
**LONDON PLAN
DENSITY
RESEARCH**

**LESSONS FROM
HIGHER DENSITY
DEVELOPMENT**

Technical Report

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1 STUDY SPECIFICATION

The study specification shown below excludes the details of the tendering process and study management.

GLA 80765 - Brief for London Plan Density Research (5 Projects)

1 Introduction

The Greater London Authority (GLA, the client) would like to commission suitably qualified consultants to carry out research on density to inform the full review of the London Plan. The work will build on the housing density study commissioned by the GLA in 2012¹. The research is to be divided into five interlinked projects related to London Plan density policy, especially Policy 3.4 Optimising Housing Potential, and in particular its associated sustainable residential quality (SRQ) density matrix (London Plan Table 3.2).

The first project will explore the different definitions of density and the different methods for measuring density. It will consider which approach or approaches best provide an understanding of two key issues related to higher density development; urban form and number of people in an area. It will provide recommendations on how a new Mayor could take account of these in the full review of the London Plan. The project will also provide a recommended approach for estimating density for understanding housing capacity at a strategic level.

The second project seeks to understand how schemes that exceed the top of the density matrix in a selected number of relevant PTALs and settings have 'performed' relative to London Plan policy objectives since completion and what lessons can be learned for future development and policy. It will examine a selection of completed developments in London which have residential densities above the maximum figure for the respective settings in the London Plan density matrix, to establish what has worked and what hasn't in terms of policy objectives and how this knowledge can be translated into new policy. This project will also identify what type of housing different typologies and densities can deliver (for example are there typologies that are not conducive to delivering family or smaller household dwellings?). Consultants will be asked to define 'success' based on a series of criteria to be developed in discussion with the GLA (see section 3.2.2).

The third project is examining development costs and viability of higher density development in different settings and locations, and the contribution these developments have made to the supply of affordable housing in London. This study will also include a review of the differential management and maintenance costs associated with higher densities.

A fourth project will provide an updated approach to understanding the character of new development and the way this relates to that of the surrounding area and exploring if/how that can be taken account of in determining a site's density.

The final project will examine the ways in which density policy may bear on the capacity of new products like starter homes and PRS to increase overall provision. More generally, the

¹ Housing Density Study, GLA 2012

project should identify linkages between density, urban form, agglomeration economics and productivity and the ways in which density policy may enhance productivity.

2 Background and policy context

Measuring and defining density

As Policy 3.4 makes clear, it is accepted that density is the outcome of the interplay of a range of policy, financial and other considerations. Nevertheless, in practical terms it remains a key measurement used to describe and plan development, particularly residential development. The London Plan SRQ matrix (Table 3.2) is predicated on the relationship between public transport accessibility and development; historically this has been considered fundamental in ensuring that development in London is sustainable in the broadest sense, and the matrix expresses this as ranges for appropriate residential density in different urban settings. The density ranges in the matrix helps implement London Plan Policy 3.4 which aims to ensure that development optimises housing output for different types of locations in London (however, in responding to this brief consultants should bear in mind that a future Mayor may wish to 'maximise' rather than 'optimise' density, as did the initial London Plan).

Density in the matrix is measured by the number of habitable rooms per hectare, and the number of residential units per hectare within the development site. However, there are various other ways to describe and measure density. For example the density of a wider area than the development site can be measured to take into account the density of the existing surrounding buildings; or the density measurement can take account of all the land uses in a mixed use site or area; or it can measure the number of people in an area rather than its land use. Other density measurements, such as plot ratio, can be used to better describe the intensity of the site being developed than units/ha or habitable rooms/ha can provide, although plot ratio on its own provides a poor description of the built form. The recommendations should also provide an understanding of how these measurements should be used with phased sites.

Lessons from higher density development and its costs

The 2015 London Plan suggests at least 49,000 homes a year need to be built for the next twenty years to meet housing need. Preparatory work on the full review of the London Plan has started and suggests housing need could be somewhat higher in the future than the current London Plan suggests. Scoping work being carried out by GLA officers is investigating a number of possible options for meeting London's growing housing need; one such option is to increase the number of higher density developments, i.e. using less land to house more people. We know that many recent developments are being delivered at densities beyond those set out in the density matrix. Given this trend of building at a higher density than indicated in the density matrix and the increasing pressure for more housing in London the GLA would like to understand how schemes that exceed the top of the density matrix have performed for occupiers, neighbours and the wider community since completion, how successful they are in achieving policy objectives and what lessons can be learned for future development and London Plan policy.

The case studies should reflect a range of types of development and include a number of different PTALs and settings – for example a suburban family housing scheme in PTAL 1 that has exceeded 150 habitable rooms per hectare, a central flatted scheme in PTAL 4, 5 or 6 which has exceeded 1100 habitable rooms per unit. This is for illustrative purposes only. The actual case study types will be identified as part of the commission although it is expected that a number of case studies will be of those schemes that exceed the top of the density matrix (1100 habitable rooms per hectare). It is these schemes that pose the greatest potential challenges for decision makers in terms of ensuring they are good quality, sustainable developments, not least because these types of developments are a relatively new phenomenon in London and are also a cause for concern among some stakeholders.

Higher density development inherently provides more floorspace than lower density development on the same site. However, in addition to delivering more housing other key issues are its cost, affordability and viability. Thus it is important for the GLA to understand whether increasing density has implications for the cost, affordability, and viability of the completed market and affordable residential units in different types of location and what those implications are. A particular focus for this research is to explore whether higher density building typologies are more expensive to build and maintain and the corresponding impact on their affordability for owners and tenants. More generally, the research should identify linkages between density, urban form, agglomeration economics and productivity and the ways in which density policy may enhance productivity.

3 Scope of the Study

3.1 Project 1 - Measuring and defining density

The aim of this project is to explore different approaches to defining and measuring density and recommend a preferred approach for the London context. Secondly, the project should develop a definition for different categories of density which can be applied irrespective of the sites context to provide clarity to a significantly wide ranging debate.

The research should address the following questions:

- What are the different definitions/measures of density, and what are their advantages and disadvantages? The study should explore:
 - different spatial level measurements e.g. building footprint, site area, surrounding areas of different size (e.g. neighbourhood area) etc,
 - how to measure density in mixed use developments,
 - how to measure the impact of the development on the surrounding area,
 - how density measures can relate to the social and physical infrastructure requirement of the development.
 - The effectiveness of the application of different definitions/measures of density in other cities

- What density measure is appropriate to indicate the intensity of the development e.g. the building's form, scale and bulk?

- How can density be defined in categories which relate to different levels of relative density, such as low, medium, high within the London context?
 - Which density measurement should be used for this definition?
 - What range of densities should each category apply to?

3.2 Project 2 – Lessons from higher density development

The aim of this part of the research is to investigate completed developments that are above the density matrix maximum in London to find out what has worked and what hasn't and how this knowledge can be applied to future policy to ensure future developments are successful and sustainable. It is envisaged that this part of the study will include a desktop review of existing evidence of high density developments delivered in London and other comparable cities, but the main focus will be on detailed case studies of a number of developments to understand how 'successful' high density developments are.

3.2.1 Case study selection

The case studies should cover a range of densities and building typologies. The appointed consultant's methodology will inform the number and selection of the case studies. However, the case studies will be agreed through discussion with the GLA steering group early in the project. In addition, while the majority of case studies should exceed the top of the density matrix for the relevant PTALs and settings, it is suggested that at least one 'control' lower density case study may be necessary to disaggregate issues caused by higher density to those prevalent in a range of densities. However, it may be possible to draw on existing work in this area (i.e. Housing Density Study –GLA 2012)

A number of case studies should include tall buildings either individually or as part of a larger scheme. The tall buildings used in the case studies should be in three general categories:

- 30m to 60m (≈10 to 20 storeys)
- 61- 150m (≈20-50 storeys)²
- 150m+

3.2.2 Issues to investigate in case studies

The following issues set out below provide the general framework for examining the case study sites. The exact research questions will be agreed through discussion with the GLA steering group early in the study period. Consultants are encouraged to set out in their bids the issues they consider should be the priority focus of the case studies. The survey of residents will provide analysis of who responded so equalities implications of future policy options can be identified.

- Site description
 - What is the site density - by different density measures (units/ha, habitable rooms/ha, plot ratio, etc.)
 - What are the site's land uses

² 150m height is the threshold for referable applications to the Mayor for buildings in the City of London

- What is the total amount of floorspace for different land uses including outside spaces and service areas?
- How many separate property units are there within the site e.g. number of residential units, number of offices, shops etc.
- What are the sizes of the residential units, in gross internal area, bedroom numbers and intended occupancy?
- What is the tenure mix of the residential units (including PRS)?
- What is the amount of affordable housing in the development- by tenure and type and was any affordable housing provided off site or as cash in lieu?
- How many of the units meet lifetime homes standards?
 - How many units are wheelchair accessible, and how many of these are occupied by wheelchair users?
- How many car and cycle parking spaces are there within the site and on street
 - How have any of the above metrics changed over the life of the development? (e.g. has commercial space been converted to residential use)
- Building design/site layout
 - How has the building fabric performed since completion?
 - Are there different building typologies on the site?
 - How successful is building and site layout in regard to:
 - number and location of entrances and their level of use
 - waste storage and maintenance access
 - integration of the development into the surrounding streets
 - impacts of the development on surrounding street life
 - What is the private amenity space and how well is it used?
 - How well is the communal amenity spaces used?
 - Where is the car and cycle parking located and how well have they been used over the life of the building?
 - What are the overlooking distances between flats, and are there any privacy concerns? (see perception of the development below)
 - What is the floor to ceiling heights of the residential units?
 - What is the number of dual and single aspect residential units?
 - How many residential units share the same entrance?
 - How many residential units access the same lift on each floor?
 - Are there overheating issues with the buildings and what are their causes?
 - Do the single aspect flats suffer from overheating more than the dual aspect flats?
 - Are there any microclimate problems within and outside the site caused by the development?
 - Has there been any mitigation measures implemented post completion?
 - What percentage of units meets the BRE daylight standards?
 - Do residents in the sub-BRE daylight standard units perceive the lack of daylight as a concern?
- Management of the site (buildings and outside space)
 - How has the site been managed since completion?

- What are residents' views of the site's management?
- What are the views of the site's management company on problems with managing the site, ongoing management costs, and what works well?
- What have been the service charges since completion and what do they cover?
- What are the deliveries and servicing arrangements? Do they work? Are they disruptive (to residents, those in the surrounding area or to traffic including public transport)?
- What are the energy costs for residents?
 - Does higher density offer efficiencies which reduce service or energy costs?
- Are the maintenance issues and costs significantly different for the tall building developments compared to high density lower height developments?
- How do the issues raised by these case study sites compare to lower density schemes within the density matrix? (potentially using existing case study research for comparisons e.g. GLA's Housing Density Study 2012 or a control case study)
- Perception of the development/quality of life (some of which will require survey work)
 - How satisfied with the development are its resident?
 - What are residents' concerns with the development and what do they like about it?
 - In particular do residents have concerns over: privacy, daylight levels in dwellings, noise from within the site, overheating?
 - How have residents' satisfaction changed over time?
 - What are the residents' views on the intensity of the development– its scale, height, and form in the context of its setting?
 - Do the residents know and interact with their neighbours within the development and outside it?
 - What was the planned occupancy rate for the different land uses?
 - What has been the actual occupancy rate for the different land uses over time?
 - What is the length of tenancy for different residential tenures?
 - How have prices of the residential units in the development changed over time compared to the surrounding area?
 - Understanding transport usage and modal share in different areas of density using TFL standard survey questions.
 - What are the perceptions of the development by residents in surrounding area?
 - What are their concerns with the development and what do they like about it?
 - What were the concerns raised at the planning application stage?
 - Do they think the development has improved the area or not?
 - Has the scheme had negative or positive impact on: traffic congestion, public transport, street parking, daylight, litter, local services and shops?

- What are their views on the intensity of the development – its scale, height, and form in the context of its setting?

3.3 Project 3 – Affordability, development costs and viability

This project will explore the relationship between increasing density, building height and development costs, and the delivery of affordable housing in different locations. In particular this research should determine if increasing density, particularly through the development of tall buildings, has any significant implications for development costs and long term management costs and if these have knock-on effects on the affordability of development for the owners and occupants. The project should also examine if building at 5-7 storeys can deliver high density without increased costs? In addition, this project will establish if higher density developments in London are supplying proportionally more or less affordable housing than comparable lower density and why?

The following issues are to be covered:

- Do residential units in: i) high density, ii) tall building development cost more to a) build and b) buy or rent (including service charges) than comparable lower density and lower height development?
 - If so what are the reasons for the higher costs?
 - Is there a point at which the build costs make building any i) denser, ii) higher, financially unviable, and how does this vary across London?
 - Is there a point at which building higher actually reduces affordability?
- Can lower height (5-7 storeys) buildings deliver high density development without increasing costs?
- Have high density developments (including high density tall buildings) deliver more or less affordable housing than comparable lower density developments, and what are the reasons?
- Are there particular issues in delivering affordable housing in high density or high building schemes bearing in mind that affordable housing tends to be fully occupied or even over occupied/overcrowded in practice, resulting in higher child yields?

3.4 Project 4 – Exploring character and development density

The findings from the above studies and a separate piece of work being commissioned by TfL to investigate how an understanding of the level of services, jobs and social infrastructure could inform density calculations will inform the options for the London Plan's density matrix (see table 3.2 of the London Plan). However, the GLA are also interested in exploring if and how the existing character of an area should be taken into account in determining what level of density is appropriate.

The research should address the following:

- Produce an updated character map of London using the current definitions of character settings (suburban, urban and central areas) in the London Plan SRQ matrix (Table 3.2).
- Consider if and how the current character settings (suburban, urban and central areas) in the London Plan SRQ matrix (Table 3.2) should be redefined to better

reflect the different character settings found in London, primarily focussing on the character of the built form.

- Propose a method for defining which of these character settings an area falls under when considering a planning proposal; and using this method produce a character map of London.
- Identify the density range that is considered appropriate for development in each of the character settings using the existing or refined PTAL bands in Table 3.2

3.5 Project 5 – Why else is density important?

The balance of probabilities suggests that London's population/housing need is likely to continue to grow at, or slightly above levels anticipated in the 2015 London Plan, but that employment growth could be higher by a third or more. Scenarios for accommodating this growth over and above existing sources are suggested in the 2050 Infrastructure Plan and through the Outer London Commission. In broad terms they are of two types: those that look to increase the supply of building land (selective 'Green Belt' release or development in the Wider SE) and those that look to make better use of London's existing built up area (e.g. intensification in appropriate town centres, Opportunity/Intensification areas, suburbs, existing large sites, surplus industrial land, housing estates). Density policy is clearly crucial to realising the development capacity of this latter group of locations, as well as other sites which will be covered in the mainstream SHLAA. The way policy can do this and its effects on the lives of Londoners is the primary concern of the four main sections of this brief.

However, density policy can also impinge on other policy concerns, not least the way the city functions economically. Research to inform previous editions of the London Plan has indicated that larger cities make a disproportionate contribution to national economies³. By inference, the disproportionate size of London relative to the UK's other cities makes it especially important to the overall economy⁴. At a more local level it has been shown that as population increases so does local employment⁵. Indirectly, the approach taken to density could have a bearing on these findings. Recent research has pointed more specifically to a relationship between density policy and urban productivity⁶ - enhancing productivity is a key national concern⁷ which could have particular implications for London.

This project should:

Review strategic linkages between density policy and demographic and economic growth, employment creation and, in particular, productivity.

³ GLA Economics, Working Paper 17: Why distance doesn't die: Agglomeration and its benefits, 2006

⁴ The law of the Primate City vs Zipf law – London's size is disproportionate relative to other western European city systems.

⁵ GLA Economics, More residents, more jobs? 2015 update. This reports an increase in the resident population of 1,000 will on average have the potential to give rise to a further 171 jobs in the locality.

⁶ Deloitte Real Estate. Meeting London's Future Needs. The economic opportunities and challenges of density in London. Discussion Paper 1. British Land. 2015

⁷ Fixing the foundations, HMS Treasury, 2015

Provide options as to how density policy might help manage these relationships; and evaluate these options in the context of Mayoral and national objectives.

2 EXTRACT FROM THE LONDON PLAN

Table 3.2 from London Plan

Supporting text

3.28 A rigorous appreciation of housing density is crucial to realising the optimum potential of sites, but it is only the start of planning housing development, not the end. It is not appropriate to apply Table 3.2 mechanistically. Its density ranges for particular types of location are broad, enabling account to be taken of other factors relevant to optimising potential – local context, design and transport capacity are particularly important, as well as social infrastructure (Policy [3.16](#)), open space (Policy [7.17](#)) and play (Policy [3.6](#)). These broad ranges also provide the framework within which boroughs can refine local approaches to implementation of this strategic policy through their LDFs^[1]. Where appropriate, they can also provide a tool for increasing density in situations where transport proposals will improve public transport accessibility in the future. It is important that higher density housing is not automatically seen as requiring high rise development.

Table 3.2 Sustainable residential quality (SRQ) density matrix (habitable rooms and dwellings per hectare)

Setting	Public Transport Accessibility Level (PTAL)	Setting	Public Transport Accessibility Level (PTAL)
	0 to 1	2 to 3	4 to 6
Suburban	150–200 hr/ha	150–250 hr/ha	200–350 hr/ha
3.8–4.6 hr/unit	35–55 u/ha	35–65 u/ha	45–90 u/ha
3.1–3.7 hr/unit	40–65 u/ha	40–80 u/ha	55–115 u/ha
2.7–3.0 hr/unit	50–75 u/ha	50–95 u/ha	70–130 u/ha
Urban	150–250 hr/ha	200–450 hr/ha	200–700 hr/ha
3.8–4.6 hr/unit	35–65 u/ha	45–120 u/ha	45–185 u/ha
3.1–3.7 hr/unit	40–80 u/ha	55–145 u/ha	55–225 u/ha
2.7–3.0 hr/unit	50–95 u/ha	70–170 u/ha	70–260 u/ha
Central	150–300 hr/ha	300–650 hr/ha	650–1100 hr/ha
3.8–4.6 hr/unit	35–80 u/ha	65–170 u/ha	140–290 u/ha
3.1–3.7 hr/unit	40–100 u/ha	80–210 u/ha	175–355 u/ha
2.7–3.0 hr/unit	50–110 u/hr	100–240 u/ha	215–405 u/ha

Notes to Table 3.2

Appropriate density ranges are related to setting in terms of location, existing building form and massing, and the index of public transport accessibility (PTAL). The setting can be defined as:

- central – areas with very dense development, a mix of different uses, large building footprints and typically buildings of four to six storeys, located within 800 metres walking distance of an International, Metropolitan or Major town centre.
- urban – areas with predominantly dense development such as, for example, terraced houses, mansion blocks, a mix of different uses, medium building footprints and typically buildings of two to four storeys, located within 800 metres walking distance of a District centre or, along main arterial routes
- suburban – areas with predominantly lower density development such as, for example, detached and semi-detached houses, predominantly residential, small building footprints and typically buildings of two to three storeys.

3.28A Geographically specific guidance on implementation of policy 3.4 is provided for Opportunity and Intensification Areas in paragraphs 2.61 and 2.62; for Town Centres in Policy [2.15](#) and paragraphs 2.72B – 2.72H and 4.42A-B; for surplus industrial land in paragraphs 2.85 and 4.23 and for other large housing sites in paragraph 3.42. More general guidance on implementation of Policy [3.4](#) is provided in the Housing SPG including exceptional circumstances where densities above the relevant density range may be justified.

3.29 The form of housing output should be determined primarily by an assessment of housing requirements and not by assumptions as to the built form of the development. While there is usually scope to provide a mix of dwelling types in different locations, higher density provision for smaller households should be focused on areas with good public transport accessibility (measured by Public Transport Accessibility Levels [PTALs]), and lower density development is generally most appropriate for family housing.

3.30 Where transport assessments other than PTALs can reasonably demonstrate that a site has either good existing or planned public transport connectivity and capacity, and subject to the wider concerns of this policy, the density of a scheme may be at the higher end of the appropriate density range. Where connectivity and capacity are limited, density should be at the lower end of the appropriate range. The Housing SPG provides further guidance on implementation of this policy in different circumstances including mixed use development, taking into account plot ratio and vertical and horizontal mixes of use.

3.31 Residential density figures should be based on net residential area, which includes internal roads and ancillary open spaces. Family housing is generally defined as having three or more bedrooms. Car parking provision should be in accordance with the standards outlined in Chapter 6. The Housing SPG provides guidance on addressing the relationships between car parking provision, development density and levels of public transport accessibility in different types of location.

¹⁴ CLG NPPF 2012 op cit para 58

3 CASE STUDY SELECTION

Background

1. The case studies were drawn from the London Development Database, following an agreed approach with the GLA. The final selection of case studies was also agreed with the GLA.
2. By using the LDD, the case studies were based on planning permissions and the boundaries that were used for each permission. Although site visits and interviews about the schemes could take a wider perspective and consider the schemes in their context (e.g. as one element in a more comprehensive area based (re)development, the primary desk top analysis necessarily focused on the content of the planning permission.

Criteria

3. The following were the criteria for selection of the case studies:
 - Focus on case studies above the densities in the Sustainable Residential Quality matrix (at varying % ages above the upper end of the density range shown);
 - Represent the settings in the matrix (but not necessarily every PTAL Level for every setting). The case studies are not intended to be examples of the highest density schemes in London in absolute terms;
 - Include at least one example from each of 3 categories of tall buildings i.e.
 - 30m to 60m (≈10 to 20 storeys)
 - 61- 150m (≈20-50 storeys)⁸
 - 150m+
 - If possible, include at least one scheme with Prior Approval
 - Include 'control' case studies of schemes with densities **within** the matrix values;
 - Be reasonably geographically spread but more importantly, to include schemes in a range of 'value areas' (using average borough residential market values as a headline measure of value);
 - Include a range of size of sites but with a focus on larger schemes;
 - Include 2 'small schemes' (i.e. below 50 dwellings);
 - Include schemes with a mix of %s of affordable housing – but limit the number with 0% or minimal AH;
 - Include at least one PRS scheme.

⁸ 150m height is the threshold for referable applications to the Mayor for buildings in the City of London

Method for case study selection

Initial selection

4. The selection process was two-stage. The first stage drew up a list of all potential candidates and the second stage narrowed this down to 12 depth case studies and 8 additional case studies for desk top analysis only.
5. From the LDD, all schemes of 50 dwellings or more and approved between April 2010 and March 2015 were included for potential selection plus a review of smaller schemes. Selection of the long-list focused on more recent approvals but did include some earlier approvals where the initial selection had insufficient candidates meeting a particular set of criteria.

Tall buildings

6. The LDD provides storey height for a proportion of all schemes in the database – we supplemented this with a web based search but not all schemes have an identified number of storeys.
7. Nine schemes were selected as a long list for the group of tall buildings, concentrating at or around a specific number of storeys.
 - 30m to 60m (≈10 to 20 storeys) – schemes at c 15 storeys were selected
 - 61- 150m (≈20-50 storeys) – schemes at c35 storeys were selected
 - 150m+ - there is only one scheme at this height in the database

Approach to rest of case studies

8. Schemes in the three settings of Central High (PTAL 4 to 6), Urban Medium (PTAL 2 to 3), Suburban (PTAL 0 to 1) were taken forward. This was done to give the broadest representation of scheme types from the matrix, ensuring the widest coverage of density ranges across London. The density ranges included were:
 - 140 to 405 dph (Central);
 - 45 to 170 dph (Urban);
 - Suburban - 35 to 75 dph (Suburban).
9. For each of the three selected groups, schemes were analysed in terms of the % above the maximum density for that group. For example a scheme of 200 dph in the Urban group would have an 'excess' density of 17.6% (i.e. 30 dph above the maximum from the matrix of 170 dph)
10. From the list of schemes in each group, the next stage in the selection process was as follows:
 - Identify a group of 4 to 5 schemes at different %age density above the maximum for that group e.g. at c25%, c50% and c75% above the maximum;
 - Review the schemes identified and select individual schemes for mix of locations (boroughs) and date of permission.

Selecting the 'small' case study schemes:

11. It was agreed with the GLA that two small case studies were included in the case studies. The case studies were identified from the Central High and Suburban Low groups and were all at c20 dwellings and both had densities in excess of the maximum matrix value.

Selecting the 'control' schemes:

12. One 'control' case study was selected from each group of the large case studies. For each group, we looked for schemes at different %ages below the maximum for the group. This was to ensure that schemes were sufficiently different from the other case studies in the group that any impact of density on 'performance'/viability can be identified. The percentages used were:
 - Central High within 20% below maximum;
 - Urban Medium within 25% below;
 - Suburban Low within 40% below.
13. No control scheme was identified for the group of tall buildings (although it is noted that some in the group of tall buildings were at densities below the maximum for their group).
14. No control scheme was identified for the 'small' case studies.

Other steps in drawing up the case study long list

15. Schemes with c100% affordable housing were deleted from the long list.
16. No scheme of 100% PRS was identified from the LDD but the later case study analysis showed that PRS schemes had been picked up.

4 THE CASE STUDIES

The 19 case studies used are set out below. The scheme names used are those found on the LDD (relating to the planning permission) and often the scheme is now better known by another name.

Depth case studies

Case study name	Borough
Ramsden Estate Phase 3, Orpington	Bromley
Lyon Court and 28 – 30 Pembroke Road	Hillingdon
66, Addison Road, Bromley	Bromley
98 – 106 High Road, Redbridge	Redbridge
Former St. Andrews Hospital	Tower Hamlets
Tower Site, 1 St. George Wharf	Lambeth
721 – 737 Commercial Road	Tower Hamlets
Beaufort Park	Barnet
194 Pitfield Street	Hackney
160-188 High Street, Stratford	Newham
Plot 09, north of Henrietta Street	Newham
Castle House, 20-20 Walworth Road	Southwark

Desk top only case studies

Case study name	Borough
Durand Close	Sutton
14-16 Kenworthy Road	Hackney
Depot, Gatliff Road, WCC	Westminster
Rathbone	Newham
Emanuel House	Westminster
77-33 Upper Richmond Road	Wandsworth
City Road	Islington

5 DATA COLLECTED FROM DESKTOP ANALYSIS AND SITE VISITS

Desk top analysis - review of planning data

- The following information was obtained from the original planning permission and key reports that led to the permission being granted (including the officers' report to committee), together with supporting plans/sketches where available. Not all the information was available from the planning documents and the site visit and/or interviews supplemented the desk top analysis for the depth case studies. This was not the case for the desk top only case studies and it is acknowledged that some information may have been partial and/or overtaken by later events

Date of development	
1. Site Density	Total site area
	Density Units/ha
	Density Hab. rooms/ha
2. Site Land Uses	Site's existing land uses at time of application
3. Amount of floorspace	Total amount of floorspace for: - residential - commercial - retail - community use - amenity space - service areas etc. - other
4. Number of separate property units within site	Total number of units in: - Residential use - Office use - Retail - Community use - Restaurants and cafes - other
5. Size of residential units and intended occupancy	(a) Gross internal area
	(b) Number of bedrooms x units
	(c) Intended occupancy of affordable units (AH, Wheel Chair access)
	(a) What was intended occupancy on completion?
6. Tenure Mix of residential units	What is the tenure mix of units in (a) Affordable Rent
	(b) social rent
	(c) shared ownership
	(b) other equity share products
	(c) PRS
7. Amount of Affordable Housing in the development	(a) amount / percentage of affordable housing
	(b) off-site provision
	(c) commuted sum in lieu
	(d) How was this considered at the planning stage?
8. Meeting Lifetime Homes Standards	(a) Number of units built to Lifetime Homes
	(b) Number of units wheelchair accessible

	(d) Number of units occupied by wheelchair users*
9. Cycle and Car Parking Spaces	(a) Number of car and cycle spaces within site (at planning stage)
	(b) Number of car and cycle spaces provided at surface
	(c) Number of car and cycle spaces parking provided in undercroft
	(d) Nos car and cycle spaces provided underground
	(e) How many levels of underground parking are there?
10. Building Height	What is the building height?
	(a) in storeys?*
	(b) in metres (from DAS or supporting information)
11. Circulation Space	How much circulation space is provided within the building?*
12. Changes in metrics following original consent	Have any of the metrics in 1 – 11 changed since the planning decision notice?
13. Surrounding Uses	What is the height range in storeys of the surrounding development? - Low rise (under 10) - Medium rise (11 – 20) - Mid to high rise (21 – 50) - Tall building (51 plus)
14. Non Material amendments	How non-material amendments have been approved since the original consent? List each by reference and date.

Analysis of the planning documents also provided background information on:

- The developer(s);
- Policy compliance of the development or circumstances considered in determining application;
- Affordable housing provision and supporting evidence where available e.g. is there evidence that scheme viability was a concern at planning application stage;
- Issues raised by consultees, neighbours and other parties when the planning application was being considered.

Site Visit and Urban Design Review

2. Site visits to each of the depth case study sites were undertaken in February and March 2016, informed by the desktop data analysis.
3. The following information was collected for each of the in-depth case studies (as far as was available at the time of the site visit):

<p>1. Building Performance</p>	<p>How has the building fabric performed since completion?</p> <p>(a) Is there visible weather staining to cladding?</p> <p>(b) Are doors and windows in good condition?</p> <p>(c) Are claddings and fascias in good condition?</p> <p>(d) Are original design features intact and unaltered e.g. wind-turbines?</p> <p>(e) Other performance issues, including upkeep of planting and external circulation areas</p>
<p>2. Building Typologies</p>	<p>Are there different building typologies on the site e.g.:</p> <ul style="list-style-type: none"> - low rise (under 10) - medium rise (11 – 20) - medium to high rise (21 – 50) - tall building (51 plus) - Mixed use - Retail - Leisure - Other typologies
<p>3. Building design, site layout, integration with environs</p>	<p>Is building and site layout successful with regard to:</p> <p>(a) Nos and location of entrances and level of use</p> <p>(b) Separate building entrance for affordable and market units?</p> <p>(c) Access for waste storage and maintenance</p> <p>(d) Is the building well integrated with surrounding area?</p> <p>(e) Does development impact on surrounding street life?</p>
<p>4. Provision and use of private amenity space</p>	<p>(a) What private amenity space* is provided for residents?</p> <ul style="list-style-type: none"> - balconies - roof terraces - front or rear garden - basements - other informal space <p>(b) What percentage of units have balconies?</p> <p>(c) What is the typical area of balconies, where provided?</p> <p>(d) How well are these used?</p> <p>(Note weather on site visit)</p>

5. Provision and use of communal amenity space	(a) What communal amenity space* is provided for residents? <ul style="list-style-type: none"> - play areas - shared gardens - roof terraces - gym - swimming pool - shared meeting space - other informal space
	(b) How well are these spaces used?
6. Location and use of car and cycle parking and usage over life of building	(a) Where is the car & cycle parking located?
	(b) How well has car parking been used since occupation?
	(c) How well has cycle parking been used since occupation?
	(d) Is there a car sharing scheme for the building?*
7. Overlooking distances between flats and privacy concerns	(a) What are the overlooking distances?
	(b) Do overlooking distances meet or exceed the Mayor's SPD
	(c) Are there any privacy concerns from residents?
	(d) Are there other signs of a lack of privacy?
8. Floor to ceiling heights of residential units	(a) What are the floor to ceiling heights of the residential units*
	(b) Do these meet or exceed the Mayor's SPD?
9. Aspect of residential units	(a) How many units are:.* <ul style="list-style-type: none"> - single aspect - dual aspect?
	(b) Does this meet or exceed the Mayor's SPD?
10. Entrances to residential units	(a) How many units share the same entrance on each floor?
	(b) Do the affordable units have a separate entrance?
	(c) Does this meet or exceed the Mayor's SPD?
11. Access to lifts	(a) How many units access the same lift on each floor?
	(b) Do different lifts serve different tenures?
	(c) Does this meet or exceed the Mayor's SPG?
12. Overheating Issues and their causes	(a) Are there overheating issues with the building?
	(b) What are the causes e.g. do single aspect flats suffer more than dual aspect flats?

13. Microclimate within and outside site due to design of development	(a) Is microclimate around the building perimeter affected by: - Wind tunnel conditions - Permanently shaded areas - Warm suntrap conditions in summer (Observations to be supported by note of weather conditions)
	(b) Have any mitigation measures been implemented post completion?
14. Compliance with BRE daylight standards	(a) What percentage of units meet BRE Daylight Standards*?

4. Annotated plans supplemented with photos were prepared as part of the depth case studies.

6 SUMMARY SHEETS FOR DEPTH CASE STUDIES

1) FORMER ST ANDREWS HOSPITAL, DEVAS STREET, TOWER HAMLETS

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The building is well integrated with surroundings as neighbouring blocks to north-east and west are part of the wider development. Private and public amenity spaces are clearly demarcated, with a private courtyard for residents within the perimeter block.
- The only impact on surrounding street life are the cars parked on the pavement along Devas Street.
- Surrounding development exhibits a mix of storey heights (low rise to mid to high rise), varying from 2 storeys up to 23 storeys at Block D which is part of the wider development.

Proximity

- Committee report states that overlooking distances exceed 18m, albeit with some overlooking at corners of the block.

Microclimate

- Visit undertaken on 1st March 2016, around 10am in wet and windy conditions, and a temperature of c. 6°C.
- The perimeter block would mean that there are shaded areas internally.

Communal Amenity Space

- Within the perimeter block there is a communal garden area.
- To the north of the block is a play area that forms part of the wider development.
- Neither spaces were in use at the time of the visit due to wet and windy weather conditions.

Private Amenity Space

- Ground floor units have small front gardens.
- Balconies are provided to upper units (c. 85% of units).
- Inward-facing units to courtyard have recessed balconies.
- None of these spaces were in use at the time of the visit due to wet and windy weather conditions.



Scheme Location



Ground Floor Plan

- Residential
- School
- Mixed Use
- Communal Space
- Private Amenity Space



Adjacent blocks within the wider development area are much higher in height.



Landscaping within the development has not performed well since completion, with grass patchy in places.

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1) FORMER ST ANDREWS HOSPITAL, DEVAS STREET, TOWER HAMLETS

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 227 residential units
- 1 community unit

Housing Mix

- 1 studio flat
- 82 1-bed flats
- 66 2-bed flats
- 58 3-bed flats
- 14 4-bed flats
- 6 5-bed flats

Affordable Housing

- 127 market units (56% market)
- 69 social rented units (30% social rented)
- 31 intermediate units (14% intermediate)
- 44% affordable units
- No apparent differences between market and affordable units.

Building Performance

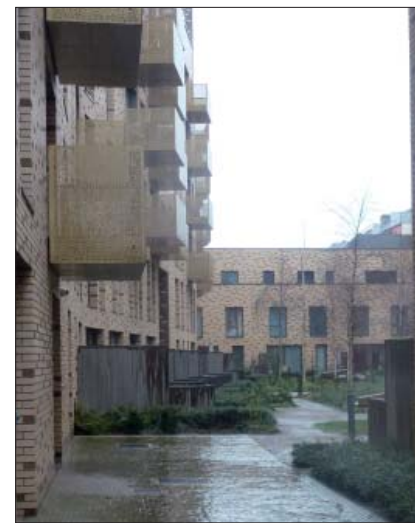
- The building has performed well since completion, although completion was in 2012 so only 4 years of ageing.
- There is no visible weather staining to cladding.
- The quality of materials and finish is better in adjacent Block B.
- All original design features are intact.

Changes following original consent

- No discernable change on site.



Scheme Location

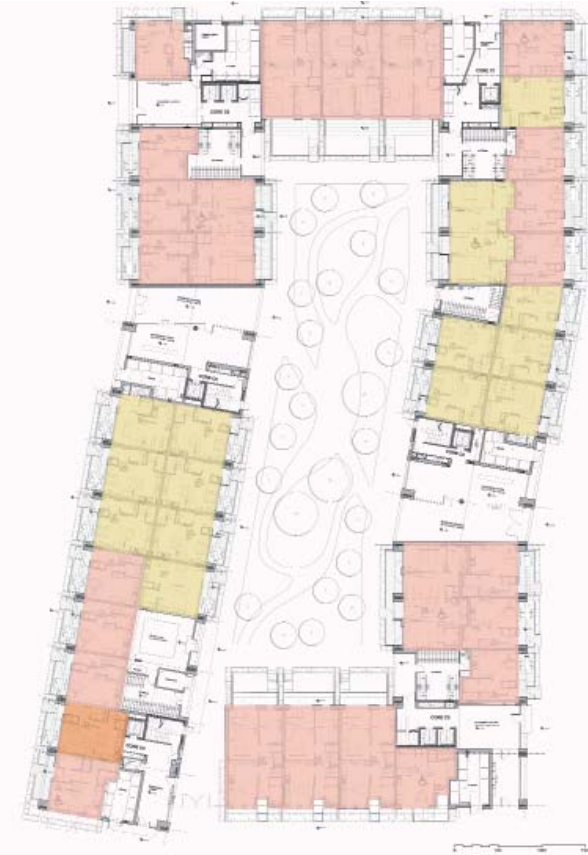


Ground floor units have a private garden, with upper units having balcony space or a roof terrace.



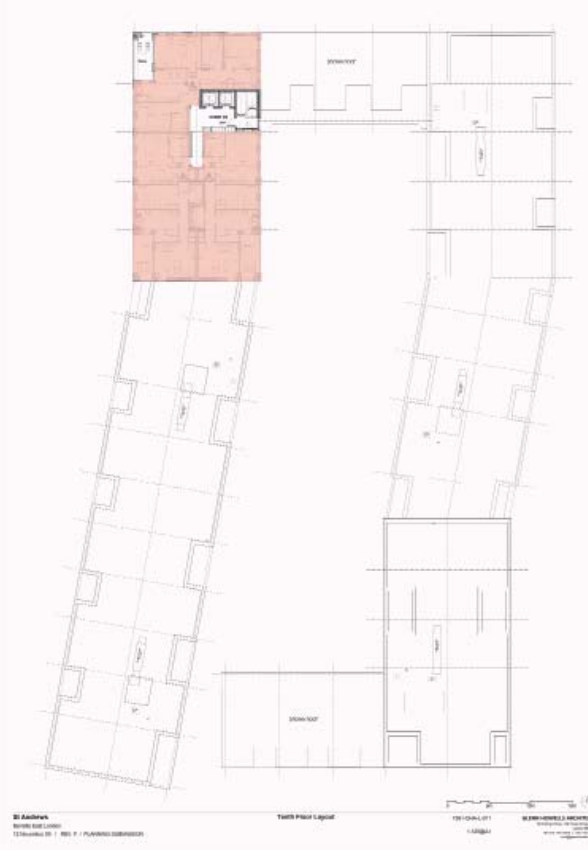
The building fabric has generally performed well since completion.

Ground Floor Plan



- Market Units
- Social Rented Units
- Intermediate Affordable Units

Tenth Floor Plan



- Market Units
- Social Rented Units
- Intermediate Affordable Units

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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1) FORMER ST ANDREWS HOSPITAL, DEVAS STREET, TOWER HAMLETS

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:
Building and Site Layout

- There are six cores, with entrances to each core spread around the perimeter of the block.
- Entrances were not used much at the time of the visit.
- Units on the ground floor have their own entrances.

Entrance to Residential Units

- There are 5 to 7 units to each floor, with each core having its own lift.
- The affordable units share the same entrance and lift as market units.

Car Parking

- Allocated car parking is provided on-street for disabled users only.
- 146 car parking spaces are provided in undercroft parking beneath Block D and St Andrews Gardens.
- There is an area of shared space along Truman Walk which appears to be permitted for parking.
- Cars were also illegally parked on the pavement adjacent to Devas Street.
- There was no evidence of a car sharing scheme.

Cycle Parking

- There are 4 cycle storage areas located within the building containing a total of 155 cycle spaces.
- Internal access could not be gained at the time of the visit, and the level of usage of these storage areas is therefore unknown.



Scheme Location



Ground Floor Plan

- Building Entrance
- Lift
- Stairs
- Cycle Parking



Ground Floor Plan

- Refuse Storage

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PLAN C: ACCESS, PARKING AND SERVICING

2) HENRIETTA STREET, NEWHAM

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues: Impact on Surroundings

- The surrounding buildings relate well to the building.
- There are no residential entrances located off North Avenue where the bus stop is located and the greatest amount of footfall is.
- A service access and an unlet A1 unit are also located on this frontage. This creates an inactive frontage to North Avenue, with the back of the building fronting onto the main street.
- Surrounding development exhibits a mix of storey heights (low rise), varying from 2 to 10 storeys).

Proximity

- The closest building is to the north of the building, and is c. 20m in distance. This exceeds the overlooking distances in the Mayor's SPD.
- There were no other apparent signs of a lack of privacy.

Microclimate

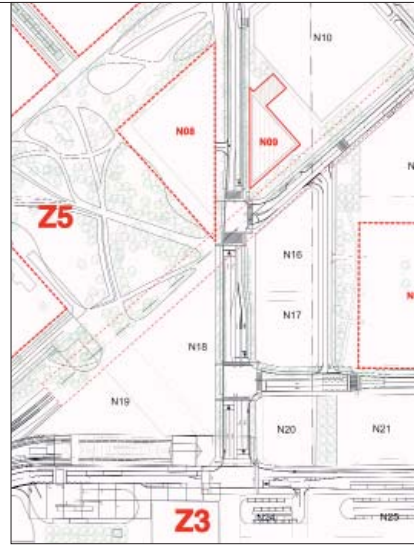
- Visit undertaken on 1st March 2016, around 12noon in wet and windy conditions, and a temperature of 6°C.
- No apparent development impact on the microclimate around the building.

