





## 7.0 DESIGN CONSIDERATIONS

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### 7.1 Accessibility & Inclusive Design

The design has been developed so that it integrates the principles of inclusive design to enable the newly created phase to be used safely, easily and with dignity by everyone, regardless of age, gender, ethnicity or economic circumstances. The intention is to ensure all areas of the community are convenient and welcoming to allow everyone to live, work, and visit independently without undue effort, separation or special treatment.

#### 7.1.1 Approach To The Design Of Homes

It is recognised that inclusive design has benefits for all members of the community. Integrating flexibility affords everyone including disabled people, older people and families a wider choice of housing options and as far as practicably possible, the dwelling designs accommodate the possible needs of visitors.

Wheelchair adaptable homes are distributed across various phases within the development, in a range of dwelling sizes and types, and with a variety of views and outlooks so that wheelchair users and their families are provided with a genuine choice and able to live as integrated members of the neighbourhood.

Phase 4 is located in the Northern Quarter, which has been identified in the masterplan as the most urban part of the site. Due to the strategic location and public nature of this site, private and private communal amenity spaces are not permitted at grade (specified in the Parameter Plan 6: Landscape & Open Space). Therefore, large family homes are less appropriate, and the mix prioritises 1-bed and 2-bed apartments that are located above ground level.

Phase 4 provides 32 wheelchair adaptable 1-bed and 2-bed units (9%). A larger percentage of Part M4(3) wheelchair adaptable homes have been provided in previous phases to ensure there is an appropriate provision of wheelchair adaptable larger family homes. Overall, the Clarendon Gas Works development allows for 10% wheelchair adaptable homes. The remaining 90% of homes have been designed to Approved Document M Volume 1 Category 2 standards.

The design of the wheelchair adaptable units follow guidance in the Approved Document M Volume 1 Category 3 standards guidance - Part M4(3)(2)(a) - to allow simple adaptation of the dwelling to meet the needs of occupants in wheelchairs. All wheelchair adaptable homes have the required spatial and structural provision so that they accommodate the mobility requirements of wheelchair users. Wheelchair adaptable homes are required to demonstrate the capacity for the dwelling to be fitted out to accommodate fully accessible kitchens and sanitary accommodation. Typical Part M4(3) layouts are illustrated in Section 7.11 of this document.

All Part M4(3) homes have access to the basement parking areas that incorporate accessible parking spaces. Communal entrances and common areas are designed to meet Approved Document M Volume 1 Category 3 standards where Part M4(3) homes are located.

#### 7.1.2 Approach To The Design Of Public Realm

While providing something for everyone within the community, the approach of creating distinct buildings and characters in different parts of the scheme provides spatial orientation without needing to over-rely on signage and written information. Phase 4 adopts this principle in the architectural and landscape design of the site.

The existing site and context are not considered to present significant impediments to inclusive design and accessibility. Level differences within the public realm generated by the implementation of the basement and the natural level difference across the Phase 4 plot boundary are accommodated in the landscape design. Pedestrian routes offer step-free approach and access to all residential and non-residential building entrances.

Inclusive design features incorporated into the landscape scheme include:

- Route widths within the ground public realm sufficient for people, including wheelchair users, to pass others travelling in the opposite direction. Minimum widths of 1800mm accommodates any amount of non-vehicular traffic without the need for passing places.
- Resting places with seating are provided at regular intervals. Seats are set back from the main desire lines, with clear space to allow a wheelchair user to rest with a seated companion.
- Principal routes with gentle gradients and cross falls not exceeding 1:40
- A crossing point, with dropped kerb and appropriate use of tonal and textural contrast and suitable tactile warning surface, is proposed locally where pedestrians need to cross the cyclist route to get to the public square.

More information regarding the landscape design of the public realm can be found in Section 5 of this document.

## 7.2 Sustainability

### 7.2.1 Energy Efficiency

The development has been designed with energy efficiency as a principal consideration and follows the energy hierarchy of: Be Lean, Be Clean & Be Green.

Passive Design Elements which have been adopted in the design of Phase 4 include:

- Deep window reveals to provide passive solar shading
- Fully open-able windows to limit reliance on mechanical cooling and ventilation
- Bottom of window sills generally 450mm above FFL to limit solar gain
- Design of H1 south façades with horizontal banding to provide shading against the midday sun.
- Design of H1 east and west façades with vertical fins to provide shading against morning and afternoon sun.
- Placement of windows to optimise benefit of facade element shading.
- High levels of thermal efficiency targeted for the building envelopes and glazing systems to minimise heat loss.

### 7.2.2 Waste

An Operational Waste and Recycling Management Strategy, prepared by AECOM, was submitted as a part of the hybrid permission HGY/2017/3117. This phase follows the sustainable methods for waste and recycling management outlined in this report. These aims are:

- To contribute towards achieving current and long-term government, Greater London Authority (GLA) and NLWA targets for waste minimisation, recycling and re-use;
- To comply with all legal requirements for handling operational waste;
- To achieve high standards of waste management performance, through giving (and continuing to give) due consideration to the waste generated by the Proposed Development during its operation; and
- To provide the Proposed Development with a convenient, clean and efficient waste management strategy that enhances the operation of the Proposed Development and promotes recycling.

### 7.2.3 Landscape, Ecology and Biodiversity

The landscape and planting strategy transforms a further portion of this former gas holder site into a ecologically rich landscape, enhancing and supporting local biodiversity. The strategy includes a mix of tree and shrub planting and native hedges. Upper level communal roof terraces are landscaped to further enhance opportunity for improving the ecological richness of the site.

