

7.1 Design Principles

Flood Levels and Escape Route

Flood Levels

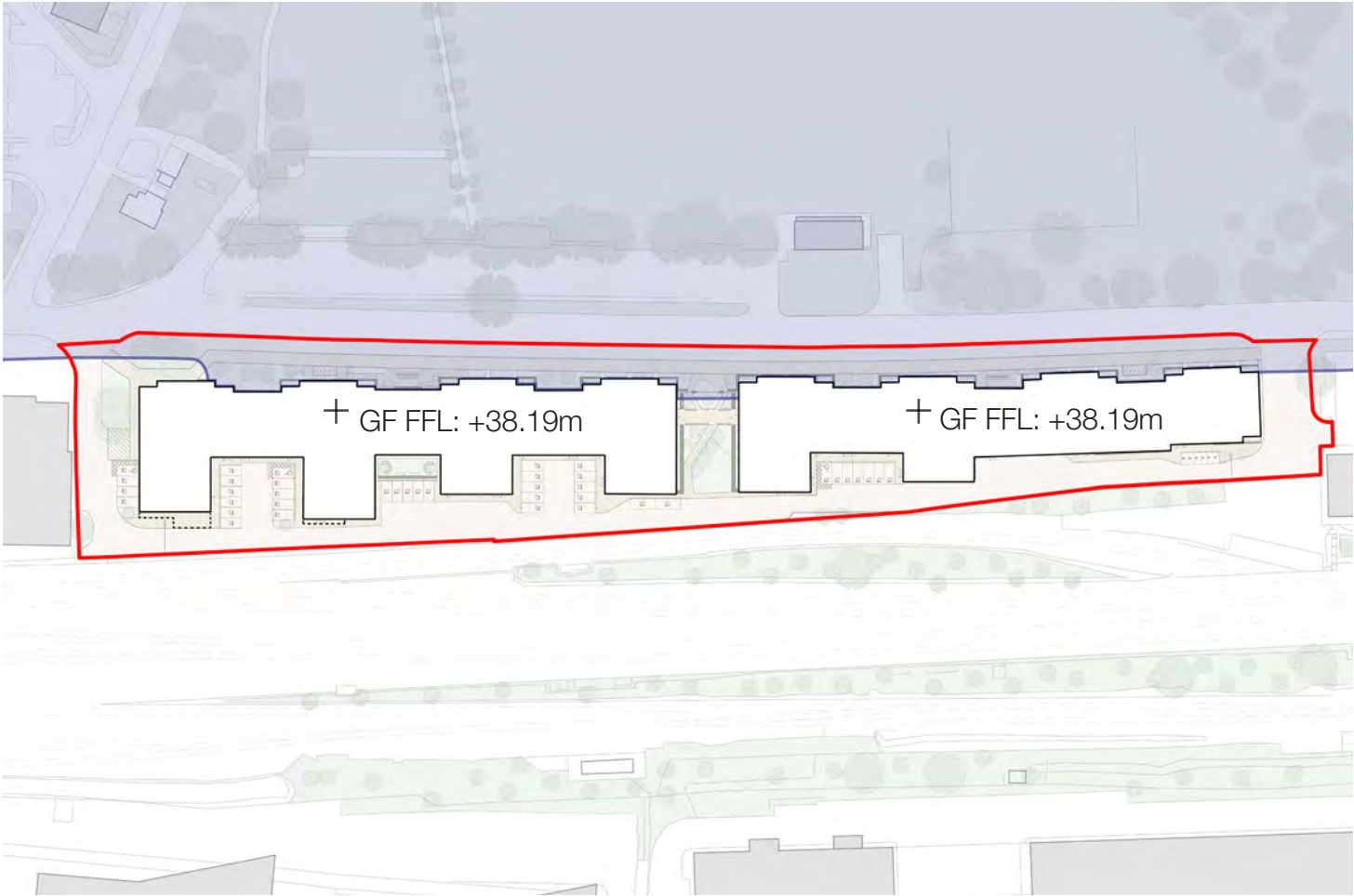
The site is within flood zone 2 and will have a proposed FFL at 300mm above the design flood level. FFL will be set at +38.19 which reflects current EA requirements for flood mitigation to allow for a 1: 100 year flood events, +35% for climate change.

External levels will be developed to tie into the existing whilst maintaining an appropriate level to facilitate safe escape.

Further information is set out in the Flood Risk Assessment and Drainage Strategy prepared by Curtins and submitted as part of the planning application for Napier Court.

Key

- Site Boundary
- Proposed Flood Zone After Development
- Ground Floor FFL



Escape Route

This diagram below shows the intended escape route in the case of a flood event.

The strategy allows escape to the front of Thames Quarter which allows onwards connection to the town centre.

Key

- Site Boundary
- Proposed Flood Zone After Development
- Escape Route
- Thames Quarter



7.2 Design Principles

Fire Access and Strategy

Fire Access

Fire service access to the primary core for each block will be allowed within 18m of a dry riser inlet (as indicated by dashed arcs in the diagram below). An indication of fire tender positions is also provided in this diagram.

Escape from primary and secondary cores will be to a safe and dry external level to allow safe progression to an appropriate muster point away from vehicular routes where possible.



Key

- Site Boundary
- Primary Core
- Secondary Core
- Fire Tender Access Route
- Dry Riser Inlet

Fire Strategy

Each block has access to 2no fire escape stairs at cores positioned at either end of an accessible corridor acting as protected routes.

Primary cores will have a firefighting and evacuation lift used ordinarily on a day to day basis as passenger lifts serving the building.

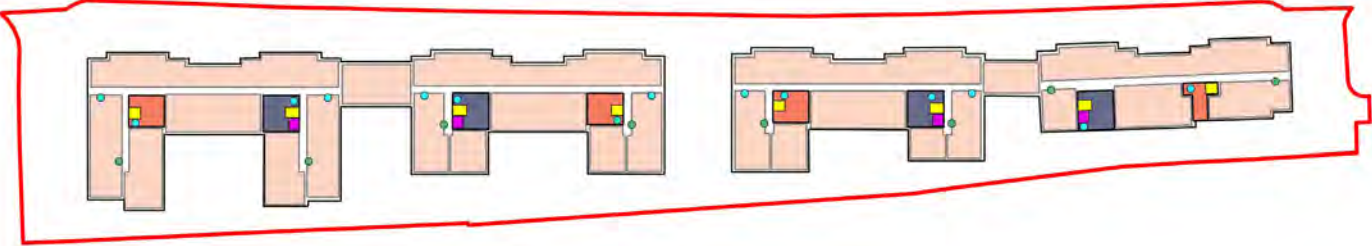
Secondary cores accommodate an evacuation lift also used ordinarily on a day to day basis as a passenger lift.

The smoke ventilation strategy has been developed in co-ordination with both the fire consultant and service engineers. The principle is natural intake for air displacement and mechanical extract for each central circulation corridor.

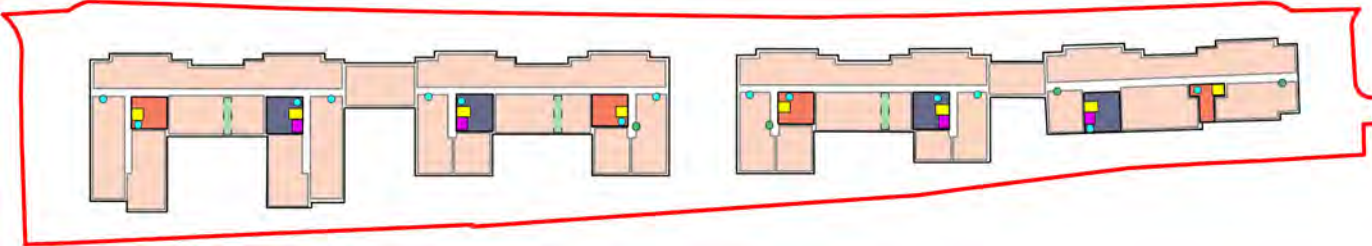
See below diagram for design principles and strategy.