Communal Amenity Space

- A play area is provided at the ground floor level for residents.
- There is also a green roof terrace.
- The play area was not in use at the time of the visit.

Private Amenity Space

- Balconies are provided to c. 94% of units, and are generous in size.
- None of the balconies were in use at the time of the visit due to the adverse weather conditions.



Scheme Location



Ground Floor Plan

Residential
Mixed-use



There is a mix of uses within the wider area, predominantly comprising residential dwellings.



A play area is provided for use by residents and the local community.

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2) HENRIETTA STREET, NEWHAM

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 120 residential units
- 3 retail units (2 occupied)

Housing Mix

- 48 1-bed flats
- 72 2-bed flats

Affordable Housing

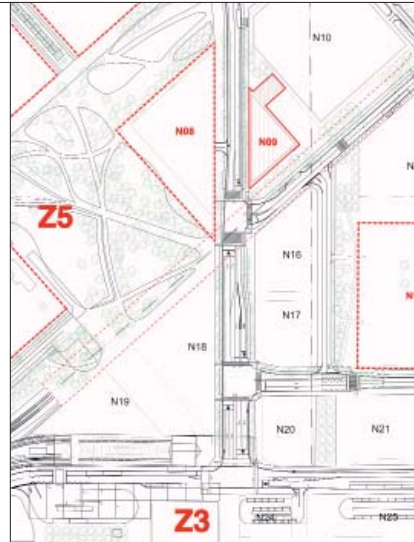
- 36 intermediate units (30%)
- 84 market units (70%)
- There was no apparent differences between the affordable and market units.

Building Performance

- The building fabric has performed well since completion, although completion was in 2013 so only 3 years of ageing.
- There is no visible weather staining.
- All original design features in very good condition.

Changes following original consent

- No discernable change on site.



Scheme Location

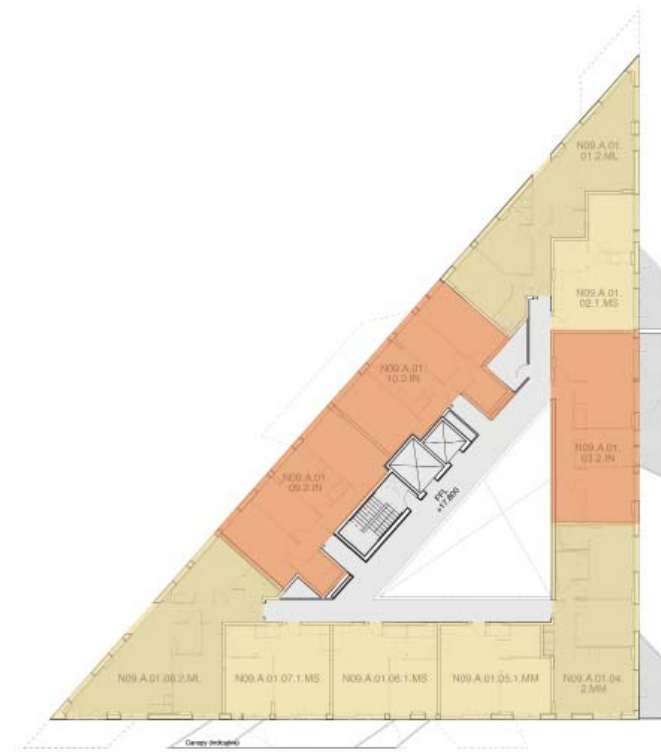


Commercial space is provided to the ground floor with residential above.



The building fabric has performed very well since completion.

First Floor Plan



Twelfth Floor Plan



Market Units
Intermediate Affordable Units

Market Units
Intermediate Affordable Units

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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2) HENRIETTA STREET, NEWHAM

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- There are no residential entrances off North Avenue which creates an inactive frontage.
- There is a separate refuse access located off North Avenue.

Entrance to Residential Units

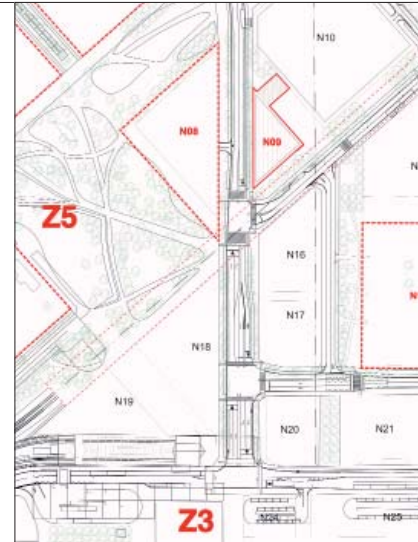
- There are two residential entrances to the building to the north and south.
- There was sporadic use of these entrances during the visit.
- A total of 10 units share the same entrance and lift access on each floor.
- Affordable units and market units share the same entrance and lift access.

Car Parking

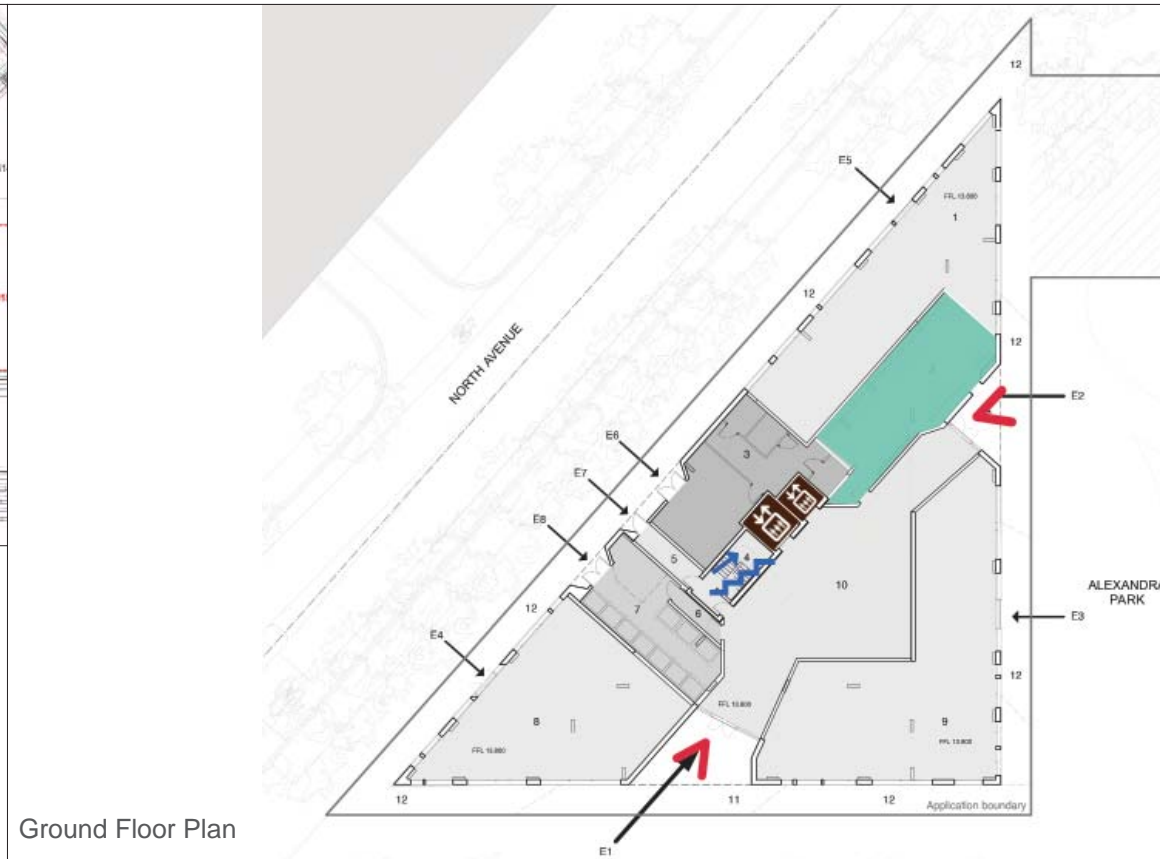
- There is no car parking provision on-site, and no evidence of a car sharing scheme.

Cycle Parking

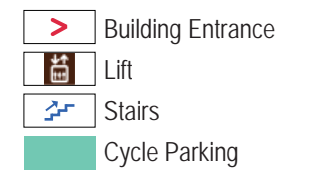
- 96 cycle spaces located within the building to the ground floor.
- The level of usage of the cycle storage area is unknown as internal access to the building was not possible at the time of the site visit.



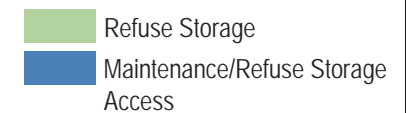
Scheme Location



Ground Floor Plan



Ground Floor Plan



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PLAN C: ACCESS, PARKING AND SERVICING

3) 194 PITFIELD STREET, HACKNEY

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues: Impact on Surroundings

- The building is well integrated within the surrounding area, with a similar scale, and massing and bulk, although does stand out as being more contemporary in architectural style in comparison to neighbouring buildings.
- Surrounding development exhibits a mix of storey heights (low rise to medium rise), varying from 2 storey terraces to the south, up to 14 storeys at Caliban Tower to the east.
- The retail unit and disabled parking space provides an inactive building facade to the northern edge.
- Refuse storage located on-street which looks unsightly.

Proximity

- Caliban Tower is the closest residential building which is c. 8.8m from a habitable room, due to the building being cut away at this corner. This does not fall within the recommended yardstick for overlooking distances set out in the Mayor's SPD.
- The private terrace of a 3-bed unit on the first floor is screened with semi-permeable metal panels, although privacy is limited by the height of the neighbouring Caliban Tower.

Microclimate

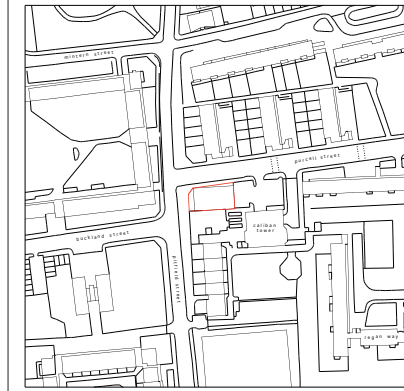
- Visit undertaken on 18th February 2016, around 10am in sunny conditions, and a temperature of c. 7 °C.
- There were no apparent microclimatic issues resulting from the development.
- The balconies on the northern facade of the building receive little natural sunlight.

Communal Amenity Space

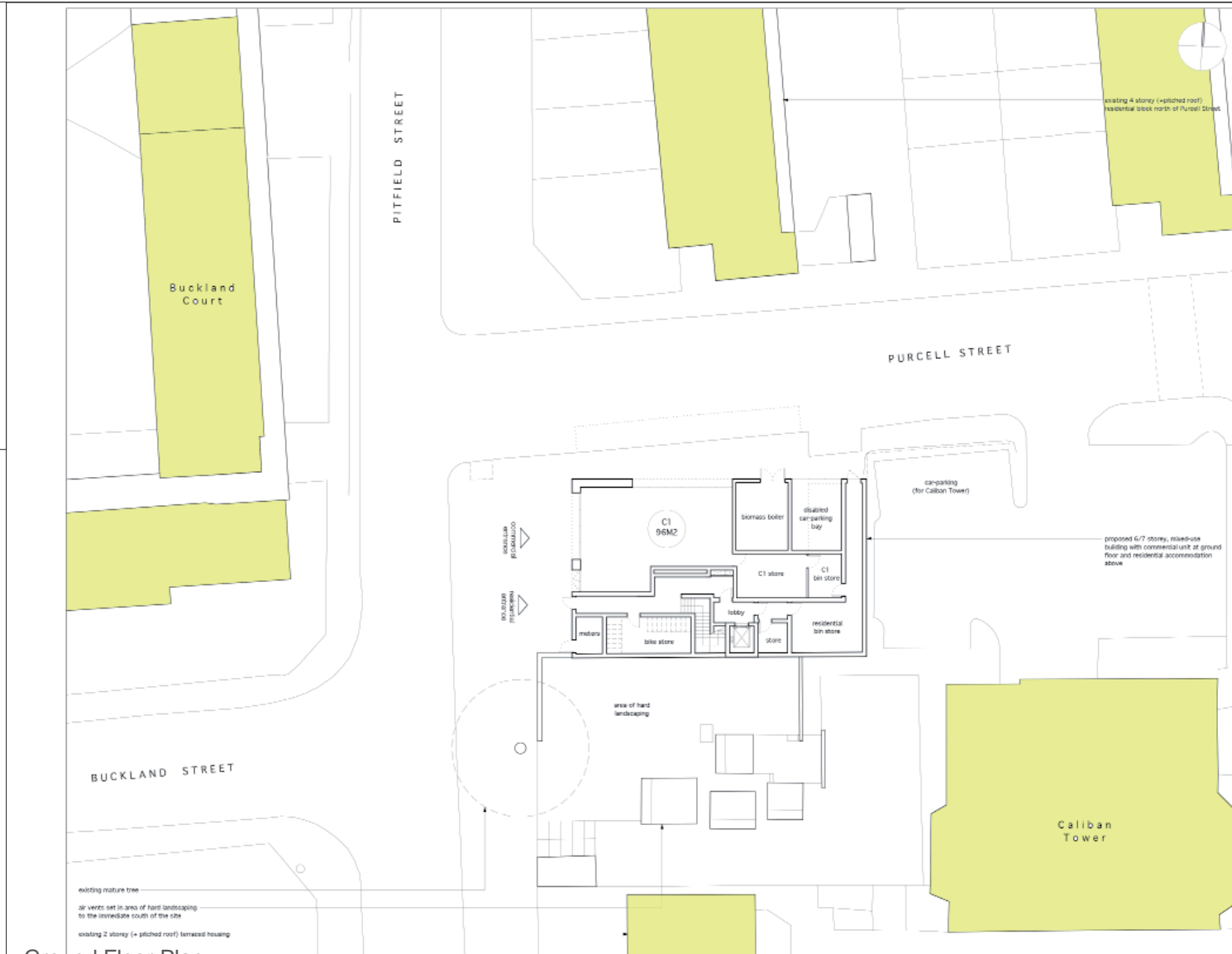
- No apparent communal amenity space provided, although there is an area of public open space to the south of the site.

Private Amenity Space

- 6 balconies are provided (38% of flats) and two private terraces (13% of flats).
- None of the balconies were being used at the time of the visit.

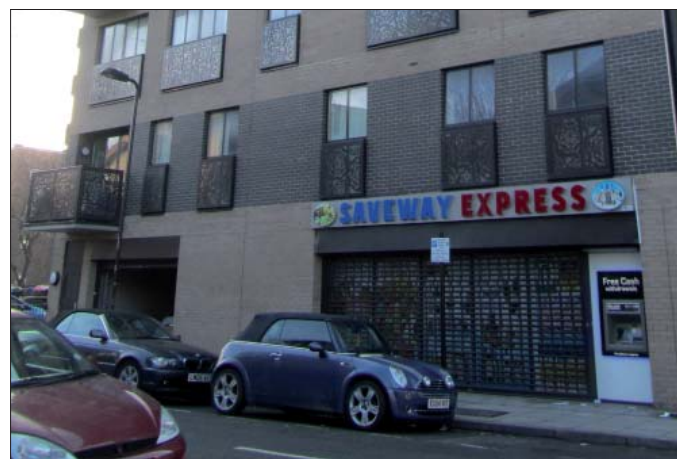


Scheme Location

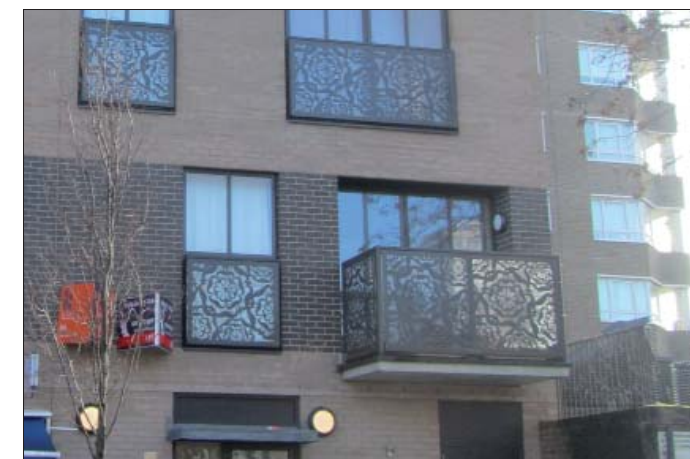


Ground Floor Plan

Residential



Retail unit and disabled parking space presents an inactive edge to the northern side of the building, with balconies receiving little natural sunlight.



Balconies provided to some of the flats on the western and northern elevation.

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3) 194 PITFIELD STREET, HACKNEY

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 16 residential units
- 1 commercial unit (convenience store)

Housing Mix

- 5 1-bed flats
- 8 2-bed flats
- 3 3-bed flats

Affordable Housing

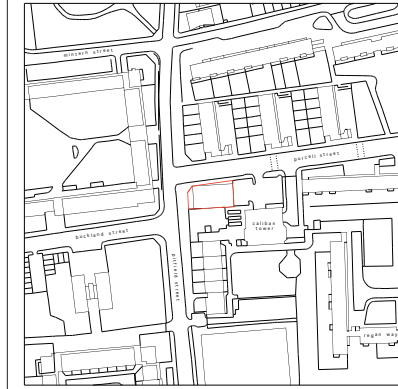
- 3 intermediate units (19% affordable)
- 13 market sale units (81% market)
- No visible differences between the market and affordable units.

Building Performance

- The building fabric has performed well since completion, although completion was in 2011 so only 5 years of ageing.
- No visible weather staining.
- Doors and windows are in very good condition.
- Rose metal panels to balconies and terraces are in good condition.
- All original design features remain intact.

Changes following original consent

- No discernable change on site.



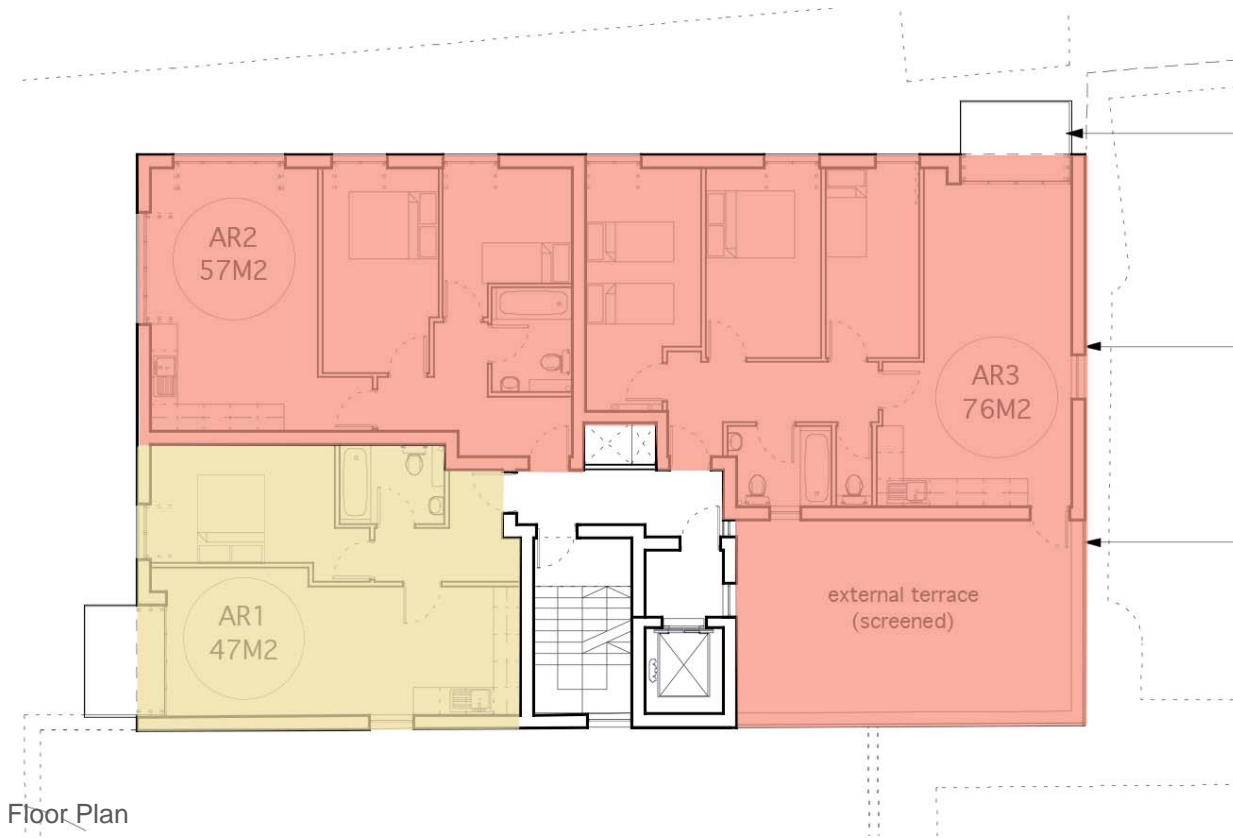
Scheme Location



Rose metal panels in very good condition.

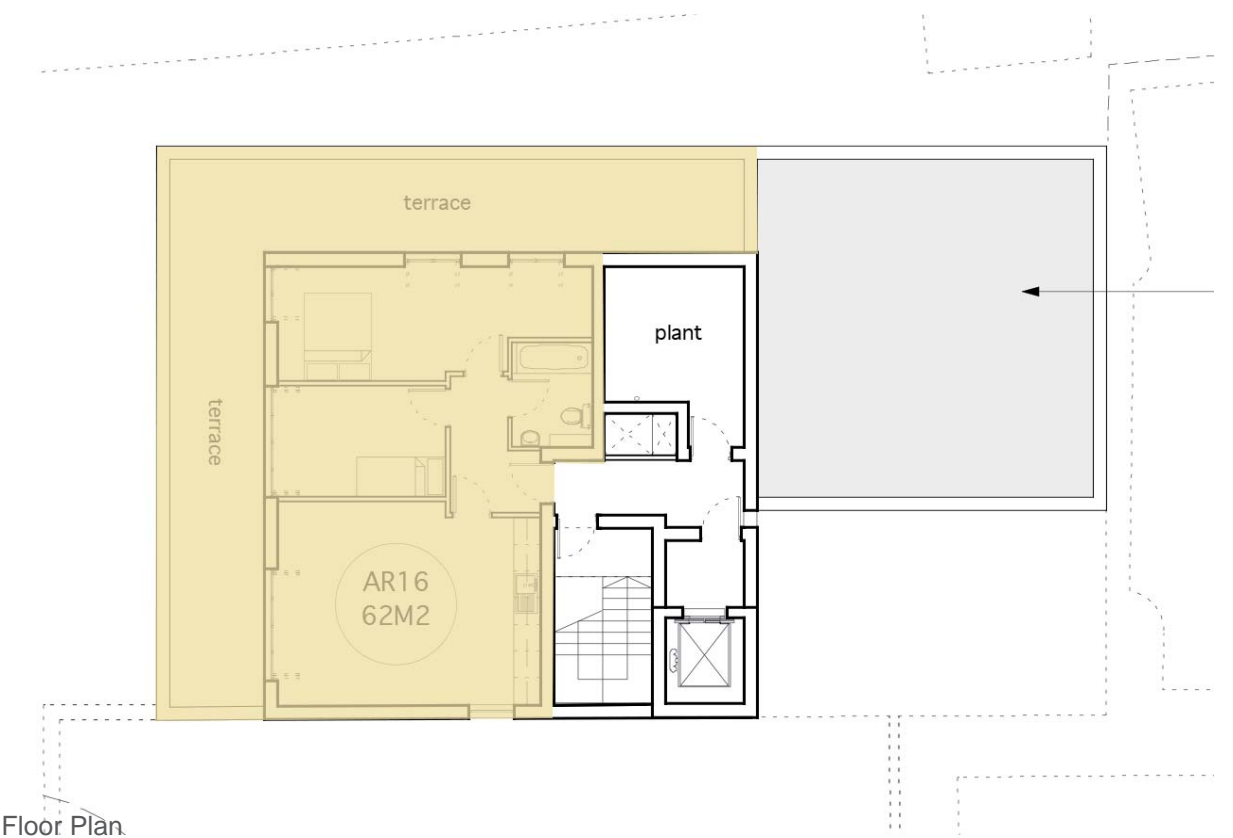


Convenience store to ground floor of development.



First Floor Plan

Market Units
Intermediate Affordable Units



Sixth Floor Plan

Market Units

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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3) 194 PITFIELD STREET, HACKNEY

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- There is one residential entrance from Pitfield Street (which also provides access to the residential bin store) which makes the layout easy to understand.
- This residential entrance was not used at the time of the visit.
- There is a separate access to the residential bin store from Purcell Street, although there were a number of refuse bins on the pavement to Pitfield Street which appeared related to this development which created an untidy appearance to the street. This indicates that the residential bin store is not adequate for the number of residential units on-site.

Entrance to Residential Units

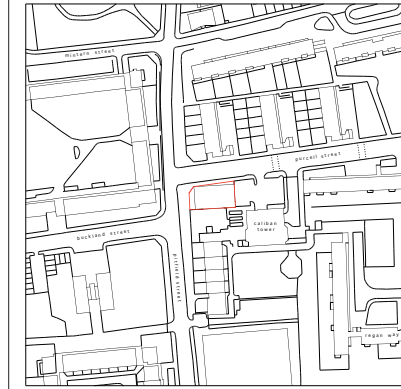
- There is one residential entrance which provides access to all flats within the development via a lift and stairs.
- On the first floor up to the fifth floor, there are three flats to each floor, except the sixth floor which only serves one flat.
- There is not a separate access for the affordable units, and only one lift which serves both market and affordable units.

Car Parking

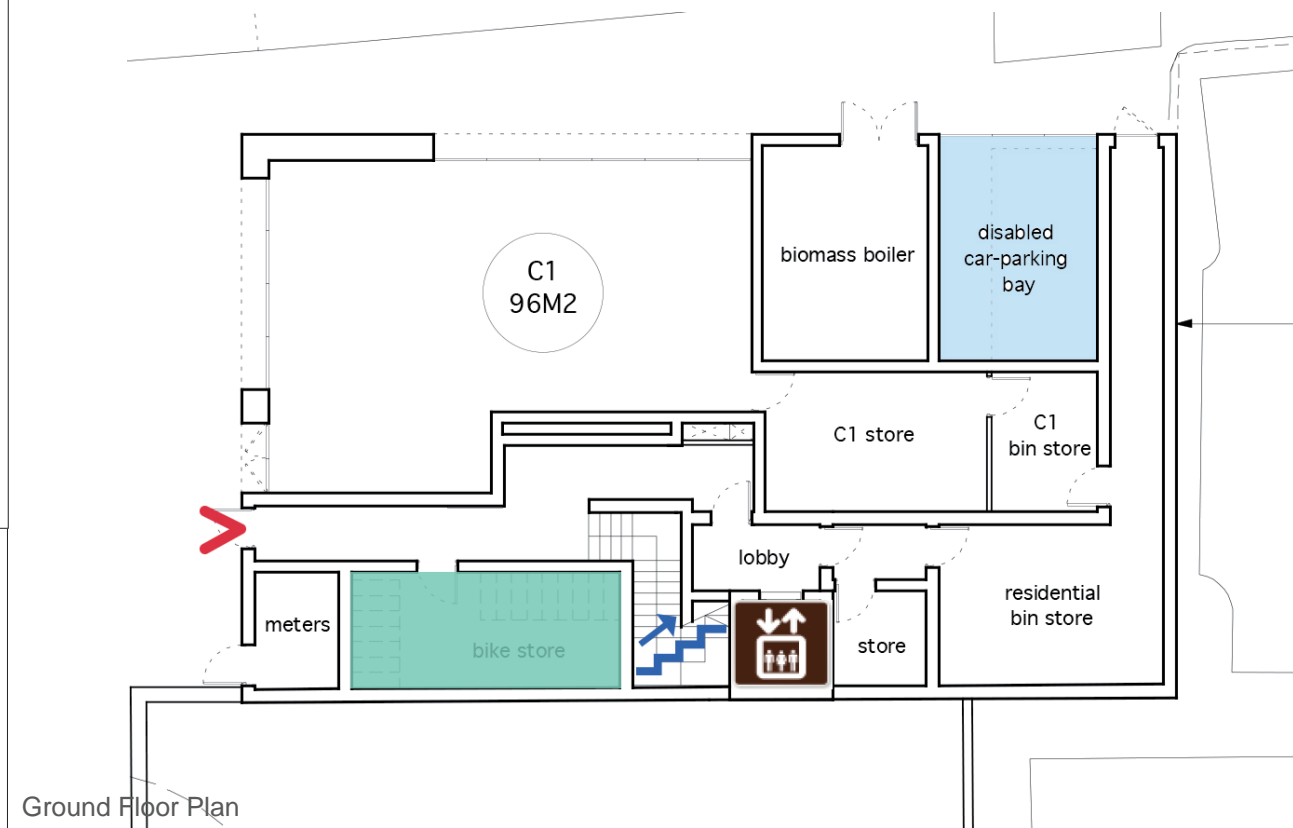
- One disabled car parking space is provided off Purcell Street.
- The development is otherwise car free, with no residential parking permits available.
- There was no evidence of a car sharing scheme.

Cycle Parking

- There is an on-site cycle store provided within the building providing space for 16 bicycles, providing a minimum of one bike space per unit.
- Access inside the building was not possible at the time of the visit and therefore it is unknown how well this cycle store is used.

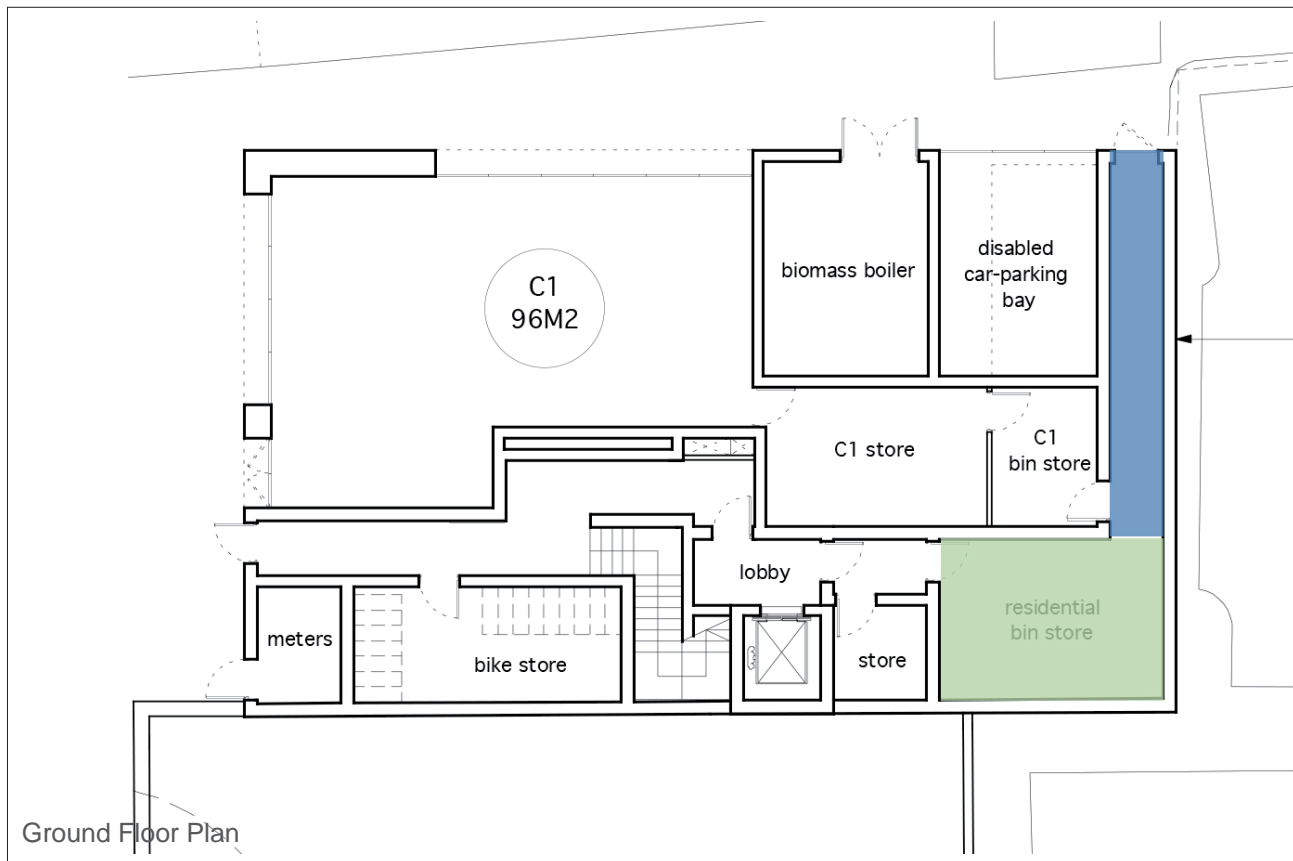


Scheme Location



Ground Floor Plan

- Residential Building Entrance
- Lift
- Stairs
- Car Parking
- Cycle Parking



Ground Floor Plan

- Refuse Storage
- Maintenance/Refuse Storage Access

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PLAN C: ACCESS, PARKING AND SERVICING

4) LYON COURT AND 28-30 PEMBROKE ROAD, HILLINGDON

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The buildings in the surrounding area vary in height with residential properties to the north of Pembroke Road being predominantly single storey in height, whilst properties to the east and west are 3-storeys, with heights increasing towards the High Street / West End Road. The development is on the whole well integrated with adjacent properties. The set back of the development ensures it does not appear overbearing on single-storey properties.
- Surrounding development exhibits a mix of storey heights within the low rise range (under 10), varying from 1 storey bungalows to a 6 storey apartment block on the corner of Pembroke Road / West End Road.

Proximity

- There is a minimum of 21 metres between facing habitable room windows. This complies with the distances in the Mayor's SPD.
- There are no apparent signs of a lack of privacy.

Microclimate

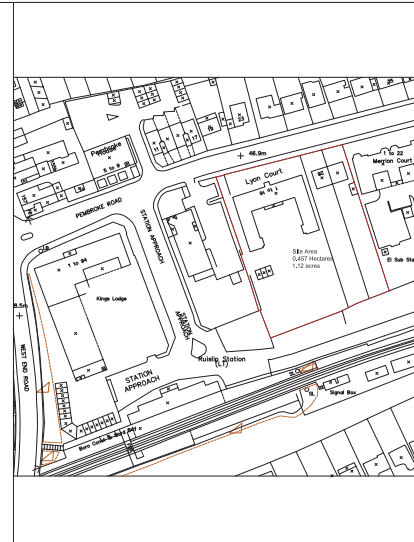
- Visit undertaken on 18th February 2016, around 12noon in sunny conditions, and a temperature of c. 7°C.
- There were no apparent microclimatic issues resulting from the development.

Communal Amenity Space

- Public front gardens are provided to those ground floor units facing on to Pembroke Road.
- A communal courtyard garden is provided for residents which includes a children's play area.
- Access into the site was not possible due to the gated nature of the development, and therefore an assessment of the usage of the communal amenity space was not possible.

Private Amenity Space

- Patios are provided for most ground floor flats.
- Juliet balconies are provided for upper floor flats, however there is no space externally to sit-out.
- None of the private amenity spaces were in use at the time of the site visit.



Scheme Location



Ground Floor Plan

- Residential
- Employment
- Communal Space
- Private Amenity Space



Surrounding residential properties are predominantly single storey in height, although the set back of the development ensures that there are no signs of a lack of privacy.



Some ground floor units have an enclosed private garden which is supplemented by communal amenity areas which include a courtyard garden and a children's play area.

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4) LYON COURT AND 28-30 PEMBROKE ROAD, HILLINGDON

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 61 residential units

Housing Mix

- 25 1-bed flats
- 27 2-bed flats
- 8 3-bed flats
- 1 4-bed house

Affordable Housing

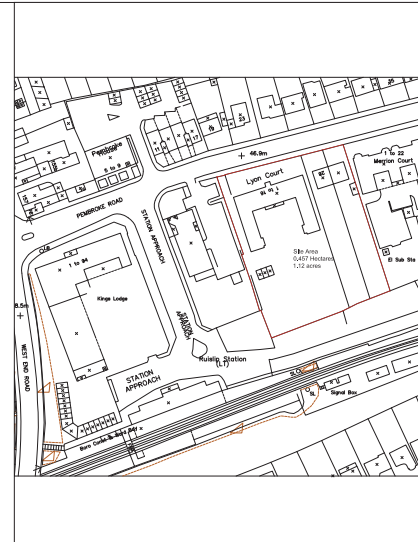
- 61 market sale units (100% market).

Building Performance

- The building fabric has performed well since completion, although completion was in 2014 so only 2 years of ageing.
- There is no visible staining to the brickwork or render.
- Doors and windows are in good condition.

Changes following original consent

- No discernable change on site.



Scheme Location



Gated entrance to scheme with car parking provided to the rear.

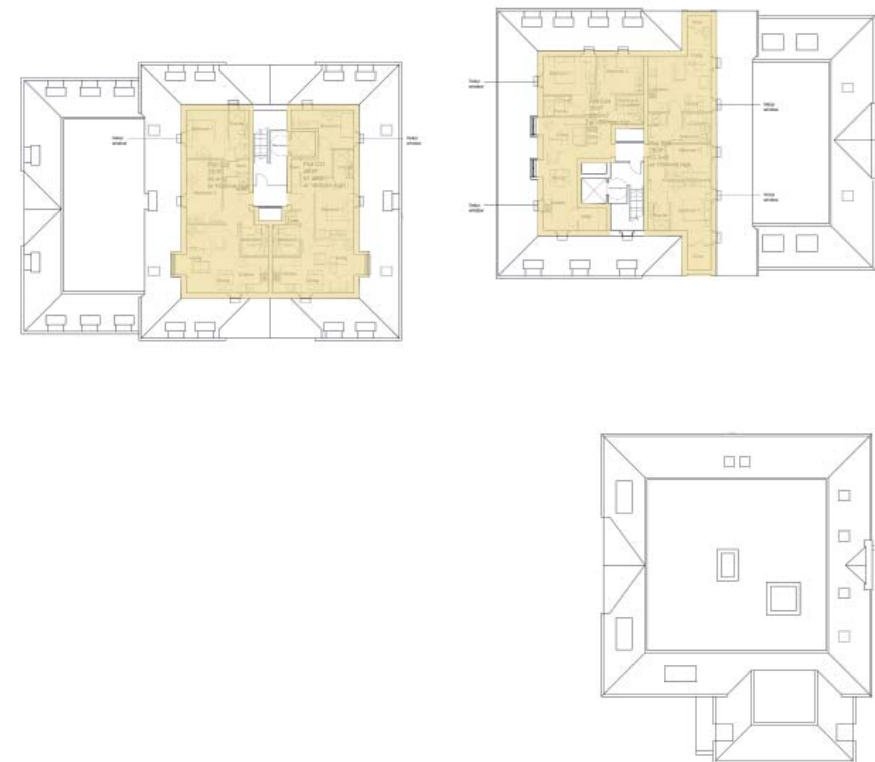


The building fabric remains in very good condition.



Ground Floor Plan

Market Units



Fourth Floor Plan

Market Units

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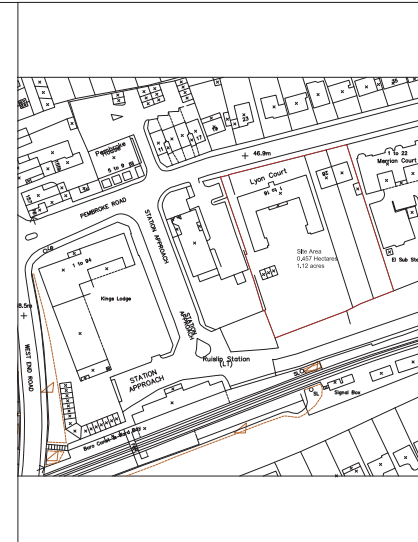
PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

4) LYON COURT AND 28-30 PEMBROKE ROAD, HILLINGDON

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues: Building and Site Layout

- The site is impermeable to the public as it is gated along Pembroke Road with access available to residents via keycard. This makes the site very insular and prevents other local residents from entering the site and making use of the communal amenity areas.
- Waste storage is accessed from within the site and located within each of the three blocks.