### 7.2.4 Well Being

The design of the landscape, buildings and new homes promotes well being for visitors and residents.

- Design to meet Part M of the Building Regulations ensures an accessible environment for all, and homes which will adapt to suit changes in life circumstance for residents.
- Homes enjoy generous glazing to habitable rooms optimising natural light within apartments. Due regard is given to achieving good environmental comfort.
- The design has been developed to maximise the extent of dual aspect homes and minimise single aspect north facing apartments.
- In addition to private amenity, residents have access to a diverse combination of semi-private amenity in the form of podium gardens and roof terraces, as well as the public amenity landscaping and open space provided within both Phase 4 and the wider masterplan that incorporates a diverse range of planting.

### 7.2.5 Sustainable Transport

The design promotes sustainable transport via the following initiatives:

- New pedestrian routes and improvements (widening) to existing footpaths to promote walking
- New cycle routes and provisions for cyclists in accordance with the London Plan 2021 with higher standards compared to the consented masterplan.
- Provision of 20% active EV vehicular charging points and 20% passive provision for future conversion.
- Supporting the creation of a new local bus route and facilities provided for the drivers.

### 7.2.6 Non-Residential uses (BREEAM)

Phase 4 incorporates a mix of non-residential uses including space for an office and a commercial retail unit. These uses are targeted to achieve a BREEAM rating of 'Very Good'.

### 7.3 Design Out Crime

The design of Phase 4 buildings has followed the rationale outlined in the approved masterplan and previous Phases of the development, applying the principles of Secured by Design New Homes guidance.

The buildings are arranged to create clearly defined and demarcated public and private spaces.

- Entrances are located on street corners and key locations where they are easily accessible, visible and overlooked, and do not present opportunities for crime or anti-social behaviour. Door entry systems will be provided in accordance with The Mayor's SPG for Housing Standard 13.
- The location and design of the ground floor and first floor B1 units, entrances, A3 commercial units and residential entrances create active and animated frontages to all streets and public spaces. Spill-out seating zones from the restaurants fronting the square will further enhance the activation and surveillance during the day and in the evenings.
- Physical security will be in accordance with Part Q of the Building Regulations.
- Cycle storage is incorporated in dedicated, secure enclosures within the basements for residents, and at ground level for commercial users. Sheilded stands are provided for guest and visitor cycle parking within the public realm.
- During the course of the design development, the local DOCO has been invited to consult with the development team on the development of Phase 4. The design has been reviewed and principles, to be reviewed further and incorporated into the detail design.

### 7.4 Fire Strategy

The fire strategy has been developed in consultation with specialist consultants Introba and through pre-applications with the HSE. The fire safety strategy is summarised below.

For further details regarding fire safety proposals please refer to Clarendon Phase 4 - Stage 2 Fire Strategy Report and Qualitative Design Review accompanying this application.

#### 7.4.1 Apartment

All apartments will incorporate sprinklers and 'stand-alone' fire detection and alarm systems.

All blocks have been provided with a fire-fighting shaft incorporating a fire-fighting stair, smoke clearance and a wet riser. In addition to this, each block has been provided with a secondary protected stair as an additional means of escape.

All blocks will be provided with a lift that will be suitable for disabled evacuation purposes.

The evacuation strategy for the residential use is based upon the principle of 'defend-in-place' whereby only the occupants of the affected apartment evacuate. This strategy is supported by the national guidance in the Building Regulations on the basis that a fire will generally occur in only one apartment and each apartment is compartmentalised in one hour fire resistant construction. This high level compartmentation ensures a low risk of fire spread beyond the apartment of origin.

#### 7.4.2 Non-residential Uses

It is proposed that the sprinkler system is extended to cover non-residential uses and basement car parking areas. Common areas will include automatic fire detection and alarm systems. Buildings are provided with fire-fighting shafts and dry rising mains in accordance with Building Regulations.

#### 7.4.3 Fire Service Access

Fire appliances have access within 40m of residential entrances and access to fire mains. There is a site-wide strategy for provision of hydrants within 90m of inlets and each other. All buildings include fire mains and fire-fighting shafts with appropriate periods of fire resistance and protection.

#### 7.4.4 Building Regulation

The development will be designed and constructed in accordance with Part B volume 1 & 2 of the Building Regulations 2010, 2019 edition. This incorporates amendments to Part B including Regulation 7 (Part B4) which sets out limits to combustibility of materials to resist fire spread through external walls.



Typical Lower Level Floor Plan

Key:

- Fire-fighting Stair
- Protected Stair
- Ventilated Corridor

# 7.5 Wind Assessment

## 7.5.1 Outline Scheme

Part of the documentation submitted and approved in support of the Hybrid Planning Application (ref. HGY/2017/3117) was an Environmental Statement (ES) containing a detailed Wind Microclimate Assessment prepared by Urban Microclimate Ltd.

The assessment applied wind tunnel testing of a physical scale model, in conjunction with long term wind statistics appropriate to the site, to provide a detailed assessment of pedestrian and elevated wind conditions in and around the site, based on the industry standard Lawson criteria for pedestrian safety and comfort.

For the plot submitted in outline, the wind tunnel testing was based on the illustrative scheme. In addition, the potential for additional cumulative effects with the further consented development at the Iceland Site (ref. HGY/2017/2886) was considered.

## 7.5.2 Proposed Scheme

A report considering the potential for any significant additional or different effects resulting from the detailed proposals for Phase 4 has been undertaken. This report highlights that the differences between the detailed proposals and the illustrative scheme considered for Blocks H1, H2 and H3 are not expected to significantly affect the suitability of wind conditions for existing and proposed activities in and around the site and the conclusions of the October 2017 ES are considered to remain valid. In addition, no significant additional adverse cumulative effects with the

Iceland development are expected.