Final escape from within the cores at ground floor will allow onward access to identified muster points.

Fire Strategy Upper Floors



Fire Strategy Ground Floor



7.3 Design Principles

Cleaning and Maintenance Strategy

Cleaning and Maintenance Strategy Ground Floor

The preliminary cleaning and maintenance strategy suggests a mixture between reach and wash for lower level easier to reach levels alongside an abseiling approach where appropriate perimeter systems will be put in place to facilitate abseiling access to each facade.

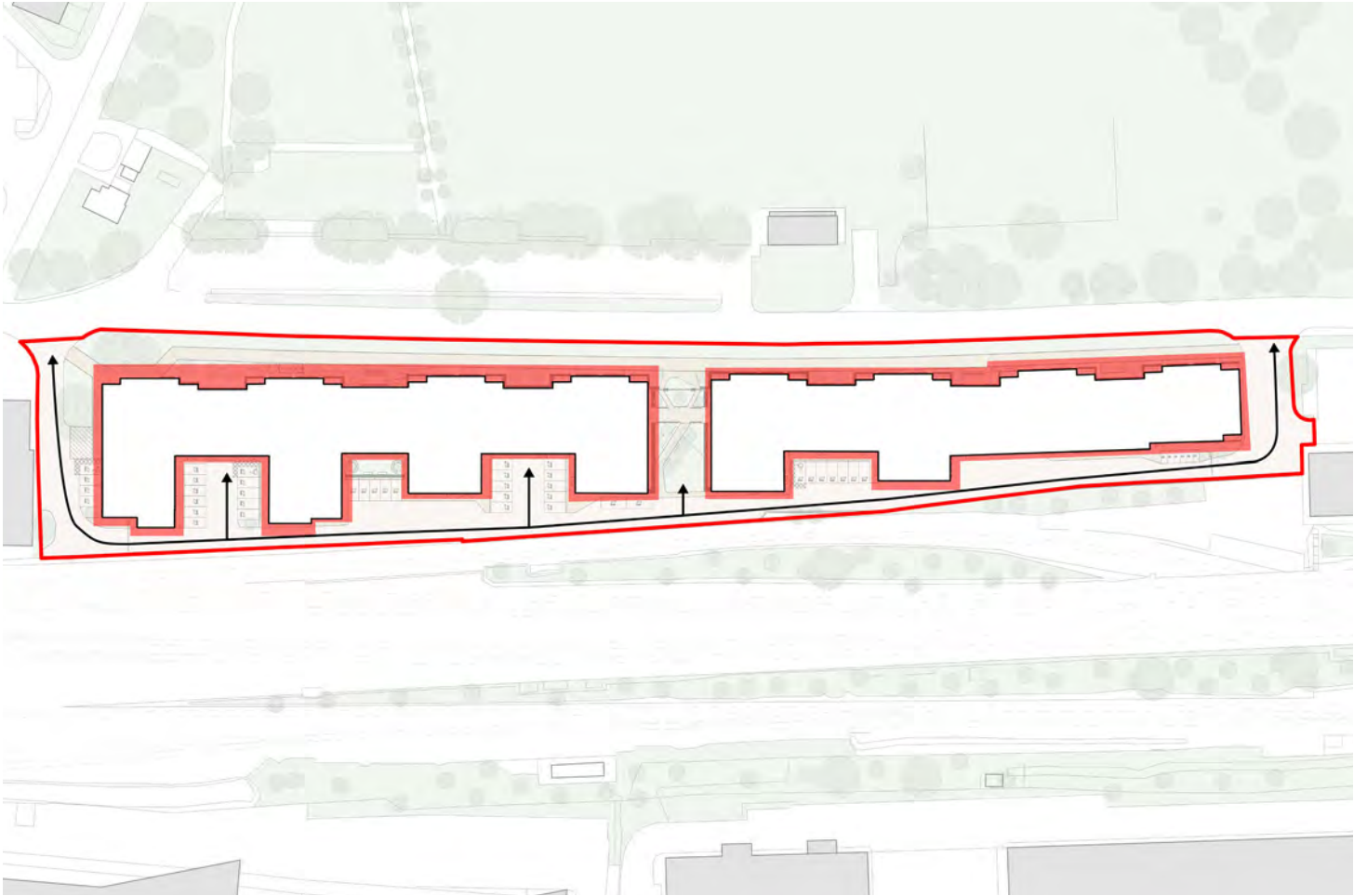
Inset balconies are proposed to some apartments and the strategy for these will be that residents can clean these windows safely from the balcony.

The window replacement strategy is to be dealt with internally. Replacement glass will taken up via core lifts, and replaced within the apartments. Any other inspection or maintenance to the facade can be done via abseiling, MEWP or scaffold access.

The diagram below illustrates general access principles for both scaffolding or MEWP access. With a MEWP the 25m horizontal reach allows for access to all of the facade from either the rear access road or by sectioning part of the pavement at the front of the building.