Scheme Location

Entrance to Residential Units

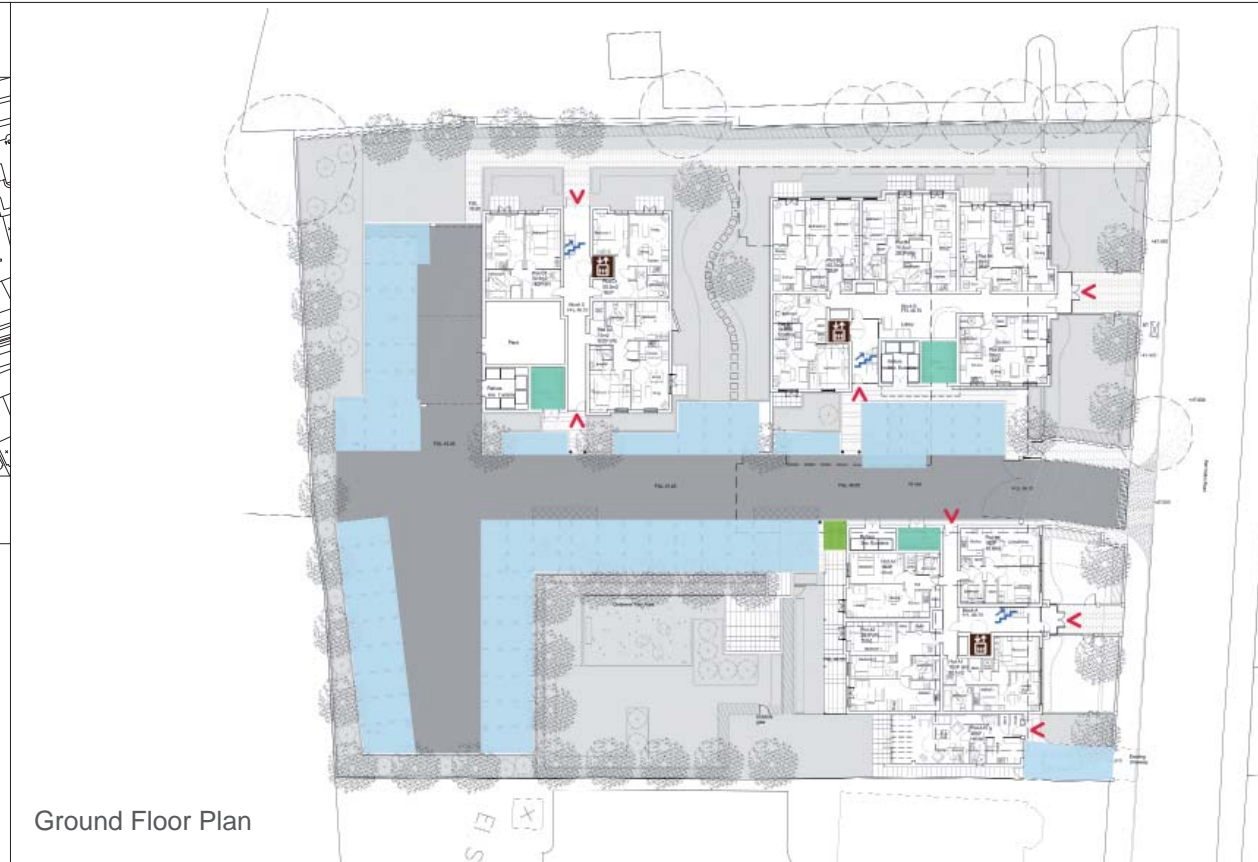
- There is a vehicular access into the site from Pembroke Road, and the private drive to the 4-bed house.
- There is direct pedestrian access into each of the two blocks fronting Pembroke Road, and an entry gate and path leading down to the rear block.
- 2 vehicular movements and 2 pedestrians entered the site at the time of the visit.
- In Block A, there are 4 units sharing the same entrance and lift on each floor, except the third floor which comprises 2 3-bed flats in Block A.
- Blocks B and C each have a lift and pedestrian entrance which serves each entire block respectively.
- In Block B, there are 5 units to the ground floor, 6 units to each floor from the first floor to the third floor, and 2 units to the fourth floor.
- In Block C, there are 3 units to the ground floor, 6 units to the second and third floor, and 2 units to the fourth floor.

Car Parking

- Car parking is provided at ground floor level around the residential blocks for 48 cars.
- Due to the site being gated, access into the site was not possible during the visit, but it was evident that the car parking area was very well used, being almost full to capacity.
- There was no evidence of a car sharing scheme.

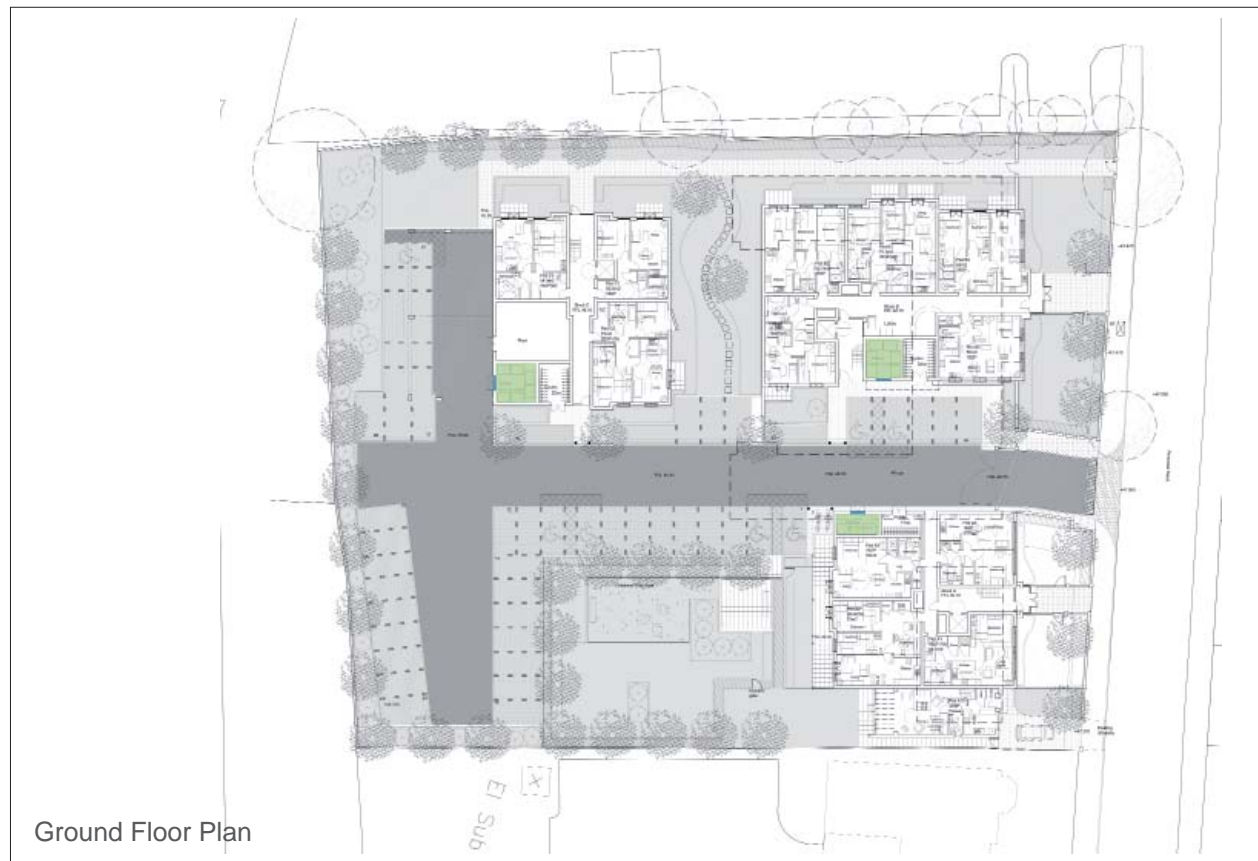
Cycle Parking

- An internal cycle store is located within each of the three blocks providing a total of 76 bicycle spaces.
- It is not known how well the cycle store is used.



Ground Floor Plan

- Residential Building Entrance
- Lift
- Stairs
- Car Parking
- Cycle Parking
- Motorcycle Parking



Ground Floor Plan

- Refuse Storage

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5) 98-106 HIGH ROAD, REDBRIDGE

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- Blocks B, C and E are accessible from the public highway (and contain the largest number of affordable units), whilst other blocks are located off a private access road which means that it is inaccessible to the public and poorly integrated with the surrounding area.
- The buildings in the surrounding area are up to 4 storeys in height (low rise) which makes the development slightly imposing on neighbouring uses, although not vastly higher than surrounding uses.



Scheme Location

Proximity

- There is no issue with overlooking, and the development meets the overlooking distances set out in the Mayor's SPD.
- There is some bamboo screening to balconies to enhance the level of privacy.

Microclimate

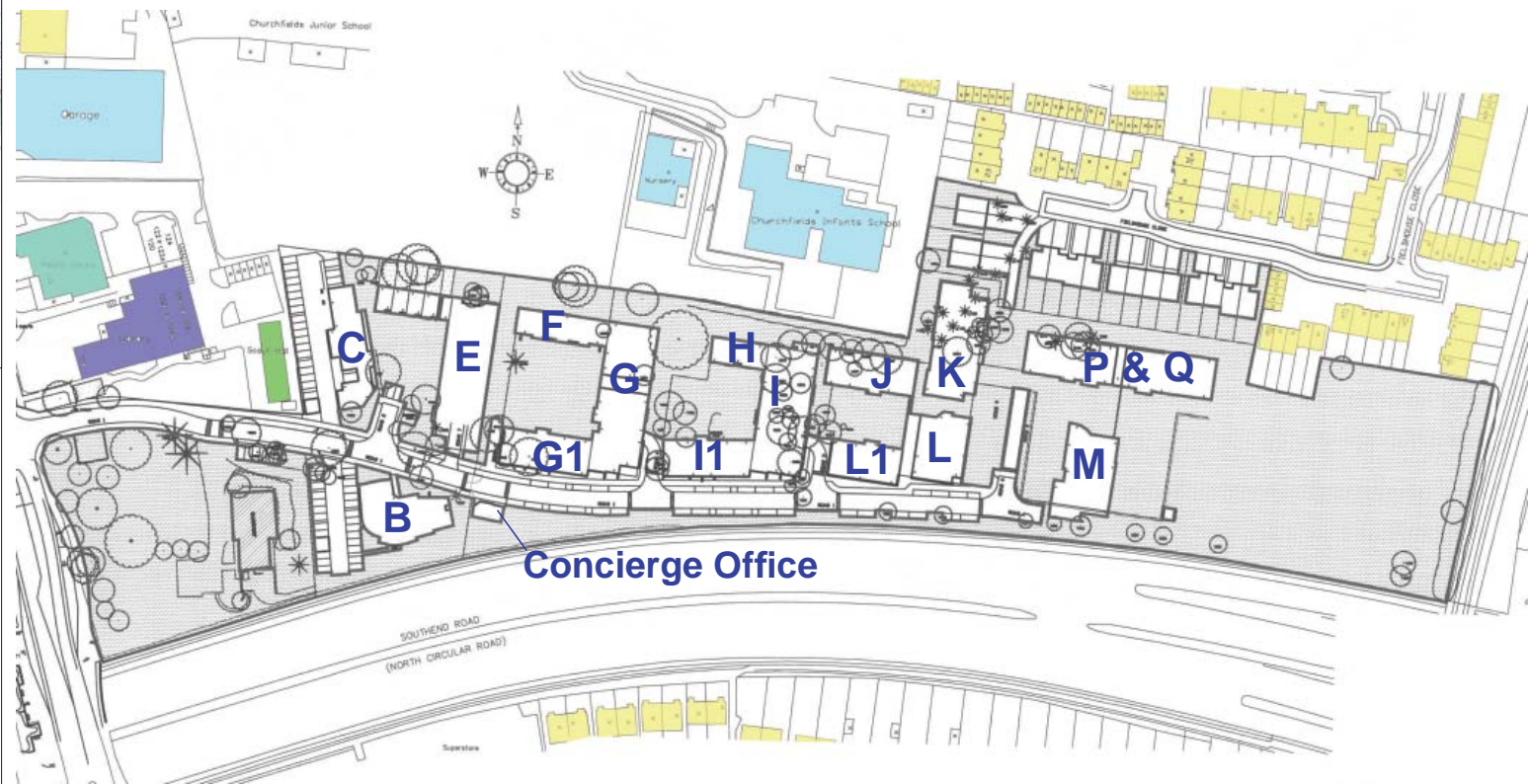
- Visit undertaken on 1st March 2016, around 3pm in dry conditions with some sunshine, and a temperature of c. 6°C.
- There are some single-aspect units in Block D which are north-facing which may receive little natural daylight.

Communal Amenity Space

- Concrete hardstanding to forecourt areas with public art.
- These areas were not in use at the time of the visit, for anything other than providing access to dwellings for those on foot.
- Ball games are discouraged, with signs displaying 'no ball games' on walls.

Private Amenity Space

- Balconies are provided to most upper units (c. 80%), and most ground floor units have a front garden.
- Balconies are c. 8m².
- None of the private amenity spaces were in use at the time of the visit.



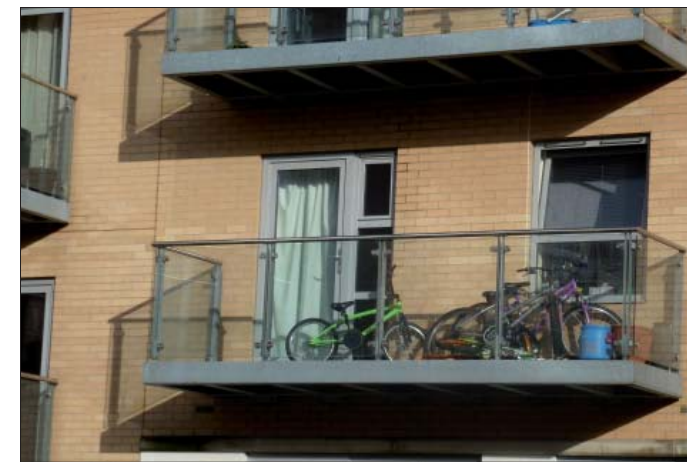
Ground Floor Plan

- Residential
- Primary School / Nursery
- Health Centre
- Library
- Scout Hut

(The analysis focuses on Blocks C and E as access to other Blocks was not possible during the visit, due to the gated nature as access to the site is restricted)



The rear view of the South Woodford Library provides an unattractive outlook to flats within Blocks C and E.



Some balconies are used to store bicycles which indicates that insufficient cycle storage is provided.

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5) 98-106 HIGH ROAD, REDBRIDGE

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 482 residential units
- 1 D1 Use unit (125m²)

Housing Mix

- 4 studio flats
- 161 1-bed flats
- 255 2-bed flats
- 54 3-bed flats
- 8 4-bed flats

Affordable Housing

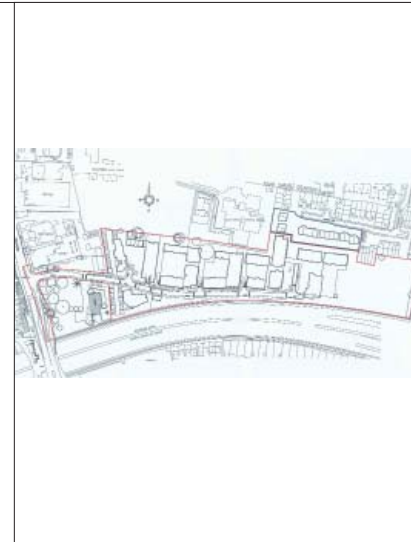
- 383 market units (79% market)
- 48 intermediate units (10% intermediate)
- 51 social rented units (11% social rented)
- 21% affordable units
- The blocks containing the majority of the affordable units (Blocks B, C and E) are accessible from the public highway, whereas those containing the majority of the market units are located off a private access road which has gated entry.

Building Performance

- The buildings have performed relatively well since completion, although completion was in 2010 so only 6 years of ageing.
- There is some staining to the render.
- The doors and windows are in good condition.
- Planting areas are in average condition and reasonably well maintained.

Changes following original consent

- No discernable change on site.



Scheme Location



Generously-sized balconies are provided to each unit.



The building fabric has performed relatively well since completion.



Ground Floor Plan



Sixth Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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5) 98-106 HIGH ROAD, REDBRIDGE

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- Part of the site was inaccessible during the visit, due to it being gated.
- Each block has its own entrance, and in some instances have more than one entrance.
- Most of the blocks have refuse storage areas within each block, however others do not and it is therefore not always clear which refuse areas serve which block.

Entrance to Residential Units

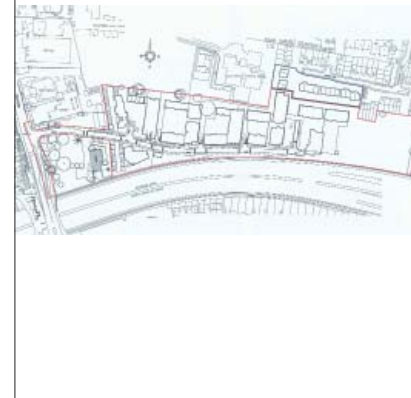
- Most blocks have access to their own lift and stairs, however Block H only has stairs access.
- Blocks B and C have between 4 and 5 units per floor.
- Some blocks contain a mix of market and affordable units and where this is the case they all share the same entrance and lift access.
- Block E has between 5 and 8 units per floor.
- Block F has 2 units per floor.
- Block G has between 4 and 5 units per floor.
- Block G1 has 6 units per floor.
- Block H has 2 units per floor.
- Block I has between 5 and 9 units per floor.
- Blocks I1 and J have 6 units per floor.
- Block K has between 3 and 7 units per floor.
- Blocks L and L1 has 4 units per floor.
- Block M has between 6 and 7 units per floor.
- Blocks P and Q have 4 units per floor.

Car Parking

- There are 456 car parking spaces located in the basement and on-street.
- Internal access to blocks was not possible during the visit, and the level of usage is therefore unknown.
- There is an evident lack of short-stay parking, with cars parked by the access gate on double yellow lines during the visit.
- There was no evidence of a car sharing scheme.

Cycle Parking

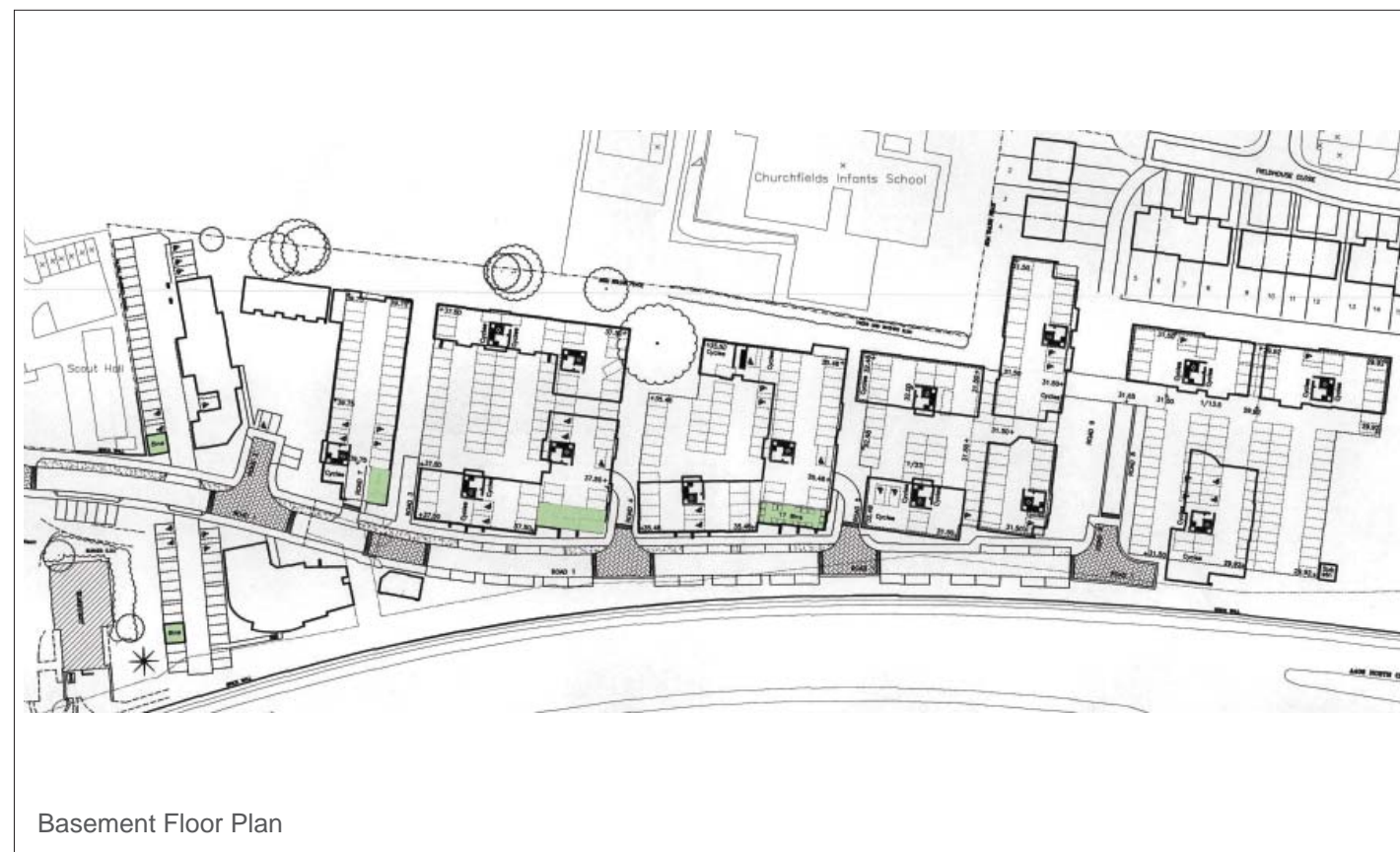
- Cycle parking is located in the basement.
- Internal access to blocks was not possible during the visit, and the level of usage is therefore unknown.



Scheme Location



- Residential Building Entrance
- Lift
- Stairs
- Car Parking
- Cycle Parking



- Refuse Storage
- (Additional refuse areas located to the ground floor of blocks)

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6) 160-188 HIGH STREET, NEWHAM

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The building is within an area comprising a mix of building heights varying from 2 storeys to 13 storeys (low to medium rise), and so whilst it sits comfortably adjacent some taller buildings, others, particularly those two storey terraced houses in Wise Road are much smaller in scale and appear out of context.
- The building provides an inactive frontage to both the High Street and Walton Road due to the empty ground floor unit and the location of refuse storage to the ground floor frontage.

Proximity

- Overlooking distances meet the requirements of the Mayor's SPD.
- There are no other signs of a lack of privacy.

Microclimate

- Visit undertaken on 15th March 2016, around 10am in overcast conditions, and a temperature of c. 6°C.
- The communal garden is north-facing and so is unlikely to receive much natural daylight.

Communal Amenity Space

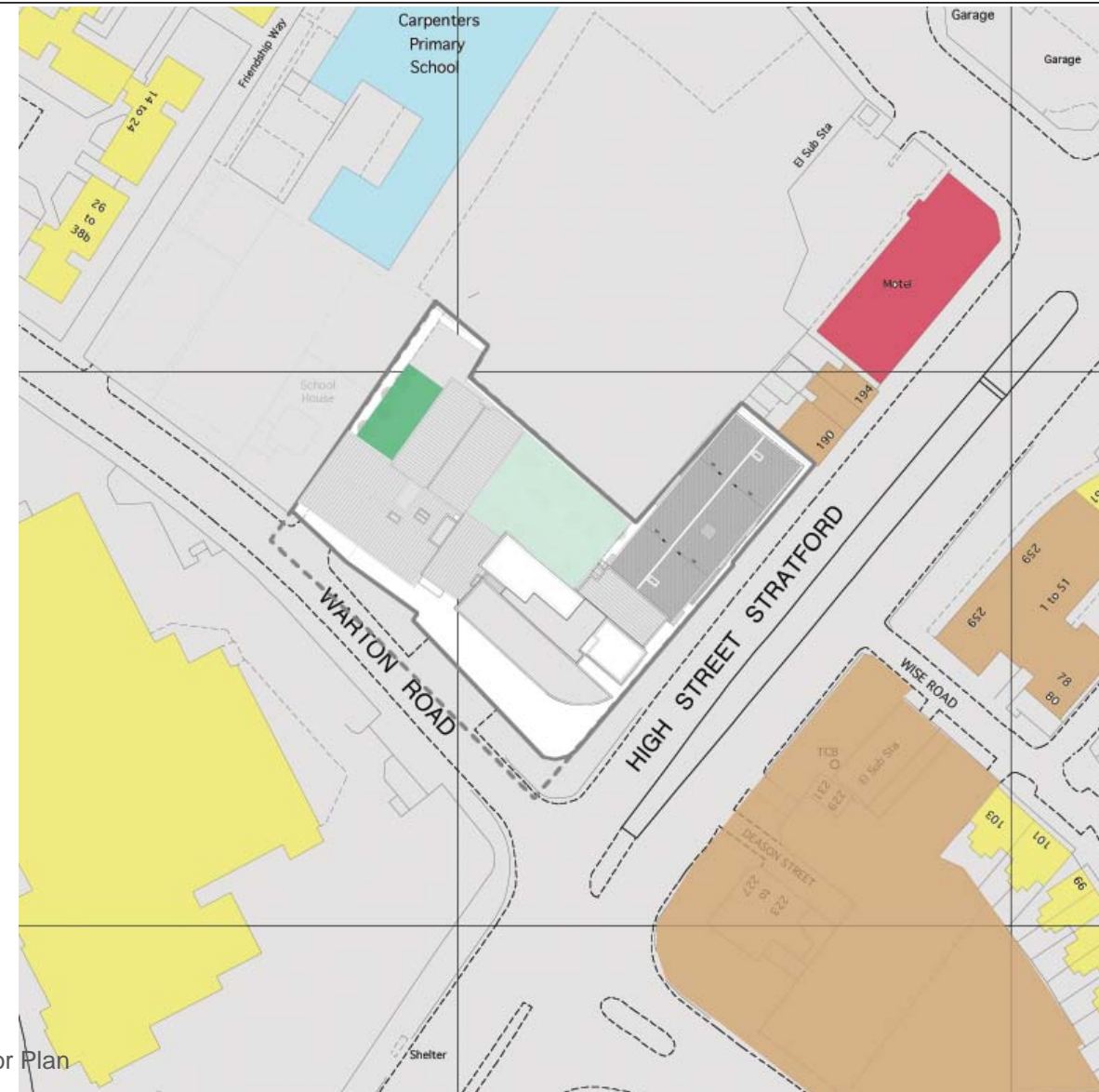
- Communal courtyard garden with gym equipment, giant chess board and play equipment, but not large enough to serve all residents in building.
- Roof terrace (not currently open).
- Meeting space/living room with tv, foosball table and kitchen area.

Private Amenity Space

- Most units have balconies (c. 90%) which are c. 2m², except those with private rear garden space.
- None of the balconies were in use at the time of the visit.



Scheme Location



Ground Floor Plan

- Residential
- Mixed-Use
- Hotel
- Primary School
- Communal Space
- Private Amenity Space



The communal amenity space is well equipped but receives little natural daylight being north-facing.



Private amenity space consists of small balconies.

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6) 160-188 HIGH STREET, NEWHAM

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 298 residential units
- 2 (vacant) commercial units

Housing Mix

- 103 1-bed flats
- 170 2-bed flats
- 25 3-bed flats

Affordable Housing

- 166 market units (56%)
- 48 intermediate units (16%)
- 84 social rented units (28%)
- 44% affordable
- There is no foyer/concierge to the blocks containing affordable units, and there is a separate refuse storage area to the block containing the market units.

Building Performance

- The building fabric has performed relatively well since completion in 2011, although wooden cladding is weather stained.
- Doors and windows are in good condition.
- All original design features are intact.

Changes following original consent

- No discernable change on site.



Scheme Location



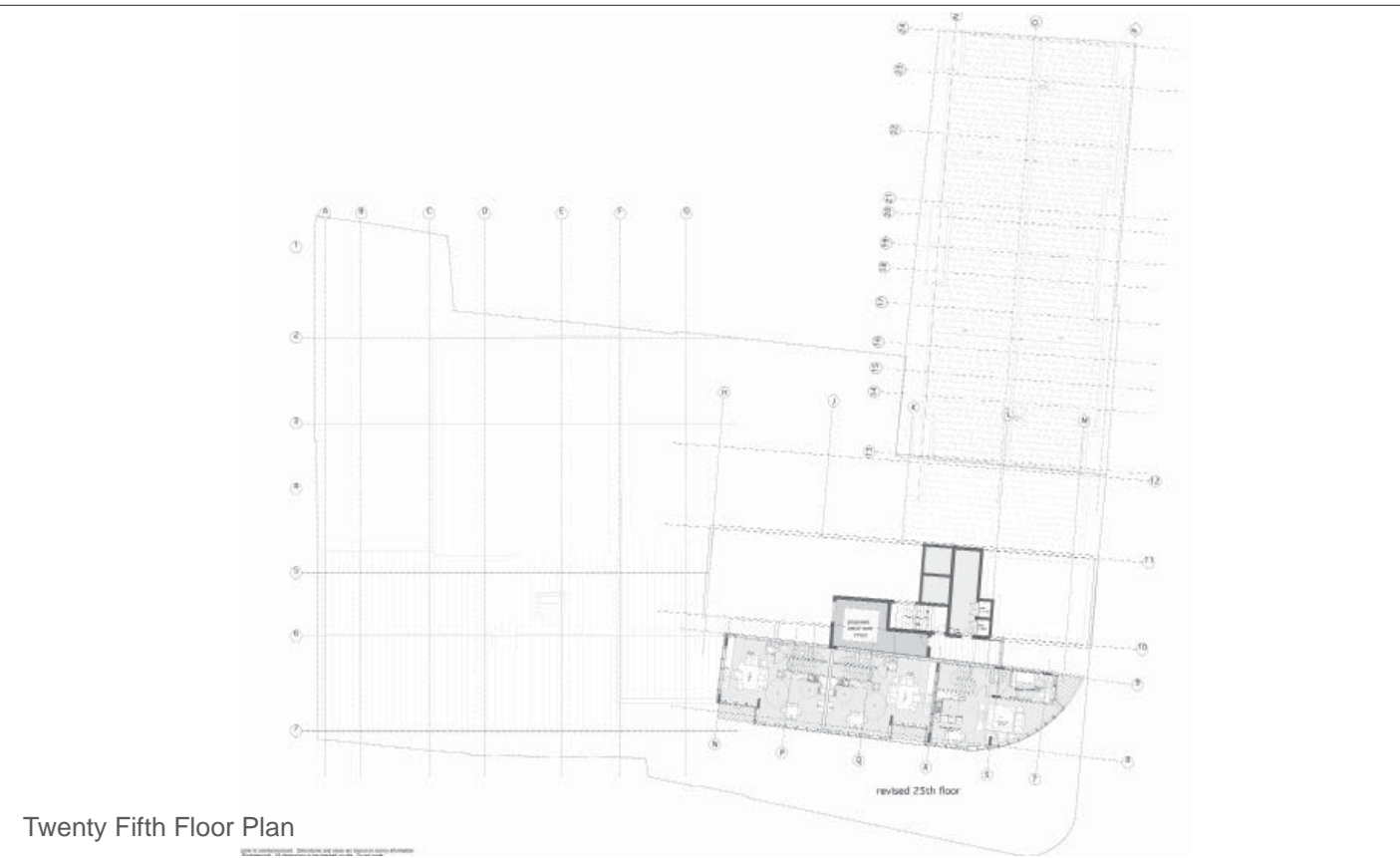
Refuse storage area provides inactive frontage to the High Street.



The commercial unit remains vacant providing a poor frontage to the street.



Mezzanine Floor Plan



Twenty Fifth Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of market units and social rented units unknown)

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of market units and social rented units unknown)

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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6) 160-188 HIGH STREET, NEWHAM

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues: Building and Site Layout

- There is a separate entrance to each of the three blocks, with the one containing all market units having its own foyer/concierge, and the other two being more basic.
- Refuse storage areas front onto the street creating issues of access for refuse vehicles accessing from the High Street as there is no place to stop.

Entrance to Residential Units

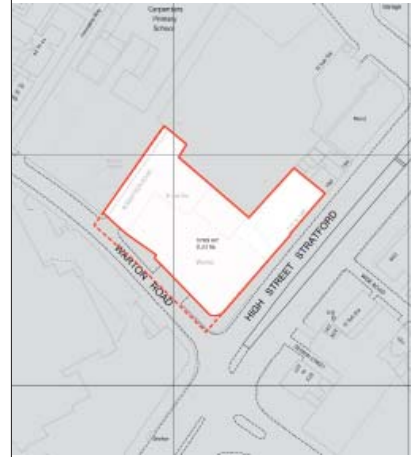
- One block contains all affordable units and therefore has its own entrance and lift.
- A second block has a mix of affordable and market units and therefore the entrance and lift access is shared across tenures.
- A third block contains all private rented flats which has a separate entrance and lift access as well as a concierge service.

Car Parking

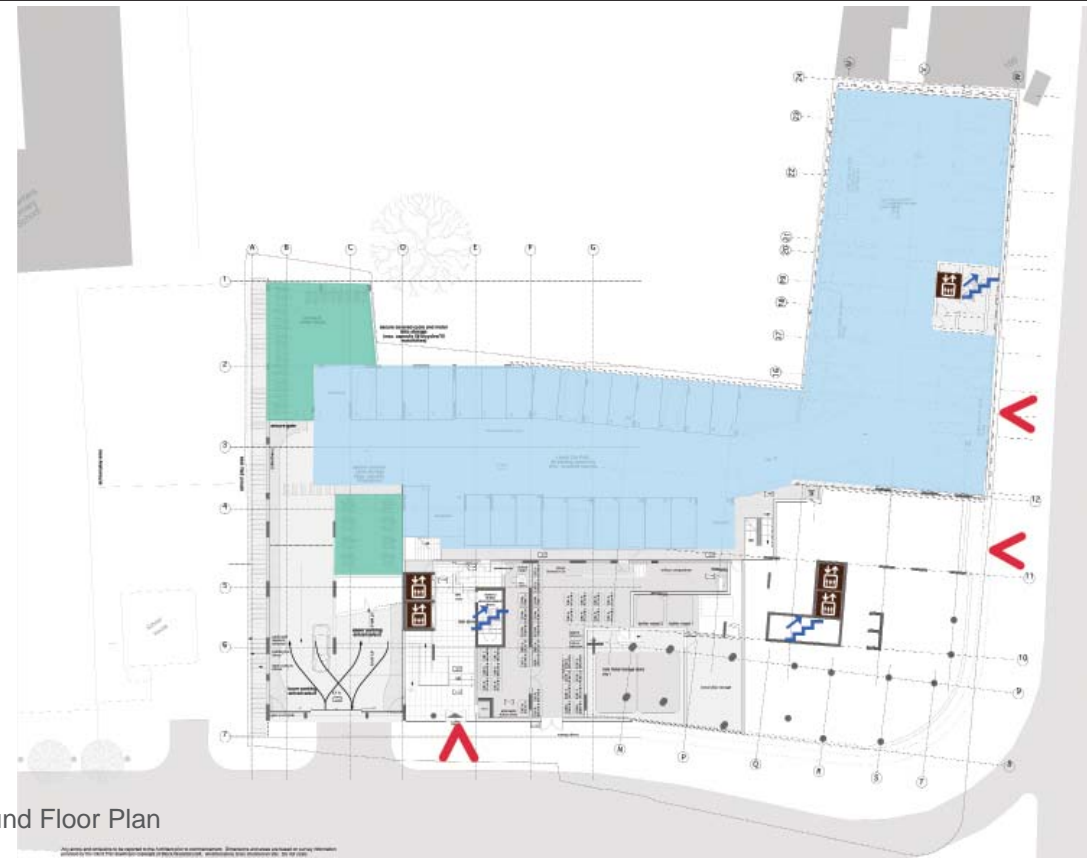
- 80 car parking spaces located to the lower ground (48cps) and to the upper ground (32cps).
- There was no evidence of a car sharing scheme.
- The car parking area was full at the time of the visit.

Cycle Parking

- 298 secure cycle spaces located adjacent the car parking areas.
- The cycle parking area was mostly full (c. 65% in use).
- 40 motorcycle spaces.



Scheme Location



Lower Ground Floor Plan

- Residential Building Entrance
- Lift
- Stairs
- Car Parking
- Cycle and motorcycle Parking



Lower Ground Floor Plan

- Refuse Storage
- Refuse storage area also located to the upper ground floor for the block containing market units)

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7) RAMSDEN ESTATE, RYE CRESCENT, BROMLEY

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The development is well integrated with buildings in the surrounding area, although the development includes much harder landscaping than the adjacent area.
- The development does not impact on surrounding street life, apart from the communal square which does not have a clear function.
- Surrounding development exhibits a mix of storey heights within the low rise range (under 10), varying from 2 storey terraces to 4 storey apartment blocks at the junctions with Cuckmere Way/Quilter Road and Rye Crescent/Quilter Road.



Scheme Location

Proximity

- The development meets the Mayor's overlooking distances.
- Some front gardens have bamboo screening up against the metal fencing to provide an increased sense of privacy, although generally there were no apparent issues of privacy.

Microclimate

- Visit undertaken on 23rd February 2016, around 12.30pm in sunny conditions with breaks of cloud, and a temperature of c. 5°C.
- There were no apparent microclimatic issues resulting from the development.
- The communal square is likely to benefit from suntrap conditions in summer.

Communal Amenity Space

- Public front gardens are provided to some properties in Phase 3A, albeit comprising mainly hardstanding/paving. All market units in Phase 3B have a front garden.
- A communal square is located within Phase 3A, although it has no clear function and as a result has been used to dump rubbish.
- The square was not in use at the time of the visit.

Private Amenity Space

- Each dwelling has a private rear garden.



Ground Floor Plan

- Residential
- Church
- Mixed Use
- Communal Space
- Private Amenity Space



The development is well integrated with buildings in the surrounding area which are of a similar scale and massing.



Public square has no clear function or purpose which has resulted in the space being used for rubbish dumping.

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7) RAMSDEN ESTATE, RYE CRESCENT, BROMLEY

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

A total of 111 residential units comprising:

- Phase 3a (affordable) - 58 units
- Phase 3b (private) - 45 units
- Phase 3c (private) - 8 units

Housing Mix

- Phase 3a comprises 58 2-, 3-, and 4-bed terraced houses.
- Phase 3b and 3c comprise private terraced housing (the housing mix is unknown).

Affordable Housing

- 53 market sale units (48% market)
- 58 affordable units (52% affordable)
- The private units include a glass canopy above the front door which differs from the affordable units which have an inset entrance.
- The affordable units appear to have very limited bin storage space. Private sale units appear to have more generous space for bin storage (or access to rear areas for storage).

Building Performance

- The building fabric has performed relatively well since completion, although completion was in 2013 so only 3 years of ageing.
- There is some staining to the brickwork of properties fronting on to Quilter Road.
- Doors and windows are in very good condition.
- All original design features remain intact.

Changes following original consent

- No discernable change on site.



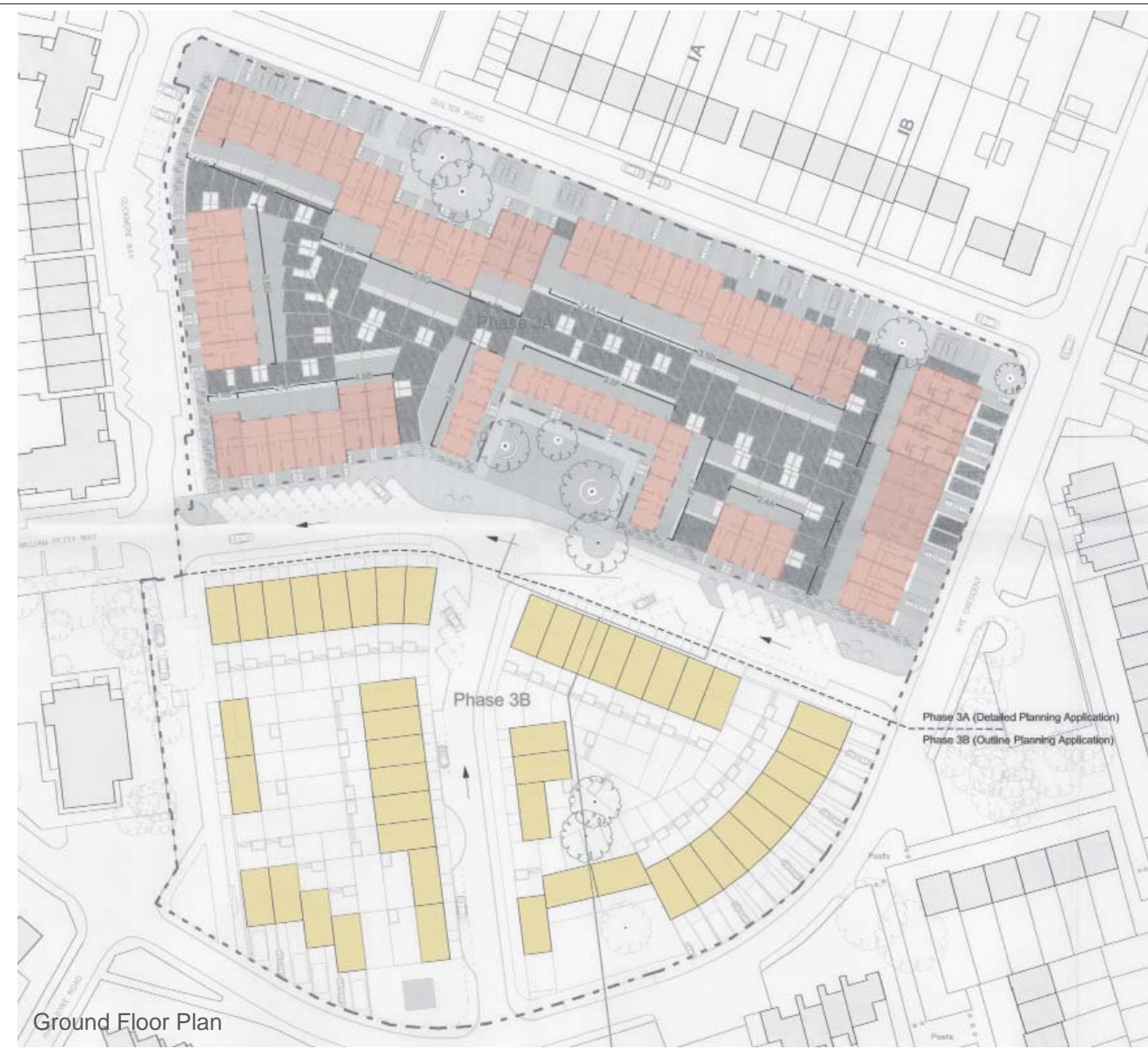
Scheme Location



Phase 3a appears to have very limited bin storage space.