## 7.5.3 Methodology

A detailed wind microclimate assessment has been undertaken using a scale model within a wind tunnel testing facility. Wind tunnel tests were carried out for the following configurations:

- Baseline conditions
- Proposed development with interim surrounds
- Proposed development with consented future surrounds

Note: in line with standard practice, future visions or frameworks are considered to lack sufficient detail (or commitment to said detail) to provide a meaningful assessment and these schemes are more appropriately assessed during the planning process for each scheme.

## 7.5.4 Conclusion

The report concludes that conditions are expected to be generally suitable for proposed pedestrian and occupant activities and that the proposed development has no significant impact on surrounding conditions.

- The proposed development has no significant impact on wind conditions with regards to pedestrian safety.
- In terms of pedestrian comfort, thoroughfares within and alongside the site are suitable for pedestrian access to, and passage through or past, the proposed development.
- Main entrances to the proposed development enjoy suitable conditions for pedestrian ingress / egress, with secondary

entrances at least tolerable.

- Bus stops along Silsoe Road enjoy suitable conditions for awaiting a bus.
- Recreational spaces generally enjoy suitable conditions for planned activities.
- The proposed development has no significant adverse impact on the pedestrian level wind conditions within the surrounding area and, in conjunction with Phase 5, is expected to enhance conditions within Phase 3's ground and podium level amenity spaces.
- No significant cumulative effects with the future surrounding developments are expected.

On the basis of the above, the proposed development is considered compliant with the assumptions and conclusions of the 2017 ES for the consented outline scheme.

For further details regarding the impact of wind on the surrounding context refer to the Wind Microclimate Report, prepared by Urban Microclimate, accompanying this application.



## 7.6 Daylight & Sunlight

### 7.6.1 Introduction

The design of the buildings and spaces have been developed to meet best practice guidance in accordance with London Plan policy and BRE guidance. A specialist Daylight & Sunlight consultant (Anstey Horne) have been appointed as part of the design team to provide advice and detailed analysis upon design options as the proposals emerged. Anstey Horne have produced technical assessments

### 7.6.2 Daylight to New Dwellings

The daylight availability within the proposed habitable rooms has been calculated in accordance with the illuminance method and the ADF method.

While it is recognised that the ADF method has been superseded since the release of the third edition of the BRE Guidelines in June 2022, it has been used to judge the acceptability of the Consented Blocks, and should therefore have significant relevance when judging the acceptability of the Proposed Development, particularly since the wider outline development has been designed based on those principles.

Of the 542 rooms tested across all blocks, 70% (378) meet the default illuminance target for the rooms described use (179 rooms in Block H1 and 199 in Blocks H2 & H3). Using the ADF method 75% (408) rooms meet the default targets (219 in Block H1 and 199 in Blocks H2 & H3).

In terms of the Consented Blocks, it should be borne in mind that the respective blocks achieved the following compliance rates:

- (a) the Block D1-D2 Report: 82%
- (b) the D3-D4 Block Report: 79%
- (c) the E Block Report: 76%

Similar to the results in the Consented Blocks, the majority of shortfalls from default BRE Guidance is due to the presence of balconies that sit above the window beneath them; as such it is there often a trade-off between external amenity space and direct skylight in dense urban regenerations; the resulting figures are not unusual in this type of development, and have been considered

acceptable in similar scale regenerations.

Overall, the Proposed Development is considered to carry a reasonable level of compliance with BRE Guidance and, which is broadly similar to the Consented Blocks, and can therefore be considered acceptable on balance.

### 7.6.3 Sunlight to New Dwellings

The focus of the BRE sunlight guidelines is on main living rooms, rather than bedrooms and kitchens. A total of 297 main living rooms (including rooms containing the main living area, such as a living/kitchen/dining room or a studio) were tested.

The sunlight results for the rooms tested are given in the table at Appendix C. As advised by the BRE Guidelines, these are room-based aggregate figures taking account of sunlight available to all windows, where they are served by more than one.

The results confirm that 57% (169) of the 297 south facing rooms assessed achieve the guidelines for SE. Of these rooms, 100 achieve the BREs high rating and 14 achieve the medium rating, 55 achieve the minimum rating.

### 7.6.4 Sunlight to Public and Residents Shared Amenity

The massing of Block H1, H2 and H3 have been specifically designed to maximise sunlight opportunity to the public and residents amenity spaces.

Phase 4 is situated to the north of the public square so will have minimal overshadowing impact. The new Arcade, although a transitional space, will still benefit sunlight through the middle of the day being on a north-south axis.

Residents for all blocks will have access roof terraces with generous sunlight. H1 has a roof terrace located at 10th floor with a southerly aspect and no overshadowing. H2 & H3 both have access to a 14th floor roof garden with good sunlight access.

### 7.6.5 Overshadowing of Neighbouring Sites

Condition 4 of the Hybrid Planning Application (ref. HGY/2017/3117) states:

‘Reserved matters applications for any development within development zones H, D and E must be accompanied by a report and/or masterplan demonstrating that the proposed development does not compromise the deliverability of development of adjoining sites’

The daylight and sunlight specialist consultants Anstey Horne have undertaken several assessments for the overshadowing of neighbouring properties to help guide the design of the Phase 4 proposals. The assessments were made in accordance with the BRE guidelines and results appraised for VSC (Vertical Sky Component), APSH (Annual Potential Sun Hours) and WPSH (Winter Potential Sun Hours).