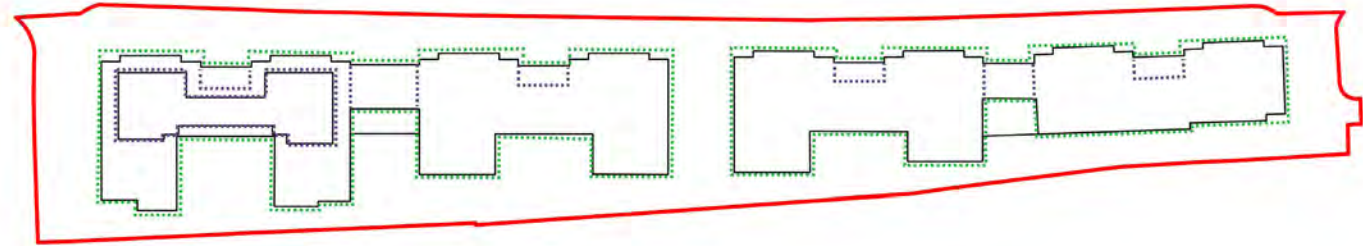
Maintenance Strategy Ground Floor

Indicative Mobile Elevating Work Platform (MEWP) Access Route

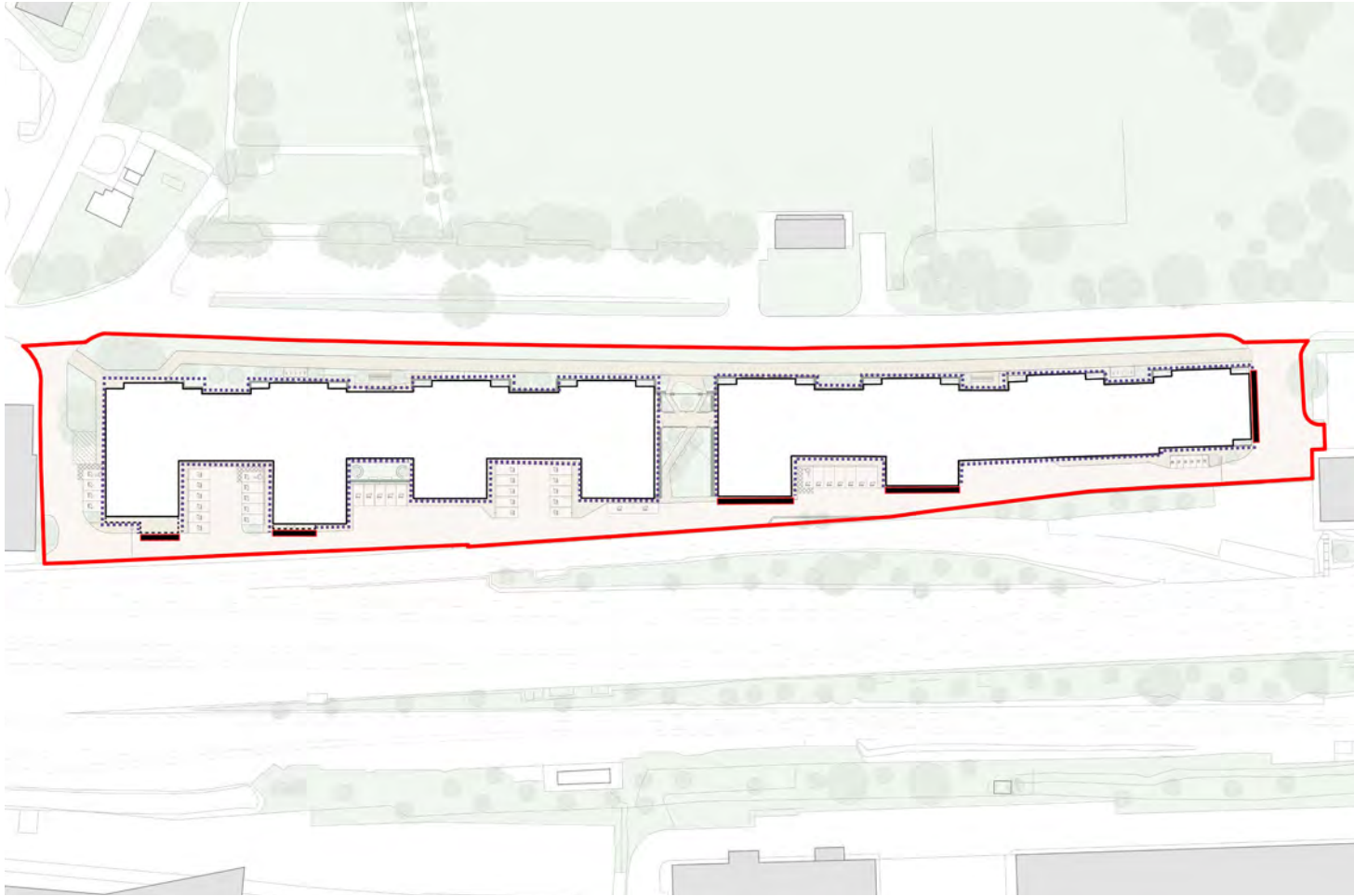


- Key**
- Site Boundary
 - Cleaning Landing Zone A
 - Abseil Landing / MEWP Access
 - Reach and Wash Cleaning
 - Abseil Cleaning
 - Maintenance Access Route

Cleaning Strategy Upper Floors



Cleaning Strategy Ground Floor



7.3 Design Principles

Cleaning and Maintenance Strategy

Cleaning and Maintenance Strategy

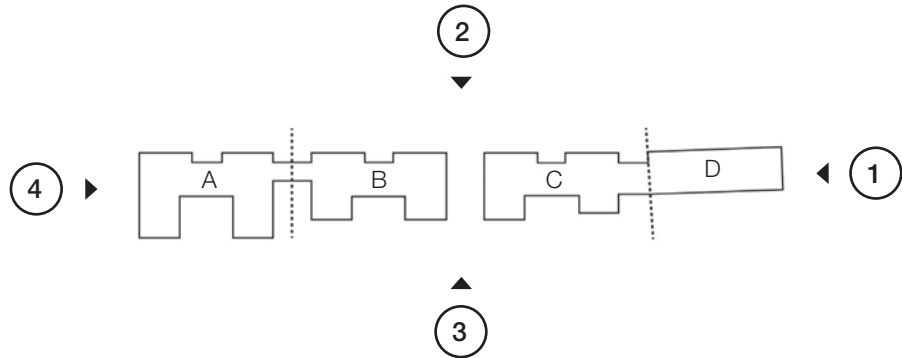
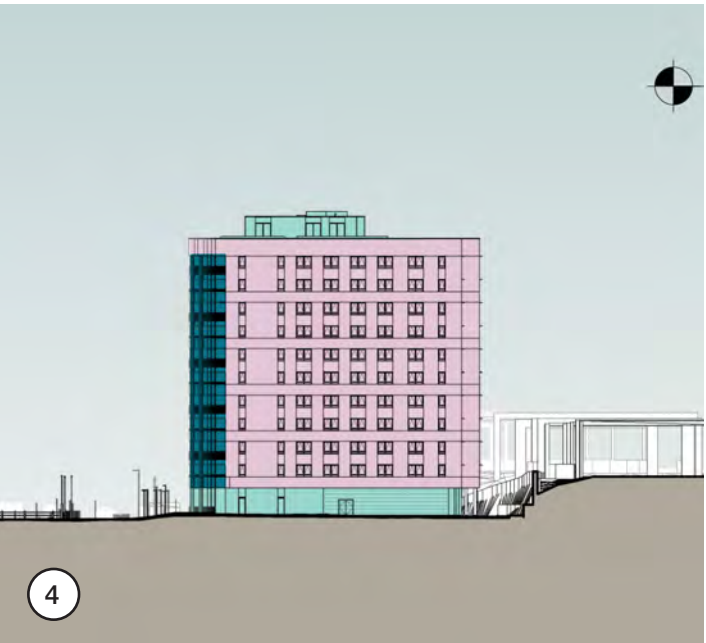
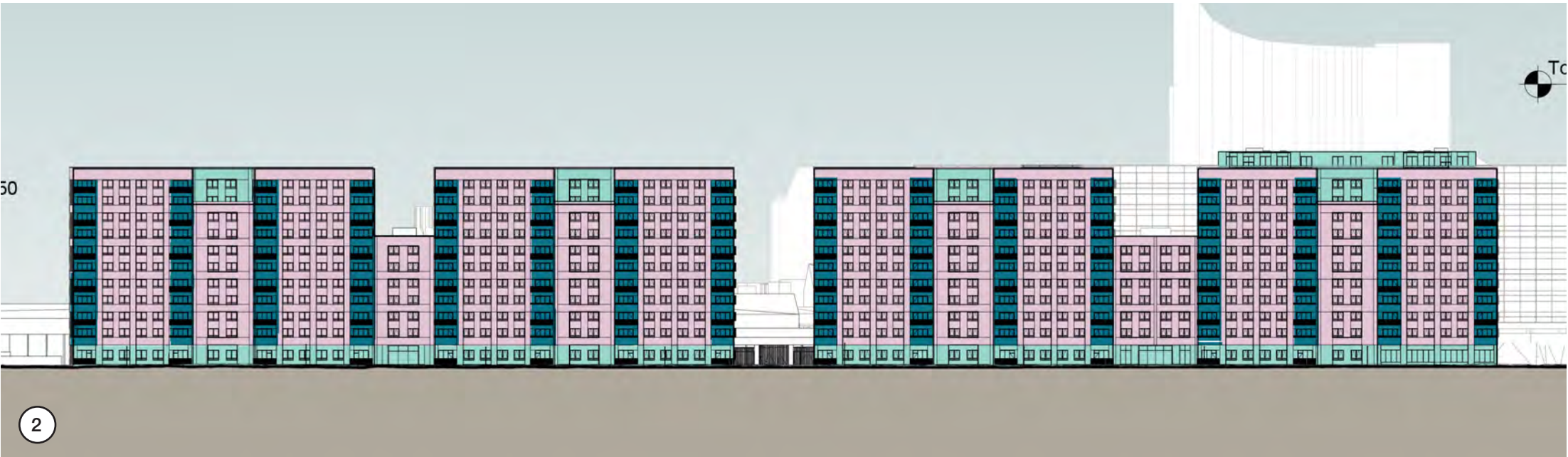
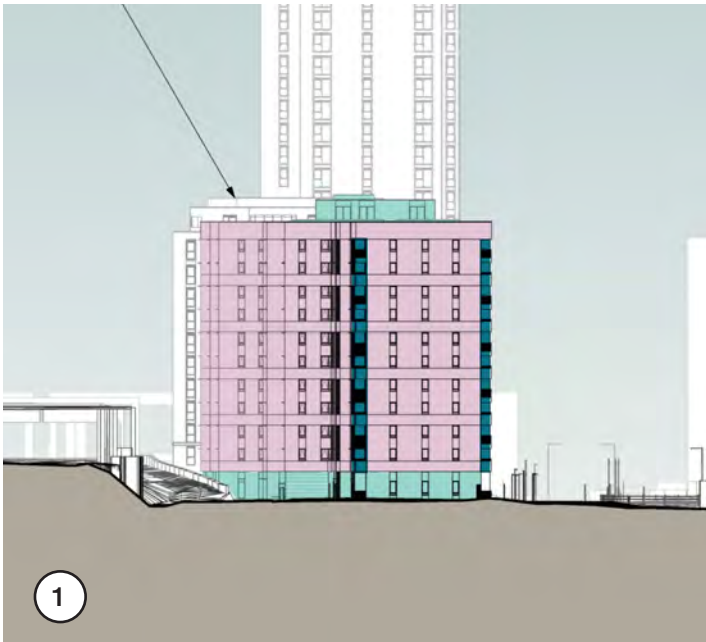
The diagrams illustrate the front and rear facades and explain the strategies involved in the cleaning and maintenance of the facades.