Some staining to brickwork on properties fronting Quilter Road.



Ground Floor Plan

- Market Units
- Social Rented Units

April 2016

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

7) RAMSDEN ESTATE, RYE CRESCENT, BROMLEY

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- The building and site layout works well with each plot having its own entrance, and boundary treatment to front gardens makes clear which areas are public and private.
- There was no activity at the time of the visit to and from each plot.

Entrance to Residential Units

- Each plot has its own front door access which works well.
- All affordable units therefore have their own separate entrance.
- There are no lifts within the development.

Car Parking

- There are 119 car parking spaces within the scheme.
- Parking is provided either on-plot on driveways or on-street.
- Where parking is provided on-plot, one parking space is provided.
- The car parking spaces were approximately 75% occupied at the time of the site visit.
- There was no evidence of a car sharing scheme.
- The low PTAL for the scheme is consistent with residents relying mainly on access by private car; the scheme is also served by buses.

Cycle Parking

- There was no evident cycle parking provided either on-street or on-plot. It is anticipated that rear gardens were used for cycle storage.



Scheme Location



Ground Floor Plan

■ Car Parking

(All units have front door access)



Ground Floor Plan

■ Refuse Storage

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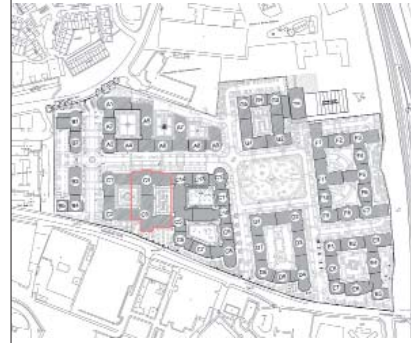
8) BEAUFORT PARK, AERODROME ROAD, BARNET

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The building is not well integrated with the surrounding area due to height, scale and character.
- Surrounding buildings vary from 2 storeys to 4 storeys (low rise) which is far lower than the 9-storey development.
- There was no apparent reference to the site's past use as an RAF camp site or to the adjacent RAF Museum during the site visit.



Scheme Location

Proximity

- The Design and Access Statement states that there is approximately 31 metres between facing windows to habitable rooms of the development, which is in excess of the Mayor's SPD distances.
- Access to the courtyard space within the block was not possible during the visit, however from an assessment of the floorplans, there may be an issue with overlooking distances at the corners of the internal block.

Microclimate

- Visit undertaken on 18th February 2016, around 3pm in sunny conditions, and a temperature of c. 6°C.
- It is expected that due to the height and design of the blocks, the courtyard space within the block will suffer from poor access to natural daylight, other than in the height of summer, and as a result will be infrequently used by residents.

Communal Amenity Space

- A play area located in the wider site was in use by 1 child and accompanied by a parent during the site visit, which took place during school half-term. This indicates that the development may contain few families with children.
- Amenity space is provided within each block.
- A park is provided within the wider site, although only one person used the park during the site visit. It's appeal may be limited by the gated access (access via a keycard) and the level of CCTV in operation and signage identifying this.

Private Amenity Space

- All of the units are provided with a balcony.
- None of the balconies were in use at the time of the visit.



Ground Floor Plan

- Residential
- Museum
- Metropolitan Police
- University
- Communal Space



Development does not sit comfortably with surrounding development which varies from 2 to 4 storeys.



Balconies provided to each unit provides residents with private amenity space.

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8) BEAUFORT PARK, AERODROME ROAD, BARNET

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 190 residential units
- 4 commercial units (one occupied as a Spa)

Housing Mix

- 14 Entry Point Worker Studio flats
- 26 Studio flats
- 28 1-bed flats
- 103 2-bed flats
- 19 3-bed flats

Affordable Housing

- 190 market/Entry Point Worker Units/Discount Market Sale units.

Building Performance

- The development has performed well since completion in 2013, albeit with only 3 years of ageing, and the use of good quality materials in the public realm evident.
- There is no visible weather staining to brickwork or render.
- Doors and windows are in good condition.

Changes following original consent

- No discernable change on site.



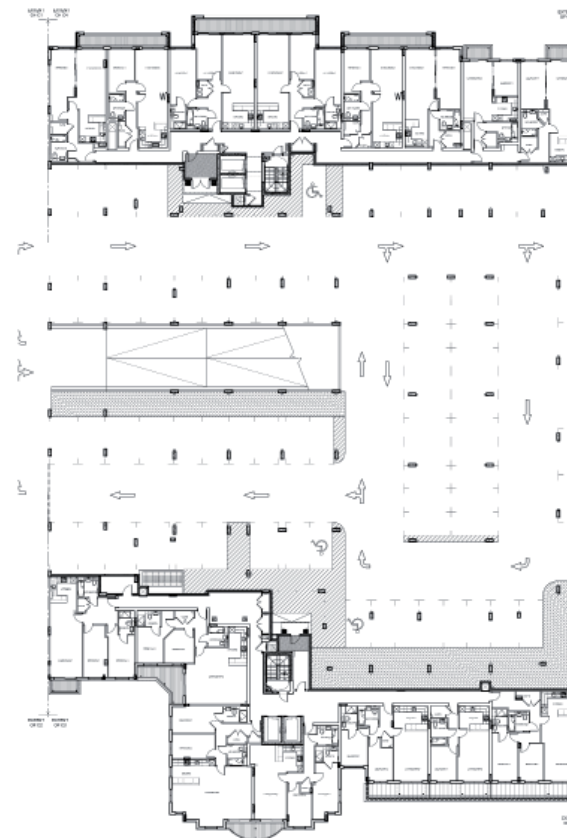
Scheme Location



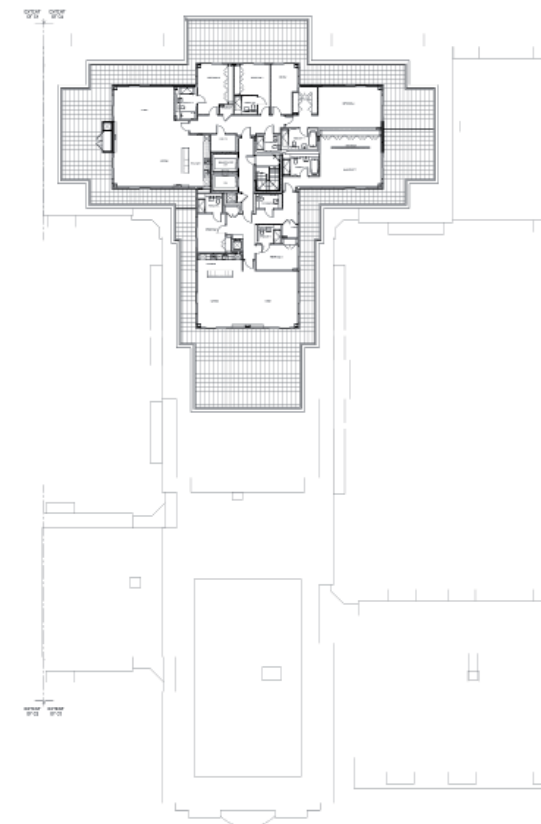
A number of commercial units remain vacant, although most units on Heritage Avenue are occupied.



Evidence of high quality public realm and maintenance.



First Floor Plan



Ninth Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)

April 2016

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

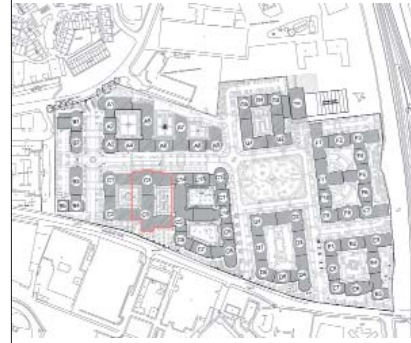
8) BEAUFORT PARK, AERODROME ROAD, BARNET

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- Car parking to the ground floor and first floor levels of the site result in pedestrian building entrances being used infrequently, and fairly inactive streets for the number of residents within the development.
- Circulation space within building unknown as internal access to typical blocks not possible (visit to marketing suite provided a poor indication as not a typical layout).



Scheme Location

Entrance to Residential Units

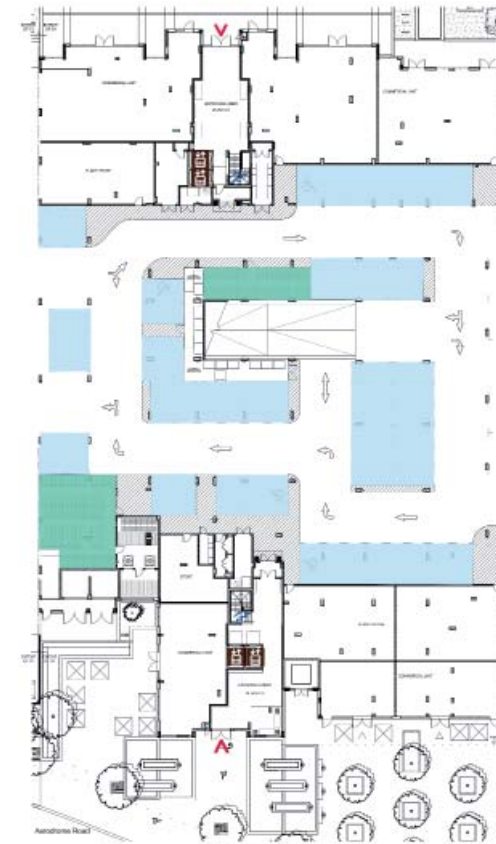
- There is one residential building entrance off Aerodrome Road and another entrance off Boulevard Drive. These entrances were not in use during visit.
- The location of the affordable units could not be identified and it is therefore unknown whether these units have a separate entrance to the market units, and whether different lifts serve different tenures.
- In Block C3 (southern block), there are 7 units sharing the same entrance and lift on the first floor. In Block C4 (northern block), there are 8 units sharing the same entrance and lift on the first floor.
- In Block C3, there are 20 units sharing the same entrance and lift on the second to seventh floors respectively. In Block C4, there are 17 units sharing the same entrance and lift on the second to seventh floors respectively. Block C3 has residential units from the first floor to seventh floor.
- There are 5 units on floor eight of Block C4, and a further 2 units on floor nine.

Car Parking

- Car parking is located on the ground floor and first floor levels.
- There are a total of 151 car parking spaces, including 10 disabled parking bays.
- Access into some of the parking areas was not possible as they had gated entry. The parking areas at the ground floor surrounding the blocks were well used, however the level of usage of the internal parking areas is not known.
- There was no evidence of a car sharing scheme.

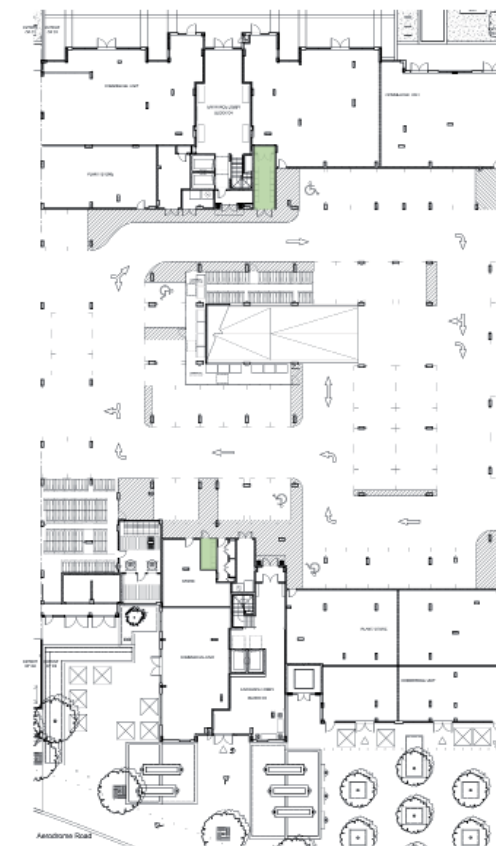
Cycle Parking

- Some cycle stands are provided on-street, although none were in use during the site visit.
- Cycle storage areas are also provided within Block C3, providing space for 95 bicycles. It is not known how well used these storage areas are, as entry could not be gained into the blocks.



Ground Floor Plan

- Residential Building Entrance
- Lift
- Stairs
- Car Parking
- Cycle Parking



Ground Floor Plan

- Refuse Storage

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PLAN C: ACCESS, PARKING AND SERVICING

9) 66 ADDISON ROAD, BROMLEY

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The building is not well integrated with its surroundings due to the 3-storey design and large footprint on-site.
- Surrounding buildings are predominantly 2 storey (low rise) terraced houses which are lower than the 3-storey flatted development.

Proximity

- Overlooking distances are approximately 18m which conforms with the Mayor's SPD distances.
- Residents of upper floor units have used bamboo screening on balconies which indicates a lack of privacy, with properties directly facing onto adjacent terraced housing.
- Forward building lines are relatively close to the back of pavement on Addison and Cowper Road in comparison to neighbouring properties.

Microclimate

- Visit undertaken on 23rd February 2016, around 11am in sunny conditions with broken cloud, and a temperature of c. 5°C.
- Units with balconies fronting onto Addison Road are likely to receive little natural daylight due to orientation (north-west facing).

Communal Amenity Space

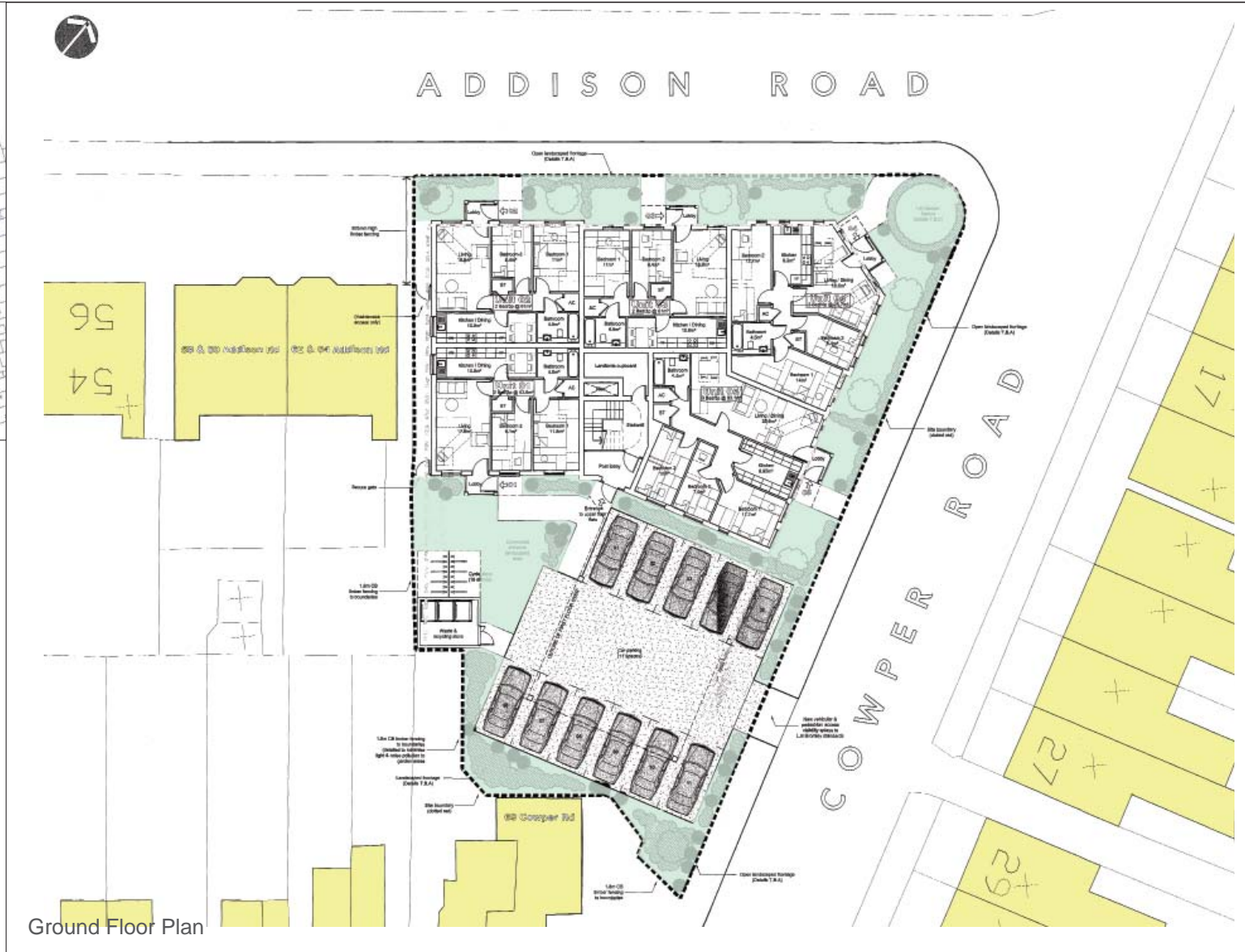
- 2 communal roof terraces are provided.
- Internal access into the development was not possible and it is therefore unknown how well used the roof terraces are.

Private Amenity Space

- Balconies are provided to approximately 75% of units.
- None of the balconies were in use at the time of the visit.



Scheme Location



Ground Floor Plan

- Residential
- Communal Space



The development is significantly larger in scale than surrounding dwellings.



Issue of privacy on balconies evident through use of bamboo screening.

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9) 66 ADDISON ROAD, BROMLEY

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 16 residential units

Housing Mix

- 14 2-bed flats
- 2 3-bed flats

Affordable Housing

- 5 social rented units (31% affordable)
- 11 market sale units (69% market)
- No visible differences between the market and affordable units.

Building Performance

- The development has generally performed well since completion in 2011, although there is some staining to brick work.
- Doors and windows are in good condition.

Changes following original consent

- No discernable change on site.



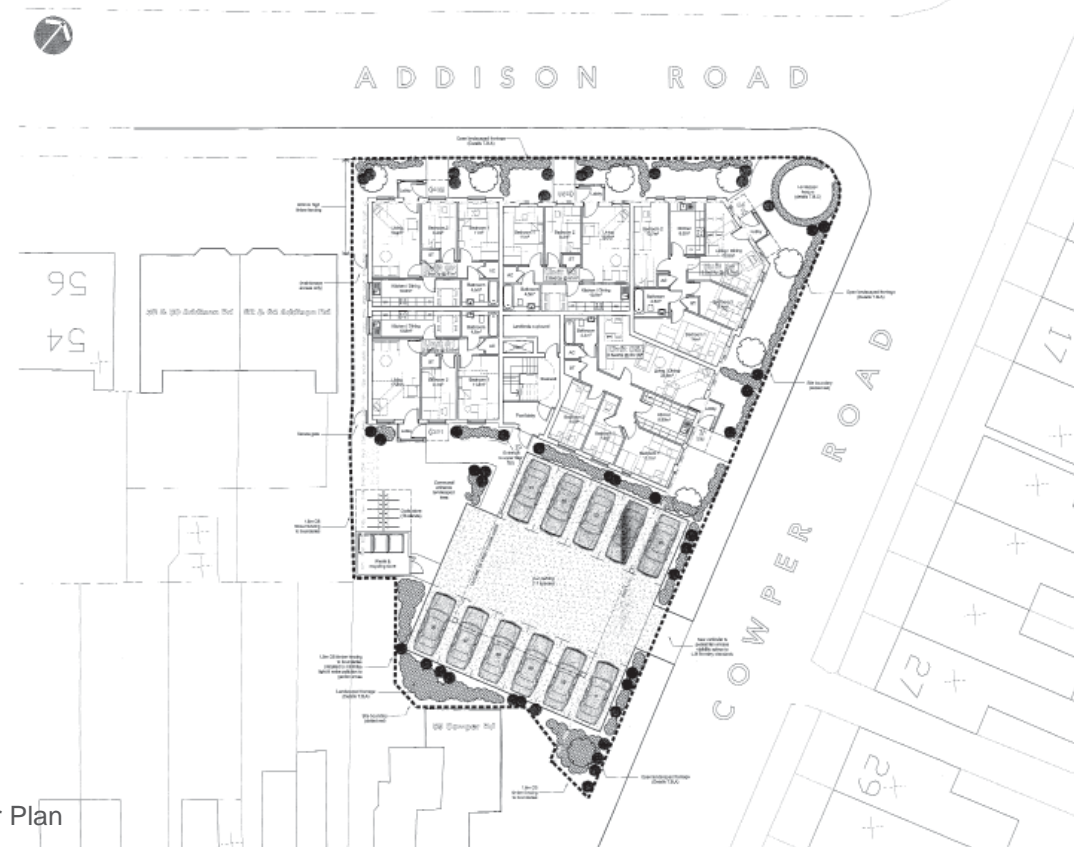
Scheme Location



All ground floor units have separate front door access.



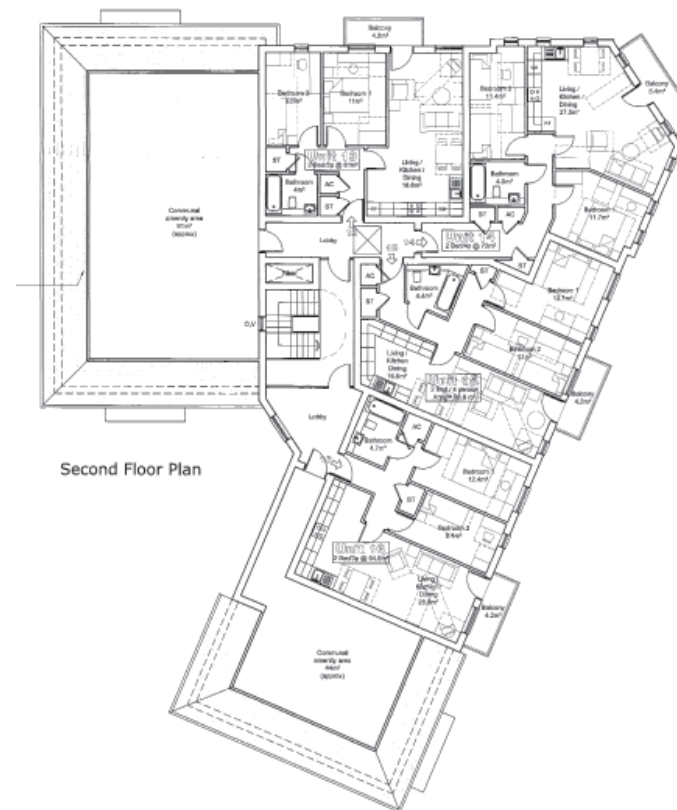
Building fabric has generally performed well since completion.



Ground Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)



Second Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

(Location of affordable units unknown)

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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9) 66 ADDISON ROAD, BROMLEY

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- The building and site layout is relatively successful in providing all ground floor units with separate front door access. Car parking is also conveniently located adjacent to the residential building entrances.
- Refuse storage is neatly tucked away to the rear of the car parking area.
- Internal access to the building was not possible during the visit and it is therefore not known how well the circulation space works within the building.

Entrance to Residential Units

- Ground floor units each have a separate entrance.
- Units on the upper floors are accessed via a communal entrance with stairs access.
- The residential building entrances were not used at the time of the visit.
- The location of affordable units is unknown and therefore it is not known whether these units have a separate access to the market units.
- On the first floor there are 7 units, and a further 4 units on the second floor, which all share the same stairs access.

Car Parking

- There are 11 covered car parking spaces at the ground floor level, accessed from Cowper Road.
- During the visit 5 of the parking spaces were occupied.
- There was no evidence of a car sharing scheme.

Cycle Parking

- A secure cycle storage area is located to the rear of the car parking providing space for 16 bicycles.
- The cycle storage area was very well used at the time of the visit.



Scheme Location



Ground Floor Plan

- Residential Building Entrance
- Stairs
- Car Parking
- Cycle Parking

(Most ground floor units have front door access)



Ground Floor Plan

- Refuse Storage

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10) TOWER SITE, ST GEORGE WHARF, LAMBETH

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The Tower is not well integrated with surrounding development, being significantly taller than even the wider St George Wharf development which is up to 20 storeys in height (low rise to medium).
- The Tower has an imposing impact on surrounding street life.

Proximity

- The overlooking distances meet the requirements of the Mayor's SPD
- There is no private amenity space provided which is likely to cause an over reliance on nearby amenity space.

Microclimate

- Visit undertaken on 15th March 2016, around 12noon in overcast conditions, and a temperature of c. 6°C.
- There was noticeable wind tunnelling in other parts of the St George Wharf development.

Communal Amenity Space

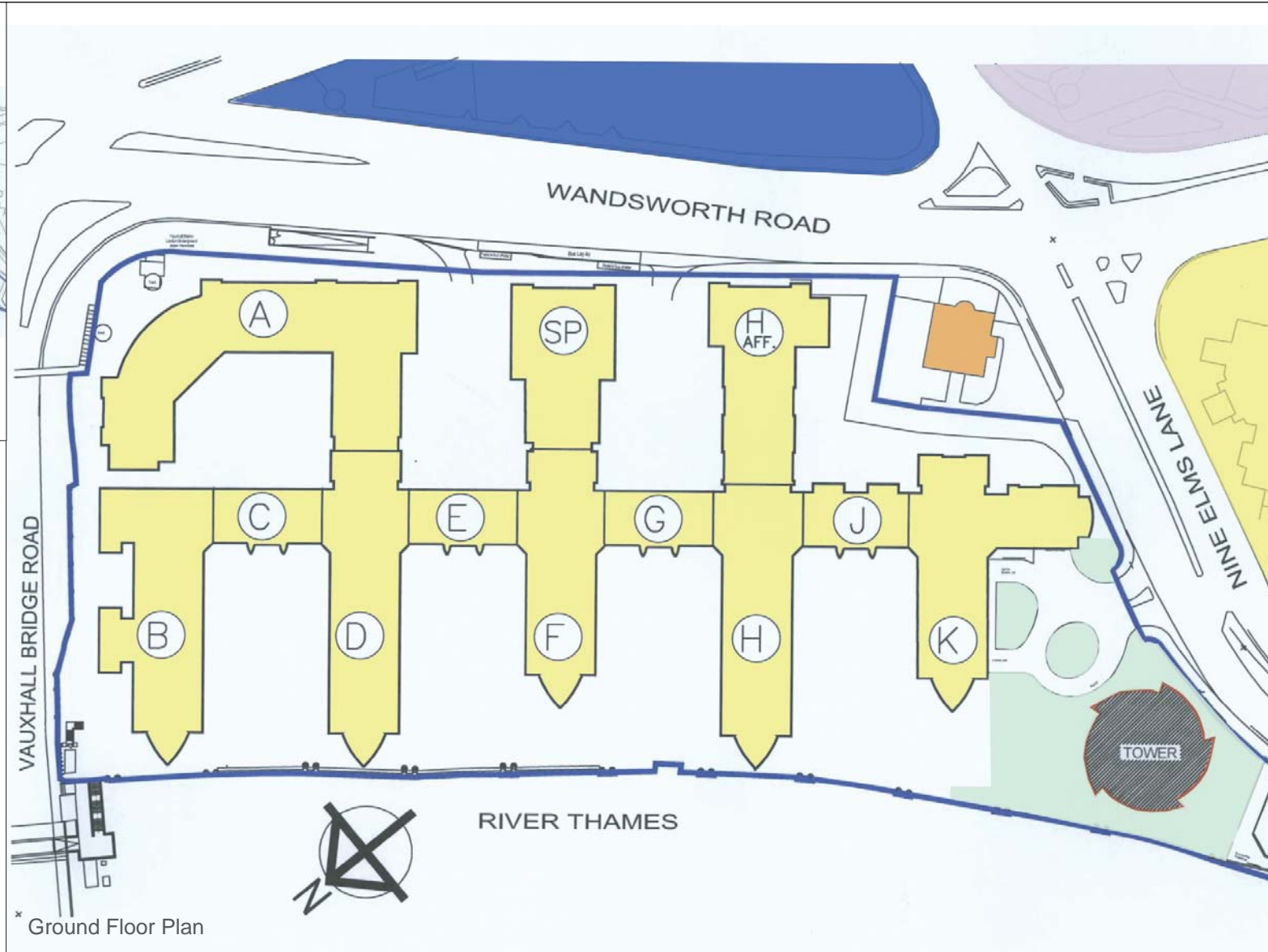
- Some formal landscaping to the entrance of the Tower, although no apparent useable amenity space for residents.
- A private gym is provided within the Tower.
- It is not known how well used internal facilities are used, as internal access was not possible at the time of the visit.

Private Amenity Space

- No private amenity space is provided.



Scheme Location



Ground Floor Plan



The height of the Tower is out of context with surrounding buildings.



Formal amenity space is provided at the gated entrance to the Tower, with little usable space to sit or relax in.

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10) TOWER SITE, ST GEORGE WHARF, LAMBETH

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 220 residential units
- 409 sqm C1 use
- 2,686 sqm A1 use
- 1,077 sqm A3 use
- 7,858 sqm B1(a) use
- 680 sqm D1 use
- 1,407 sqm D2 use

Housing Mix

- Housing mix not known.

Affordable Housing

- No affordable housing provision.

Building Performance

- The building fabric has performed well since completion, although completion was in 2014 so only 2 years of ageing.
- Doors and windows are in good condition.
- All original design features remain intact.

Changes following original consent

- No discernable change on site.



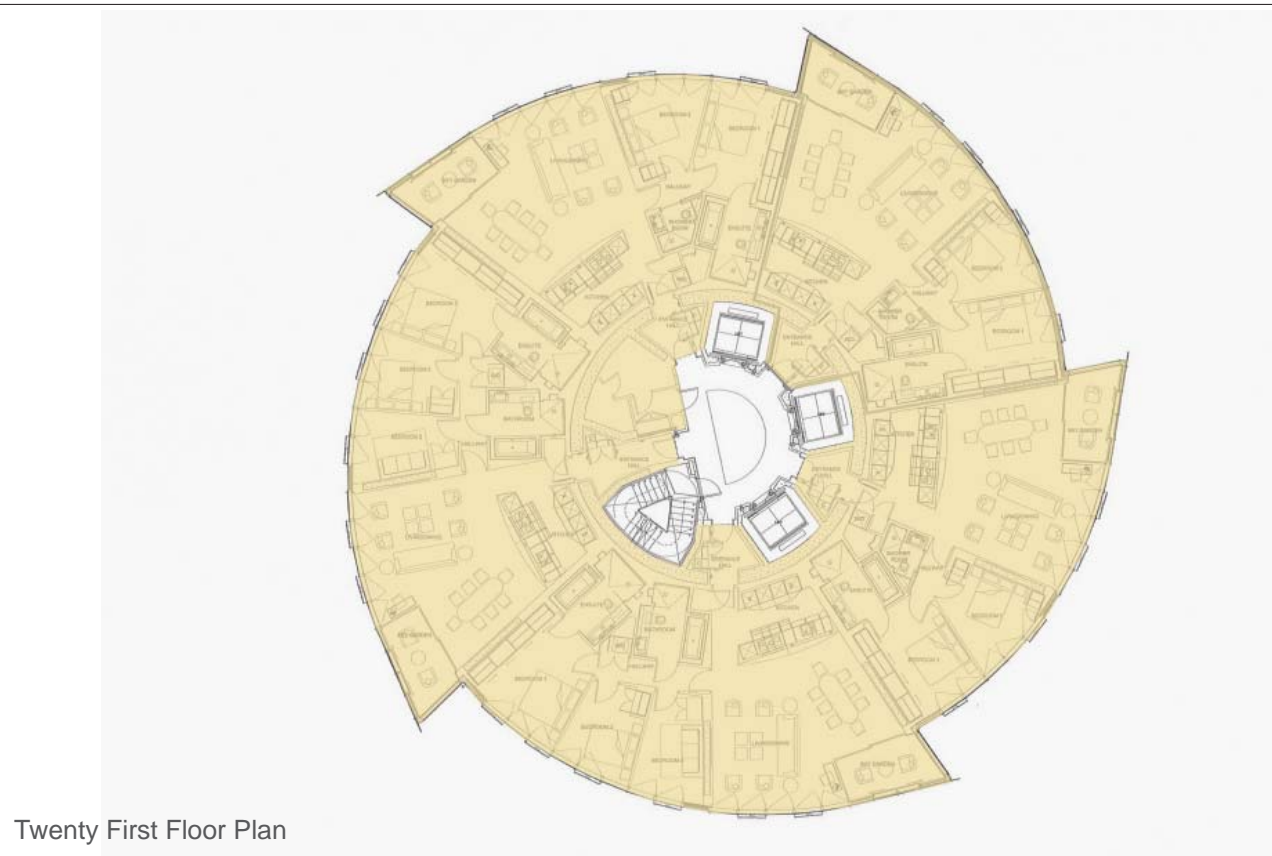
Scheme Location



The ground floor is screen from public view by curtains with a private gym located above.

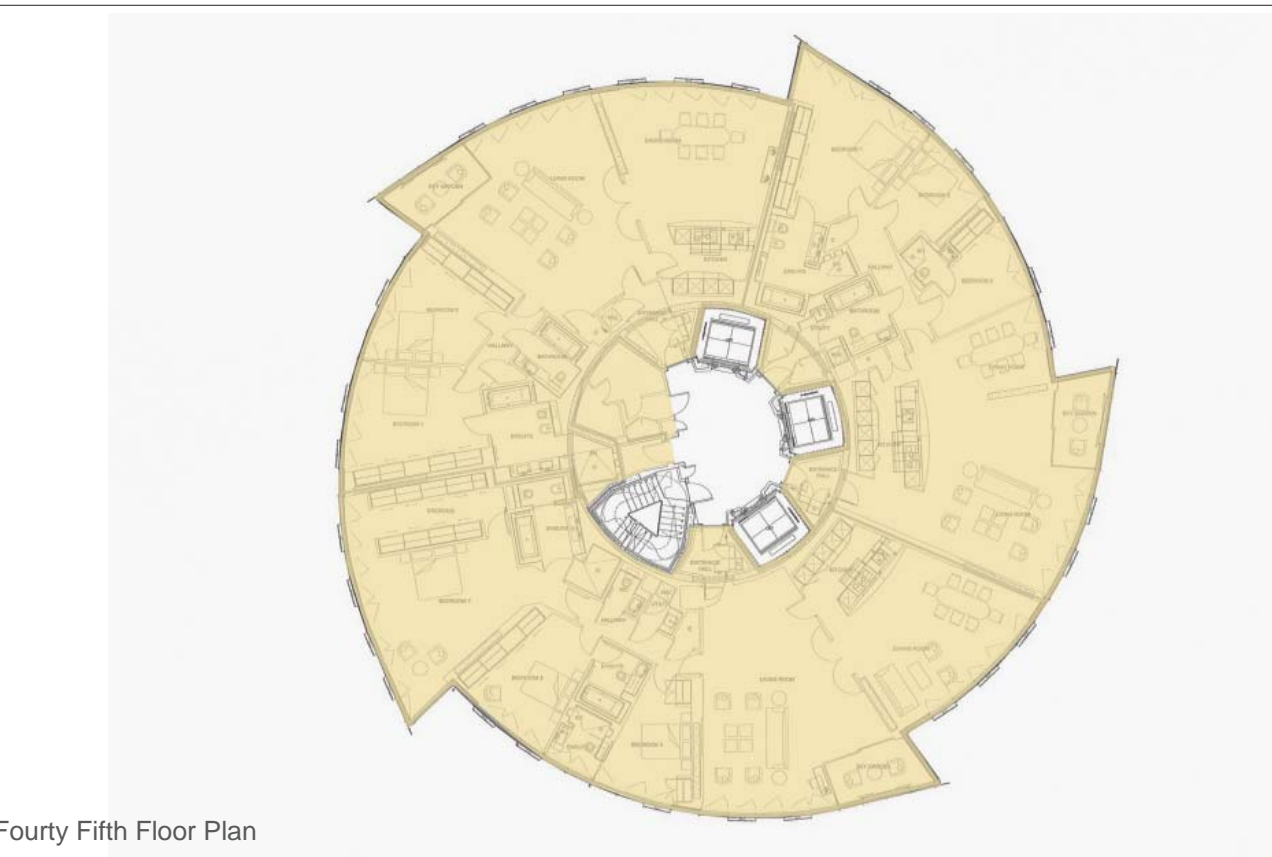


The building fabric has performed well since completion.



Twenty First Floor Plan

Market Units



Fourty Fifth Floor Plan

Market Units

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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10) TOWER SITE, ST GEORGE WHARF, LAMBETH

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- The main entrance into the Tower is via a formal drive-through access.
- There was one motorcycle accessing the Tower at the time of the visit.
- Access for waste storage and maintenance not known.

Entrance to Residential Units

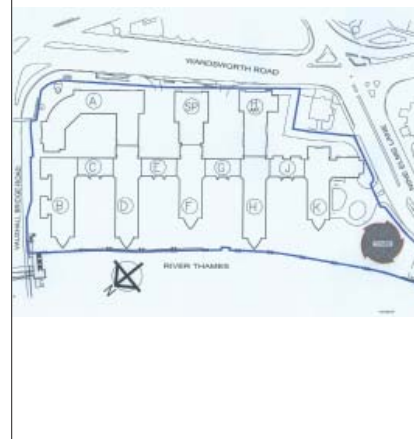
- There are no affordable units on-site and therefore there all market units are accessed via the same entrance and lift access.

Car Parking

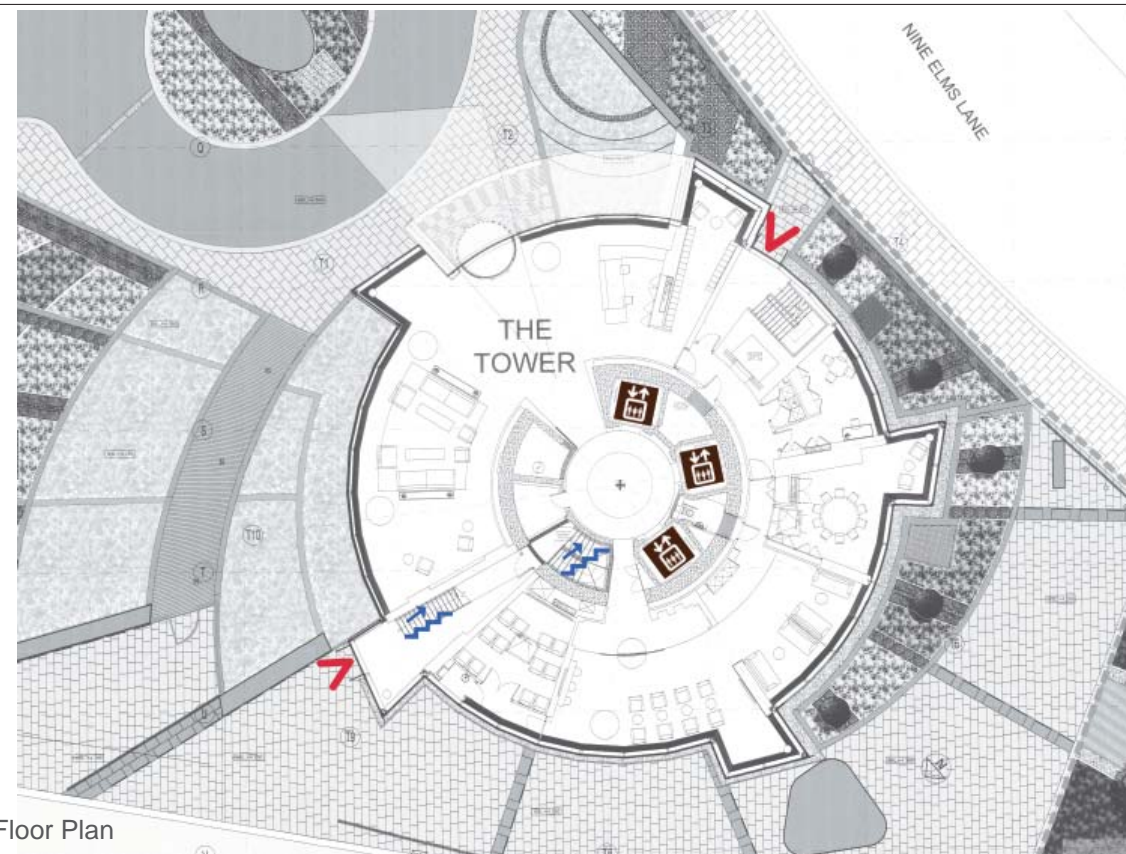
- 781 car parking spaces underground.
- Level of useage unknown.
- It is not known whether there was a car sharing scheme in operation.

Cycle Parking

- Level of cycle parking storage unknown.