Regarding the impact to the existing neighbouring conditions the assessment results found that the impact of the Blocks H1-H3 RMA block massing will not have a greater impact on the neighbouring properties or the surrounding blocks than was reported for the 2017 ES. The assessment from Anstey Horne therefore confirms that the range of effects on daylight and sunlight to neighbouring properties remain unchanged from that presented within the 2017 ES.

Regarding the impact on the adjacent development potential, including Bittern Place, Mallard Place and Kingfisher Place. The daylight potential for the facades of each development have been mapped alongside the model of the proposed Phase 4 scheme. The results show facades to achieve daylight levels where well considered design will ensure habitable rooms are adequately daylight.

7.7 Facade Maintenance, Access and Cleaning

A holistic approach has been taken for the design of the strategy for cleaning, maintenance, and glass replacement over the lifetime of the building.

Abseiling access has been allowed for to all façades of the buildings for general access and maintenance. However, a hybrid strategy has been adopted for window cleaning, to give the residents the ability to clean internally where it's safe, practical and possible.

Block H2 and H3

All windows and balcony doors in H2 and H3 can be cleaned internally by the residents by hand and using a short, 1m cleaning tool.

Block H1

A hybrid strategy has been adopted for H1 due to the height and nature of this building and the fenestration design. The adjacent diagrams highlight in blue the windows which will require abseiling for cleaning purposes. The remainder of the windows can be cleaned internally.



7.8 Residential Quality

7.8.1 Design Standards

Phase 4 of Clarendon Gasworks has been designed with due regard for the following relevant standards:

- The London Plan 2021
- DCLG Technical Housing Standards – Nationally Described Space Standards (19th May 2016)
- The Building Regulations
- Approved Parameter Plans
- Clarendon Gas Works Design Code
- St Williams Apartment Design Minimum Requirements Guide

7.8.2 Apartment Aspects

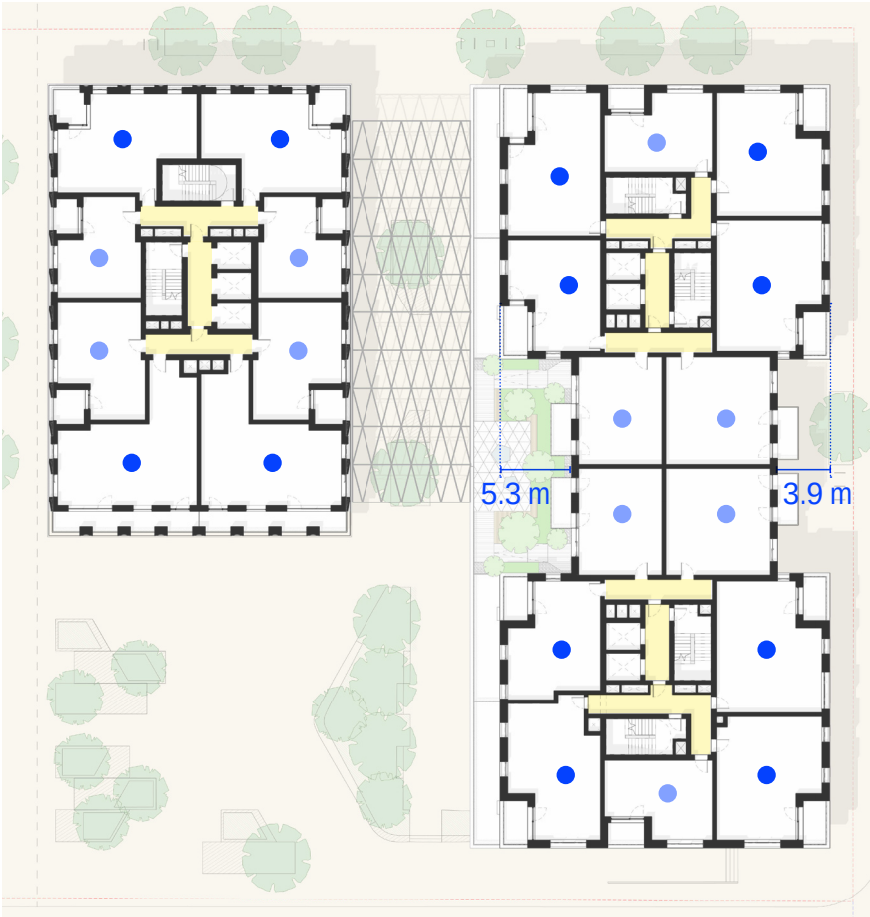
A principle of the design development has been to maximise the ratio of dual aspect homes.

The site wide schedule of accommodation in the Hybrid Planning Permission indicated a dual aspect ratio of 61.3%.

The Design Code 2.4.1 states that no more than 10% of units in the overall development can be single aspect north-facing.