Ground floor and roof amenity benefit from reach and wash cleaning methods, while abseiling cleaning is used for the upper floors.

- Key
- Reach and Wash Cleaning

Abseiling Approach

Cleaning from Balcony



7.3 Design Principles

Cleaning and Maintenance Strategy

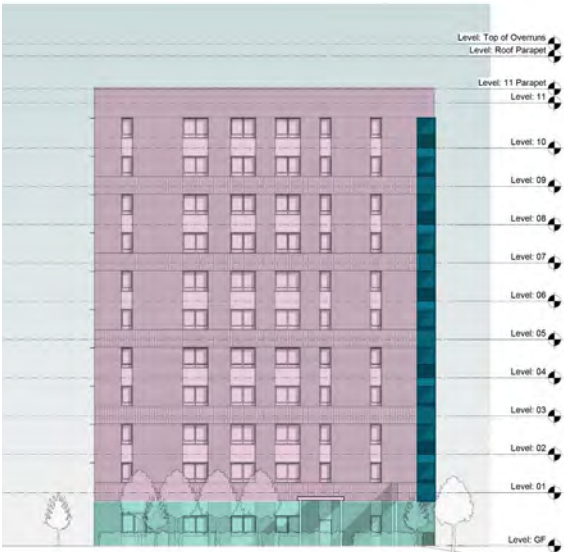
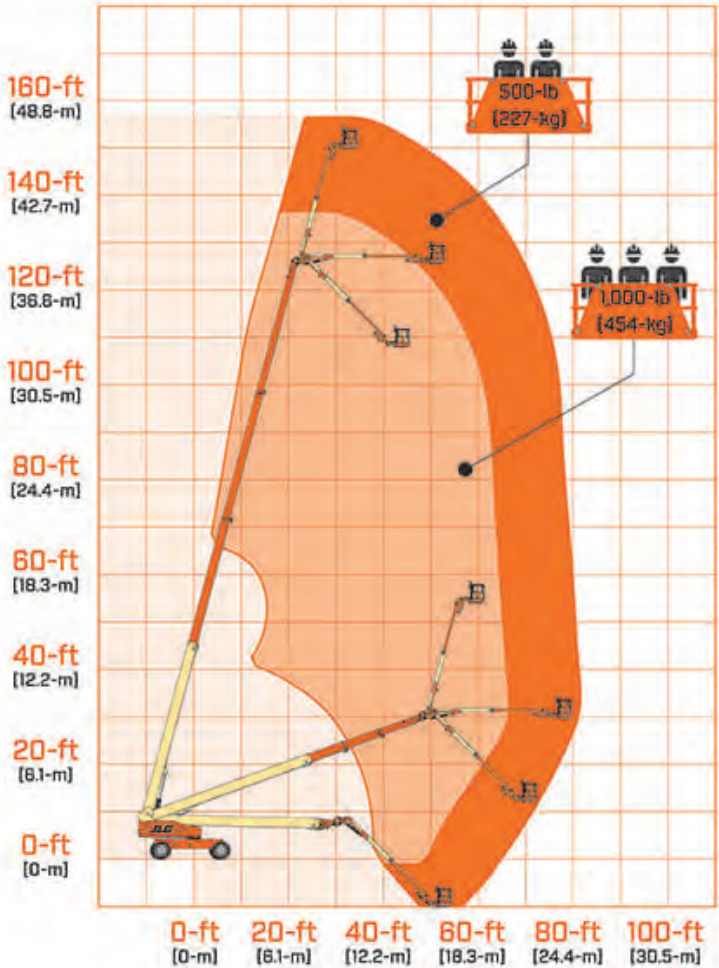
Cleaning and Maintenance Strategy

The diagrams illustrate the side and courtyard facing facades and explain the strategies involved in their cleaning and maintenance.

The adjacent images illustrate a combination of cleaning and maintenance methodologies.

Accessible lower levels at ground floor and roof terraces may be cleaned via reach and wash. Upper levels will be cleaned via abseiling from roof level Davit arms, whilst the cleaning of balconies will be undertaken by residents.

The window replacement strategy is to be dealt with internally. Replacement glass will taken up via core lifts, and replaced within the apartments. Any other inspection or maintenance to the facade can be done via abseiling, MEWP or scaffold access.