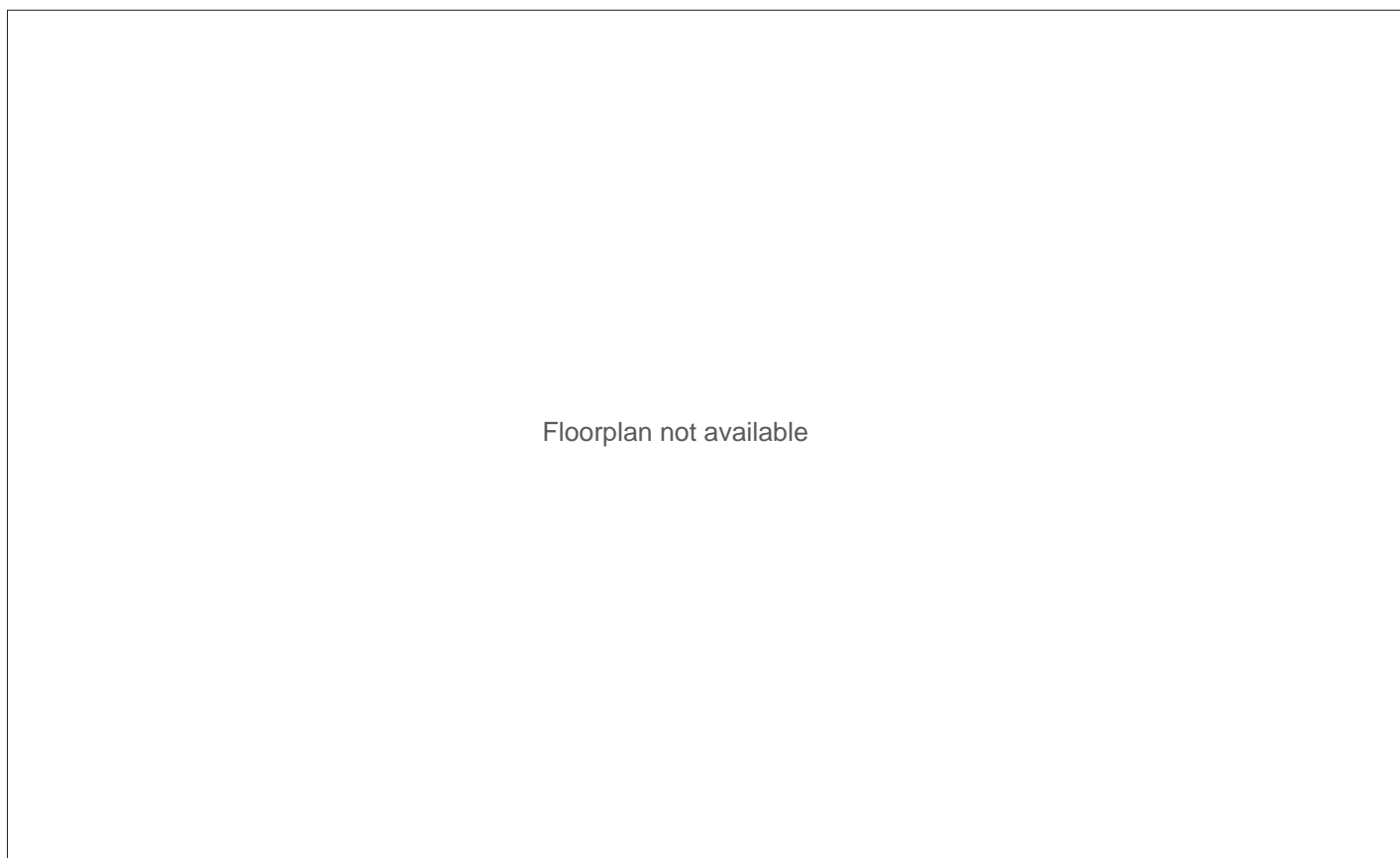


Scheme Location



Ground Floor Plan

- Residential Building Entrance
 - Lift
 - Stairs
- (Location of car parking and cycle parking areas unknown)



Floorplan not available

- Refuse Storage
 - Maintenance/Refuse Storage Access
- (Location of refuse storage area unknown)

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11) 721-737 COMMERCIAL ROAD, TOWER HAMLETS

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The majority of the development is well integrated with the surrounding area in terms of massing, scale and height.
- Block A is rather more incongruous and dominating in relation to its surroundings as it rises to 13 storeys.
- Block A is likely to cause issues of overshadowing.
- Surrounding buildings vary from 3 storeys to 6 storeys (low rise) which is far lower than Block A.
- None of the commercial units are occupied which presents a poor inactive frontage to Commercial Road.



Scheme Location

Proximity

- The configuration of the development blocks ensures that overlooking distances as set out in the Mayor's SPD are met.
- Some ground floor units have used bamboo screenings to balconies to enhance the level of privacy.

Microclimate

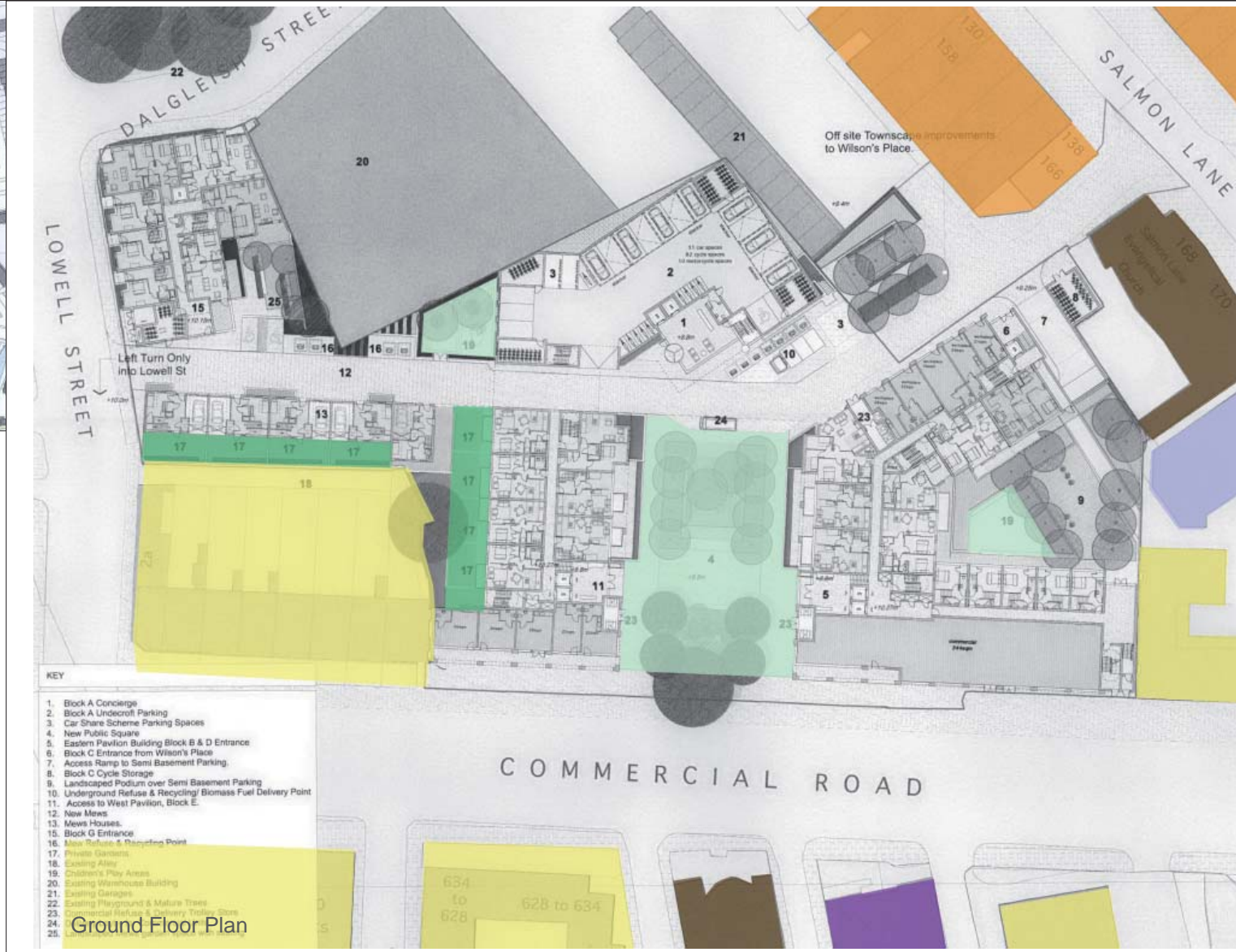
- Visit undertaken on 23rd February 2016, around 4pm in sunny conditions with broken cloud, and a temperature of c. 4°C.
- Northern facing units, particularly those in Block A, are likely to receive little natural daylight due to orientation (north facing).

Communal Amenity Space

- A public square is provided at the heart of the development.
- A small play area, with one piece of play equipment is provided between Blocks A and G.
- Neither the public square nor the play area were in use at the time of the visit.

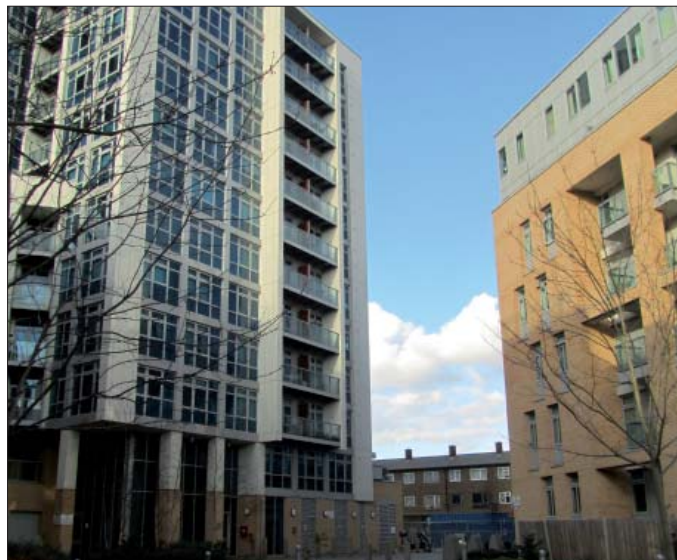
Private Amenity Space

- Balconies are provided to most (if not all) units (c. 95% of units).
- The balconies vary in size, with the smallest found in Block A (c. 3m²), and the largest in Blocks B, C and D, which also vary in size (c. 5m² to 7m²).
- Only one of the balconies was in use at the time of the visit.



- Residential
- Mixed Use to GF with residential above
- Church
- Theatre
- Museum
- Communal Space
- Private Amenity Space

- KEY
- Block A Concierge
 - Block A Undercroft Parking
 - Car Share Scheme Parking Spaces
 - New Public Square
 - Eastern Pavilion Building Block B & D Entrance
 - Block C Entrance from Wilson's Place
 - Access Ramp to Semi Basement Parking
 - Block C Cycle Storage
 - Landscaped Podium over Semi Basement Parking
 - Underground Refuse & Recycling/ Biomass Fuel Delivery Point
 - Access to West Pavement, Block E
 - New Mews
 - Mews Houses
 - Block G Entrance
 - New Public Square
 - Private Gardens
 - Existing Alley
 - Children's Play Areas
 - Existing Warehouse Building
 - Existing Garages
 - Existing Playgrounds & Mature Trees
 - Commercial Refuse & Delivery Trolley Store
 - Access to West Pavement, Block E
 - Ground Floor Plan



Block A appears incongruous in relation to surrounding development.



Communal public square provides an attractive setting to the development.

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11) 721-737 COMMERCIAL ROAD, TOWER HAMLETS

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 319 residential units
- 4 commercial units

Housing Mix

- 9 studio flats
- 107 1-bed flats
- 119 2-bed flats
- 79 3-bed flats
- 5 5-bed houses

Affordable Housing

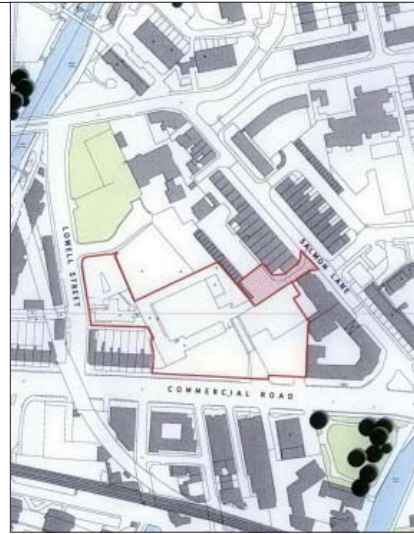
- 215 market sale units (67% market)
- 72 affordable rented units (23% social rented)
- 32 intermediate units (10% intermediate)
- 33% affordable
- No visible differences between the market and affordable units.

Building Performance

- The development has performed well since completion, and appears to include good quality materials. However, completion was in 2013 so only 3 years of ageing.
- Doors and windows are in good condition.
- There is no visible staining to brick work or render.
- Some additional refuse bins between Blocks A and G, which suggests that there might not be enough household waste units across the development.

Changes following original consent

- No discernable change on site.



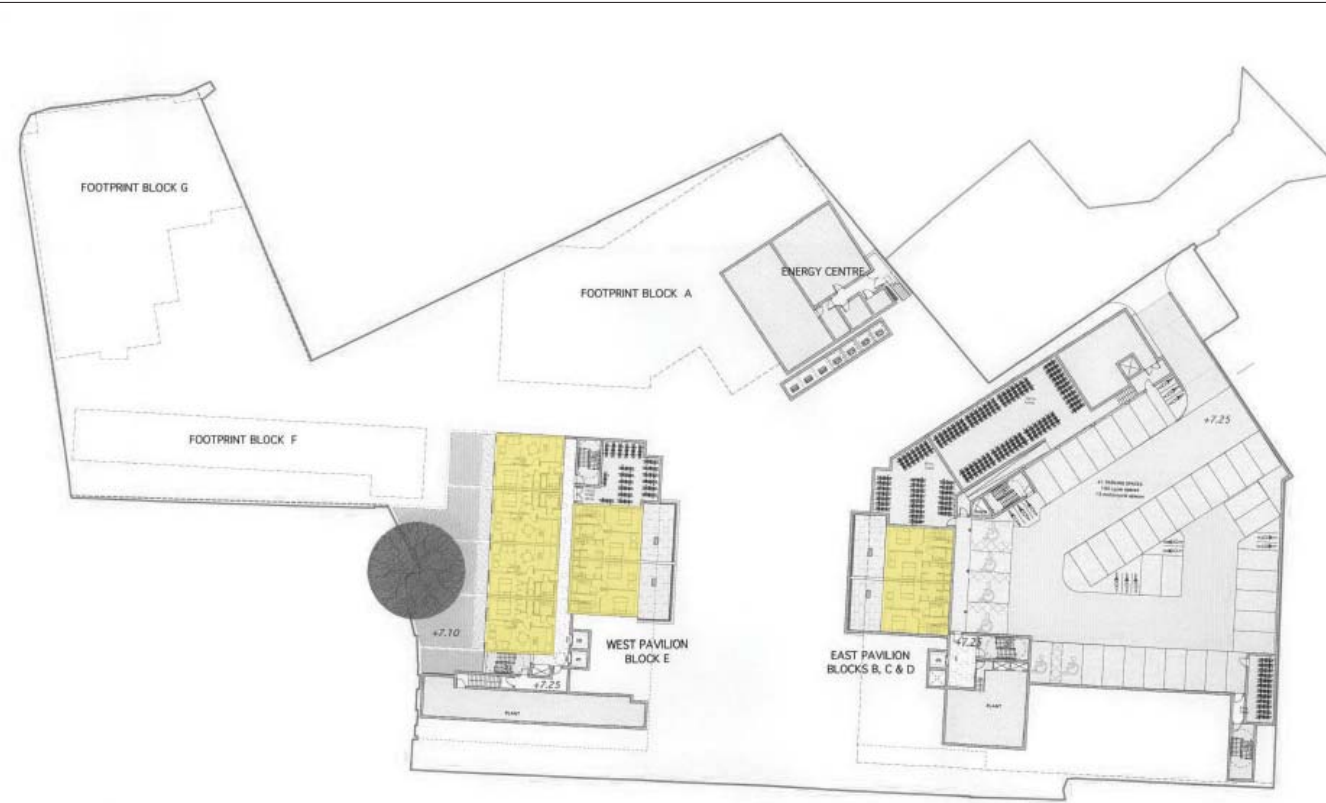
Scheme Location



The use of high quality materials is evident across the scheme (except Block A).

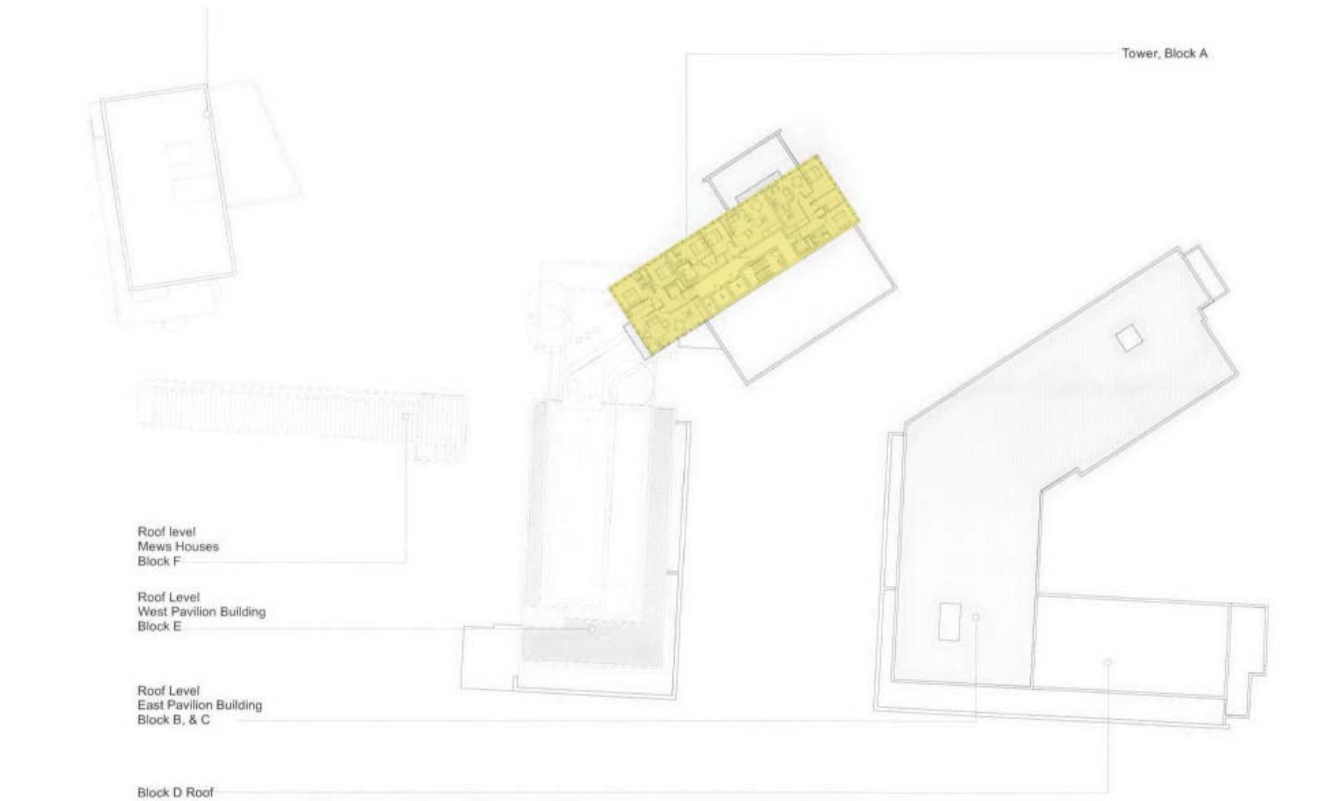


Household waste units are provided across the site for disposal of residents' waste.



Lower Ground Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units



Thirteenth Floor Plan

- Market Units
- Social Rented Units
- Intermediate Affordable Units

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PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

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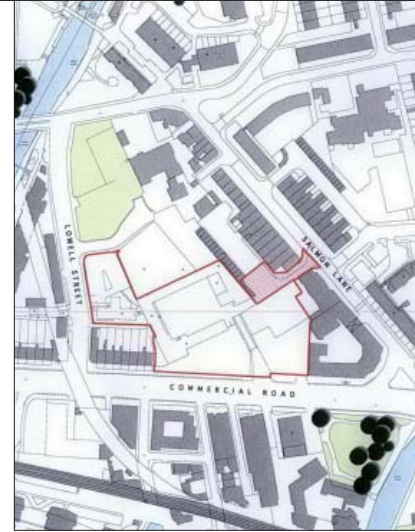
11) 721-737 COMMERCIAL ROAD, TOWER HAMLETS

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:

Building and Site Layout

- The building and site layout works very well, with the mix of shared access to apartment blocks, and individual front door access to terraced units.
- There are 8 household waste units located across the site which sit comfortably within the public realm. Although additional refuse bins are located between Blocks A and G which indicates that there is insufficient refuse storage, and appears untidy as a result.
- The circulation space within Block A works very well, and is well organised.



Scheme Location

Entrance to Residential Units

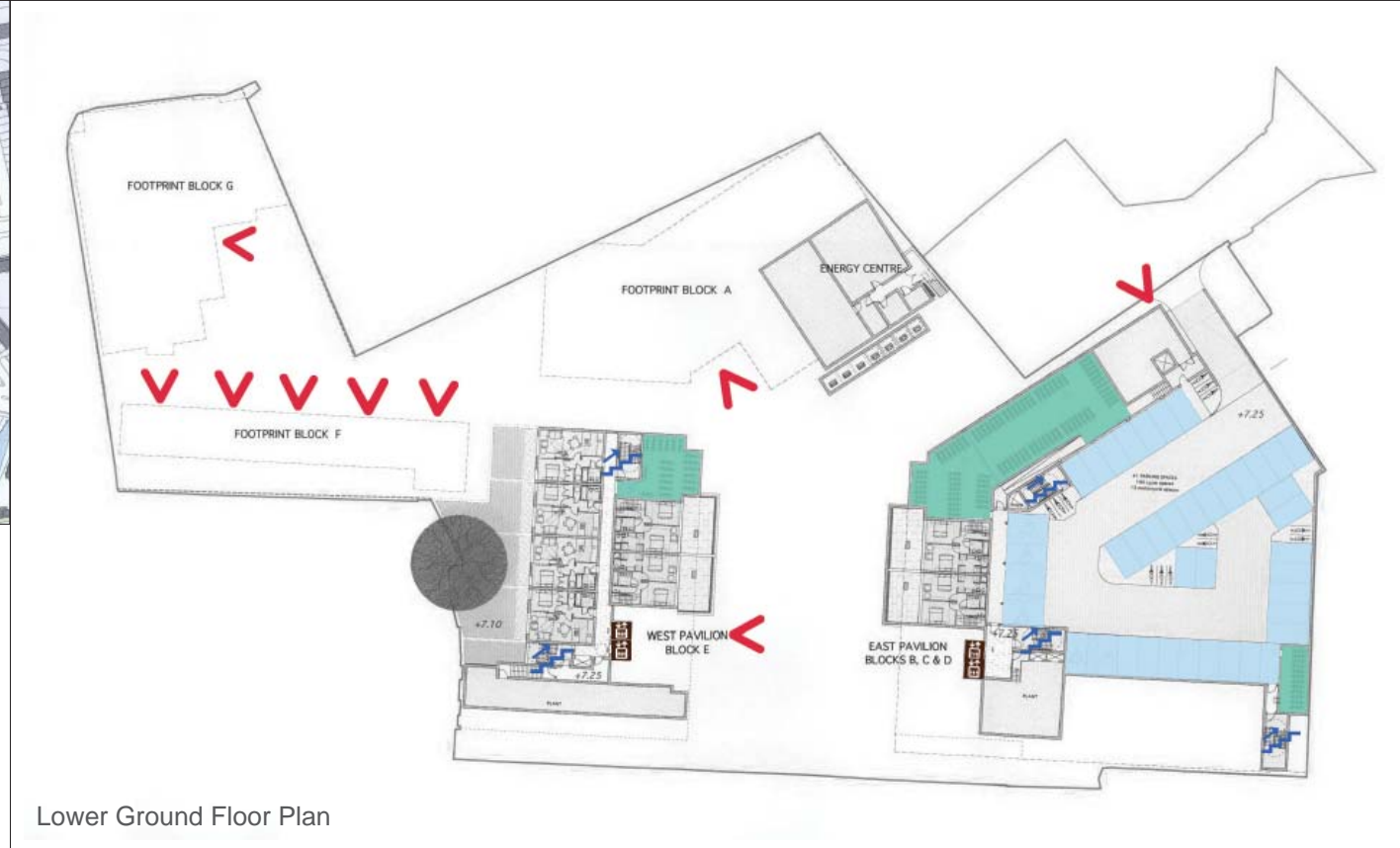
- A pedestrian entrance is provided each for Block A, B/C/D, E and G. Individual houses in Block F each have their own front door access.
- There were 8 people movements into and out of the residential blocks during the visit.
- Block A is 13 storeys in height, varying from 3 units up to 9 units on each floor.
- Blocks B, C, and D are 6 storeys in height, varying from 2 units up to 24 units on each floor.
- Block E is 5 storeys in height, varying from 6 units up to 11 units on each floor.
- Block F comprises 3 storey mews houses.
- Block G is 7 storeys in height, varying from 4 up to 8 units on each floor.
- There is a mix of market and affordable units in Block E and whilst it is unknown the exact location of the affordable units in Block E, it is anticipated that all units share the same single point of access, lift, and stairs.

Car Parking

- There are 79 car parking spaces, including disabled spaces located in the basement of Blocks B, C, and D, and the undercroft of Block A.
- Internal access into the car parking area was not possible during the visit, and therefore it is unknown the level of usage of the parking areas.
- There is a single car sharing parking space for residents to the south-east of Block G.

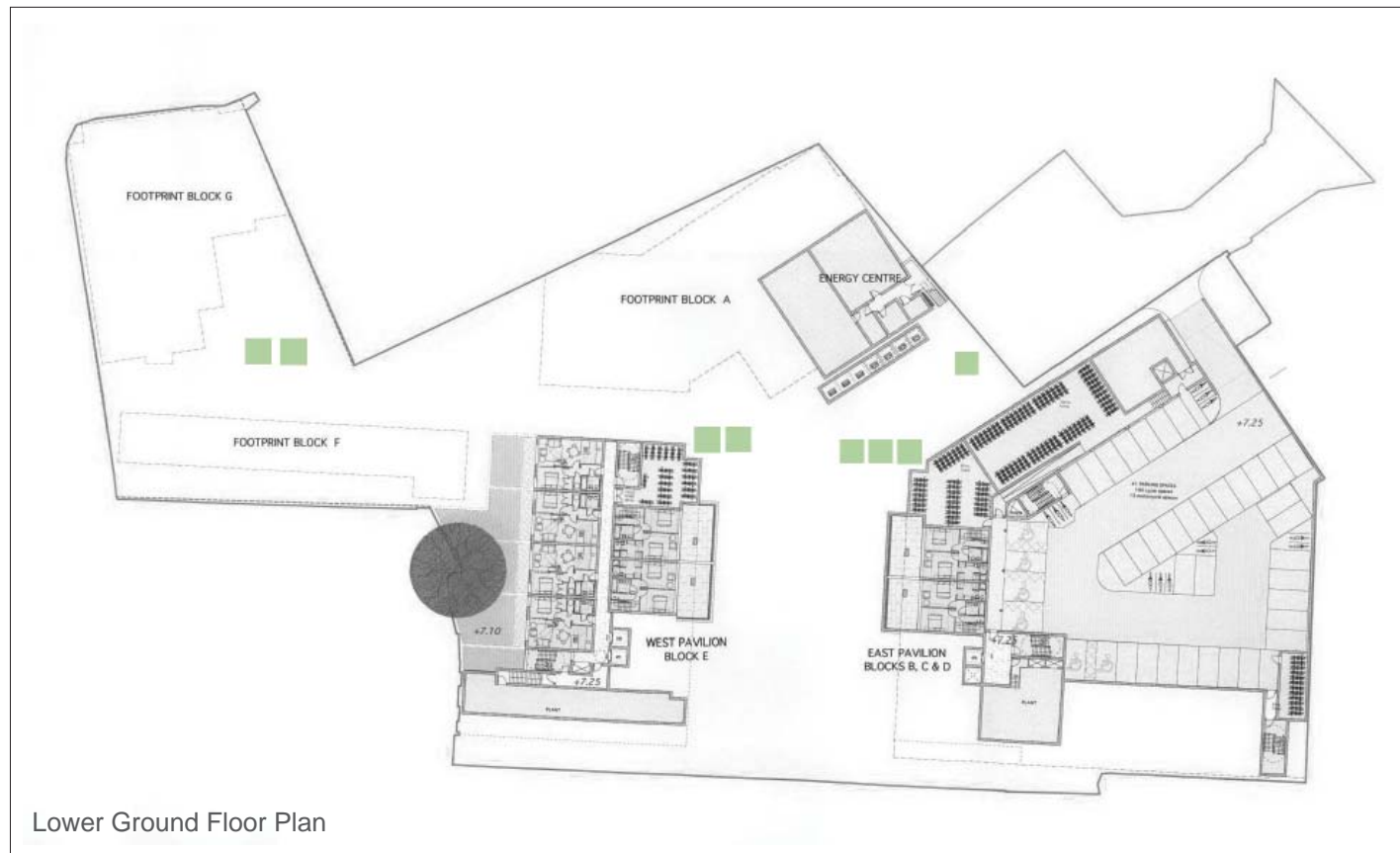
Cycle Parking

- There are some cycle parking stands providing space for 319 bicycles across the development which were 50% in use at the time of the visit.
- There are additional secure cycle parking areas to the lower ground floor of Blocks B, C, and D, and Block A.



Lower Ground Floor Plan

- > Residential Building Entrance
- ☒ Lift
- ☒ Stairs
- Car Parking
- Cycle Parking



Lower Ground Floor Plan

- Refuse Storage

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PLAN C: ACCESS, PARKING AND SERVICING

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12) CASTLE HOUSE, 2-20 WALWORTH ROAD, SOUTHWARK

This Plan illustrates the context and any environmental impacts which arise as a result of density.

Key Issues:

Impact on Surroundings

- The building is not well integrated with the surrounding area as most existing buildings adjacent the site are much lower in scale, some being 2 storey terraced housing (low rise). Draper House is 25 storeys, and there is a new development currently under construction at One The Elephant will be 37 storeys which are more comparable in scale once completed (mid to high rise).

Proximity

- The Committee Report states that overlooking distances are 23m to the nearest residential units, which exceeds the Mayor's SPD. However, the Report does identify some daylight impact to residents of Draper House.

Microclimate

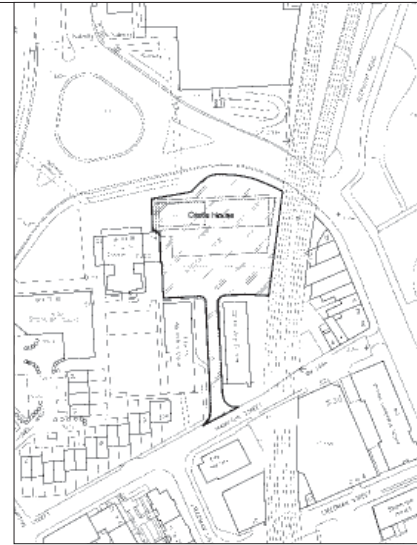
- Visit undertaken on 15th March 2016, around 11am in overcast conditions, and a temperature of c. 6°C.
- A number of the units fronting on to Walworth Road are directly north-facing and will receive very little natural daylight.

Communal Amenity Space

- Only hard landscaping is provided to the external area of the building and does not provide an inviting space for residents to sit out.
- There was no one sat outside in this space at the time of the visit.

Private Amenity Space

- No apparent private amenity space discernable from site visit.



Scheme Location



Ground Floor Plan

- Residential
- Mixed-Use
- Nursery
- Communal Space



Castle House is a dominant feature in the context of its surrounding built form.



The wind turbines at the top of Castle House were not operational at the time of the visit.

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12) CASTLE HOUSE, 2-20 WALWORTH ROAD, SOUTHWARK

This Plan illustrates the housing typologies present at this scheme and the location and groupings of different tenures, and any issues which arise directly as a result of density.

Key Issues:

Mix of Uses

- 408 residential units
- 4 commercial units (2 occupied)

Housing Mix

- 40 Studio flats
- 200 1-bed flats
- 148 2-bed flats
- 20 3-bed flats

Affordable Housing

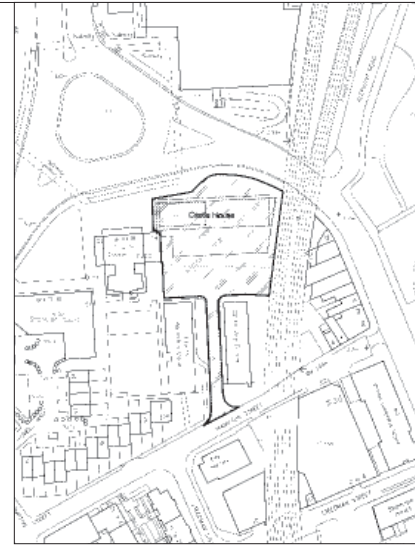
- 310 market units (76% market)
- 78 intermediate units (19% intermediate)
- 20 retained equity units (5% retained equity)
- No apparent differences between market and affordable units.

Building Performance

- The building has performed well since completion, although completion was in 2011, so only 5 years of ageing.
- The doors and windows are in good condition.
- All original design features are intact, except the wind turbines to the top of the building which were not operational at the time of the visit.
- The servicing area to the rear of the building works well with the location of refuse storage easily accessible.

Changes following original consent

- No discernable change on site.



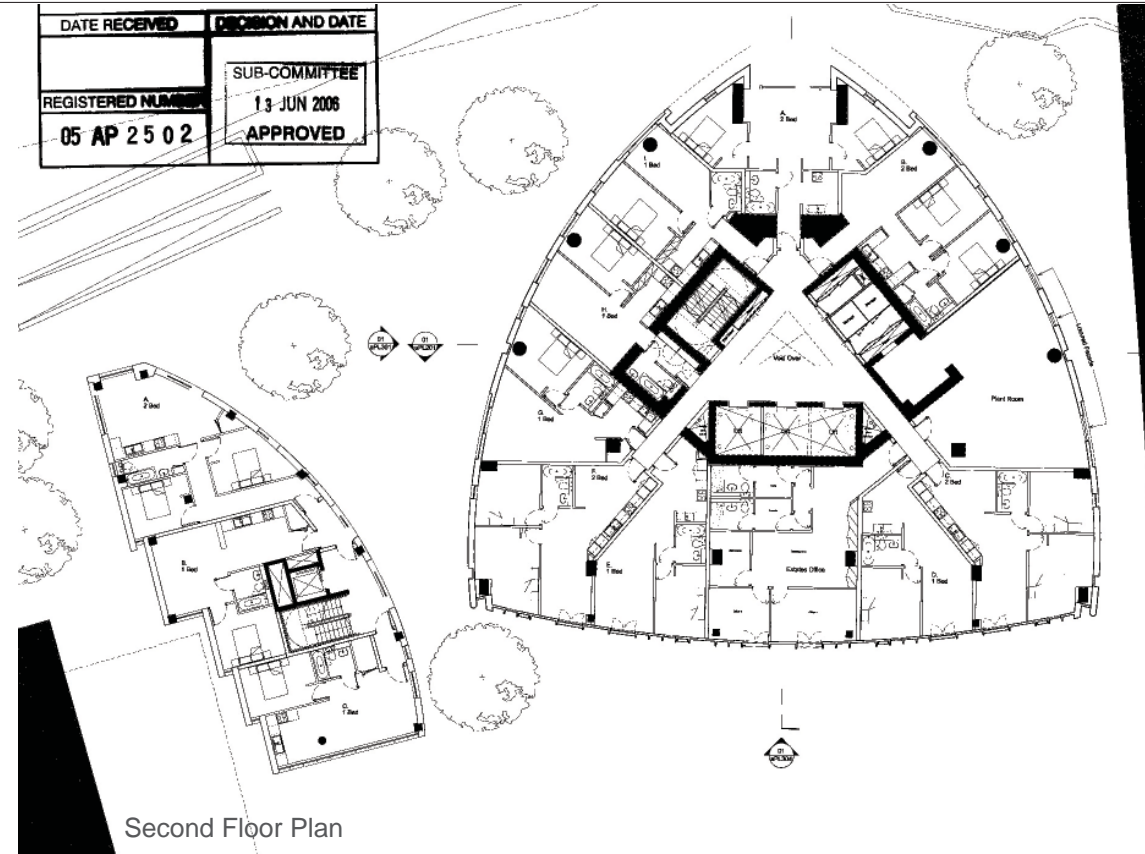
Scheme Location



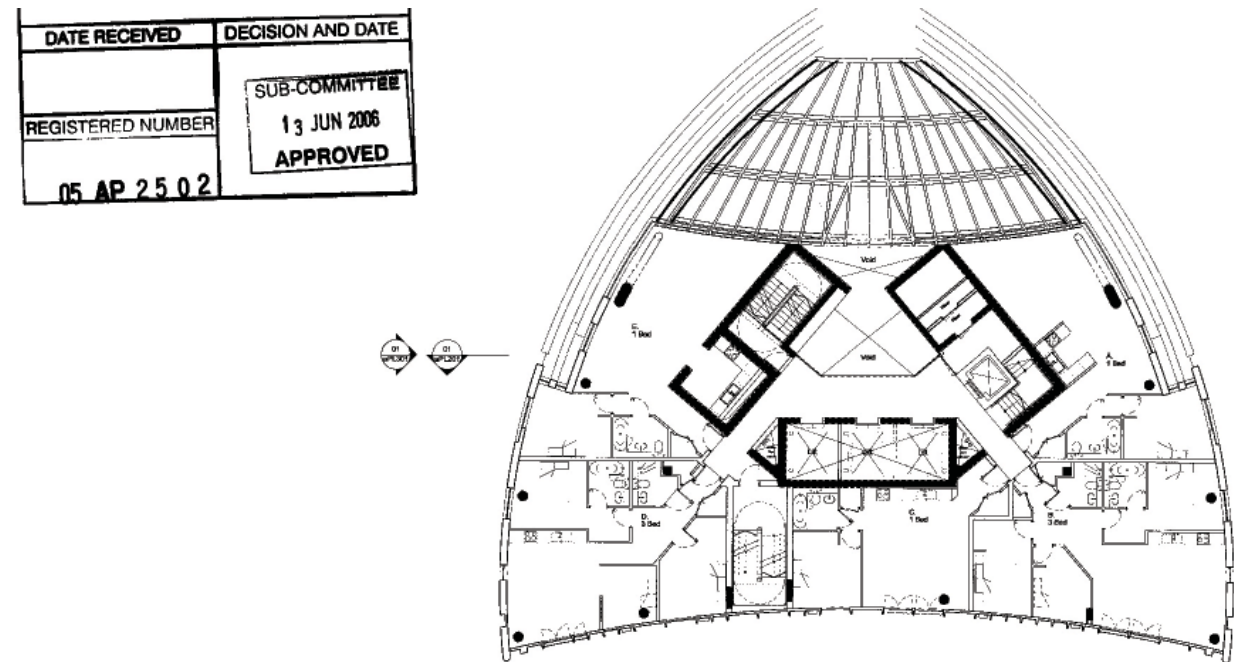
Two of the commercial units are currently vacant presenting a poor active frontage to the street.



Use of high quality materials evident.



Second Floor Plan



Fortieth Floor Plan

Market Units
Intermediate Affordable Units
(Location of affordable units unknown)

Market Units
Intermediate Affordable Units
(Location of affordable units unknown)

April 2016

GLA004/CASE012/B

NTS



PLAN B: MIX OF USES, HOUSING TENURE AND BUILDING PERFORMANCE

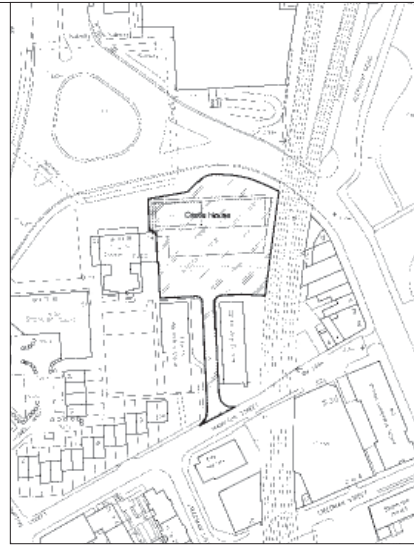
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12) CASTLE HOUSE, 2-20 WALWORTH ROAD, SOUTHWARK

This Plan presents the points of access and circulation within the scheme, the location of car parking and servicing areas, and the issues arising as a direct result of density.

Key Issues:
Building and Site Layout

- There are two separate entrances - one to the main tower which has a foyer, and one to the adjacent building which does not.
- These accesses were not used at the time of the visit.
- Access for waste storage and maintenance is located to the rear of the main building, and to the front of the adjacent building.