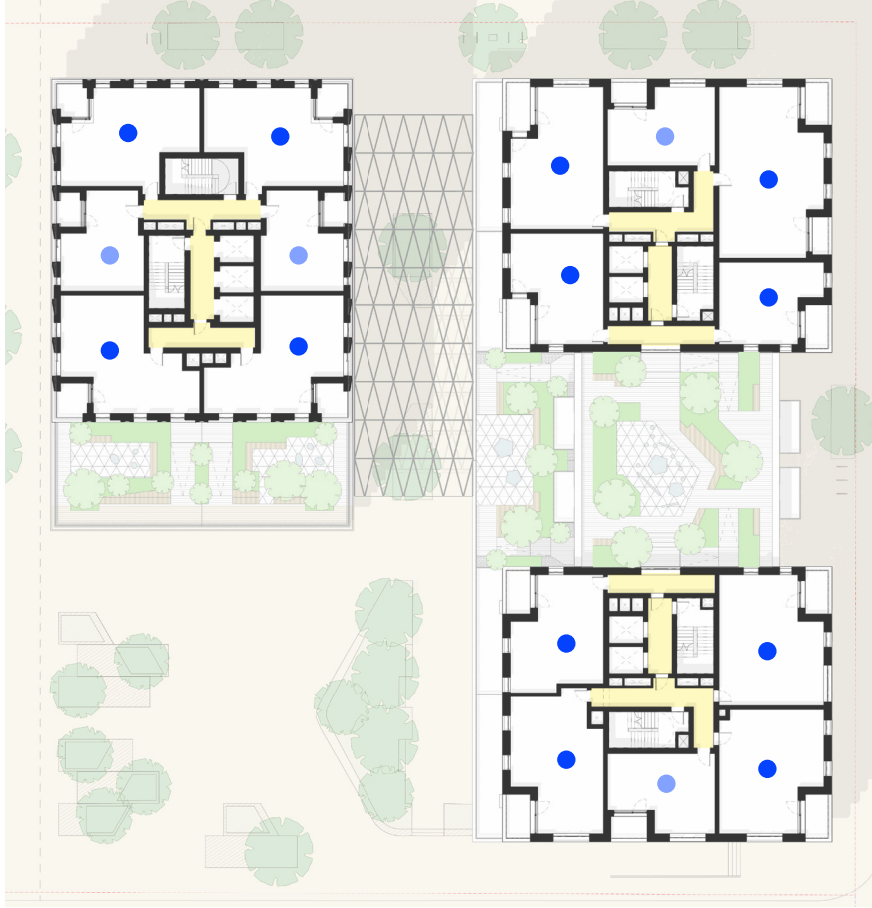
Phase 4 delivers a dual aspect ratio of 62%, and only 4% single aspect north-facing units, a significant improvement on the requirements of the Design Code.

The number of units per core has been limited to no more than 8 at the lower levels, and 4-6 units on the upper levels.



Typical Lower Floor Plan

- Key:
- Dual Aspect Units
  - Single Aspect Units
  - Common Corridor



Typical Upper Floor Plan

**2.4.1 Limiting north-facing single aspect units**  
REASON: Ensuring decent outlook and orientation is important in dense developments in order to create genuinely liveable amenity space for all residents.  
- CODE: Offsets in the facade are encouraged to maximise dual aspect zones.  
- CODE: Offsets of >3m can create homes which genuinely have a dual aspect and outlook, enriching the sunlight penetration, outlook and visual connection with local context.  
- CODE: No more than 10% of units in the overall development can be single aspect north-facing.

Extract from the Design Code

### 7.8.3 Private Amenity Space

The London housing SPG states that each home should have a private amenity space of a minimum 5 sqm for 1-2 persons and 1 sqm per additional occupant. Minimum depth of the space should be 1.5m, this has been provided for all homes of the Phase 4 development.

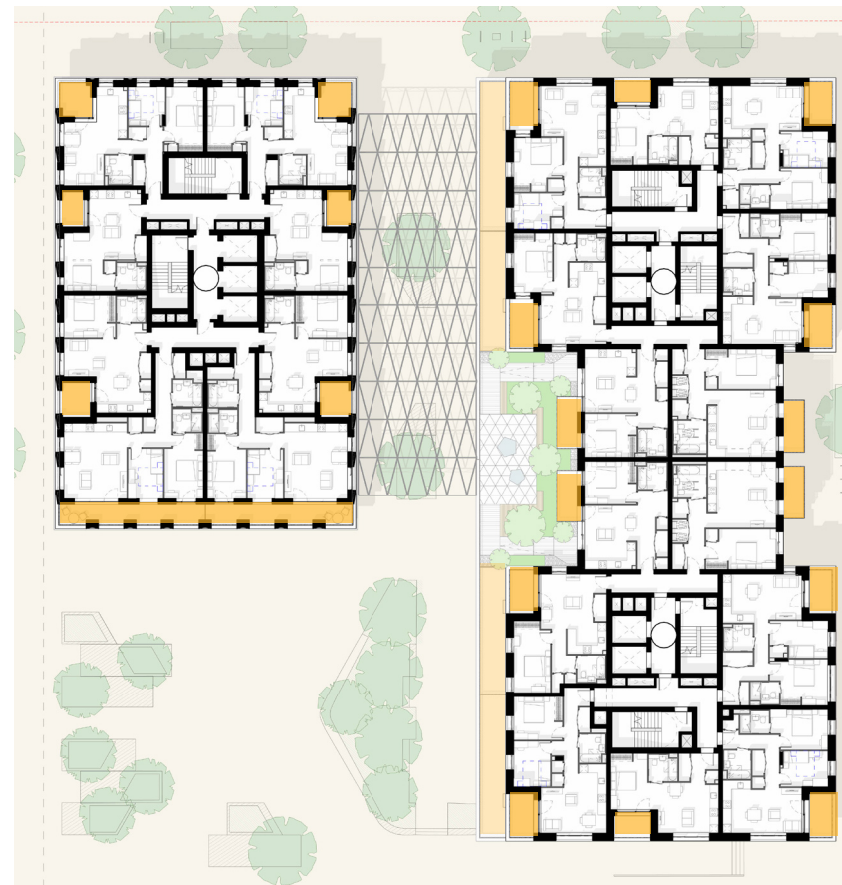
In-keeping with the masterplan Design Code the majority of the balconies are recessed to provide enhanced privacy in this more urban setting and greater shelter from wind. Balconies are designed to be an extension of the living spaces and where possible they have been placed on building corners to maximise outlook and aspect. Projecting balconies have been introduced to the recessed and most sheltered part of the façades between H2 and H3 to minimise overshadowing of apartments.