1



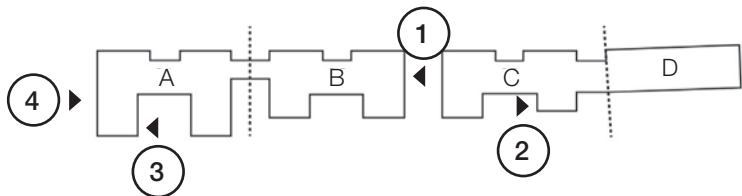
2



3



4



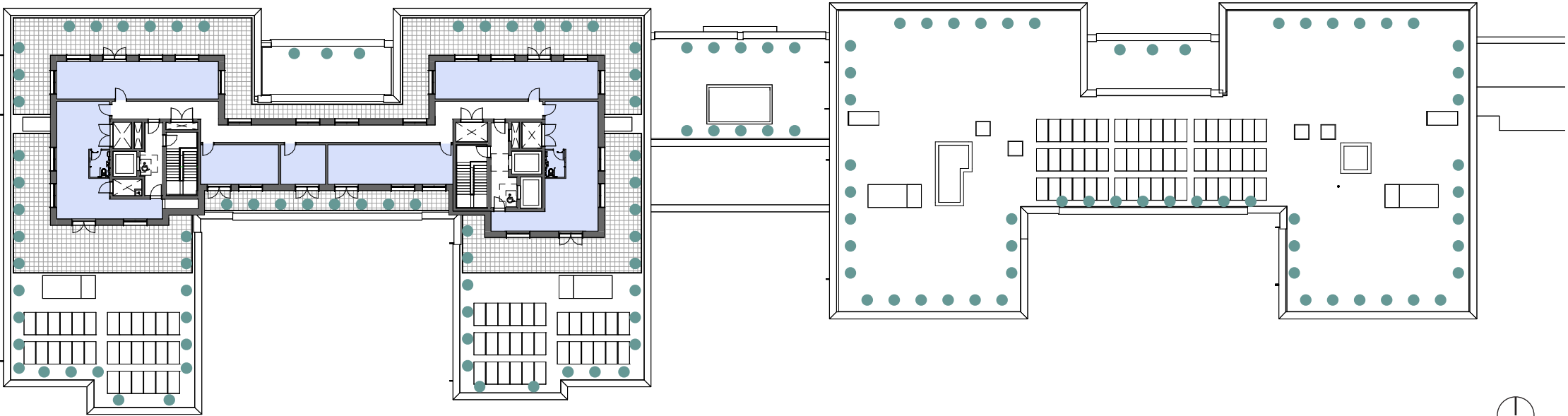
7.3 Design Principles

Cleaning and Maintenance Strategy

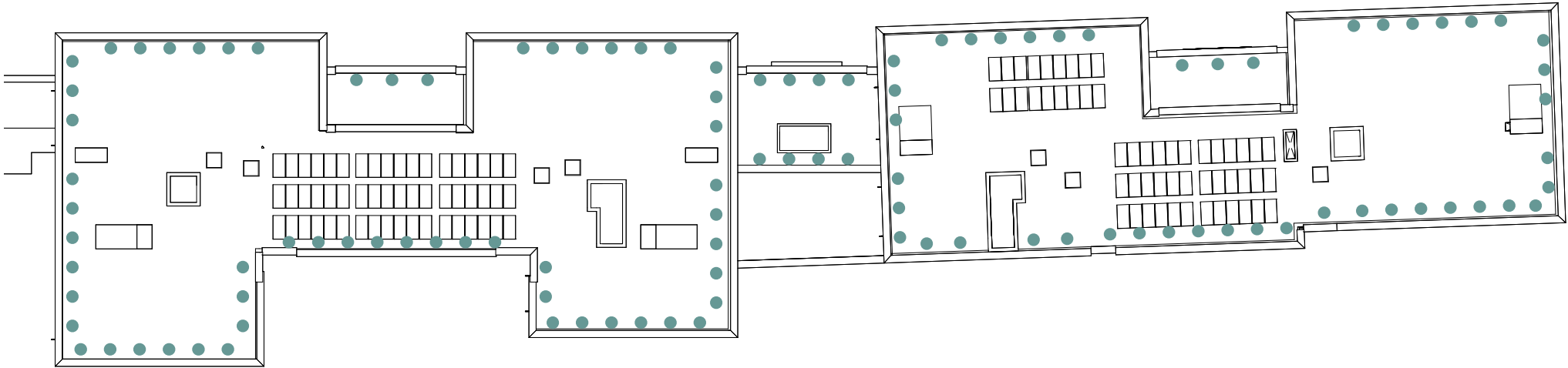
Cleaning and Maintenance Strategy

The below diagram shows indicative locations for the Davit Arm Anchors accessed on the various roof areas.

● - Davit Arm Anchor



Block A & B Roof Plan - Indicative Davit Arm Anchor Locations



Block C & D Roof Plan - Indicative Davit Arm Anchor Locations

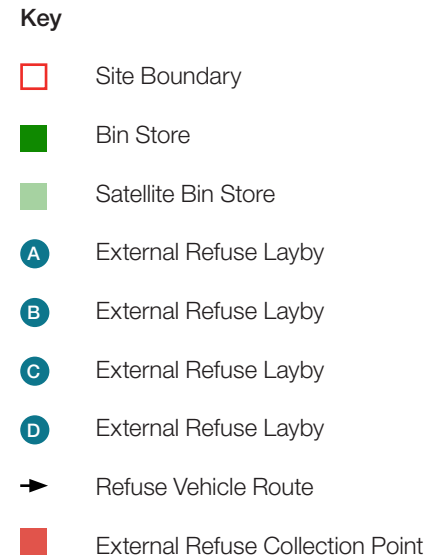


Refuse and Recycling Store Access and Provision

A one way servicing route is created with access from Napier Road with the entrance on the eastern access point, and egress at the western point adjacent to Thames Quarter.

Various laybys are proposed for waste collection vehicles as shown in the diagram below.

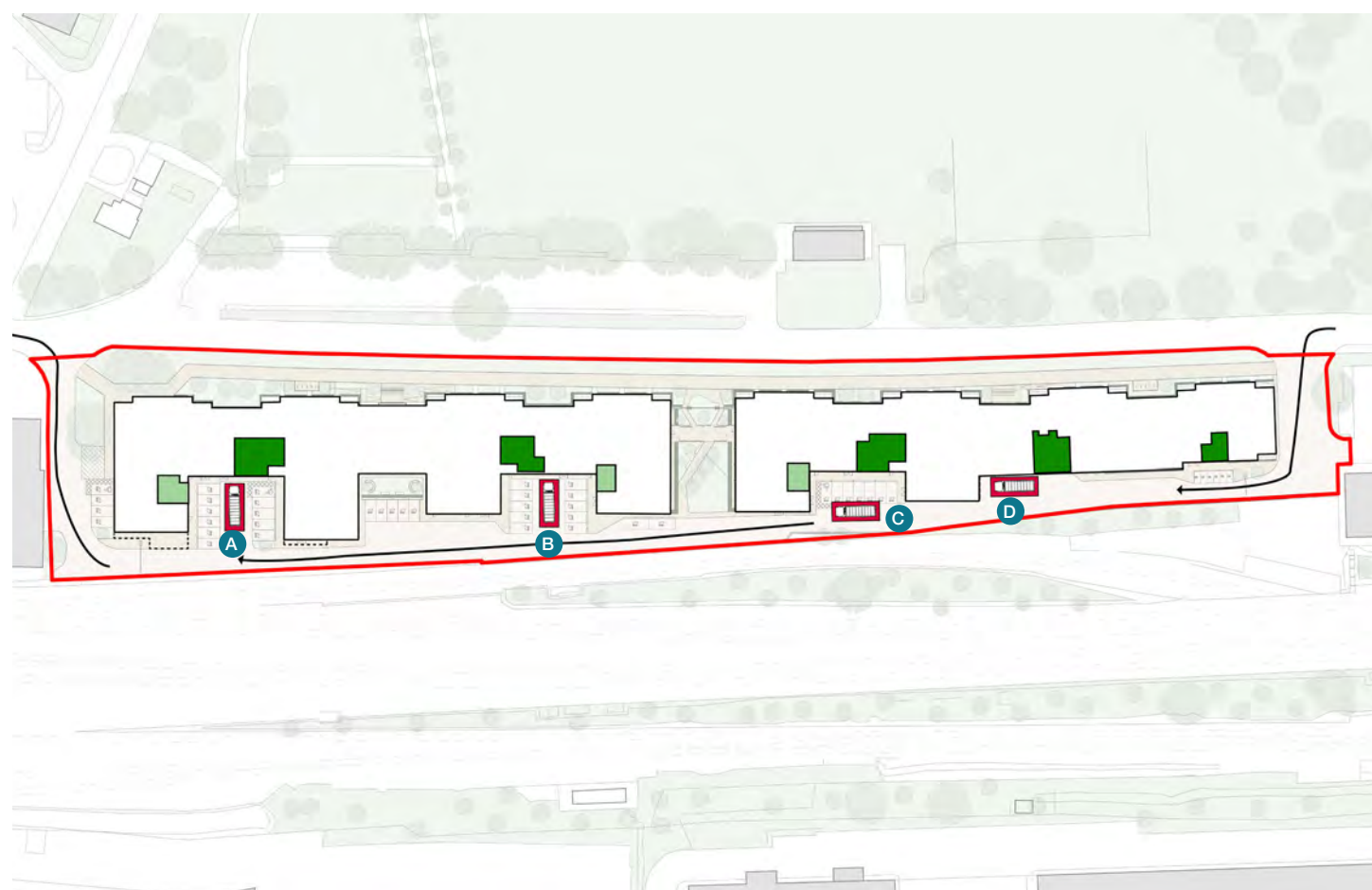
Waste and recycling will be managed on collection days from three predetermined collection points as illustrated in the diagrams to the right. The intention is to use the local authorities collection service for the fortnightly collection, and then contract the local authority weekly service. This would result in one collection per week.



