficial or adverse) are of **negligible** significance.

10.8 Noise emissions from building services plant installations can be mitigated through the suitable siting of plant and implementation of standard noise control techniques. Noise transfer from commercial uses and adjoining noise sensitive premises and the operational noise from such uses can be mitigated through the specification of appropriate separating constructions and specification of external building fabric elements. Mitigation to address operational noise from non-residential sources that will form part of the Development can be secured and enforced through an appropriate planning condition. Assuming noise

from commercial units is adequately controlled through planning conditions and detailed design, the residual effects would be **negligible adverse**.

11 Wind Microclimate

11.1 The meteorological data for the Site indicates that the most frequent winds and the strongest winds blow from south-west, with north-easterly winds common during spring.

11.2 A 3-dimensional model of the Development was constructed to test in a wind tunnel facility in order to predict the comfort and safety of pedestrians in and around the Site once the Development is complete. The conditions with and without the Development were tested with existing surrounding buildings. Conditions with cumulative schemes were also tested.

11.3 Wind tunnel testing of a physical 3D model has enabled the wind environment at the Site to be quantified and classified in terms of suitability for planned usage, based on the industry standard Lawson Criteria for pedestrian comfort and safety. The study combines measured wind speeds at key areas in and around the Site with long-term wind frequency statistics to determine the probability of local wind speeds exceeding comfort and safety thresholds for a range of common pedestrian activities based on the industry standard Lawson Criteria. This defines the type of activities for which the wind conditions would be safe and comfortable.

11.4 The wind tunnel study concluded that wind conditions in and around the existing site are suitable, in terms of both pedestrian safety and comfort, for their current usage throughout the year.

11.5 With the introduction of the Development within the context of existing surrounds, wind conditions in and around the site are suitable, in terms of both pedestrian safety and comfort, for their intended usage. This represents a **negligible** effect.

11.6 With the introduction of the cumulative surrounds, wind conditions in and around the Development remain similar to the existing surrounds and are suitable, in terms of safety and comfort, for the general public throughout the year.

11.7 With the introduction of the proposed soft landscaping, wind conditions remain suitable, both in terms of pedestrian comfort and safety, for the intended use by the general public and are further improved in some areas of the Development.

12 Effect Interactions

12.1 The EIA Regulations require consideration of cumulative effects which include potential effects from interactions of individual effects ('in-combination' effects) during the construction and operation phases of the Development.

12.2 During construction works, the assessment shows that there is a potential for noise and dust from the construction works and the slight increase in traffic flows due to construction traffic to interact. When these effects are combined, they could potentially create adverse (albeit temporary) combined nuisance effects on neighbouring residential properties, education facilities, local amenity areas, public realm, commercial properties and businesses and users of these buildings.

12.3 This adverse effect would occur throughout the demolition and construction programme, however the effect experienced by the receptors will vary as works progress around the Site. These effects would be temporary during construction and are typical for a project of this nature. The CEMP and CLP will manage and minimise effects where possible.

12.4 Once the development is complete, the effects will be specific to a receptor that have a fixed location. In order for there to be an interaction between effects on that fixed receptor, the residual effects would have to affect the receptor or receptors at the same time. Therefore the assessment concluds that there would be no in-combination effects arising from those topics which have residual effects (townscape and visual, traffic and transport and socio-economics).

Mitigation, Monitoring and Residual Effects

12.5 The ES includes a summary of the proposed mitigation measures and significant residual effects for all the topics considered. A thorough assessment was undertaken of the likely significant environmental effects of the Development.

12.6 During the programme of enabling, demolition and construction works, some adverse effects will occur during the four-year programme, although these effects are temporary and the majority would be mitigated through implementation of the CEMP. A CTMP has also been prepared as part of the planning submission (Appendix 7.1 of the ES Volume 2), which provides a full description of the way in which mitigation measures will be adopted through a full CLP. The CEMP and CLP would be secured by planning condition prior to the commencement of any works commencing for the Development. These documents include mitigation measures identified as part of the EIA in the technical assessments (chapter 6-11), as well as, good practice and outline how the critical construction activities will be undertaken, specifically in relation to the environmental, public health and safety aspects and traffic management of the Development.

12.7 Mitigation measures were designed-in to the Development where possible, and once constructed and occupied, the Development is expected to have a beneficial effect on housing stock at a local and district level, household spending, crime, safety and the setting of some townscape character areas. The only residual adverse effects once the Development is complete are predicted to be **negligible adverse** effect on noise, **minor adverse** effects regarding additional vehicle trips, rail trips and bus routes, and **mainly substantial adverse, but occasionally major adverse** effect at the local level views for Bunns Lane and nearby streets, residents of Grahame Park Estate, and users of Mill Hill Park.

References

[1] Her Majesty's Stationary Office (HMSO), 2017. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The Stationary Office. May 2017.
[2] HMSO, 2018. The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018. The Stationary Office. October 2018.