### 7.8.4 Designing for Sunlight/ Daylight

The design has recognised the challenges of achieving good levels of daylight in high density development and has responded as follows:

- H1 has been separated from H2/3 to maximise light access to the building façades.
- The slim profile of H1, H2 and H3 creates shallow units with optimum facade widths glazing area.
- The sculpting of the building forms around a communal roof terrace on the second floor between H2 and H3, creating increased southern and western solar access into the amenity space and the surrounding units.

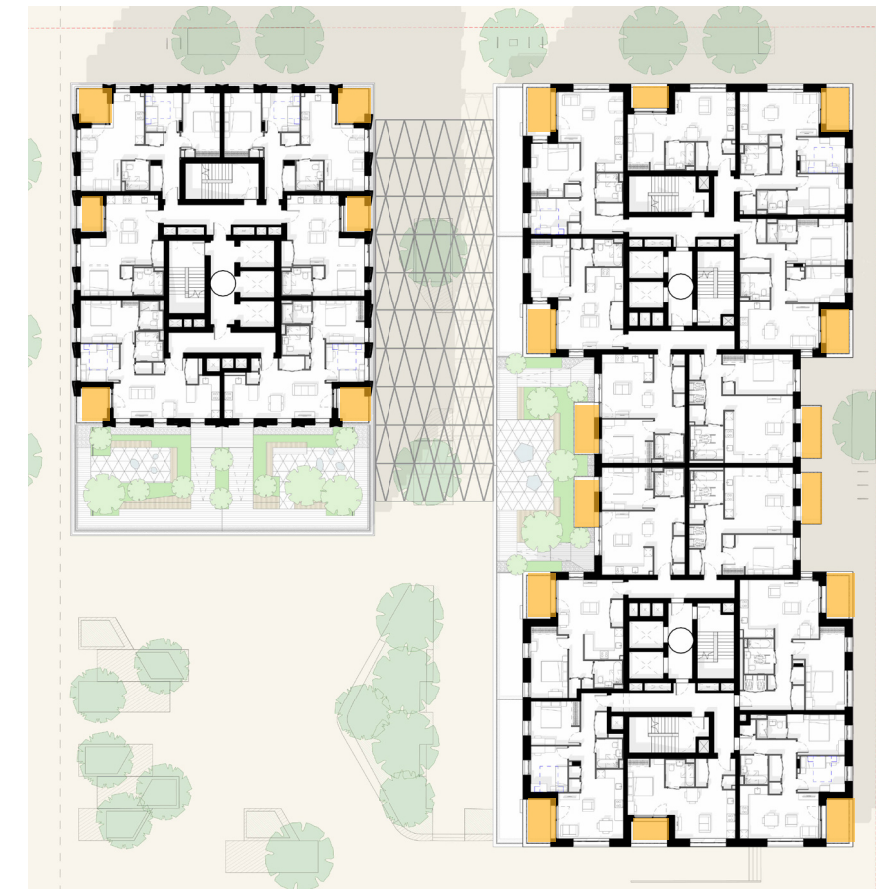
For further details regarding sunlight and daylight levels within the apartments, refer to the Daylight & Sunlight Assessment, prepared by Anstey Horne, accompanying this application.



Typical Lower Floor Plan

Key:

- Private Terraces/ Balconies
- Private Terraces L02



Typical Upper Floor Plan

7.9 Sample Apartment Design

A selection of apartment layouts have been included on the following page to demonstrate the design principles and quality of internal space.

Designs have been developed in collaboration with the St William team. Designs have been developed in compliance with Part M and NDSS space and furniture arrangement standards.