A



E



Ground Floor Plan



C

7.4 Design Principles

Refuse and Recycling Store Access and Provision

The refuse strategy is underpinned by the principles of reduce, reuse and recycle by making it easy for residents to deal with refuse from their apartment to point of collection. Space within apartment kitchens will allow residents to deal with daily arising.

The ground floor bin stores are located within a 30m horizontal distance from all apartments.

Building management will be able to monitor and control the refuse storage areas to manouevure bins within each refuse room as they become full.

Key

Site Boundary

Accommodation

Primary Core

Secondary Core

Travel Route

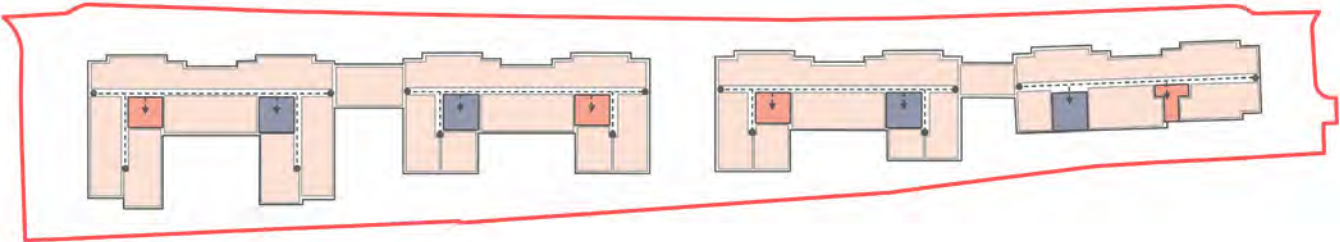


Napier Court refuse provision

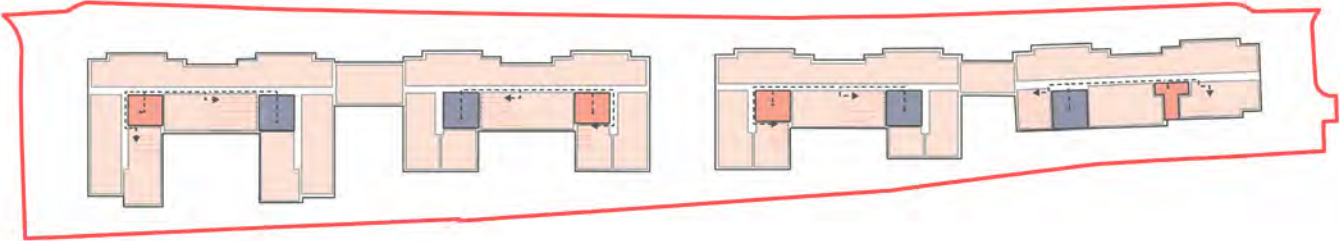
Bin Type	Total Bins	Usage
1100 litre bins	102	General Waste and Recycling
240 litre bins	29	Food Waste

Refuse provision is based upon guidance from Reading Borough Council

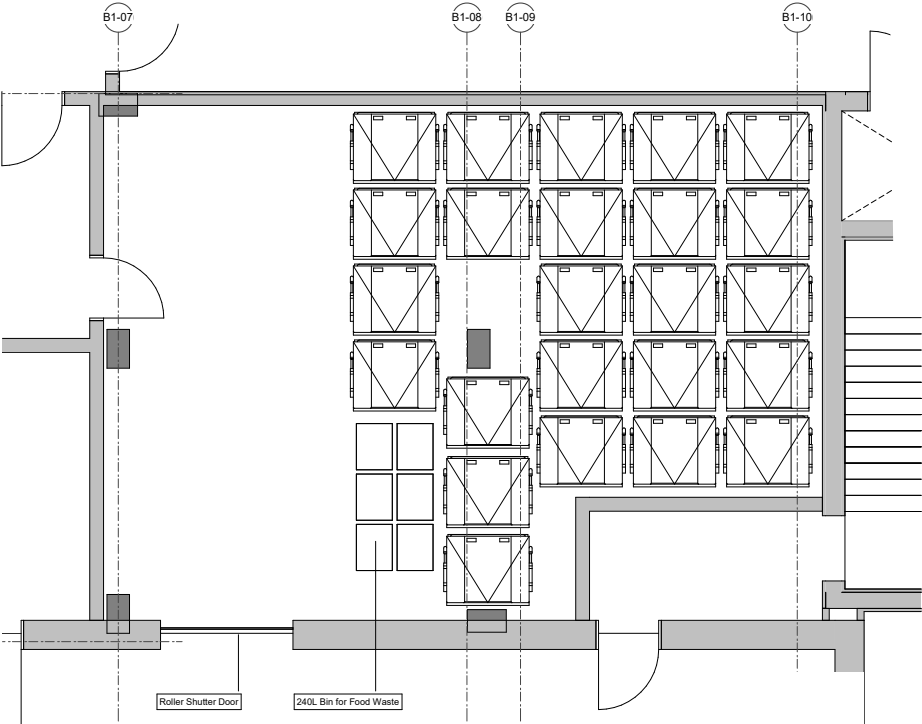
Horizontal Travel Route Upper Floors



Horizontal Travel Route Ground Floor



Example of Refuse Store Layout



Each of the refuse stores allow access externally with a roller shutter, which offers a wider opening.

There is also a secondary internal access which is into a lobby offering separation from the store and the central corridor to help with ventilation and trapping any potential smells.