Scheme Location

Entrance to Residential Units

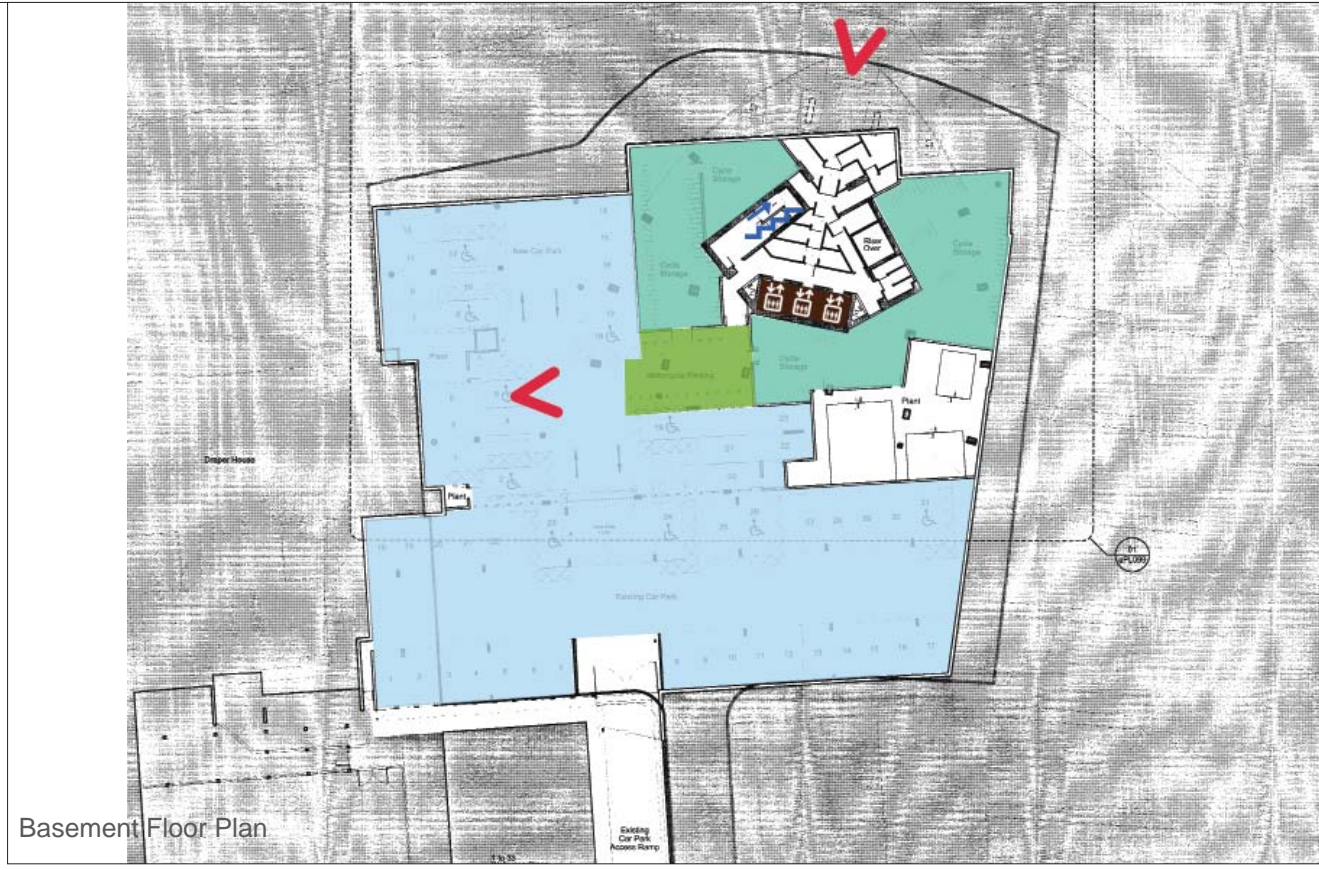
- Within the main building there are 399 units which share the same building entrance and lift access.
- On floors 2 to 36, there are between 8 and 11 units to each floor. On floors 37 up to 40, there are between 5 and 7 units to each floor.
- Within the adjacent building there are 9 units which share the same building entrance and lift access.
- There are 3 units to each floor of the adjacent building.
- The location of the affordable units is unknown and therefore it is not known whether market and affordable units share the same entrance or lift access, however it is presumed that they do due to the configuration of the buildings.

Car Parking

- There are 57 car parking spaces including 10 disabled spaces located in the basement.
- The level of usage is unknown as internal access was not possible during the visit.
- There is a car club scheme in operation, with 2 car club spaces within the basement for residents to use.

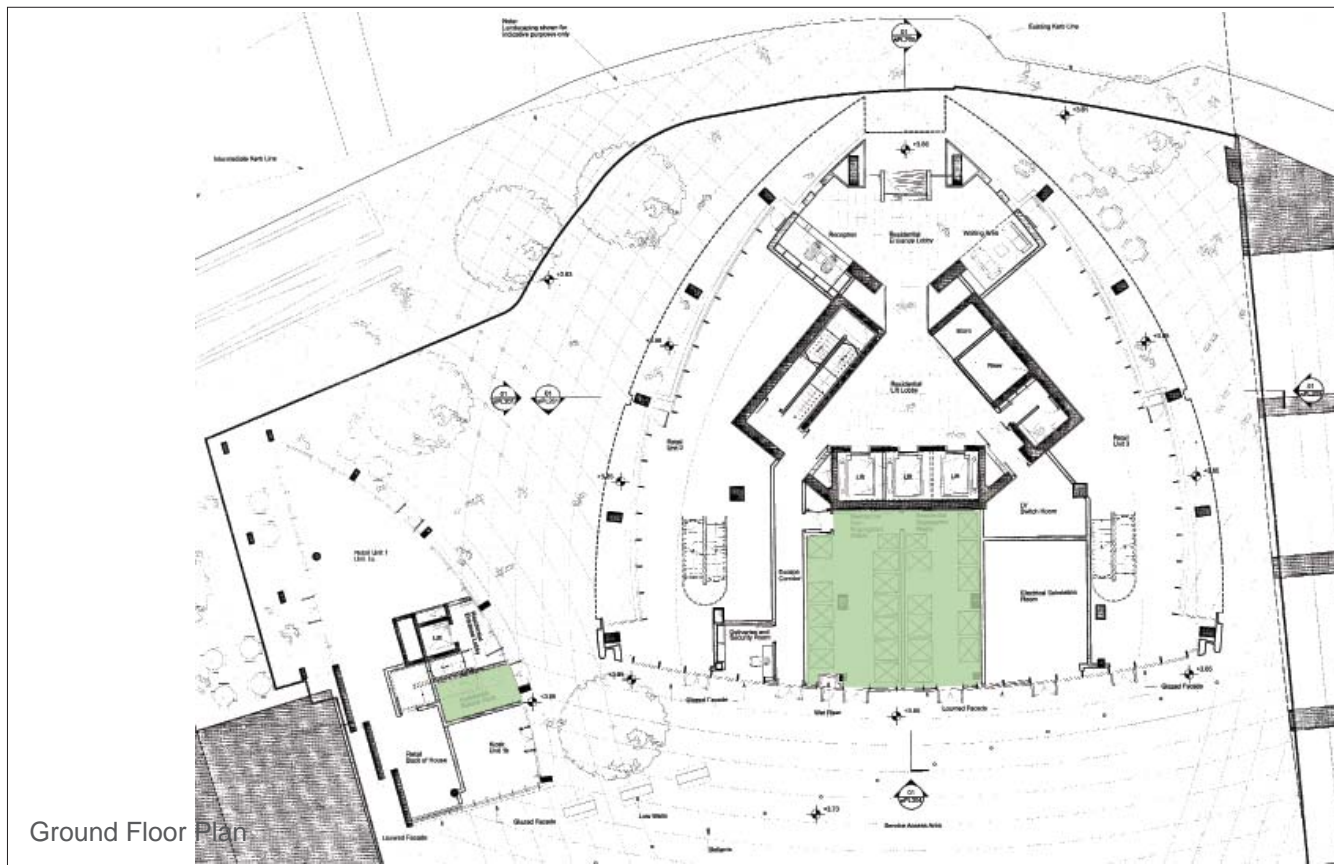
Cycle Parking

- There are 440 cycle spaces located in the basement.
- There are also 22 motorcycle spaces located in the basement.
- The level of usage is unknown as internal access was not possible during the visit.



Basement Floor Plan

- Residential Building Entrance
- Lift
- Stairs
- Car parking
- Cycle parking
- Motorcycle parking



Ground Floor Plan

- Refuse Storage

April 2016

GLA004/CASE012/C

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PLAN C: ACCESS, PARKING AND SERVICING

7 DISCUSSION AGENDA FOR INTERVIEWS WITH HOUSING ASSOCIATIONS AND COMMERCIAL MANAGING AGENTS

HOUSING ASSOCIATIONS

1 General introduction to study and purpose of interview

2 Stock in the development

Check understanding of number of affordable units in management at this development (interviewer to be clear about definition of 'this development' being used).

And type of affordable units by number:

- Social rent
- Affordable rent
- Shared ownership
- Intermediate rent
- Any other low cost sale options

Any change in number/tenure since development first occupied

When were the AH units first occupied? Do you know if this was before/after occupation of the market units?

Is the AH stock in a particular part of the development e.g. on lower floors of a tall building, in a specific block within a development

Is this HA the sole provider of AH in this development – if not, a quick overview of other HAs which are landlords and scale of their involvement

3 Standards

How much of the development is to Lifetime Homes standards?

How many units are wheelchair accessible?

And how many of these units are occupied by wheelchair users?

4 Turnover

Is turnover in the development more/less than general for AH that you manage in this area? Do you have an estimate of the annual turnover rate - for the different tenures if known?

And similarly, what is the level of voids at this development - for the different tenures if known?

Any types of units/location within the development that are more difficult to let than others? Any thoughts on why this is the case?

How strong is the requirement from residents for transfers into larger properties as their household grows – is this level typical for your stock or are there different pressures in this scheme than found elsewhere? If so, any views on why this is the case?

5 Management of the development generally

Are there particular management issues for you with this development?

Are they similar to issues you find elsewhere or do they have something to do with the design of the scheme or with allocations policies operated for this scheme?

6 Use of the building

Are there any areas of the building that are available to other residents but not to tenants/shared owners of the HA – which ones? Any comments on this?

Do the HA's tenants/shared owners share the same access to the development and the same lifts as other residents? If so, how does this work? Does it ever cause comment from your residents?

How much use do residents make of the outside public amenity spaces – communal gardens etc Do you think this is low or high for a scheme of this type and any thoughts on reasons for this.

7 As a place to live for residents

For your residents in this development – what do you think are the good points as a place to live? And what are the less good points?

Do you ever hear any specific complaints about living here – prompt for noisiness, limited daylight in parts of the accommodation, privacy, difficulty in keeping accommodation warm enough/cool enough, lifts not working (how often, how long for?) Check whether this affects specific units within the development and mitigation measures.

Are there any issues you are aware of in relation to the car parking provided at this scheme?

Ditto cycle storage?

8 Rents and Service charges

Please can you provide information about typical rents charged in this scheme (for new lettings)? (For different rented tenures if appropriate)?

And what percentage rent do you charge for shared ownership units (if any)

On average, how much service charge do residents pay on a monthly basis? And is there much variation in payments between different units?

How does this level of service charge compare with other schemes where you own/manage units?

Do you think the service charge is affecting residents' ability to pay their rent/mortgage payments for shared owners? If so, for any particular group? How serious is this as an issue?

9 Views on building performance

How well do you think the building fabric has performed since the scheme was first occupied?

Any issues to highlight?

10 Interaction with neighbourhood

Does this development facilitate residents meeting and interacting?

Are there active resident groups within the development?

Are you aware if residents feel themselves to be part of the wider community with people from the area around the scheme?

11 Impact on the area

Overall, how well do you think the development fits into the area?

What impact does it have on the area?

12 Price paid for units

It would be very helpful if you could tell us the price paid by the HA for units in this scheme. This information will be used only to assist us in our analysis and will not be disclosed to anyone outside the research team for any purpose. It will not be included in any report we prepare.

13 Any other comments?

Thank you

COMMERCIAL MANAGING AGENTS

1 General introduction to study and purpose of interview

Check -

How long has the site been occupied? What about the residential element?

2 Stock in the development

Check understanding about the tenure mix at this development (interviewer to be clear about definition of 'this development' being used and to set out what is believed to be the mix from desk based research).

Do you know whether there are any PRS units within the development

Are there any vacant residential units? Do you know what tenure these are?

For the market/ PRS units- Do you have any idea of the turnover of these types of units?

3 Management of the development generally

How has the site been managed since occupation (this company all through and/or shared with other companies etc)?

In terms of the overall management of the development – are there any issues you would highlight? What would you say works well and anything that works less well about managing this development?

And in terms of management costs – are there aspects of managing this development that work well in terms of costs or are more costly to manage?

Overall, how well do you think the building fabric has performed since the scheme was first occupied?

Are there any specific maintenance costs and issues relating to this development that have arisen since first occupation?

4 Service charges

What are the service charges for the site? Do they vary between type of unit? How have they changed since first occupation/ over the last 3 years?

What do the service charges cover?

Do you know if residents also pay ground rent? If so, what sort of rents are charged?

5 Development details

Do you know how many wheelchair accessible units there are in the development?

And how many of the wheelchair accessible units are occupied by wheelchair users?

Can you tell us how many car and cycle spaces are provided in the development?

How many are at surface level, undercroft and/ or underground (how many levels of

underground parking are there)? (Where this information is already available – interviewer to set out what we understand to be the level of provision first and then check with interviewee)

Are the car spaces well used? Does the car parking provision ever cause any management problems for you – if so, what sort of problems?

Are the cycle spaces well used? Does the cycle provision ever cause any management problems for you – if so, what sort of problems?

What sorts of private amenity space is provided for the residents?

What about communal amenity space?

How well is this used?

How many lifts are there and how many units are served by each lift?

Do different lifts serve different tenures?

What about accesses into the development, do these serve different tenures?

What are the servicing arrangements for the development? Do they work well or can they be disruptive to residents on site and/ or off-site?

Have servicing arrangements changed since occupation? If so, what are they and why?

And how is refuse dealt with – any issues around this?

6 Building performance and management

Do you have any information about the energy costs for residents? Are there any features such as district wide heating schemes incorporated within higher density developments which result in efficiencies for residents?

7 As a place to live for residents

For the residents in this development – what do you think are the good points as a place to live? And what are the less good points?

Do you ever hear any specific complaints about living here – prompt for noisiness, limited daylight in parts of the accommodation, privacy, difficulty in keeping accommodation warm enough/cool enough, lifts not working (how often, how long for?) Check whether this affects specific units within the development and mitigation measures. Also microclimate issues.

Have any mitigation measures been put in place since occupation to deal with these issues?

Do you have a view on what the residents think of how the building is managed?

8 Local community

From your knowledge of this development, do you think residents get to know each other?

Are there active resident groups within the development?

Are you aware if residents feel themselves to be part of the wider community with people from the area around the scheme?

Do you know if there were any concerns about the development amongst the surrounding residents before the scheme was built? Do they like or dislike it now?

How well do you think the development fits within the local area?

9 Any other comments?

Thank you

8 RESIDENTS' SURVEY – STATEMENT OF METHOD

Questionnaire Design

1. The questionnaire was designed, in consultation with the GLA, feedback to ensure that the survey effectively captured the information that is required by the study. Questions were included about the following topics:
 - Characteristics of the accommodation
 - Satisfaction with the home and the development
 - Extent of community within the development and links with the wider community
 - Issues about the design of the property
 - Availability and use of external space
 - Service charges
 - Socio-economic details about the respondent and their household
2. A target of 10 minutes was agreed as the average time to administer each interview, and the questionnaire script was piloted and refined to ensure that this target could be achieved.

Sample Design

3. The survey required a representative sample of households resident in each of the selected schemes; however this had to be achieved within the budget available for the research.
4. As the characteristics of residents at each scheme was not known, it was not possible to manage the sample to ensure that a representative cross-section of residents had been interviewed using a typical quota-based approach; and it was not practical to undertake a random sample at pre-selected addresses within the resources that were available. Therefore, the sample design was based on ensuring a good spread of respondents within different types of properties was achieved.
5. On balance, a personal interview methodology was adopted as the most effective approach to ensure all residents at each scheme would have an equal chance of participation. This would also ensure representation from groups less likely to participate in self-completion questionnaires (in particular young people and working families).
6. To ensure good coverage for working families, around two thirds of the interviews at each scheme were undertaken outside normal working hours – on weekday evenings or at the weekend. However, consistent with the Market Research Society Code of Conduct, no interviews were undertaken after 9pm.
7. It was also decided to actively manage the sample and apply quota controls to ensure that the achieved sample included a spread of interviews across the development. This took account of the balance between market housing and affordable housing at each scheme, the balance between houses and apartments, and the building floor for dwellings in apartment blocks.
8. The number of interviews at each of the selected schemes was established based on the overall number of dwellings at each scheme (to ensure that the

required number of interviews could be achieved with a reasonable response rate), but also took account of the need to produce results for different sub-groups of the overall sample.

Fieldwork Management

9. The survey was carried out using Computer Assisted Personal Interviews (CAPI) conducted by ORS' IQCS trained interviewers and field-based supervisory team, and all interviewers attended a comprehensive briefing in advance of the survey.
10. There are significant benefits of using CAPI systems from the point of view of data accuracy, data security and call handling. The systems also allow for management of the sampled areas and immediate transfer of respondent data to automated databases for subsequent analysis. The system includes automatic routing and data validation. Interviewers are able to take brief notes to open ended questions during the interview and then to return, review and elaborate on them once the call has been completed. The CAPI management system also has sophisticated sample management and reporting facilities.
11. The survey interviews began on 7 March and the fieldwork period ended on 20 April 2016. A total of 221 interviews were achieved. The overall sample profile includes:
 - 68 interviews conducted on weekdays before 6pm;
 - 87 interviews conducted on weekdays after 6pm; and
 - 66 interviews conducted at the weekend.

Weighting the Data

12. The sample was weighted to take account of differential selection and response rates at the different schemes; but whilst the sample covered a representative cross-section of properties, the achieved sample is likely to have been affected by survey response bias to some extent. This is caused by differing rates of non-contact and refusal for different socio-demographic groups.
13. In this context, post stratification weights would normally be calculated; where the characteristics of the achieved sample are compared against information about the entire population to establish where the sample had under- or over-represented particular socio-demographic groups. However, as there is no other data about the population at these specific schemes, it isn't possible to derive weights to compensate for this – so it's important to recognise that the survey may not be representative of the entire population.

Respondent Profile

14. Figure 8.1 shows the socio-demographic characteristics of the 221 respondents to the main survey sample.

Figure 8.1: Socio-demographic characteristics for Respondents (unweighted and weighted) and Resident Population by Age, Gender, Working Status, Household Type and Tenure (Note: Figures may not sum due to rounding)

Characteristic	Unweighted Count	Unweighted Valid %	Weighted Valid %	Resident Population %	
BY AGE					
16 to 24	39	17.6%	18.9%	-	
25 to 34	91	41.2%	41.5%	-	
35 to 44	52	23.5%	23.1%	-	
45 to 54	21	9.5%	9.4%	-	
55 to 64	8	3.6%	3.4%	-	
65 to 74	8	3.6%	2.9%	-	
75 or over	2	0.9%	0.6%	-	
Total valid responses	221	100.0%	100.0%	-	
BY GENDER					
Male	106	48.0%	48.5%	-	
Female	115	52.0%	51.5%	-	
Total valid responses	221	100.0%	100.0%	-	
BY WORKING STATUS					
Full-time employee	158	71.5%	70.7%	-	
Part-time employee	26	11.8%	12.4%	-	
Unemployed or currently looking for work	2	0.9%	0.7%	-	
Retired from paid work	9	4.1%	3.1%	-	
Student in full-time education	12	5.4%	5.8%	-	
Looking after the family/home	13	5.9%	6.7%	-	
Long-term sick or disabled	1	0.5%	0.5%	-	
Total valid responses	221	100.0%	100.0%	-	
BY HOUSEHOLD TYPE					
Single person (and no others)	32	14.6%	13.1%	-	
Couple (and no others)	44	20.1%	20.3%	-	
Lone parent with dependent child(ren)	19	8.7%	9.5%	-	
Couple with dependent child(ren)	59	26.9%	27.0%	-	
Group of adults, either related or unrelated	65	29.7%	30.0%	-	
Total valid responses	219	100.0%	100.0%	-	
<i>Not known</i>	2	-	-	-	
BY TENURE					
Market housing	Owned (with or without mortgage)	27	12.2%	10.7%	-
	Private rented	105	47.5%	48.5%	-
	Sub-total	132	59.7%	59.2%	59.6%
Affordable housing	Affordable home ownership	30	13.6%	12.5%	-
	Affordable rented	59	26.7%	28.3%	-
	Sub-total	89	40.3%	40.8%	40.4%
Total valid responses	221	100.0%	100.0%	100.0%	

9 RESULTS OF THE RESIDENTS' SURVEY

The survey

- 1 The survey of residents, addresses issues about how schemes at different densities and heights operate from the residents' perspective: what has worked and what has not.
- 2 The survey achieved 221 interviews. Permission was required from those managing the schemes to gain access to 'gated' apartment blocks and this was not always forthcoming or was granted but under very limited conditions. Therefore in some schemes where we wished to interview, very few interviews were completed.
- 3 Nevertheless, interviews were achieved with residents in buildings of various heights including two schemes of 15+ storeys. However, the results for this category are heavily reliant on one building as in the second very tall building it proved very difficult to obtain interviews. It is worth noting this, as results from people living in buildings of 15+ storeys may reflect issues in the one building rather than illustrating wider issues about life in tall buildings.
- 4 Given the focus of the research on higher density development and tall buildings, most interviews were undertaken with residents living in apartments (93% of the weighted sample). The key results are described in the following sections.

Characteristics of those surveyed

Type of property lived in⁹

- 5 The residents interviewed lived in the following property types:
 - 49% lived on the 4th floor or lower in an apartment or in a 2 or 3 storey house;
 - 39% on storeys 5 to 14; and
 - 12% at 15 storeys or higher
- 6 In terms of the total number of storeys in the building residents lived in:
 - 12% in a building of 4 or fewer storeys (including 2 and 3 storey houses);
 - 61% in a building of 5 to 14 storeys;
 - 25% in a building of 15 to 24 storeys;
 - 1% in a building of 25 storeys or more
- 7 The latter grouping of the storey height of the building lived in is used for some of the analysis later in this chapter. As can be seen, the proportion of residents in the taller buildings is more limited and results presented need to be assessed in this light.
- 8 The schemes in which interviewees lived were also grouped by 'development type'. This follows the broad typologies identified in the main report and uses 'courtyard', single/multiple blocks' and 'lower rise' (houses and flats in buildings 4 or fewer storeys). The categories are a subjective judgement on

⁹ Throughout this chapter, percentages may not add to 100% because of rounding errors

the part of the research team and the results shown for these categories need to be seen in this light. In terms of the proportion found in each group, they were:

- 53% lived in a courtyard development;
- 33% lived in a single/multiple block;
- 14% lived in a low rise development.

Tenure

- 12% lived in 'affordable home ownership' e.g. shared ownership;
- 28% lived in affordable rent (or social rent);
- 11% were owner occupiers (with/without a mortgage);
- 49% were private renters.

Main and second homes

- 97% this was the residents main/only home;
- 1% a second home;
- 2% student term time home.

Household types

- 9 The majority of residents lived in households without children but only 13% were single person households. The largest single group of households were those sharing with other adults. The household types of the residents are summarised in the table below.

Table 9.1: Household type of residents

Household type	%
Single person (and no others)	13
Couple (and no others)	20
Lone parent with dependent child(ren)	10
Couple with dependent child(ren)	27
Group of adults, either related or unrelated	30

- 10 Nearly half of private renters (46%) were living in groups of adults and 49% of those living at 15 storeys or higher were adults sharing.
- 11 Families with children were more likely to be found in affordable rented homes. 75% of households living in affordable rent were 'family' residents compared with 35% of homeowners and 14% in market / private rent. Most families (23% of all households) had 1 or 2 children but 10% of all households were larger families with three or more children.

Age of residents

- 12 Residents were predominately young people with 60% aged 16 to 35 years. This is a very different picture from the London average which (excluding children under 16) was 41% at the 2011 Census¹⁰.

Table 9.2: Age of residents

Age in years	%
Aged 16-24	19
Aged 25-34	42
Aged 35-44	23
Aged 45-54	9
Aged 55-64	3
Aged 65-74	3
Aged 75 or over	1

- 13 There is an important relationship between the age of resident and tenure with a high percentage of residents being young private renters.

Table 9.3: Age of residents and tenure

Age in years	Tenure		
	Private rent	Affordable rent	Owner occupied
	%	%	%
Aged 16-24	26	15	9
Aged 25-34	50	28	40
Aged 35-44	16	30	29
Aged 45-54	4	20	8
Aged 55-64	2	6	3
Aged 65-74	2	.	9
Aged 75 or over	.	1	1
Total	100	100	100

Note: Owner occupied includes equity share/shared ownership

¹⁰ The Census age bands are from 15 to 34 so the comparison is not exact and should be treated as a guideline.

- 14 A similar relationship exists between age of resident and the height of the building they live in. This ties in with the relationship between age and tenure as private rented units are heavily represented in tall buildings.

Table 9.4: Age of resident and storey of building in which live

Age in years	Storey height				
	House	4 or less	5 to 7	8 to 14	15 +
	%	%	%	%	%
Aged 16-24	.	18	17	15	32
Aged 25-34	22	21	36	53	55
Aged 35-44	33	34	28	26	6
Aged 45-54	28	8	12	5	6
Aged 55-64	.	8	4	2	2
Aged 65-74	11	10	3	.	.
Aged 75 or over	6	.	1	.	.
Total	100	100	100	100	100

Note: Owner occupied includes equity share/shared ownership

- 15 Those living in the taller buildings are predominately aged under 35 years and a third of those living in buildings of 15+ storeys are under 25 years. The lower the building, the more mixed the age groups of occupiers but it is important to note the small samples sizes for some of these groups and that these results (as with the survey generally) need to be taken as indicative of real world trends rather than a definitive set of values.

Employment status

- 16 The table below shows employment status and how this varies by the height of the building in which residents live. Employment status is relevant in itself but is also a surrogate (albeit a rather crude surrogate) for the likelihood people are in their home during the working day.

Table 9.5: Employment status and storey height of building

Employment status	Storey height					
	All	House	4 or less	5 to 7	8 to 14	15 +
		%	%	%	%	%
Full-time paid work (31 or more hours per week)	71	61	64	63	82	78
Part-time paid work (Up to 30 hours per week)	12	11	22	15	15	2
Unemployed or currently looking for work	1	.	2	.	.	2
Retired from paid work	3	17	8	3	.	.
Student in full-time education	6	6	.	3	.	18
Looking after the family/home	7	6	4	16	.	.
Long-term sick or disabled	1	.	.	.	3	.
Total		100	100	100	100	100

- 17 The majority of residents in the survey are in part or full time employment (83%). This tends to increase with building height but those living in the tallest buildings include a proportion of students. The results of the above analysis need to be treated with particular caution as some findings (e.g. 16% looking after family/home and living in storeys 5 to 7) are likely influenced by the particular schemes used in the survey.

Length of time at this address

- 18 The schemes used for the survey were all relatively new developments and so it was expected that residents would not have lived at their current address for more than 3 to 5 years. This was confirmed by the survey which found that almost a half (46%) had lived at their current address for less than 2 years. Length of residence varies significantly with tenure with 76% of private renters living at their current address for less than two years – while those in affordable rent and owners were more likely to be longer term residents.

Table 9.6: Time at current address by tenure

Time at this address	Tenure		
	Private rent	Affordable rent	Owner occupied
	%	%	%
Less than 6 months	29	6	2
6 months but less than 12 months	21	8	11
12 months but less than 2 years	26	5	3
2 years but less than 3 years	15	5	26
3 years or longer	9	76	58
Total	100	100	100

- 19 There was also a significant difference in length of residence between younger and older residents. Taking those aged 35 and older and those 34 and younger as two broad groups - 64% of younger residents had lived at their current address for less than 2 years while the equivalent figure for those 35+ years was 18%.

Ethnic group

- 20 Residents surveyed were asked to describe their ethnic group. A wide range of groups were represented and those with more than 1% of residents are shown in the table below.

Table 9.7: Ethnic group of residents

Ethnic group	%
White - English/Welsh/Scottish/Northern Irish/British	36
White - Any other White background	19
Asian/Asian British - Indian	9
Asian/Asian British - Bangladeshi	12
Asian/Asian British - Chinese	2
Asian/Asian British - Any other Asian background	8
Black/African/Caribbean/Black British - African	6
Black/African/Caribbean/Black British - Caribbean	2
Other ethnic group - Any other ethnic group	2

Satisfaction with current home

- 21 Residents were asked how satisfied or dissatisfied they were with their home as a place to live. 80% of residents interviewed were very or fairly satisfied. There is some variation in the percentage answering fairly/very satisfied with building height but without a clear trend however, those who were 'very satisfied' decreases with building height but the picture is not clear cut.

Table 9.8: Satisfaction with home and by height of building

Satisfied/dissatisfied	Storey height					
	All	House	4 or less	5 to 7	8 to 14	15 +
	%	%	%	%	%	%
Very satisfied	48	67	64	48	53	33
Fairly satisfied	31	22	26	20	35	49
<i>Very or fairly satisfied combined</i>	<i>80</i>	<i>89</i>	<i>90</i>	<i>68</i>	<i>88</i>	<i>82</i>
Neither satisfied nor dissatisfied	14	11	6	24	5	14
Fairly dissatisfied	5	.	.	8	7	4
Very dissatisfied	0	.	4	.	.	.
Total		100	100	100	100	100

- 22 Younger residents (34 and under) are more likely to be satisfied with their home than older people – 85% being fairly/very satisfied compared with 72% of those aged 35+.
- 23 The most significant variation in satisfaction was between residents in different tenures. Those living in affordable rent were the least likely group to be fairly/very satisfied – down to 59% compared with c85/90% across the other tenures.
- 24 Levels of satisfaction were also linked to the development typologies identified for this study. Those living in ‘courtyard’ style developments are more diverse in their views than in the other two development types – ‘courtyard’ residents had the highest percentage that were ‘very satisfied’ and the highest percentage that were fairly/very dissatisfied. Residents in the lower rise developments were the most satisfied overall but the rating of those in single/multiple blocks is still 86% fairly/very satisfied.

Table 9.9: Satisfaction with home and development type

Satisfied/dissatisfied	Development type			
	All	Courtyard Developments	Single/ Multiple Block Developments	Lower Rise Developments
	%	%	%	%
Very satisfied	48	52	37	64
Fairly satisfied	31	21	49	29
<i>Very or fairly satisfied combined</i>	80	73	86	93
Neither satisfied nor dissatisfied	14	19	10	7
Fairly dissatisfied	5	8	4	.
Very dissatisfied	0	1	.	.
Total		100	100	100

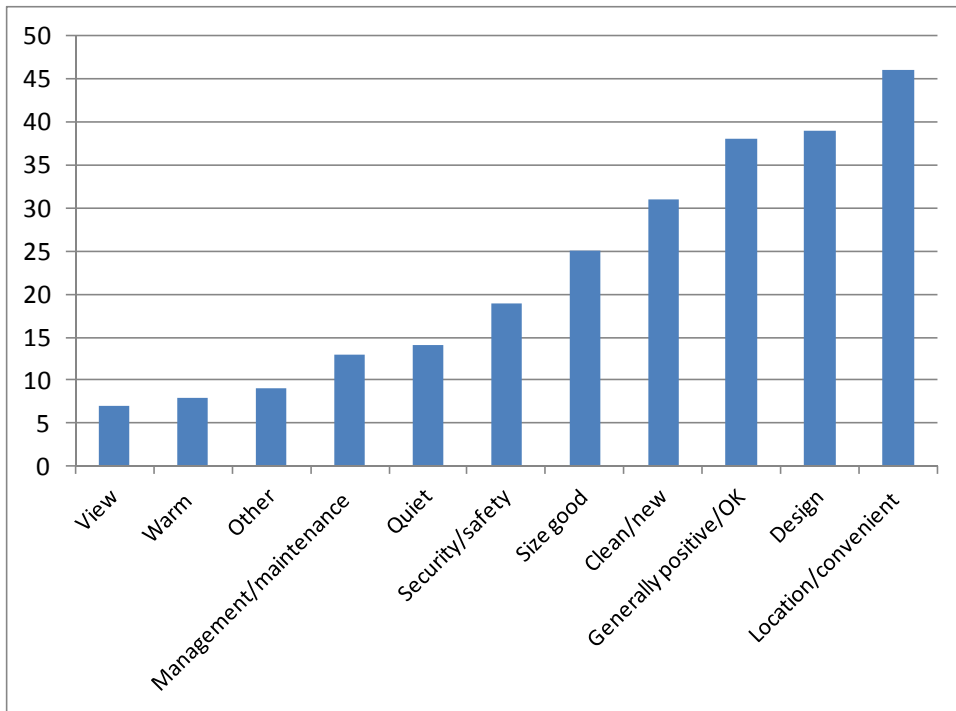
- 25 Residents were asked to give more details about what they liked and disliked about their home –
- What are the main reasons for you being satisfied with your home?
 - What are the main reasons for you being dissatisfied with your home?
- 26 170 of those surveyed gave a reason for being ‘satisfied with your home’. Some gave more than one reason and 257 separate comments were recorded. These have been grouped together under the following

headings with examples of specific comments shown alongside to illustrate the type of comments given.

Good for children	
Area	<i>The area is very lively and beautiful</i>
Comfortable	
Concierge	
Community	<i>Very good neighbours, easy to go shopping.</i>
View	
Warm	<i>It's nice and warm</i>
Management/maintenance of building	<i>The service, the front desk,whole experiences of people being helpful. It's a nice building and facilities are being maintained.</i>
Quiet	<i>It's a very new flat and very quiet and peaceful too.</i>
Security/safety	<i>The whole area is very safe.</i>
Size good	<i>Good quality and size.</i>
Clean/new	<i>Comfortableeverything (is) new.</i>
Generally positive/OK	<i>It's a beautiful estate, always well cleaned. No issues apart from parking.</i>
Design	<i>Nicely put together, good build quality</i>
Location/convenient for facilities	<i>Love the whole lot, the positioning, ...shops, and station.</i>
Other	

- 27 Location/convenience was mentioned as a reason for satisfaction more often than any other reason but 'design' and 'generally positive' were nearly as frequently mentioned. All reasons with 5 or more mentions are shown in the chart below.

Table 9.10: Reasons for being satisfied with home



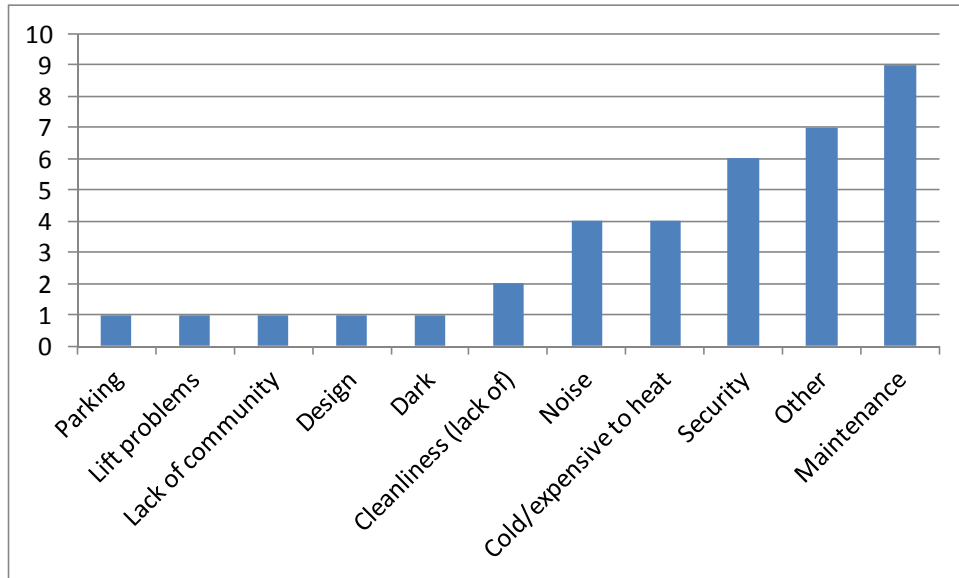
28 Reasons for being dissatisfied with the home were mentioned much less often – with 37 mentions in total. These have been grouped as shown in the table below, again illustrated with residents’ comments.

Cleanliness (lack of)	
Cold/expensive to heat	<i>It gets quite cold. sometimes very, very cold.</i>
Lack of community	
Dark	
Design	
Maintenance	<i>Some internal issues need sorting. Lovely flat but poor quality. leaking windows, draft, water leaks.</i>
Noise	
Parking	<i>No issues apart from parking.</i>
Security	<i>It's not a very safe area Things get stolen from my balcony too often.</i>
Lift problems	
Other	<i>New and clean however the water is very hard, also no communal area outside.</i>

29 No single item was mentioned by more than 9 residents. The most frequent issue (with 9 mentions) was maintenance related. Security was also a concern with 6 mentions and the issues here were a mix of a general sense of insecurity about the area and specific comments about burglary (from

vehicles, of cycles or the property itself) All (groups of) reasons given (down to 1 mention) are shown in the chart below.

Table 9.11: Reasons for being dissatisfied with home



Satisfaction with development as a whole

30 Residents were then asked about satisfaction/dissatisfaction with the ‘**development as a whole**’. Satisfaction levels with the development closely mirrored the results for the home with 80% of residents interviewed being very or fairly satisfied. However, there is evidence that residents in the tallest buildings are less satisfied with the development as a whole than those living in lower rise developments. The limitations of the survey must be taken into account here but there is a clear signal that, although residents in the tall buildings surveyed like their home, they are less satisfied overall with the development they live in

Table 9.12: Satisfaction with the development as whole

Satisfied/dissatisfied	Storey height					
	All	House	4 or less	5 to 7	8 to 14	15 +
	%	%	%	%	%	%
Very satisfied	40	33	48	49	49	19
Fairly satisfied	39	33	36	33	41	51
<i>Very or fairly satisfied combined</i>	80	67	84	82	89	71
Neither satisfied nor dissatisfied	12	6	10	18	7	10
Fairly dissatisfied	7	17	4	.	2	20
Very dissatisfied	1	11	2	.	2	.
Total		100	100	100	100	100

- 31 As with satisfaction with the home, younger residents (34 and under) are more likely to be satisfied with their development than older people – 85% being fairly/very satisfied compared with 72% of those aged 35+.
- 32 And again there are different levels of satisfaction with the development as a whole between those living in different tenures. Residents in affordable rent were the least likely group to be fairly/very satisfied with the development – down to 73% compared with c80/85% across the other tenures.
- 33 Levels of satisfaction were also linked to the development typologies identified for this study. But where residents in ‘courtyard’ style developments expressed very diverse views about their home, they rated the development as a whole more uniformly and it is this development typology that has the highest percentage fairly/very satisfied (85%).

Table 9.13: Satisfaction with the development as whole and development type

Satisfied/dissatisfied	Development type			
	All	Courtyard Developments	Single/ Multiple Block Developments	Lower Rise Developments
	%	%	%	%
Very satisfied	40	52	22	40
Fairly satisfied	39	34	51	33
<i>Very or fairly satisfied combined</i>	80	85	73	73
Neither satisfied nor dissatisfied	12	14	11	8
Fairly dissatisfied	7	1	16	8
Very dissatisfied	1	.	.	10
Total	100	100	100	100

Different aspects of the accommodation

- 34 A series of questions were asked about different aspects of living in the property. The results for each are summarised below, picking up where any group of residents has a different view from the overall picture.
- 35 **Privacy** - *Thinking about your home to what extent do you agree or disagree that... Your home has a sense of privacy away from the other properties?*
- 93% strongly or tend to agree with the statement;
 - Percentage falls to 88% and 89% respectively for those living in lower rise development (4 or fewer storeys) and those living in affordable rent;
 - Highest levels of satisfaction found with residents in taller buildings (over 15 storeys) at 100% and in single/multiple blocks (99%).
- 36 **Daylight** - *Thinking about your home to what extent do you agree or disagree that... There is sufficient daylight in your home?*
- 91% strongly or tend to agree with the statement;
 - Percentage falls to 70% for those living in lower rise development (4 or fewer storeys);
 - For those residents that did not agree that there is sufficient daylight in their home (9% of all)¹¹, the issue was of sufficient concern for 95% of them, so that they regularly need to turn on their lights in living

¹¹ Includes those that neither agreed nor disagreed, and those that tend or strongly disagree

rooms/kitchen/bedroom during the day. Those living in the tallest buildings surveyed (15+ storeys) were least likely to say this but noting the very small sample size here).

37 **Warmth in the home** - *Thinking about your property to what extent do you experience problems with... Being able to keep your home warm enough?*

- 68% said it was not a problem, 17% said that it was a problem but not serious and 15% had a serious problem keeping the home warm enough;
- The most likely group to say they had a problem/serious problem were living in affordable rent (49%) or in schemes of 8 to 14 storeys (54%). The data suggests that keeping the home warm enough is a function of wealth rather than being related to building type;
- Those residents who said they had a problem/serious problem keeping their home warm were asked to state the nature of the problem - 16 respondents referred again to the cold they experienced in their home, e.g.
".....it's always cold, cold air, cold walls."
".....it gets very cold during winter."
- Poor quality/draughty windows (8 mentions) and cost of the heating (5 mentions) were the two other set of comments mentioned more than twice.

38 **Keeping the home cool enough** - *Thinking about your property to what extent do you experience problems with... Being able to keep your home cool enough?*

- 72% said it was not a problem, 20% that it was a problem but not serious and 8% had a serious problem keeping the home cool enough;
- The most likely group to say they had a problem/serious problem were living in the tallest buildings (15+ storeys) with 43% stating this was a (serious) problem for them. This links to the other high percentage of residents expressing a problem keeping their home cool - 41% in single/multiple block who stated this as a problem;
- Those residents who said they had a problem/serious problem keeping their home cool were asked to state the nature of the problem. There were fewer comments than about keeping the home warm but those that did comment (16 respondents in total) described the problem they faced in these sorts of terms e.g.
" too warm being high up, humidity.."
".....greenhouse effect, windows slow heat, windows don't open too high due to safety."
- 6 residents mentioned the need for air conditioning and another couple explained that they could not open their windows wide enough because of the height of their flat.