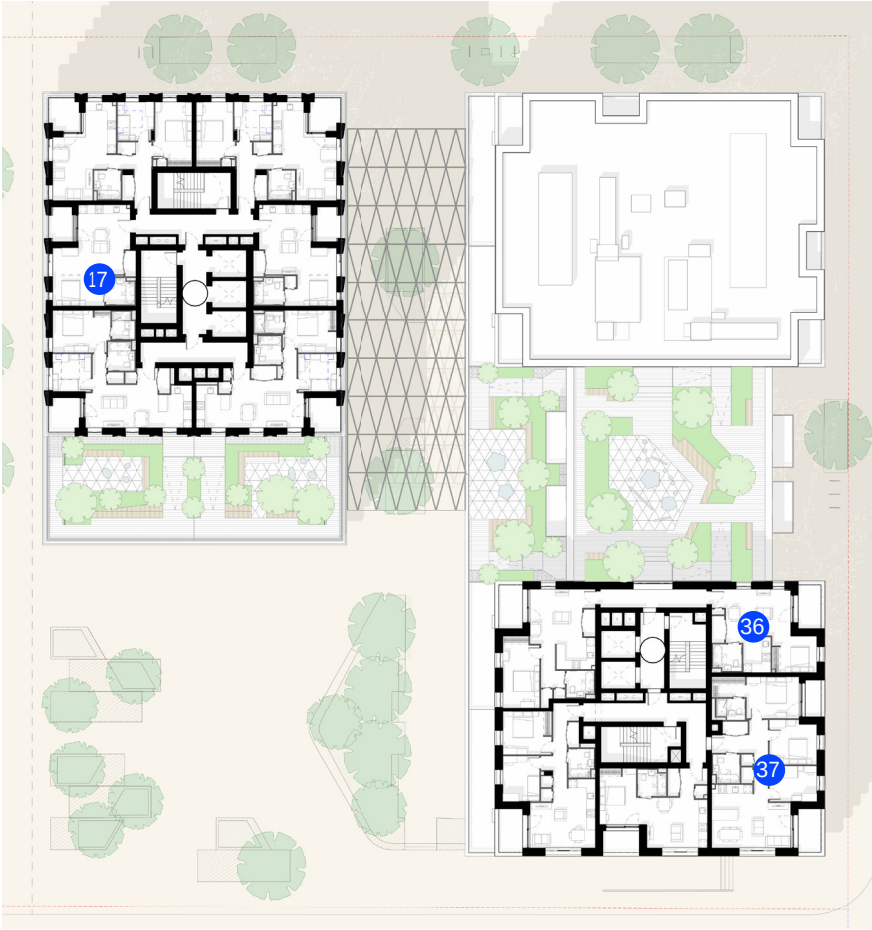


Visualisation of the Internal Space of Apartment Type 02

Key Plans



Typical Lower Floor Plan



Typical Upper Floor Plan

- Key:
- ⓧ Apartment Types

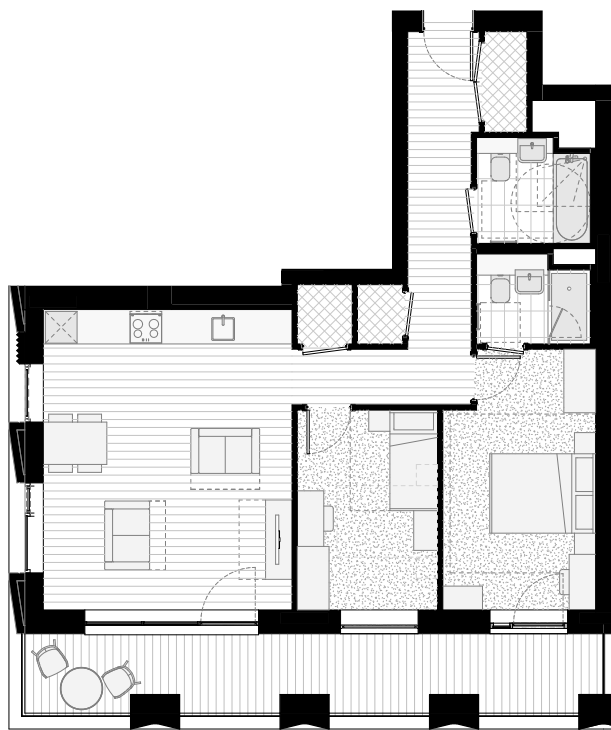
Apartment Layout Plans



Apt Type 02 - 2B3P



Apt Type 05 - 1B2P



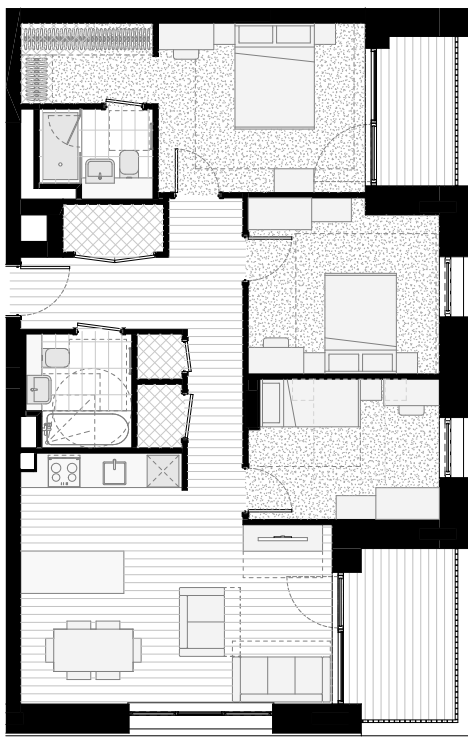
Apt Type 07 - 2B3P



Apt Type 12 - 2B3P



Apt Type 18 - 1B1P



Apt Type 37 - 3B5P

7.10 Wheelchair Adaptable Units

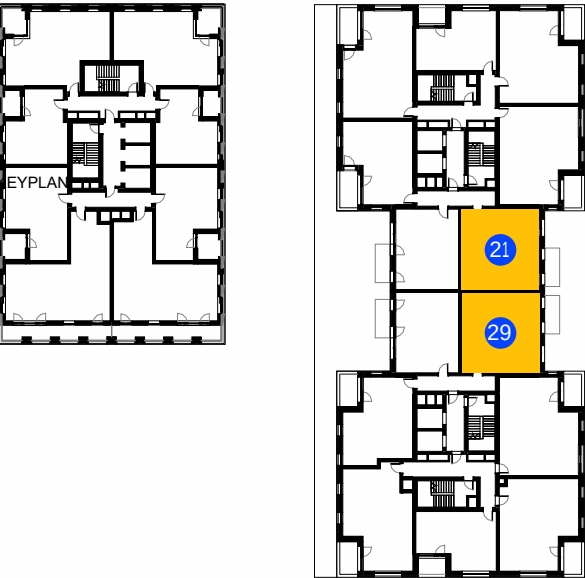
There are two types of wheelchair adaptable homes (Part M4(3) ) in Phase 4. These are located from the first floor to the seventeenth floor of H2 and H3. The layout and location of these are illustrated on the following pages.

More details regarding the design and provision of Part M4(3) homes can be found in Section 7.1 of this document.