7.5 Design Principles

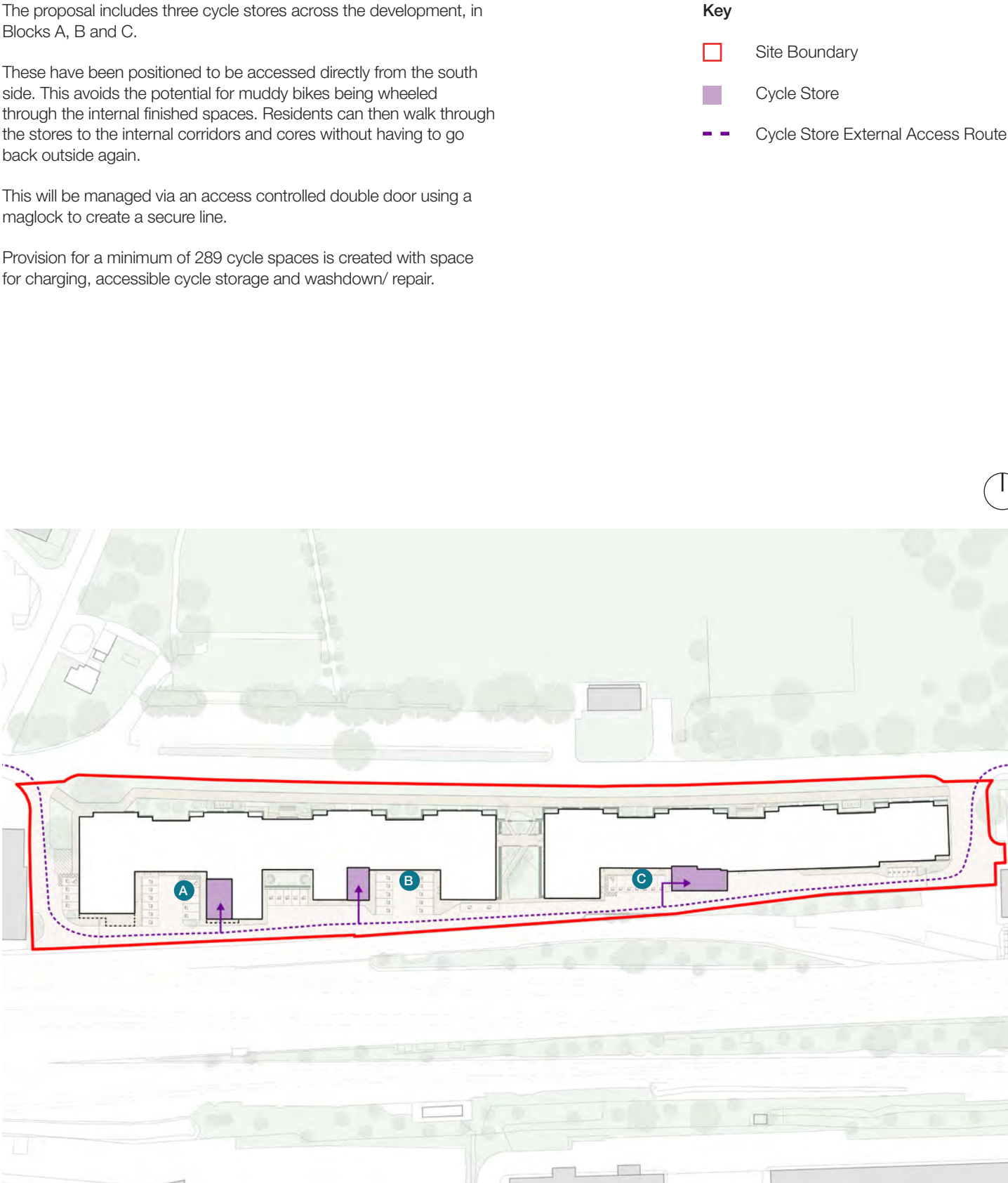
Cycle Stores, Access and Provision

The proposal includes three cycle stores across the development, in Blocks A, B and C.

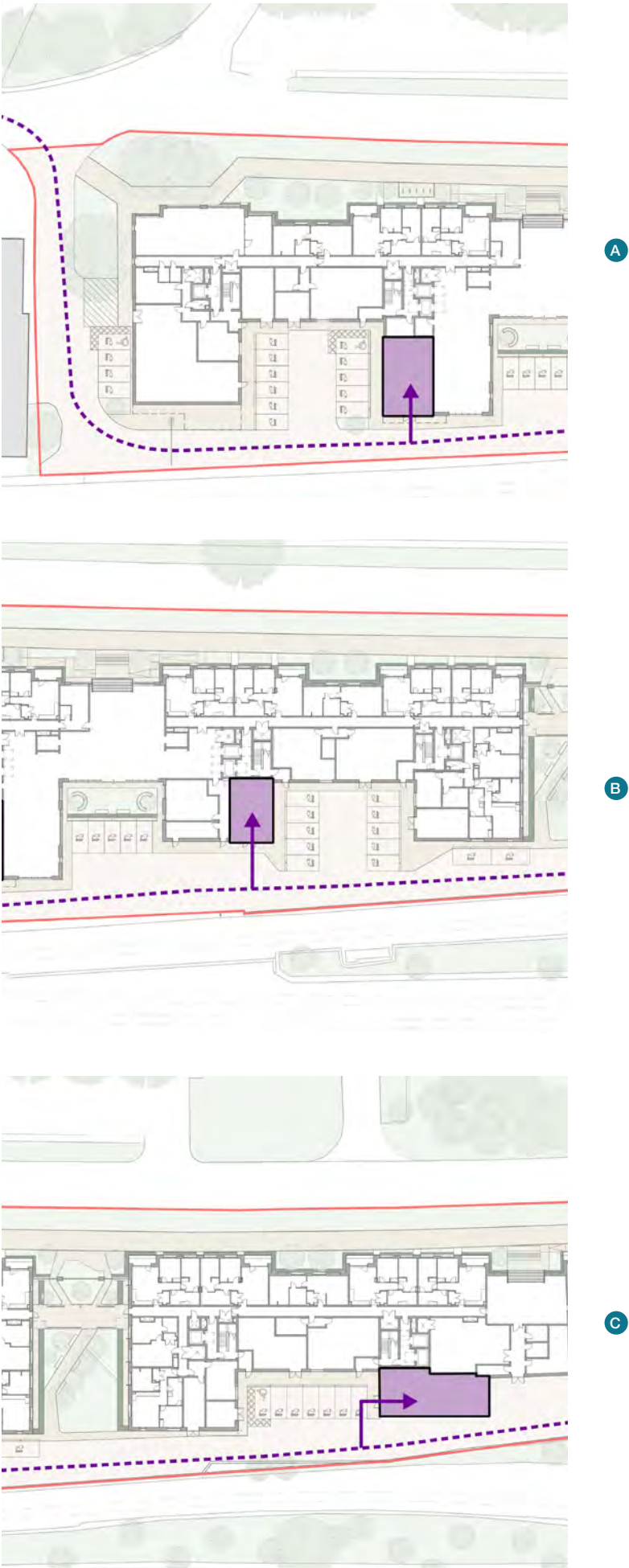
These have been positioned to be accessed directly from the south side. This avoids the potential for muddy bikes being wheeled through the internal finished spaces. Residents can then walk through the stores to the internal corridors and cores without having to go back outside again.

This will be managed via an access controlled double door using a maglock to create a secure line.

Provision for a minimum of 289 cycle spaces is created with space for charging, accessible cycle storage and washdown/ repair.