- 39 **Sense of community within the scheme** - *Thinking about this development to what extent do you agree or disagree that... There is a strong sense of community **within the development**?*
- 58% strongly or tend to agree with the statement and 31% disagreed with the statement;
 - Those least likely to feel a sense of community were living in the taller buildings (15+ storeys) where the percentage **not** feeling a sense of community rose to 60%;
 - Residents with the strongest sense of community in their development were living in the courtyard style development type where 76% stated they strongly or tend to agree with the statement about the sense of community;
 - Also expressing a positive sense of community were those living in affordable rent - where 68% stated they strongly or tend to agree with the statement about the sense of community. At the other end of the spectrum were those living in private rent where 51% said they strongly or tend to agree with the statement;
 - A very similar question asked was, "*Thinking about this development to what extent do you agree or disagree that... You feel part of the community within the development*" and again people living in courtyard style developments and affordable rent were more likely to agree with the statement than those living in taller buildings and in private rent;
 - Feeling part of a community within the development or that there is a strong sense of community varied little with the age of residents (using the broad categories of 35 and over and 34 and under).
- 40 **Sense of community within the wider area** - *Thinking about this development to what extent do you agree or disagree that... You feel part of the community within the wider area?*
- 53% strongly or tend to agree with the statement and 35% disagreed with the statement;
 - Those least likely to feel a part of the community within the wider area were living in the taller buildings (15+ storeys) where the percentage **not** feeling part of the wider community was at 68%. Again, this appears linked to the results for single/multiple blocks with 62% **not** feeling part of the wider community;
 - Residents with the strongest sense of community in their development were living in the courtyard style development type where 72% stated they strongly or tend to agree with the statement about feeling part of the wider community;
 - Again, also expressing a positive sense of community – this time with the wider area - were those living in affordable rent - where 67% stated they strongly or tend to agree with the statement about being part of the wider community. At the other end of the spectrum were those living in private rent where 47% said they strongly or tend to agree with the statement.

41 **Floor height preference** - *Is your apartment on your preferred floor, or would you rather have lived on a higher floor or on a lower floor?*
(Question not asked of those living in houses)

- The majority of residents (77%) were satisfied with the floor they were located on. If residents wanted an alternative, it was more likely to be at a higher storey (18%). Only 5% wanted to live on a lower floor;
- As a general rule, the taller the building currently lived in – the more likely residents are to want to live at a higher storey – so 36% of those in buildings of 15+ storeys wanted to live higher up.

Amenity space

42 Residents were asked about the amenity space available to them (for sole use or shared) and its importance to them. The following table sets out the survey results, showing how the type of space available varies with the height of building but that even at 15+ storeys 95% of residents said they had their own balcony.

Table 9.14: Private amenity space and number of storeys

Type of amenity space	All	Storey height				
		House	4 or less	5 to 7	8 to 14	15 +
	%	%	%	%	%	%
Yes - Own balcony	79	.	52	82	96	95
Yes - Own roof terrace	2	6
Yes - Own private garden	6	78	2	.	.	.
Yes - Access to communal balcony	1	.	.	1	.	2
Yes - Access to communal roof terrace	20	.	.	.	40	47
Yes - Access to communal private garden	20	.	3	30	8	31
Other	6	.	.	8	.	10
No	14	22	43	17	2	2

Notes:

Residents could give more than one answer e.g. have own balcony and have access to a communal private garden

'Other' mainly refers to access to a gym

43 The finding that 22% of residents living in a house/maisonette have no garden appears unreliable but may be explained by the proportion of residents in this group living in a maisonette (with no amenity space). Similarly, 43% of those

living in buildings of 4 or fewer storeys also have no private amenity space but this may be a reflection of the particular schemes in this group.

- 44 Residents in taller buildings usually have their own balcony and may also enjoy access to a communal roof terrace or communal private garden. The latter were available to about a quarter of both residents (23%) living in 'courtyard' type developments and in single/multiple blocks.
- 45 Residents were asked about the importance to 'you and your household' of the 'property's **private** outside space'. Overall, 78% said it was very or fairly important and the remainder (22%) that it was not (particularly) important. Younger residents (34 and under), those living in private rent and those living in taller buildings (15+ storeys) attached the least importance to private amenity space and were the most likely to say that private amenity space was not (particularly) important (with relative percentages of 25%, 29%, 29%). Nevertheless, it is worth noting that even amongst these three groups, around 70/75% said it was important.
- 46 Residents who had access to some form of **shared space** were also asked about the importance to 'you and your household' of this. A very different picture emerges from that found with the private amenity space. Overall, only 42% of residents with access to shared space said it was fairly or very important to them and 58% said it was not. It was of least importance to those living in private rent, those living in taller buildings (15+ storeys) and those living in single/multiple blocks – with relative percentages for these groups being 76%, 74% and 69%. We might have expected that shared space would be more important to those living in 'courtyard type' developments (with ready access to this type of space) and the survey confirms this with 65% saying it was fairly/very important to them but again it must be recognised that the sample size is too small to be entirely reliable here.

Service charges

- 47 84% of those interviewed said they paid a service charge and 16% said they didn't. This includes a number of residents in tall buildings and/or private rent where we can be fairly certain there will be a service charge.
- 48 Of those that stated they paid a service charge, payments are as follows:

Service charge per month	% respondents
Less than £40 per month	7%
£40 but less than £80 per month	13%
£80 but less than £120 per month	26%
£120 but less than £200 per month	36%
£200 or more per month	18%

- 49 The above figures have a substantial caveat as they rely on a very small sub set of data. Most residents said they didn't know what they paid or that it was rolled up into their rent.

10 VIABILITY TESTING ASSUMPTIONS AND RESULTS

Build Costs for Taller Buildings

1. The main factors influencing development costs relate to height, and include issues in project development, fees, construction and programme/risk. Density is related to height, particularly for the highest and lowest densities, although as the discussion about the case studies earlier in this report shows, density can be delivered in different ways.
2. Tall buildings produce a concentration of development and then operational activity which may then produce greater impact on the environment to be assessed, such as transport issues, visual impact and daylight/sunlight impacts. The effect of these factors is to increase the risk of construction inflation, incur higher financing costs and therefore prejudice viability. There is also some suggestion that tall buildings located in existing communities take longer to get to the construction stage, as the planning approval process is usually extended, as a result of heightened public interest. In terms of developer decision making, these factors may weaken the internal rate of return in comparison with other, less risky projects, which may mean that the taller developments are less likely to be pursued.
3. It is likely that there will be higher professional fees for taller buildings¹²:
 - Additional impacts assessments and planning work may be needed to address acceptability issues;
 - There may be a need for additional expertise in relation to building specification;
 - The tallest buildings will often make use of a branded architect, which brings additional costs (although this can also apply to other forms of development);
 - Taller buildings are more likely to require one-off designs compared to lower buildings which are more likely to be able to take advantage of traditional/existing design.
4. The specification for tall buildings increases construction costs:
 - Some form of cooling equipment (particularly in the private sector) is likely to be the norm, increasing costs and reducing space efficiencies;
 - The need for additional lift shafts to service upper floors (e.g. 1-20 and 21+), with consequent space and plant implications has an impact on costs. Alternatively, super-fast lifts can be installed, although these will also have a cost premium;
 - Additional lifts may be installed to serve the penthouse only;
 - Intermediate plant floors will be required over 100m reducing the net area. Plant implications will include additional booster pumps and tanks for water services;
 - More expensive high pressure radiators may be required;

¹² Although some of these additional costs are not exclusive to tall buildings – some may apply to other forms of high density development.

- A sprinkler system will be required in lieu of a dry riser over 60m;
 - Environmental factors will increase costs (e.g. wind, heat gain);
 - Shared facilities will often be provided such as gym, leisure, concierge etc., in addition to any s106 requirements;
 - Height will dictate the structural design;
 - Height will also dictate construction techniques:
 - Increased amounts of Hi-performance, self-compacting concrete.
 - Use of post tensioning for a more flexible structural form and to minimise floor thickness and therefore reduce floor-floor heights; and blade columns in party walls to increase stability.
 - Logistics (crane strategy, welfare on/off site, vertical movement labour/materials). It is likely that a more expensive cladding will be required on higher buildings, e.g. brick cladding cannot be used over a certain height and developers will prefer more expensive glazed facades to optimise view from the apartments. Cladding for towers will be more expensive to withstand the higher wind loads;
 - Height also affects the lifting strategy, with taller buildings requiring more complex and often costlier lifting, especially where the site is constrained;
 - Welfare and working practices are also affected by height, with height adding to the time taken to reach the construction level.
5. Programme and risk are also affected by height. The longer programme required by a taller building affects cash flow, with a greater lag between incurring costs and receiving revenue. This compares with lower development where it is more likely that phasing can be used to complete and sell earlier phases while later phases are being constructed. The programme impacts from height will have some steps (e.g. every extra lift is one more week concrete pour etc.) as well as the expected additional time taken to construct additional storeys. As well as the planning risks noted earlier, the longer construction period brings risks of changing finance, market value and build cost factors.
6. For a given height, there are also cost efficiency factors that particularly affect tall buildings such as:
- Shape
 - Structural design (slenderness, wind loads)
 - Wall to floor ratio - the façade is a major cost driver; and different designs can have a significant impact on the quantity and quality of the façade in order to incorporate visual, environmental, performance and U/g-value requirements.
 - Nett to gross floor area is critically affected by height, with taller buildings requiring more unsaleable space. A review of the floor plans for a subset of the case studies has confirmed the net to gross ratios used in the earlier Building Standards and SHLAA viability work¹³,

¹³ GLA Housing Standards Review Viability Assessment, 2015; and GLA 2013 SHLAA Viability Assessment, 2014. Note that there may be substantial case by case variation and that the lowest and highest floors tend to have the most variance.

which showed that 1-5 storeys required approximately 15% circulation/non-saleable space; 6-15 storeys required approximately 20%; and 16 or more storeys 25%.

- Design, where repetition of floors is cheaper but more desirable designs will increase costs. The visual impact of taller buildings on the cityscape may mean that a more expensive design is required. Pre-fabrication helps cost efficiency but requires repetition.
 - Affordable Housing policy, where the provision of affordable housing in the same building as market housing may be less efficient as there are different finishes required for the different tenures as well as differing ability to support service charges. Including both tenures can therefore result in additional design and construction costs.
7. As a result of these specification requirements the cost of higher buildings may be 30-40% above lower development, although some of this may be mitigated by higher values on upper floors. As a result of the additional costs, it is likely that the highest buildings are likely to be developed in locations where there is the potential to achieve higher values and a significant amount of pre-sales.

Testing Assumptions

Market values

Figure 10.1 Values for 2 bed flats

Band	Oct 15 New Build Flat market sales	Oct 15 Top Quartile	Borough	Generic types and assumed new build flat value						
				High tower	Low rise high density	Low rise low density	High density infill	5-8 storey	13-14 storey	Tall tower
7	£4,500,000									
7	£2,750,000									
7	£2,026,517	£4,696,280	Westminster							
7	£1,878,755	£4,075,500	Kensington	£2,750,000	£2,750,000	£2,750,000	£2,750,000	£2,750,000	£2,750,000	£2,750,000
6	£1,090,892	£1,821,020	City							
6	£1,004,730	£1,998,358	Camden							
6	£831,225	£1,534,770	Hammersmith	£975,000	£975,000	£975,000	£975,000	£975,000	£975,000	£975,000
5	£660,856	£1,252,921	Southwark							
5	£633,310	£1,379,496	Lambeth							
5	£621,822	£1,056,848	Wandsworth							
5	£555,460	£1,140,546	Barnet							
5	£526,666	£789,817	Islington	£600,000	£600,000	£600,000	£600,000	£600,000	£600,000	£600,000
4	£525,468	£904,185	Kingston							
4	£514,316	£870,497	Hounslow							
4	£507,432	£858,420	Ealing							
4	£499,613	£736,793	Hackney							
4	£497,374	£784,602	Richmond							
4	£476,978	£806,156	Tower							
4	£465,860	£719,288	Greenwich	£500,000	£500,000	£500,000	£500,000	£500,000	£500,000	£500,000
3	£412,466	£851,348	Harrow							
3	£410,323	£649,772	Merton							
3	£401,800	£639,107	Haringey							
3	£386,346	£636,599	Enfield							

Band	Oct 15 New Build Flat market sales	Oct 15 Top Quartile	Borough	Generic types and assumed new build flat value						
				High tower	Low rise high density	Low rise low density	High density infill	5-8 storey	13-14 storey	Tall tower
3	£382,130	£528,670	Lewisham							
3	£377,342	£578,090	Brent							
3	£355,388	£510,084	Hillingdon		£400,000	£400,000	£400,000	£400,000	£400,000	£400,000
2	£340,649	£458,027	Newham							
2	£326,910	£448,513	Waltham							
2	£308,263	£466,400	Bromley							
2	£301,920	£433,848	Croydon							
2	£287,805	£431,323	Redbridge							
2	£276,863	£349,647	Sutton		£300,000	£300,000	£300,000	£300,000	£300,000	£300,000
1	£224,927	£292,515	Havering							
1	£202,213	£252,532	Bexley							
1	£189,670	£216,644	Barking							
1	£160,000									
1	£150,000				£175,000	£175,000	£175,000	£175,000		

Figure 10.2: Values for 1 bed flats

Band	Borough	Generic types						
		High tower	Low rise high density	Low rise low density	High density infill	5-8 storey	13-14 storey	Tall tower
7		X						
7		X						
7	WESTMINSTER	X						
7	KENSINGTON	£2,050,000						
6	CITY	X						X
6	CAMDEN	X						X
6	HAMMERSMITH	£730,000						£730,000
5	SOUTHWARK	X			X	X	X	X
5	LAMBETH	X			X	X	X	X
5	WANDSWORTH	X			X	X	X	X
5	BARNET	X			X	X	X	X
5	ISLINGTON	£450,000			£450,000	£450,000	£450,000	£450,000
4	KINGSTON		X		X	X	X	X
4	HOUNSLOW		X		X	X	X	X
4	EALING		X		X	X	X	X
4	HACKNEY		X		X	X	X	X
4	RICHMOND		X		X	X	X	X
4	TOWER		X		X	X	X	X
4	GREENWICH		£370,000		£370,000	£370,000	£370,000	£370,000
3	HARROW		X	X	X	X	X	
3	MERTON		X	X	X	X	X	
3	HARINGEY		X	X	X	X	X	
3	ENFIELD		X	X	X	X	X	
3	LEWISHAM		X	X	X	X	X	
3	BRENT		X	X	X	X	X	
3	HILLINGDON		£300,000	£300,000	£300,000	£300,000	£300,000	
2	NEWHAM		X	X		X		
2	WALTHAM		X	X		X		
2	BROMLEY		X	X		X		
2	CROYDON		X	X		X		
2	REDBRIDGE		X	X		X		
2	SUTTON		£220,000	£220,000		£220,000		
1	HAVERING			X		X		
1	BEXLEY			X		X		
1	BARKING			X		X		
1				X		X		
1				£130,000		£130,000		

Figure 10.3: Values for 3 bed terraces (90 sq m)

Band	Boroughs	Values
7	WESTMINSTER	
7	KENSINGTON	£3,700,000
6	CITY	
6	CAMDEN	
6	HAMMERSMITH	£1,300,000
5	SOUTHWARK	
5	LAMBETH	
5	WANDSWORTH	
5	BARNET	
5	ISLINGTON	£800,000
4	KINGSTON	
4	HOUNSLOW	
4	EALING	
4	HACKNEY	
4	RICHMOND	
4	TOWER	
4	GREENWICH	£670,000
3	HARROW	
3	MERTON	
3	HARINGEY	
3	ENFIELD	
3	LEWISHAM	
3	BRENT	
3	HILLINGDON	£535,000
2	NEWHAM	
2	WALTHAM	
2	BROMLEY	
2	CROYDON	
2	REDBRIDGE	
2	SUTTON	£400,000
1	HAVERING	
1	BEXLEY	
1	BARKING	£235,000

Figure 10.4: Market Dwelling mix

	2b3.5p 67.17 sq m flat (LDD avg)	3b4p 90 sq m house
Generic typology		
High tower	100%	
Low rise high density	100%	
Low rise low density	20%	80%
High density infill	100%	
5-8 storey	100%	
13-14 storey	100%	
Tall tower	100%	

Affordable Housing

Each value point iteration of each case study is tested at 50% and 35% affordable housing.

Tenure – Affordable Rent 60% and Shared Ownership 40% of the AH share.

Figure 10.5: Affordable dwelling mix

Generic Case study	Affordable rent 1b2p 50sq m flat	Affordable rent 2b4p 70 sq m flat	Affordable rent 3b6p 95 sq m flat	Affordable rent 3b5p terrace 99 sq m	Shared ownership 1b2p 50 sq m	Shared ownership 2b3.5p 65.02 sq m flat (GLA AH Dataset)
High tower	20%	20%	20%	0%	0%	40%
Low rise high density	15%	20%	25%	0%	0%	40%
Low rise low density	10%	20%	0%	30%	20%	20%
High density infill	20%	20%	20%	0%	0%	40%
5-8 storey	20%	20%	20%	0%	0%	40%
13-14 storey	20%	20%	20%	0%	0%	40%
Tall tower	20%	20%	20%	0%	0%	40%
<i>Rows sum to 100%</i>						

Affordable Housing Values and Costs**Figure 10.6: Affordable rents vary by Borough Value Band and dwelling size.**

Bed rooms	Adjusted AR rents						
	Band 7	Band 6	Band 5	Band 4	Band 3	Band 2	Band 1
1	£120	£120	£130	£170	£160	£130	£120
2	£160	£170	£180	£220	£210	£170	£160
3+	£210	£220	£230	£250	£250	£230	£210

Figure 10.7: Service charges vary by Borough Value Band and dwelling size

Bed rooms	Band 7	Band 6	Band 5	Band 4	Band 3	Band 2	Band 1
1	£31	£17	£7	£5	£0	£0	£0
2	£34	£22	£20	£10	£0	£0	£0
3+	£37	£28	£23	£10	£1	£0	£0

Figure 10.8: Percentage share and rental charge on unsold equity varies by Borough Value Band and dwelling size

Bed rooms	Band 7	Band 6	Band 5	Band 4	Band 3	Band 2	Band 1
Percentage share							
1	25%	30%	35%	40%	45%	50%	50%
2	25%	30%	35%	40%	45%	50%	50%
3+	25%	30%	35%	40%	45%	50%	50%
Rental charge on unsold equity							
1	2.00%	2.00%	2.30%	2.50%	2.70%	2.70%	2.90%
2	2.00%	2.00%	2.30%	2.50%	2.70%	2.70%	2.90%
3+	2.00%	2.00%	2.30%	2.50%	2.70%	2.70%	2.90%

For rental properties.

Management and maintenance	6% of annual affordable rent
Voids/bad debts	3.00%
Repairs reserve	In capitalisation rate
Capitalisation	5.5%
<i>For shared ownership</i>	
Capitalisation	5.5%

Figure 10.9: Dwelling sizes

Type	Sq m	size	
Market flats	37	1b1p	GLA space standards
	50	1b2p	GLA space standards
	61	2b3p	GLA space standards
	67.17	2b3.5p	LDD avg
	70	2b4p	GLA space standards
	74	3b4p	GLA space standards
	95	3b6p	GLA space standards
Market Houses	79	2b4p	GLA space standards
	90	3b4p	GLA space standards
	121	4b7p	GLA space standards
AR flats	37	1b1p	GLA space standards
	50	1b2p	GLA space standards
	61	2b3p	GLA space standards
	70	2b4p	GLA space standards
	73.51	2b3.5p	GLA AH database
	74	3b4p	GLA space standards
	95	3b6p	GLA space standards
AR houses	99	3b5p	GLA space standards
s/o flats	39	1b1p	GLA space standards
	50	1b2p	GLA space standards
	61	2b3p	GLA space standards
	65.02	2b3.5p	GLA AH dataset
	70	2b4p	GLA space standards
	74	3b4p	GLA space standards
	86	3b5p	GLA space standards
Bold text denotes dwelling sizes used			

Figure 10.10: Development costs

Type	Cost	
Build cost	See case study matrix	sq m includes external works and accessibility Varies by case study and location
Professional fees	8%-12%	8% for all except: Tall tower 10% High tower 12%
Finance	7%	of development costs (net of inflation)
Marketing fees	3%	of GDV
Developer return	20%	of GDV
Contractor return	6%	of build costs
Residual s106/278	£2,000	Per dwelling for children's play/informal greenspace/minor local transport
Site costs	£250,000 - £750,000	£250,000 for low rise high density and low rise low density, and £750,000 for the rest
Agents and legal	1.75%	

CIL**Figure 10.11: CIL rates**

Borough Band	CIL/sq m
7	£435
6	£240
5	£256
4	£154
3	£149
2	£107
1	£68

Figure 10.12: Benchmark Land Values

Borough Value Band	DCLG Land value estimates for policy appraisal 2015	GLA Housing Standards Viability Study 2015 benchmark land values (based upon CIL viability studies)			
		Highest	Medium high	Medium low	Low
7	£122,020,000	£74,390,000	£39,960,000	£15,830,000	£6,240,000
6	£75,100,000	£38,430,000	£21,300,000	£10,430,000	£3,750,000
5	£35,130,000	£20,040,000	£13,580,000	£7,960,000	£3,700,000
4	£24,680,000	£11,390,000	£5,950,000	£3,610,000	£2,230,000
3	£14,920,000	£6,540,000	£4,170,000	£2,610,000	£1,630,000
2	£13,340,000	£6,200,000	£3,360,000	£1,920,000	£1,740,000
1	£8,430,000	£2,720,000	£2,290,000	£2,070,000	£1,510,000

8. Some of the specific case studies include other uses as minority components of the housing-led schemes, mainly retail but also some office and nursery

use. The inclusion of these non-residential elements in the specific case studies responds to the characteristics of the location and surrounding area, rather than being a fundamentally necessary part of that type of development. Including these uses in some generic typologies but not others may reduce the clarity about the viability results for different schemes. Therefore, non-residential uses such as retail and offices have not been included in the viability testing.

Typology Characteristics

Figure 10.13: Typology characteristics summarised

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
High tower	50% AH Band 7	Single tower	300	45	0.25	1200	20,427	6,809	£4,330	300	£750,000
High tower	35% AH Band 7	Single tower	300	45	0.25	1200	20,344	6,781	£4,430	300	£750,000
High tower	50% AH Band 6	Single tower	300	45	0.25	1200	20,427	6,809	£4,000	300	£750,000
High tower	35% AH Band 6	Single tower	300	45	0.25	1200	20,344	6,781	£4,040	300	£750,000
High tower	50% AH Band 5	Single tower	300	45	0.25	1200	20,427	6,809	£3,810	300	£750,000
High tower	35% AH Band 5	Single tower	300	45	0.25	1200	20,344	6,781	£3,810	300	£750,000
High tower	50% AH Band 4	Single tower	300	45	0.25	1200	20,427	6,809	£3,740	300	£750,000
High tower	35% AH Band 4	Single tower	300	45	0.25	1200	20,344	6,781	£3,740	300	£750,000
High tower	50% AH	Single tower	300	45	0.25	1200	20,427	6,809	£3,660	300	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
	Band 3										
High tower	35% AH Band 3	Single tower	300	45	0.25	1200	20,344	6,781	£3,660	300	£750,000
High tower	50% AH Band 2	Single tower	300	45	0.25	1200	20,427	6,809	£3,590	300	£750,000
High tower	35% AH Band 2	Single tower	300	45	0.25	1200	20,344	6,781	£3,590	300	£750,000
High tower	50% AH Band 1	Single tower	300	45	0.25	1200	20,427	6,809	£3,480	300	£750,000
High tower	35% AH Band 1	Single tower	300	45	0.25	1200	20,344	6,781	£3,480	300	£750,000
Low rise high density	50% AH Band 7	2 blocks	50	4	0.33	150	3,461	611	£2,890	76	£250,000
Low rise high density	35% AH Band 7	2 blocks	50	4	0.33	150	3,430	605	£2,950	76	£250,000
Low rise high density	50% AH Band 6	2 blocks	50	4	0.33	150	3,461	611	£2,680	76	£250,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Low rise high density	35% AH Band 6	2 blocks	50	4	0.33	150	3,430	605	£2,720	76	£250,000
Low rise high density	50% AH Band 5	2 blocks	50	4	0.33	150	3,461	611	£2,550	76	£250,000
Low rise high density	35% AH Band 5	2 blocks	50	4	0.33	150	3,430	605	£2,550	76	£250,000
Low rise high density	50% AH Band 4	2 blocks	50	4	0.33	150	3,461	611	£2,500	76	£250,000
Low rise high density	35% AH Band 4	2 blocks	50	4	0.33	150	3,430	605	£2,500	76	£250,000
Low rise high density	50% AH Band 3	2 blocks	50	4	0.33	150	3,461	611	£2,450	76	£250,000
Low rise high density	35% AH Band 3	2 blocks	50	4	0.33	150	3,430	605	£2,450	76	£250,000
Low rise high density	50% AH Band 2	2 blocks	50	4	0.33	150	3,461	611	£2,400	76	£250,000
Low rise high density	35% AH Band 2	2 blocks	50	4	0.33	150	3,430	605	£2,400	76	£250,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Low rise high density	50% AH Band 1	2 blocks	50	4	0.33	150	3,461	611	£2,330	76	£250,000
Low rise high density	35% AH Band 1	2 blocks	50	4	0.33	150	3,430	605	£2,330	76	£250,000
Low rise low density	50% AH Band 7	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£2,300	84	£250,000
Low rise low density	35% AH Band 7	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£2,460	84	£250,000
Low rise low density	50% AH Band 6	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£2,220	84	£250,000
Low rise low density	35% AH Band 6	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£2,380	84	£250,000
Low rise low density	50% AH Band 5	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£2,040	84	£250,000
Low rise low density	35% AH Band 5	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£2,150	84	£250,000
Low rise low density	50% AH Band 4	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£2,000	84	£250,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Low rise low density	35% AH Band 4	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£2,110	84	£250,000
Low rise low density	50% AH Band 3	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£1,770	84	£250,000
Low rise low density	35% AH Band 3	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£1,840	84	£250,000
Low rise low density	50% AH Band 2	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£1,510	84	£250,000
Low rise low density	35% AH Band 2	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£1,510	84	£250,000
Low rise low density	50% AH Band 1	Terraced houses and flats	100	2-3	2.00	50	7,857	1,387	£1,480	84	£250,000
Low rise low density	35% AH Band 1	Terraced houses and flats	100	2-3	2.00	50	8,063	1,423	£1,480	84	£250,000
High density infill	50% AH Band 7	Single block	20	7	0.03	800	1,362	340	£2,770	61	£750,000
High density infill	35% AH Band 7	Single block	20	7	0.03	800	1,356	339	£2,830	61	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
High density infill	50% AH Band 6	Single block	20	7	0.03	800	1,362	340	£2,570	61	£750,000
High density infill	35% AH Band 6	Single block	20	7	0.03	800	1,356	339	£2,600	61	£750,000
High density infill	50% AH Band 5	Single block	20	7	0.03	800	1,362	340	£2,450	61	£750,000
High density infill	35% AH Band 5	Single block	20	7	0.03	800	1,356	339	£2,450	61	£750,000
High density infill	50% AH Band 4	Single block	20	7	0.03	800	1,362	340	£2,400	61	£750,000
High density infill	35% AH Band 4	Single block	20	7	0.03	800	1,356	339	£2,400	61	£750,000
High density infill	50% AH Band 3	Single block	20	7	0.03	800	1,362	340	£2,350	61	£750,000
High density infill	35% AH Band 3	Single block	20	7	0.03	800	1,356	339	£2,350	61	£750,000
High density infill	50% AH Band 2	Single block	20	7	0.03	800	1,362	340	£2,300	61	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
High density infill	35% AH Band 2	Single block	20	7	0.03	800	1,356	339	£2,300	61	£750,000
High density infill	50% AH Band 1	Single block	20	7	0.03	800	1,362	340	£2,230	61	£750,000
High density infill	35% AH Band 1	Single block	20	7	0.03	800	1,356	339	£2,230	61	£750,000
5-8 storey	50% AH Band 7	Single block	200	8	0.40	500	13,618	3,404	£3,200	101	£750,000
5-8 storey	35% AH Band 7	Single block	200	8	0.40	500	13,563	3,391	£3,260	101	£750,000
5-8 storey	50% AH Band 6	Single block	200	8	0.40	500	13,618	3,404	£2,980	101	£750,000
5-8 storey	35% AH Band 6	Single block	200	8	0.40	500	13,563	3,391	£3,010	101	£750,000
5-8 storey	50% AH Band 5	Single block	200	8	0.40	500	13,618	3,404	£2,860	101	£750,000
5-8 storey	35% AH Band 5	Single block	200	8	0.40	500	13,563	3,391	£2,860	101	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
5-8 storey	50% AH Band 4	Single block	200	8	0.40	500	13,618	3,404	£2,800	101	£750,000
5-8 storey	35% AH Band 4	Single block	200	8	0.40	500	13,563	3,391	£2,800	101	£750,000
5-8 storey	50% AH Band 3	Single block	200	8	0.40	500	13,618	3,404	£2,740	101	£750,000
5-8 storey	35% AH Band 3	Single block	200	8	0.40	500	13,563	3,391	£2,740	101	£750,000
5-8 storey	50% AH Band 2	Single block	200	8	0.40	500	13,618	3,404	£2,690	101	£750,000
5-8 storey	35% AH Band 2	Single block	200	8	0.40	500	13,563	3,391	£2,690	101	£750,000
5-8 storey	50% AH Band 1	Single block	200	8	0.40	500	13,618	3,404	£2,600	101	£750,000
5-8 storey	35% AH Band 1	Single block	200	8	0.40	500	13,563	3,391	£2,600	101	£750,000
13-14 storey	50% AH Band 7	Single block	150	13	0.15	1000	10,213	2,553	£3,540	99	£250,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
13-14 storey	35% AH Band 7	Single block	150	13	0.15	1000	10,172	2,543	£3,600	99	£250,000
13-14 storey	50% AH Band 6	Single block	150	13	0.15	1000	10,213	2,553	£3,320	99	£250,000
13-14 storey	35% AH Band 6	Single block	150	13	0.15	1000	10,172	2,543	£3,350	99	£250,000
13-14 storey	50% AH Band 5	Single block	150	13	0.15	1000	10,213	2,553	£3,190	99	£250,000
13-14 storey	35% AH Band 5	Single block	150	13	0.15	1000	10,172	2,543	£3,190	99	£250,000
13-14 storey	50% AH Band 4	Single block	150	13	0.15	1000	10,213	2,553	£3,130	99	£250,000
13-14 storey	35% AH Band 4	Single block	150	13	0.15	1000	10,172	2,543	£3,130	99	£250,000
13-14 storey	50% AH Band 3	Single block	150	13	0.15	1000	10,213	2,553	£3,060	99	£250,000
13-14 storey	35% AH Band 3	Single block	150	13	0.15	1000	10,172	2,543	£3,060	99	£250,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
13-14 storey	50% AH Band 2	Single block	150	13	0.15	1000	10,213	2,553	£3,000	99	£250,000
13-14 storey	35% AH Band 2	Single block	150	13	0.15	1000	10,172	2,543	£3,000	99	£250,000
13-14 storey	50% AH Band 1	Single block	150	13	0.15	1000	10,213	2,553	£2,910	99	£250,000
13-14 storey	35% AH Band 1	Single block	150	13	0.15	1000	10,172	2,543	£2,910	99	£250,000
Tall tower	50% AH Band 7	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,690	150	£750,000
Tall tower	35% AH Band 7	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,790	150	£750,000
Tall tower	50% AH Band 6	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,380	150	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Tall tower	35% AH Band 6	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,420	150	£750,000
Tall tower	50% AH Band 5	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,200	150	£750,000
Tall tower	35% AH Band 5	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,200	150	£750,000
Tall tower	50% AH Band 4	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,140	150	£750,000
Tall tower	35% AH Band 4	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,140	150	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Tall tower	50% AH Band 3	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,070	150	£750,000
Tall tower	35% AH Band 3	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,070	150	£750,000
Tall tower	50% AH Band 2	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£3,010	150	£750,000
Tall tower	35% AH Band 2	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£3,010	150	£750,000
Tall tower	50% AH Band 1	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,427	6,809	£2,920	150	£750,000

Typology	Ah% and Value Band	Description	Dwgs	Storeys	Site ha	dph	m2 resi units	m2 circulation	Build £/m2	Development period weeks	Demolition cost/ha
Tall tower	35% AH Band 1	One block of 10 storeys (AH) and one block of 25 storeys (mkt)	300	25	0.33	900	20,344	6,781	£2,920	150	£750,000

Figure 10.14: Viability Testing Results

Higher Density Development in London

Generic Case study	Ah% and Value Band	Results	Results per ha	Benchmark Land Values £m/ha					Residual value less benchmark £m/ha				
		DCF Net Present Value £m	DCF Net Present Value £m/ha	DCLG	Building Standards/SHLAA Highest	Building Standards/SHLAA Medium high	Building Standards/SHLAA Medium low	Building Standards/SHLAA Low	DCLG	Building Standards/SHLAA Highest	Building Standards/SHLAA Medium high	Building Standards/SHLAA Medium low	Building Standards/SHLAA Low
High tower	50% AH Band 7	£249.5	£998.0	£122.02	£74.39	£39.96	£15.83	£6.24	£875.9	£923.6	£958.0	£982.1	£991.7
High tower	35% AH Band 7	£304.8	£1,219.2	£122.02	£74.39	£39.96	£15.83	£6.24	£1,097.2	£1,144.9	£1,179.3	£1,203.4	£1,213.0
High tower	50% AH Band 6	£36.3	£145.1	£75.10	£38.43	£21.30	£10.43	£3.75	£70.0	£106.7	£123.8	£134.7	£141.3
High tower	35% AH Band 6	£57.6	£230.6	£75.10	£38.43	£21.30	£10.43	£3.75	£155.5	£192.1	£209.3	£220.1	£226.8
High tower	50% AH Band 5	£-5.3	£-21.2	£35.13	£20.04	£13.58	£7.96	£3.70	£-56.3	£-41.3	£-34.8	£-29.2	£-24.9
High tower	35% AH Band 5	£5.9	£23.6	£35.13	£20.04	£13.58	£7.96	£3.70	£-11.5	£3.6	£10.0	£15.6	£19.9
High tower	50% AH Band 4	£-13.1	£-52.2	£24.68	£11.39	£5.95	£3.61	£2.23	£-76.9	£-63.6	£-58.2	£-55.8	£-54.5
High tower	35% AH Band 4	£-5.5	£-21.9	£24.68	£11.39	£5.95	£3.61	£2.23	£-46.6	£-33.3	£-27.9	£-25.6	£-24.2
13-14 storey	50% AH Band 7	£155.1	£1,034.2	£122.02	£74.39	£39.96	£15.83	£6.24	£912.2	£959.8	£994.2	£1,018.4	£1,027.9
13-14 storey	35% AH Band 7	£186.2	£1,241.3	£122.02	£74.39	£39.96	£15.83	£6.24	£1,119.3	£1,166.9	£1,201.3	£1,225.4	£1,235.0
13-14 storey	50% AH Band 6	£35.1	£234.3	£75.10	£38.43	£21.30	£10.43	£3.75	£159.2	£195.9	£213.0	£223.9	£230.6
13-14 storey	35% AH Band 6	£44.8	£298.9	£75.10	£38.43	£21.30	£10.43	£3.75	£223.8	£260.5	£277.6	£288.5	£295.2
13-14 storey	50% AH Band 5	£11.6	£77.1	£35.13	£20.04	£13.58	£7.96	£3.70	£41.9	£57.0	£63.5	£69.1	£73.4
13-14 storey	35% AH Band 5	£16.6	£110.6	£35.13	£20.04	£13.58	£7.96	£3.70	£75.5	£90.6	£97.0	£102.6	£106.9
13-14 storey	50% AH Band 4	£7.7	£51.3	£24.68	£11.39	£5.95	£3.61	£2.23	£26.6	£39.9	£45.4	£47.7	£49.1
13-14 storey	35% AH Band 4	£11.1	£73.7	£24.68	£11.39	£5.95	£3.61	£2.23	£49.0	£62.3	£67.8	£70.1	£71.5
13-14 storey	50% AH Band 3	£1.6	£11.0	£14.92	£6.54	£4.17	£2.61	£1.63	£-3.9	£4.4	£6.8	£8.4	£9.4

Higher Density Development in London

13-14 storey	35% AH Band 3	£3.7	£25.0	£14.92	£6.54	£4.17	£2.61	£1.63	£10.1	£18.4	£20.8	£22.4	£23.4
13-14 storey	50% AH Band 2	-£6.4	-£42.6	£13.34	£6.20	£3.36	£1.92	£1.74	-£56.0	-£48.8	-£46.0	-£44.6	-£44.4
13-14 storey	35% AH Band 2	-£4.9	-£32.8	£13.34	£6.20	£3.36	£1.92	£1.74	-£46.1	-£39.0	-£36.1	-£34.7	-£34.5
Tall tower	50% AH Band 7	£294.9	£884.6	£122.02	£74.39	£39.96	£15.83	£6.24	£762.6	£810.2	£844.6	£868.7	£878.3
Tall tower	35% AH Band 7	£354.5	£1,063.5	£122.02	£74.39	£39.96	£15.83	£6.24	£941.5	£989.1	£1,023.6	£1,047.7	£1,057.3
Tall tower	50% AH Band 6	£63.3	£190.0	£75.10	£38.43	£21.30	£10.43	£3.75	£114.9	£151.6	£168.7	£179.6	£186.3
Tall tower	35% AH Band 6	£82.0	£246.1	£75.10	£38.43	£21.30	£10.43	£3.75	£171.0	£207.7	£224.8	£235.7	£242.3
Tall tower	50% AH Band 5	£18.7	£56.0	£35.13	£20.04	£13.58	£7.96	£3.70	£20.9	£36.0	£42.5	£48.1	£52.3
Tall tower	35% AH Band 5	£28.5	£85.6	£35.13	£20.04	£13.58	£7.96	£3.70	£50.5	£65.6	£72.0	£77.6	£81.9
Tall tower	50% AH Band 4	£11.2	£33.6	£24.68	£11.39	£5.95	£3.61	£2.23	£9.0	£22.3	£27.7	£30.0	£31.4
Tall tower	35% AH Band 4	£17.8	£53.4	£24.68	£11.39	£5.95	£3.61	£2.23	£28.8	£42.1	£47.5	£49.8	£51.2
Tall tower	50% AH Band 3	-£0.6	-£1.7	£14.92	£6.54	£4.17	£2.61	£1.63	-£16.6	-£8.2	-£5.9	-£4.3	-£3.3
Tall tower	35% AH Band 3	£3.6	£10.9	£14.92	£6.54	£4.17	£2.61	£1.63	-£4.0	£4.4	£6.7	£8.3	£9.3
Tall tower	50% AH Band 2	-£16.8	-£50.4	£13.34	£6.20	£3.36	£1.92	£1.74	-£63.8	-£56.6	-£53.8	-£52.4	-£52.2
Tall tower	35% AH Band 2	-£13.8	-£41.4	£13.34	£6.20	£3.36	£1.92	£1.74	-£54.8	-£47.6	-£44.8	-£43.3	-£43.2
High density infill	50% AH Band 7	£21.9	£877.9	£122.02	£74.39	£39.96	£15.83	£6.24	£755.9	£803.5	£837.9	£862.0	£871.6
High density infill	35% AH Band 7	£26.1	£1,042.9	£122.02	£74.39	£39.96	£15.83	£6.24	£920.9	£968.5	£1,003.0	£1,027.1	£1,036.7
High density infill	50% AH Band 6	£5.9	£236.5	£75.10	£38.43	£21.30	£10.43	£3.75	£161.4	£198.0	£215.2	£226.0	£232.7

Higher Density Development in London

High density infill	35% AH Band 6	£7.2	£287.6	£75.10	£38.43	£21.30	£10.43	£3.75	£212.5	£249.1	£266.3	£277.1	£283.8
High density infill	50% AH Band 5	£2.7	£109.8	£35.13	£20.04	£13.58	£7.96	£3.70	£74.7	£89.8	£96.3	£101.9	£106.1
High density infill	35% AH Band 5	£3.4	£136.1	£35.13	£20.04	£13.58	£7.96	£3.70	£101.0	£116.1	£122.5	£128.1	£132.4
High density infill	50% AH Band 4	£2.2	£88.6	£24.68	£11.39	£5.95	£3.61	£2.23	£63.9	£77.2	£82.6	£85.0	£86.3
High density infill	35% AH Band 4	£2.6	£105.9	£24.68	£11.39	£5.95	£3.61	£2.23	£81.3	£94.5	£100.0	£102.3	£103.7
High density infill	50% AH Band 3	£1.4	£55.0	£14.92	£6.54	£4.17	£2.61	£1.63	£40.1	£48.5	£50.9	£52.4	£53.4
High density infill	35% AH Band 3	£1.6	£65.6	£14.92	£6.54	£4.17	£2.61	£1.63	£50.7	£59.1	£61.5	£63.0	£64.0
High density infill	50% AH Band 2	£0.3	£13.8	£13.34	£6.20	£3.36	£1.92	£1.74	£0.5	£7.6	£10.5	£11.9	£12.1
High density infill	35% AH Band 2	£0.5	£20.6	£13.34	£6.20	£3.36	£1.92	£1.74	£7.2	£14.4	£17.2	£18.6	£18.8
High density infill	50% AH Band 1	-£0.9	-£36.9	£8.43	£2.72	£2.29	£2.07	£1.51	-£45.4	-£39.6	-£39.2	-£39.0	-£38.4
High density infill	35% AH Band 1	-£0.9	-£36.0	£8.43	£2.72	£2.29	£2.07	£1.51	-£44.4	-£38.7	-£38.3	-£38.1	-£37.5
5-8 storey	50% AH Band 7	£211.7	£529.2	£122.02	£74.39	£39.96	£15.83	£6.24	£407.2	£454.8	£489.3	£513.4	£523.0
5-8 storey	35% AH Band 7	£253.0	£632.6	£122.02	£74.39	£39.96	£15.83	£6.24	£510.6	£558.2	£592.6	£616.8	£626.4
5-8 storey	50% AH Band 6	£51.7	£129.3	£75.10	£38.43	£21.30	£10.43	£3.75	£54.2	£90.9	£108.0	£118.9	£125.6
5-8 storey	35% AH Band 6	£64.6	£161.5	£75.10	£38.43	£21.30	£10.43	£3.75	£86.4	£123.0	£140.2	£151.0	£157.7