7.10.1 Part M4 (3) home - apartment type 21 & 29

Apartment type 21 and 29 are 1-bed 2-persons units located in the centre portion of H2/3 facing east. Type 21 and type 29 are mirror versions of the same apartment layout.

There are 25 apartments of this type.



Key Plan - Typical Lower Floor

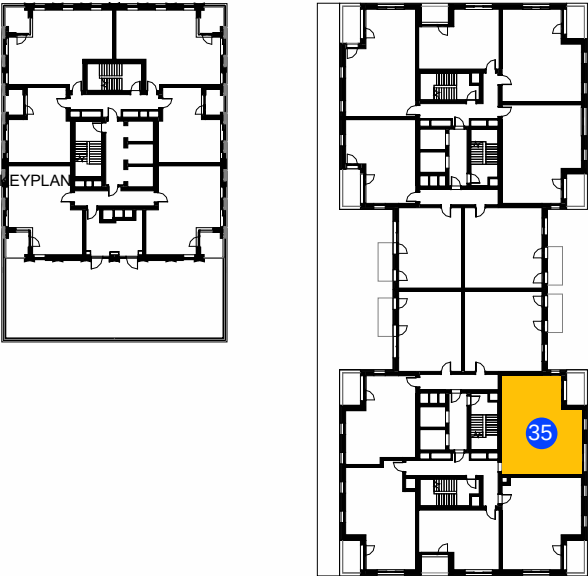


Wheelchair adaptable unit layout - apartment type 21

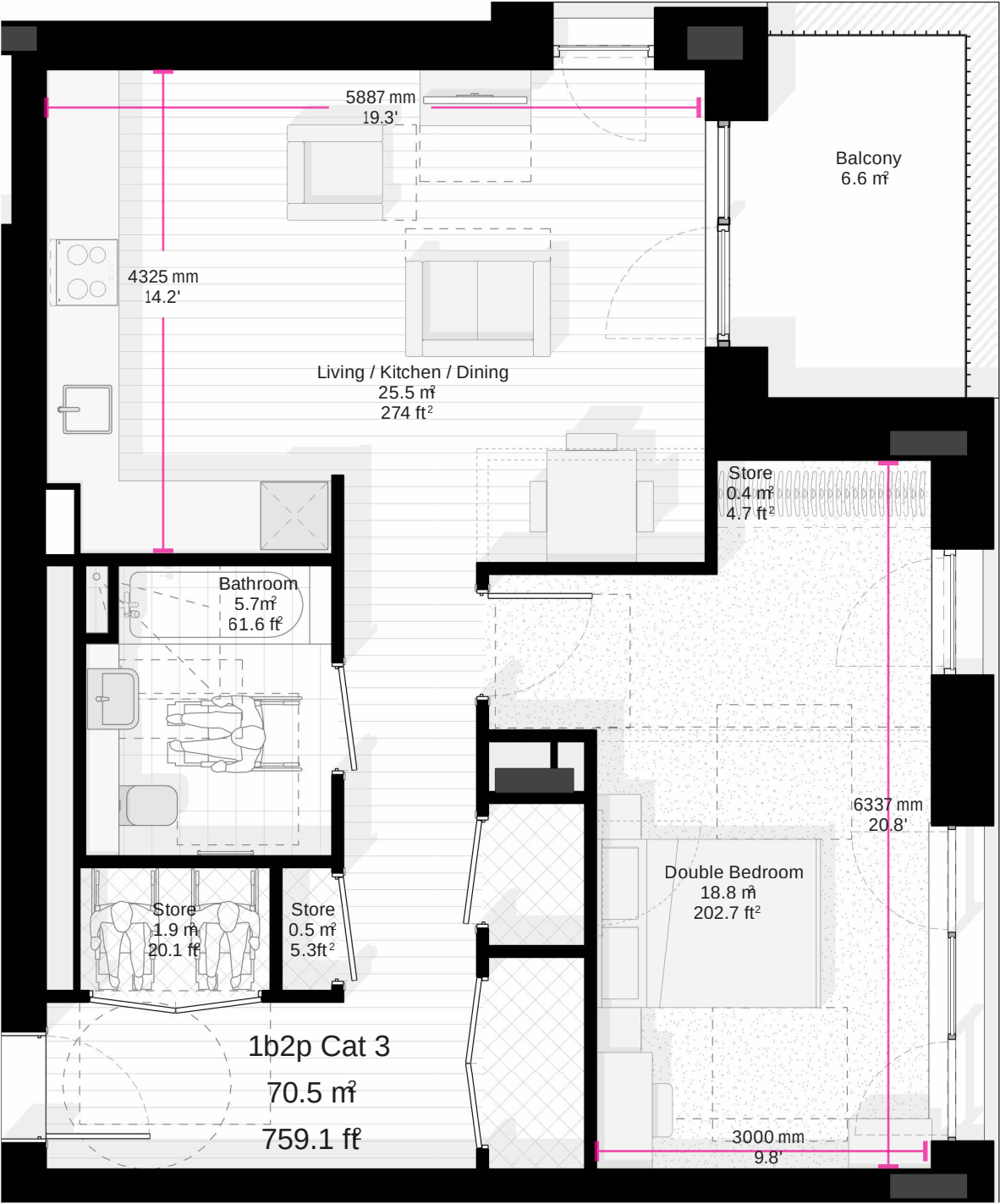
7.10.2 Cat3 home - apartment type 35

Apartment type 35 is a dual aspect 1-bed 2-persons unit located on the north-east corner of H3.

There are nine apartments of this type.



Key Plan - Typical :Lower Floor



Wheelchair adaptable unit layout - apartment type 35