Higher Density Development in London

5-8 storey	50% AH Band 5	£20.1	£50.3	£35.13	£20.04	£13.58	£7.96	£3.70	£15.2	£30.3	£36.7	£42.4	£46.6
5-8 storey	35% AH Band 5	£26.8	£66.9	£35.13	£20.04	£13.58	£7.96	£3.70	£31.8	£46.9	£53.4	£59.0	£63.2
5-8 storey	50% AH Band 4	£15.0	£37.5	£24.68	£11.39	£5.95	£3.61	£2.23	£12.8	£26.1	£31.5	£33.8	£35.2
5-8 storey	35% AH Band 4	£19.4	£48.5	£24.68	£11.39	£5.95	£3.61	£2.23	£23.8	£37.1	£42.6	£44.9	£46.3
5-8 storey	50% AH Band 3	£6.8	£16.9	£14.92	£6.54	£4.17	£2.61	£1.63	£2.0	£10.4	£12.7	£14.3	£15.3
5-8 storey	35% AH Band 3	£9.5	£23.8	£14.92	£6.54	£4.17	£2.61	£1.63	£8.8	£17.2	£19.6	£21.2	£22.1
5-8 storey	50% AH Band 2	-£3.8	-£9.5	£13.34	£6.20	£3.36	£1.92	£1.74	-£22.8	-£15.7	-£12.8	-£11.4	-£11.2
5-8 storey	35% AH Band 2	-£1.9	-£4.7	£13.34	£6.20	£3.36	£1.92	£1.74	-£18.0	-£10.9	-£8.1	-£6.6	-£6.4
5-8 storey	50% AH Band 1	-£16.4	-£40.9	£8.43	£2.72	£2.29	£2.07	£1.51	-£49.3	-£43.6	-£43.2	-£43.0	-£42.4
5-8 storey	35% AH Band 1	-£16.0	-£40.1	£8.43	£2.72	£2.29	£2.07	£1.51	-£48.6	-£42.8	-£42.4	-£42.2	-£41.6
Low rise high density	50% AH Band 7	£54.2	£162.6	£122.02	£74.39	£39.96	£15.83	£6.24	£40.5	£88.2	£122.6	£146.7	£156.3
Low rise high density	35% AH Band 7	£64.5	£193.6	£122.02	£74.39	£39.96	£15.83	£6.24	£71.6	£119.2	£153.6	£177.8	£187.4
Low rise high density	50% AH Band 6	£14.2	£42.5	£75.10	£38.43	£21.30	£10.43	£3.75	-£32.6	£4.1	£21.2	£32.1	£38.7
Low rise high density	35% AH Band 6	£17.3	£52.0	£75.10	£38.43	£21.30	£10.43	£3.75	-£23.1	£13.6	£30.7	£41.6	£48.3
Low rise high density	50% AH Band 5	£6.3	£18.9	£35.13	£20.04	£13.58	£7.96	£3.70	-£16.2	-£1.2	£5.3	£10.9	£15.2
Low rise high density	35% AH Band 5	£8.0	£23.9	£35.13	£20.04	£13.58	£7.96	£3.70	-£11.2	£3.9	£10.3	£15.9	£20.2
Low rise high density	50% AH Band 4	£5.0	£14.9	£24.68	£11.39	£5.95	£3.61	£2.23	-£9.8	£3.5	£8.9	£11.3	£12.7

Higher Density Development in London

Low rise high density	35% AH Band 4	£6.1	£18.2	£24.68	£11.39	£5.95	£3.61	£2.23	-£6.5	£6.8	£12.3	£14.6	£16.0
Low rise high density	50% AH Band 3	£2.9	£8.7	£14.92	£6.54	£4.17	£2.61	£1.63	-£6.3	£2.1	£4.5	£6.0	£7.0
Low rise high density	35% AH Band 3	£3.6	£10.7	£14.92	£6.54	£4.17	£2.61	£1.63	-£4.2	£4.2	£6.5	£8.1	£9.1
Low rise high density	50% AH Band 2	£0.3	£1.0	£13.34	£6.20	£3.36	£1.92	£1.74	-£12.4	-£5.2	-£2.4	-£0.9	-£0.8
Low rise high density	35% AH Band 2	£0.8	£2.3	£13.34	£6.20	£3.36	£1.92	£1.74	-£11.0	-£3.9	-£1.1	£0.4	£0.6
Low rise high density	50% AH Band 1	-£2.9	-£8.7	£8.43	£2.72	£2.29	£2.07	£1.51	-£17.1	-£11.4	-£11.0	-£10.7	-£10.2
Low rise high density	35% AH Band 1	-£2.8	-£8.4	£8.43	£2.72	£2.29	£2.07	£1.51	-£16.9	-£11.1	-£10.7	-£10.5	-£9.9
Low rise low density	50% AH Band 7	£134.6	£67.3	£122.02	£74.39	£39.96	£15.83	£6.24	-£54.7	-£7.1	£27.3	£51.5	£61.0
Low rise low density	35% AH Band 7	£162.9	£81.4	£122.02	£74.39	£39.96	£15.83	£6.24	-£40.6	£7.0	£41.5	£65.6	£75.2
Low rise low density	50% AH Band 6	£37.5	£18.8	£75.10	£38.43	£21.30	£10.43	£3.75	-£56.3	-£19.7	-£2.5	£8.3	£15.0
Low rise low density	35% AH Band 6	£45.2	£22.6	£75.10	£38.43	£21.30	£10.43	£3.75	-£52.5	-£15.8	£1.3	£12.2	£18.9
Low rise low density	50% AH Band 5	£19.1	£9.5	£35.13	£20.04	£13.58	£7.96	£3.70	-£25.6	-£10.5	-£4.1	£1.6	£5.8
Low rise low density	35% AH Band 5	£22.7	£11.3	£35.13	£20.04	£13.58	£7.96	£3.70	-£23.8	-£8.7	-£2.2	£3.4	£7.6
Low rise low density	50% AH Band 4	£15.6	£7.8	£24.68	£11.39	£5.95	£3.61	£2.23	-£16.9	-£3.6	£1.8	£4.2	£5.6

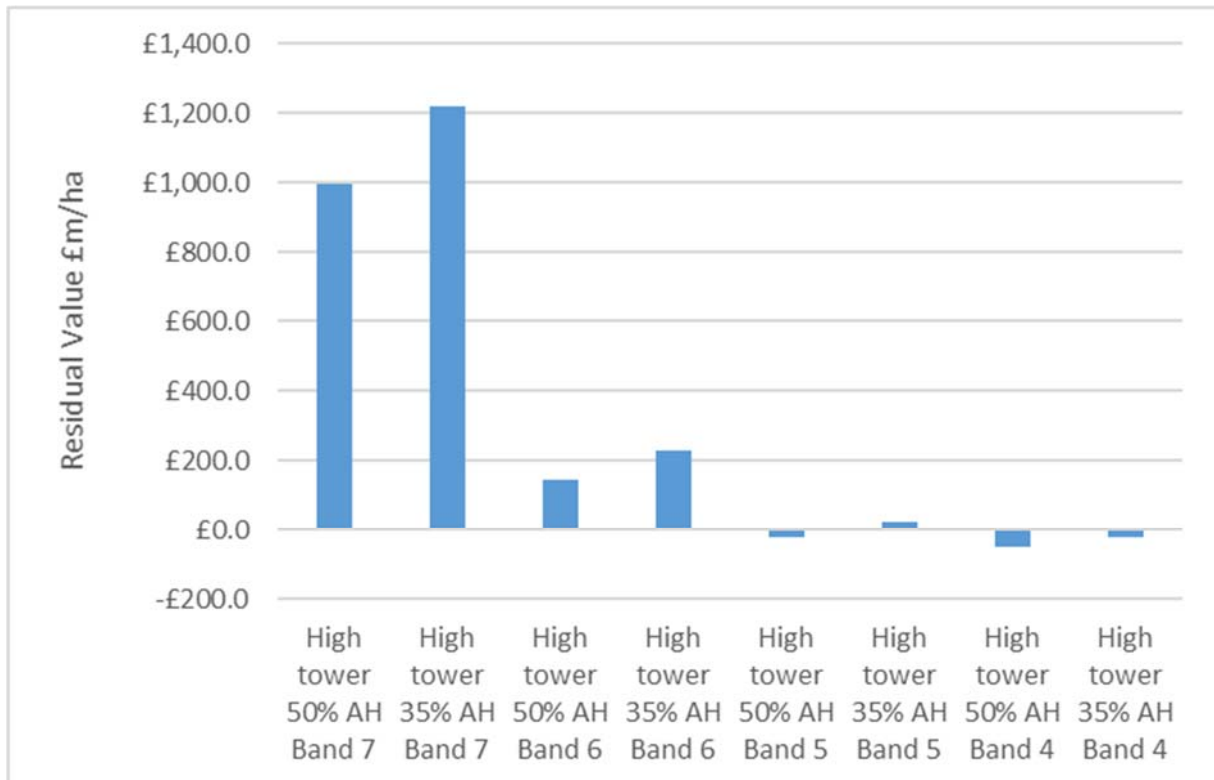
Higher Density Development in London

Low rise low density	35% AH Band 4	£17.9	£8.9	£24.68	£11.39	£5.95	£3.61	£2.23	-£15.8	-£2.5	£3.0	£5.3	£6.7
Low rise low density	50% AH Band 3	£12.2	£6.1	£14.92	£6.54	£4.17	£2.61	£1.63	-£8.8	-£0.4	£1.9	£3.5	£4.5
Low rise low density	35% AH Band 3	£13.7	£6.8	£14.92	£6.54	£4.17	£2.61	£1.63	-£8.1	£0.3	£2.7	£4.2	£5.2
Low rise low density	50% AH Band 2	£8.1	£4.1	£13.34	£6.20	£3.36	£1.92	£1.74	-£9.3	-£2.1	£0.7	£2.2	£2.3
Low rise low density	35% AH Band 2	£9.4	£4.7	£13.34	£6.20	£3.36	£1.92	£1.74	-£8.6	-£1.5	£1.4	£2.8	£3.0
Low rise low density	50% AH Band 1	£0.9	£0.5	£8.43	£2.72	£2.29	£2.07	£1.51	-£8.0	-£2.3	-£1.8	-£1.6	-£1.1
Low rise low density	35% AH Band 1	£1.1	£0.5	£8.43	£2.72	£2.29	£2.07	£1.51	-£7.9	-£2.2	-£1.8	-£1.5	-£1.0

High Tower

9. The 45 storey high tower is modelled at 1,200 units per ha, in borough value bands 4 to 7 (the highest). The figure below illustrates the residual values.

Figure 10.15: High tower residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
High tower 50% AH Band 7	£998.0	£875.9	£923.6	£991.7
High tower 35% AH Band 7	£1,219.2	£1,097.2	£1,144.9	£1,213.0
High tower 50% AH Band 6	£145.1	£70.0	£106.7	£141.3
High tower 35% AH Band 6	£230.6	£155.5	£192.1	£226.8
High tower 50% AH Band 5	£-21.2	£-56.3	£-41.3	£-24.9
High tower 35% AH Band 5	£23.6	£-11.5	£3.6	£19.9
High tower 50% AH Band 4	£-52.2	£-76.9	£-63.6	£-54.5
High tower 35% AH Band 4	£-21.9	£-46.6	£-33.3	£-24.2

Commentary

- The high tower typology produces very high residual values in the highest borough value band but these reduce considerably in value band 6 and again in value bands 5 and 4.
- Unsurprisingly, as the proportion of affordable housing is reduced from 50% to 35% in each borough band, the residual value increases.
- Although the modelling suggests that residual values of this nature are theoretically possible in borough value band 7, in practice the opportunities to actually deliver this will be very limited and it is likely that

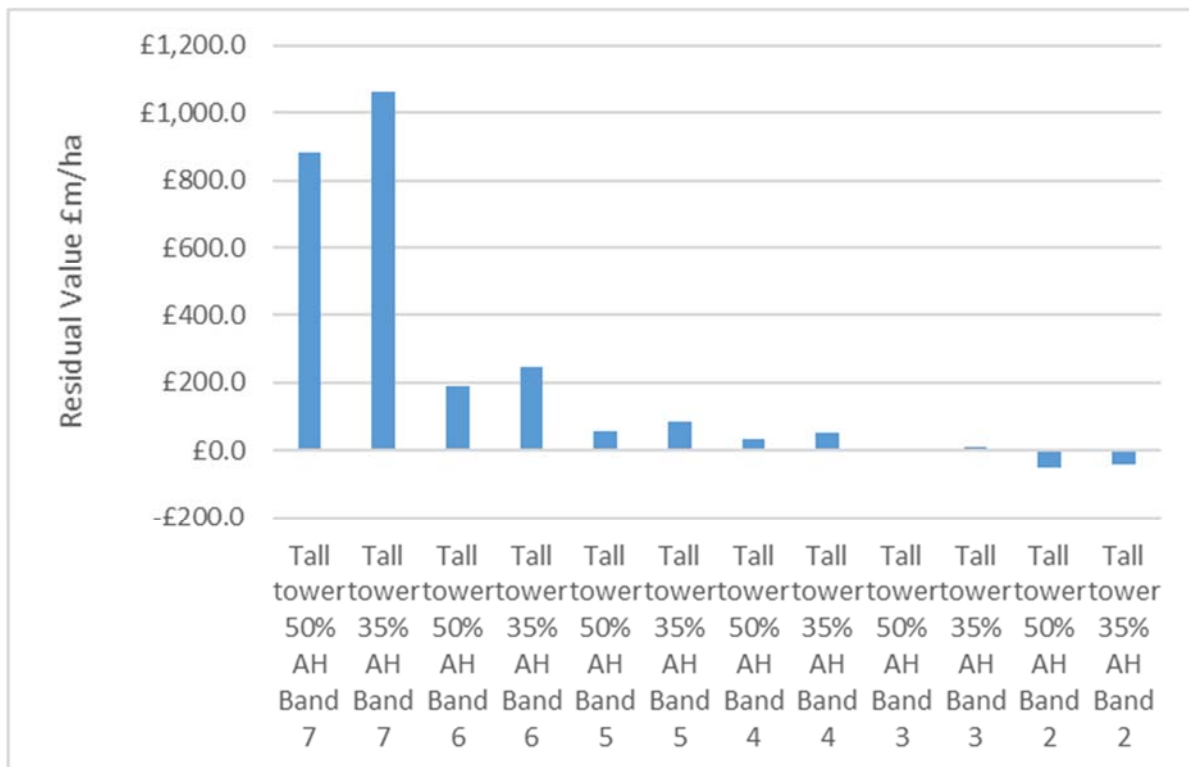
there will be additional development costs outside the costs incorporated within this modelling.

- In terms of comparison against the benchmarks, in borough value band 7 the values are a long way above all of the benchmarks. In borough value band 6 the residual values are also comfortably above all of the benchmarks even with 50% affordable housing. In borough value band 5 the high tower typology can reach the CIL viability benchmarks but only at 35% affordable housing.
- In borough value band 5 the residual value is negative at 50% affordable housing, although there is still a positive residual value at 35% affordable housing. At 35% affordable housing the residual value is above the lower CIL viability-derived benchmark but below the other higher benchmarks.
- In borough value band 4 the residual value is negative with both 50% and 35% affordable housing.
- The main finding from the modelling of the High tower typology is that it where values are particularly high it is viable and can support policy compliant affordable housing provisions and still be able to afford high prices for sites. However, as soon as values fall the viability weakens quickly to the extent that even in some of the relatively valuable parts of London (borough value band 5) the affordable housing provision has to be reduced to maintain viability.

Tall tower

10. The 25 storey tall tower is modelled at 900 units per ha, in borough value bands 2 to 7. The figure below illustrates the residual values.

Figure 10.16: Tall tower residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
Tall tower 50% AH Band 7	£884.6	£762.6	£810.2	£878.3
Tall tower 35% AH Band 7	£1,063.5	£941.5	£989.1	£1,057.3
Tall tower 50% AH Band 6	£190.0	£114.9	£151.6	£186.3
Tall tower 35% AH Band 6	£246.1	£171.0	£207.7	£242.3
Tall tower 50% AH Band 5	£56.0	£20.9	£36.0	£52.3
Tall tower 35% AH Band 5	£85.6	£50.5	£65.6	£81.9
Tall tower 50% AH Band 4	£33.6	£9.0	£22.3	£31.4
Tall tower 35% AH Band 4	£53.4	£28.8	£42.1	£51.2
Tall tower 50% AH Band 3	-£1.7	-£16.6	-£8.2	-£3.3
Tall tower 35% AH Band 3	£10.9	-£4.0	£4.4	£9.3
Tall tower 50% AH Band 2	-£50.4	-£63.8	-£56.6	-£52.2
Tall tower 35% AH Band 2	-£41.4	-£54.8	-£47.6	-£43.2

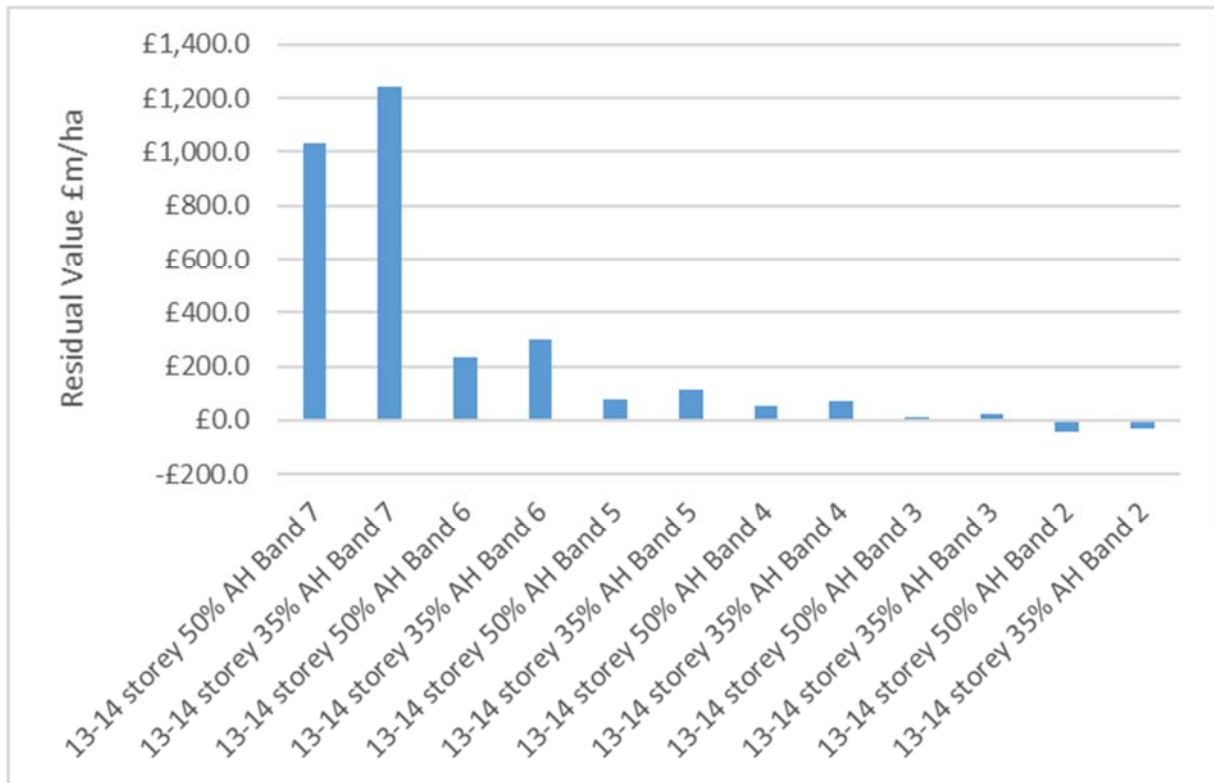
Commentary

- The tall tower typology is viable in borough value bands 4 to 7. In all of these bands, there are higher values when the proportion of affordable housing is reduced.
- This typology produces very high residual values in borough value band 7 but these are reduced considerably in borough value band 6 and again in borough value bands 5 and 4.
- The typology is able to support 50% affordable housing in borough value bands 4 to 7.
- In borough value band 3 this case study is able to support 35% affordable housing but has a negative residual value with 50% affordable housing.
- The overall findings from the viability modelling of this typology are that where values are high, this development height is viable and can support policy compliant affordable housing provisions and still be able to afford high prices for sites. However, as values decrease the 'headroom' is reduced. This pattern is not dissimilar to the High Tower typology, although less pronounced, and this case study remains viable in lower value areas than the High Tower.

13-14 storey

11. The 13-14 storey typology is modelled at 1,000 units per ha, in borough value bands 2 to 7. The figure below illustrates the residual values.

Figure 10.17: 13-14 storey residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
13-14 storey 50% AH Band 7	£1,034.2	£912.2	£959.8	£1,027.9
13-14 storey 35% AH Band 7	£1,241.3	£1,119.3	£1,166.9	£1,235.0
13-14 storey 50% AH Band 6	£234.3	£159.2	£195.9	£230.6
13-14 storey 35% AH Band 6	£298.9	£223.8	£260.5	£295.2
13-14 storey 50% AH Band 5	£77.1	£41.9	£57.0	£73.4
13-14 storey 35% AH Band 5	£110.6	£75.5	£90.6	£106.9
13-14 storey 50% AH Band 4	£51.3	£26.6	£39.9	£49.1
13-14 storey 35% AH Band 4	£73.7	£49.0	£62.3	£71.5
13-14 storey 50% AH Band 3	£11.0	£-3.9	£4.4	£9.4
13-14 storey 35% AH Band 3	£25.0	£10.1	£18.4	£23.4
13-14 storey 50% AH Band 2	£-42.6	£-56.0	£-48.8	£-44.4
13-14 storey 35% AH Band 2	£-32.8	£-46.1	£-39.0	£-34.5

Commentary

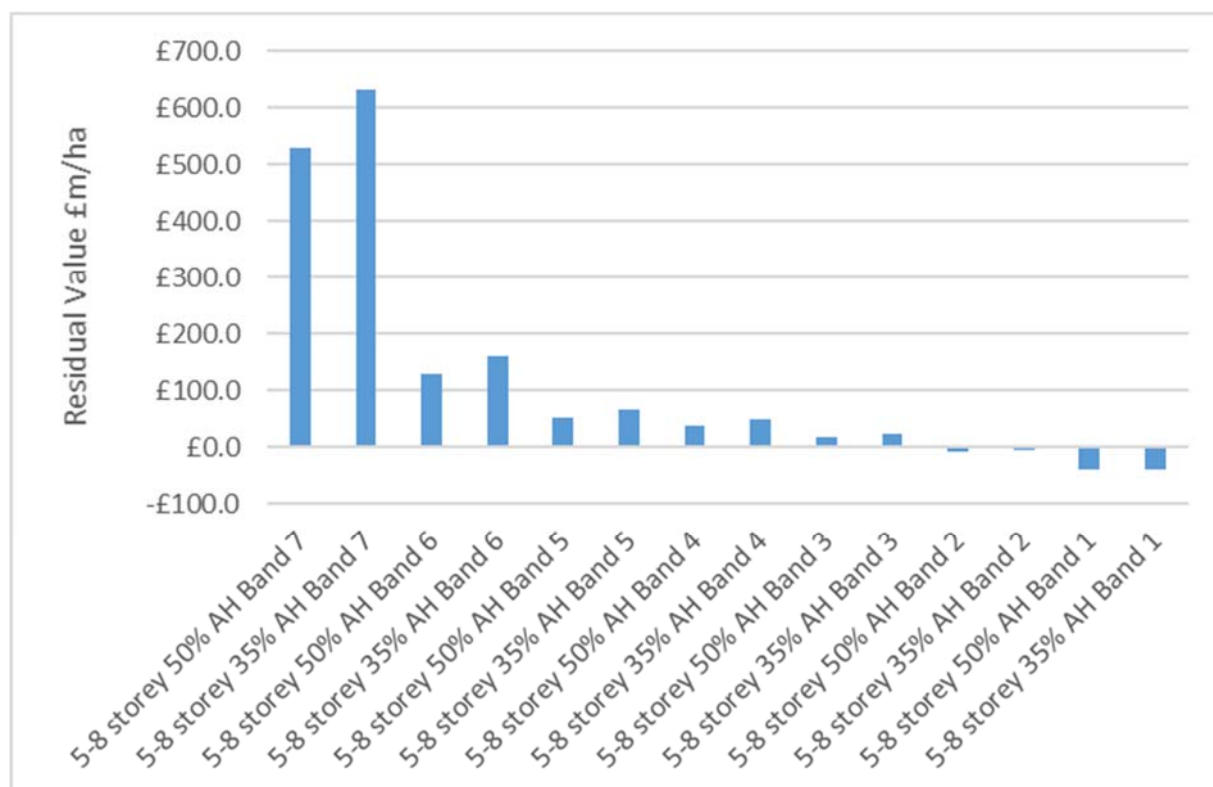
- The 13-14 storey typology has a positive residual value in borough value bands 3-7.
- The viability is strongest in the higher borough value bands.
- Again, viability is stronger with 35% affordable housing than with 50% affordable housing.

- These residual values are comfortably above the benchmarks in borough value band 4-7, but in borough band 3 the residual value with 50% affordable housing is between the DCLG benchmark and the CIL viability benchmarks.
- In borough value band 2 this case study has a negative residual value.

5-8 storey

12. The 5-8 storey typology is modelled at 500 units per ha, in borough value bands 1 (the lowest value) to 7 (the highest value). The figure below illustrates the residual values.

Figure 10.18: 5-8 storey residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
5-8 storey 50% AH Band 7	£529.2	£407.2	£454.8	£523.0
5-8 storey 35% AH Band 7	£632.6	£510.6	£558.2	£626.4
5-8 storey 50% AH Band 6	£129.3	£54.2	£90.9	£125.6
5-8 storey 35% AH Band 6	£161.5	£86.4	£123.0	£157.7
5-8 storey 50% AH Band 5	£50.3	£15.2	£30.3	£46.6
5-8 storey 35% AH Band 5	£66.9	£31.8	£46.9	£63.2
5-8 storey 50% AH Band 4	£37.5	£12.8	£26.1	£35.2
5-8 storey 35% AH Band 4	£48.5	£23.8	£37.1	£46.3
5-8 storey 50% AH Band 3	£16.9	£2.0	£10.4	£15.3
5-8 storey 35% AH Band 3	£23.8	£8.8	£17.2	£22.1
5-8 storey 50% AH Band 2	£-9.5	£-22.8	£-15.7	£-11.2
5-8 storey 35% AH Band 2	£-4.7	£-18.0	£-10.9	£-6.4
5-8 storey 50% AH Band 1	£-40.9	£-49.3	£-43.6	£-42.4
5-8 storey 35% AH Band 1	£-40.1	£-48.6	£-42.8	£-41.6

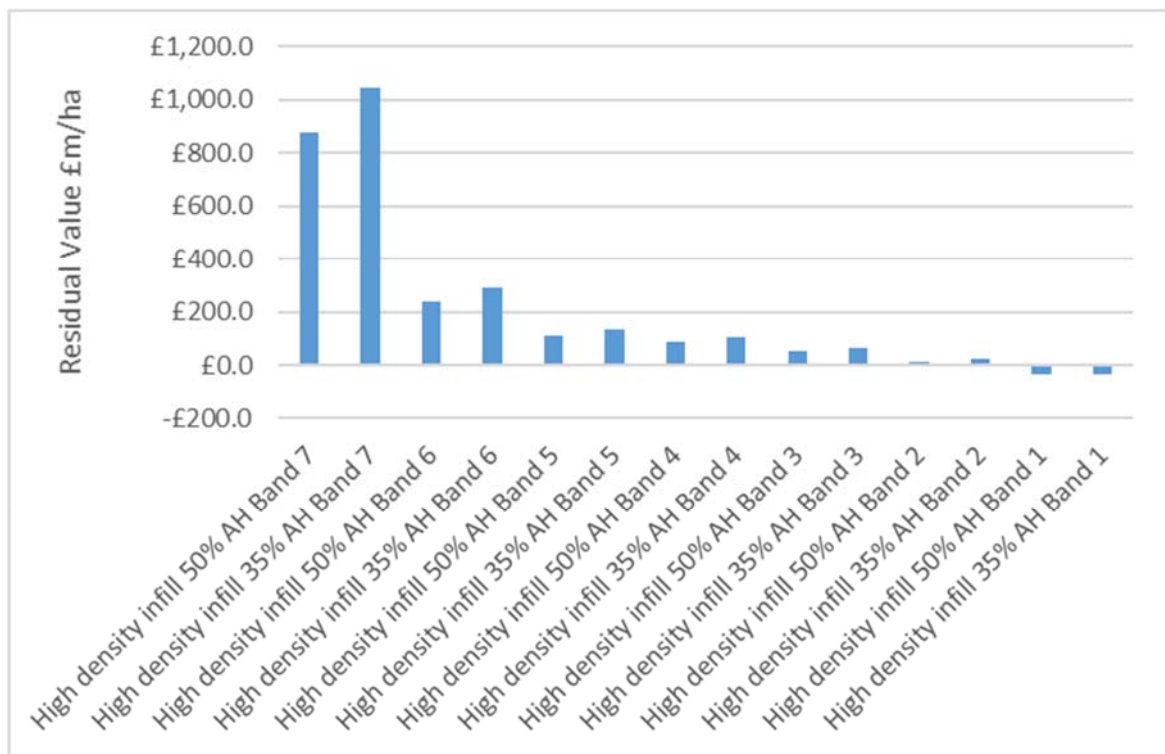
Commentary

- The 5-8 storey typology has positive residual values in borough value bands 3 to 7. The residual values are comfortably above the highest benchmarks.
- However, in borough value bands 2 and 1 this typology has a negative residual value, even with affordable housing reduced to 35%.
- As with the other typology, the viability is stronger when the affordable housing is reduced to 35%.

High density infill

13. The high density infill 7 storey typology is modelled at 800 units per ha, in all of the borough value bands 1 to 7. The figure below illustrates the residual values.

Figure 10.19: High density infill residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
High density infill 50% AH Band 7	£877.9	£755.9	£803.5	£871.6
High density infill 35% AH Band 7	£1,042.9	£920.9	£968.5	£1,036.7
High density infill 50% AH Band 6	£236.5	£161.4	£198.0	£232.7
High density infill 35% AH Band 6	£287.6	£212.5	£249.1	£283.8
High density infill 50% AH Band 5	£109.8	£74.7	£89.8	£106.1
High density infill 35% AH Band 5	£136.1	£101.0	£116.1	£132.4
High density infill 50% AH Band 4	£88.6	£63.9	£77.2	£86.3
High density infill 35% AH Band 4	£105.9	£81.3	£94.5	£103.7
High density infill 50% AH Band 3	£55.0	£40.1	£48.5	£53.4
High density infill 35% AH Band 3	£65.6	£50.7	£59.1	£64.0
High density infill 50% AH Band 2	£13.8	£0.5	£7.6	£12.1
High density infill 35% AH Band 2	£20.6	£7.2	£14.4	£18.8
High density infill 50% AH Band 1	-£36.9	-£45.4	-£39.6	-£38.4
High density infill 35% AH Band 1	-£36.0	-£44.4	-£38.7	-£37.5

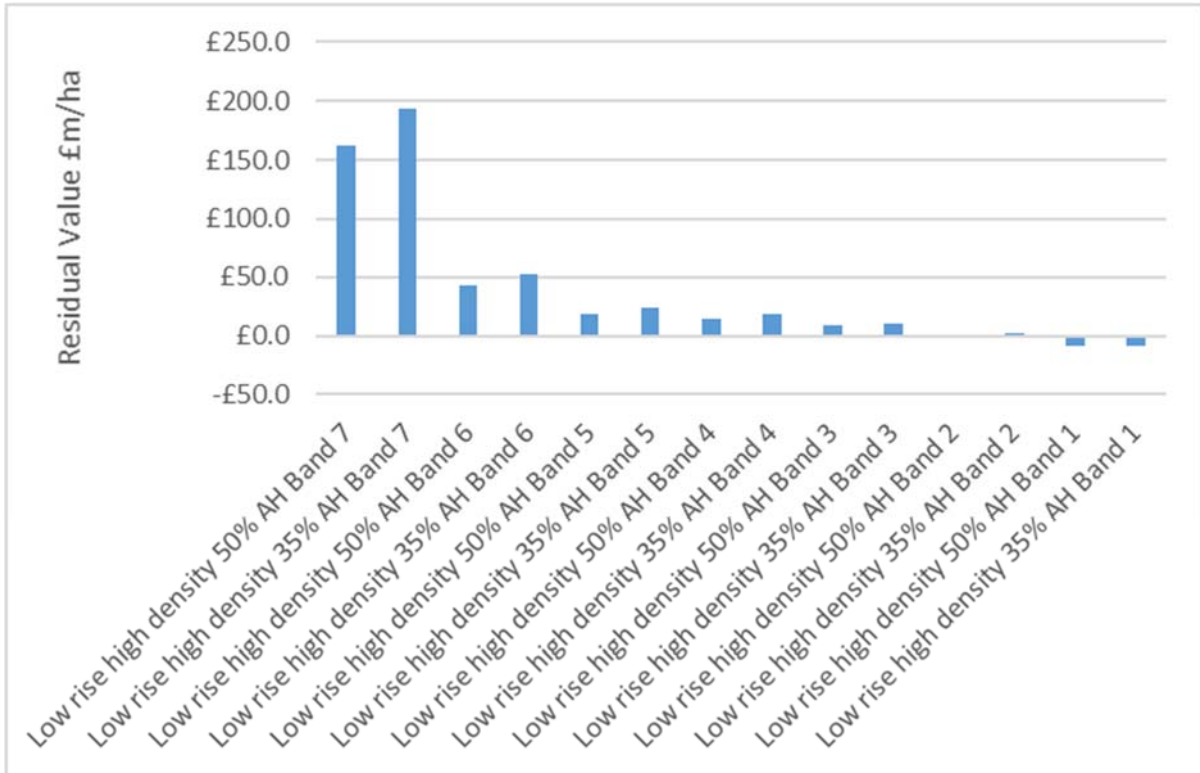
Commentary

- The high density infill typology is viable in all of the borough value bands tested, except for borough value band 1.
- Where the case study has a positive residual value, these are comfortably in excess of the higher value benchmarks.
- Viability is stronger with 35% affordable housing than 50%, but for the characteristics modelled here, this is unlikely to make an impact on delivery.

Low rise high density

14. The low rise high density 4 storey typology is modelled at 150 units per ha, in all the borough value bands. The figure below illustrates the residual values.

Figure 10.20: Low rise high density residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
Low rise high density 50% AH Band 7	£162.6	£40.5	£88.2	£156.3
Low rise high density 35% AH Band 7	£193.6	£71.6	£119.2	£187.4
Low rise high density 50% AH Band 6	£42.5	-£32.6	£4.1	£38.7
Low rise high density 35% AH Band 6	£52.0	-£23.1	£13.6	£48.3
Low rise high density 50% AH Band 5	£18.9	-£16.2	-£1.2	£15.2
Low rise high density 35% AH Band 5	£23.9	-£11.2	£3.9	£20.2
Low rise high density 50% AH Band 4	£14.9	-£9.8	£3.5	£12.7
Low rise high density 35% AH Band 4	£18.2	-£6.5	£6.8	£16.0
Low rise high density 50% AH Band 3	£8.7	-£6.3	£2.1	£7.0
Low rise high density 35% AH Band 3	£10.7	-£4.2	£4.2	£9.1
Low rise high density 50% AH Band 2	£1.0	-£12.4	-£5.2	-£0.8
Low rise high density 35% AH Band 2	£2.3	-£11.0	-£3.9	£0.6
Low rise high density 50% AH Band 1	-£8.7	-£17.1	-£11.4	-£10.2
Low rise high density 35% AH Band 1	-£8.4	-£16.9	-£11.1	-£9.9

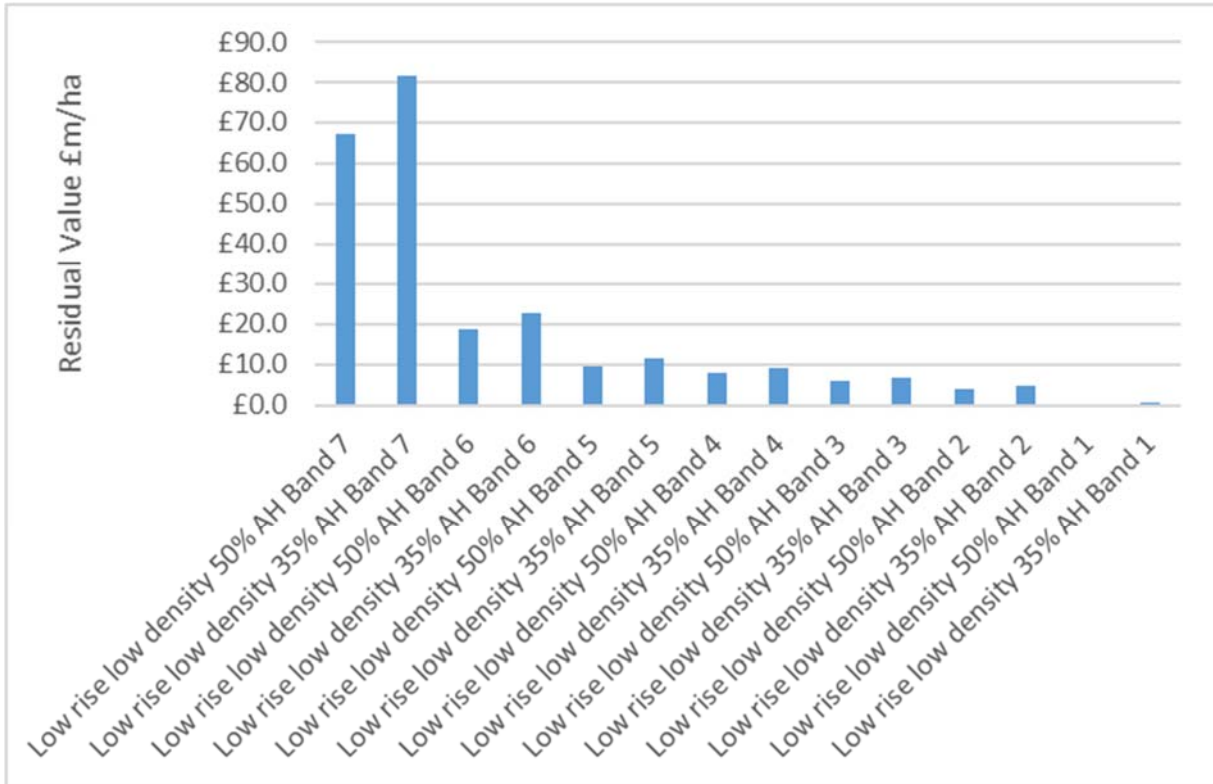
Commentary

- The low rise high density typology produces a positive residual value in all of the borough value bands tested except for borough value band 1.
- None of the residual values reach the higher DCLG benchmark except in borough value band 7, but in most of the borough value bands where the case study is viable, the values exceed the higher CIL benchmarks.
- In borough value band 2 the typology exceeds the lower CIL viability benchmark at 35% affordable housing, making it one of the few development types that displays viability in this borough value band.

Low rise low density

15. The low rise low density 2-3 storey typology is modelled at 50 units per ha, in all borough value bands. The figure below illustrates the residual values.

Figure 10.21: Low rise low density residual value £/ha



Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
Low rise low density 50% AH Band 7	£67.3	-\$54.7	-\$7.1	£61.0
Low rise low density 35% AH Band 7	£81.4	-\$40.6	£7.0	£75.2
Low rise low density 50% AH Band 6	£18.8	-\$56.3	-\$19.7	£15.0
Low rise low density 35% AH Band 6	£22.6	-\$52.5	-\$15.8	£18.9
Low rise low density 50% AH Band 5	£9.5	-\$25.6	-\$10.5	£5.8
Low rise low density 35% AH Band 5	£11.3	-\$23.8	-\$8.7	£7.6
Low rise low density 50% AH Band 4	£7.8	-\$16.9	-\$3.6	£5.6
Low rise low density 35% AH Band 4	£8.9	-\$15.8	-\$2.5	£6.7
Low rise low density 50% AH Band 3	£6.1	-\$8.8	-\$0.4	£4.5

Case study	Residual Value £m/ha	Residual value less DCLG Benchmark £m/ha	Residual value less GLA Housing Standards Viability Study benchmarks	
			High £m/ha	Low £m/ha
Low rise low density 35% AH Band 3	£6.8	-£8.1	£0.3	£5.2
Low rise low density 50% AH Band 2	£4.1	-£9.3	-£2.1	£2.3
Low rise low density 35% AH Band 2	£4.7	-£8.6	-£1.5	£3.0
Low rise low density 50% AH Band 1	£0.5	-£8.0	-£2.3	-£1.1
Low rise low density 35% AH Band 1	£0.5	-£7.9	-£2.2	-£1.0

Commentary

- The low rise low density typology produces a positive residual value in all of the borough value bands.
- In most cases the positive residual value is below the higher Building Standards Viability Study CIL benchmarks.
- In borough value band 1 the residual value is below the lower Building Standards Viability Study CIL benchmarks.
- Although the viability for this typology may appear weak compared to some of the other typologies, it is one of the few forms of development tested here that produces a residual value above a benchmark in borough value band 2 and it is the only case study with any positive residual value in borough value band 1.