Ground Floor Plan



7.5 Design Principles

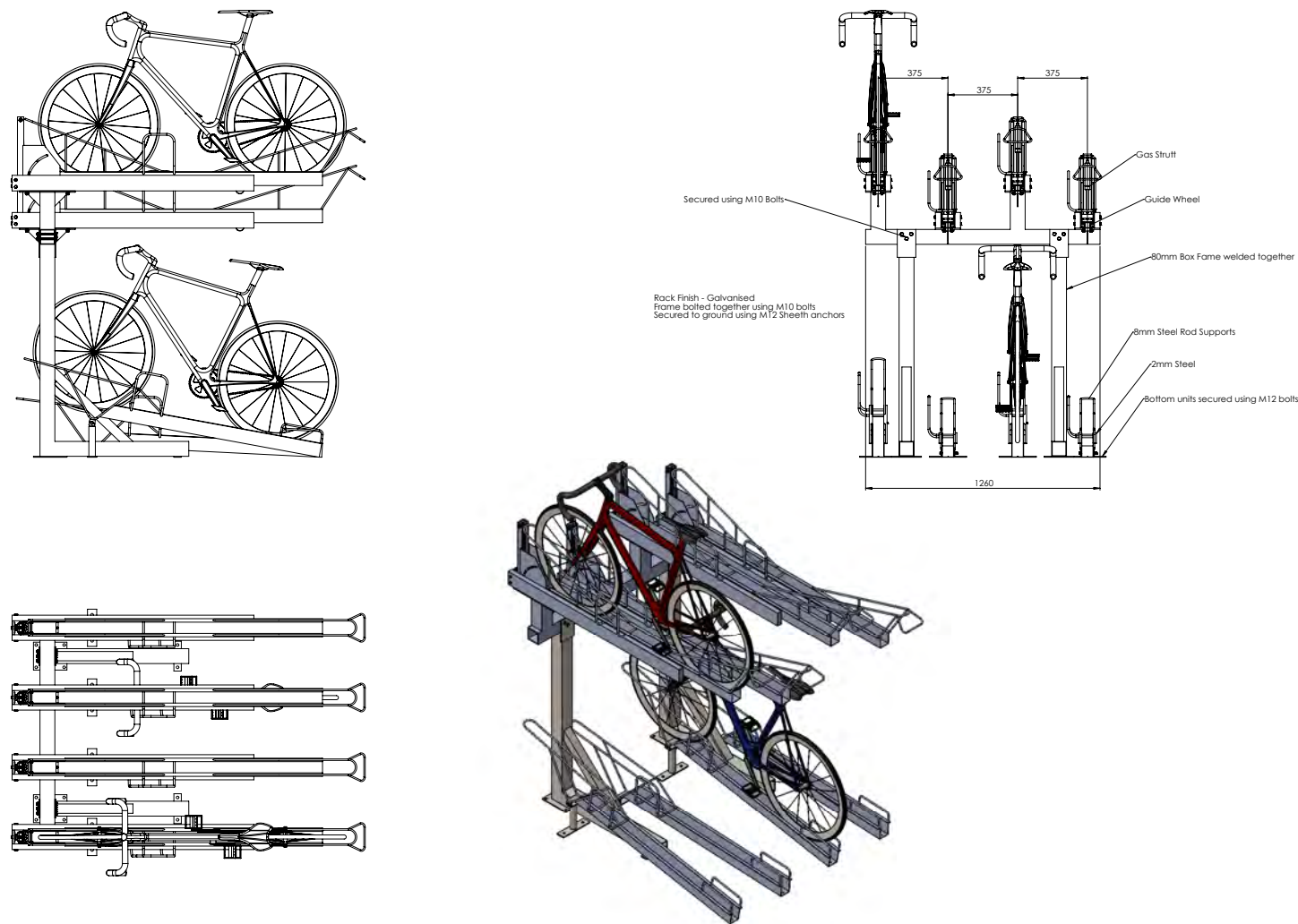
Cycle Stores, Access and Provision

The cycle store provision achieves a 50% ratio based on the number of dwellings. The current proposals are based on a two tier rack as illustrated in the technical drawing shown opposite.

Access to the cycle stores are from the south side of the building directly to outside, avoiding messy or wet bikes coming into the shared areas. This access will be access controlled to create a secure line to the store.

There is also provision for 10 total (5 per phase) Sheffield Style Bike stands which are positioned at the front of the building in proximity to the main entrances, providing 20 cycle parking spaces in total. These are intended for visitor use.

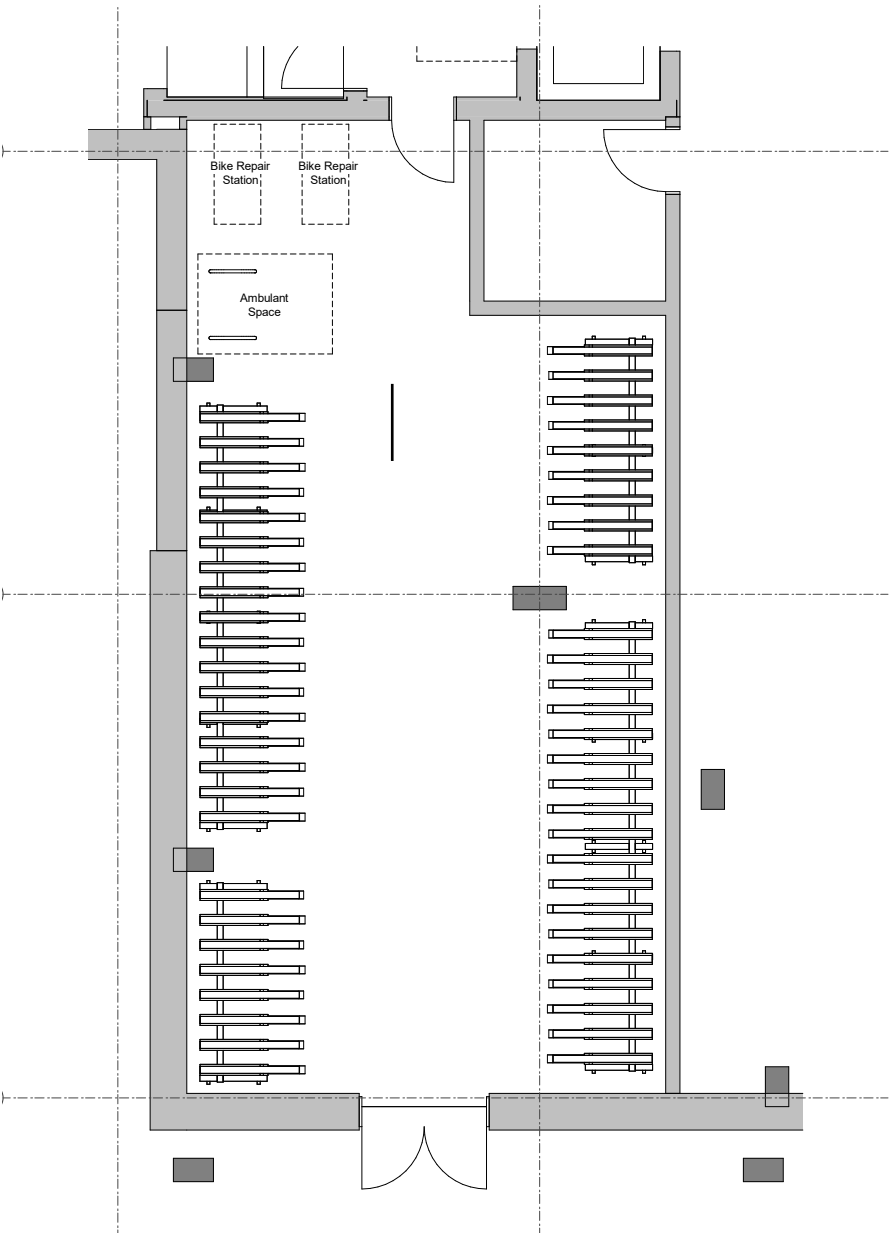
Example of Two-Tiered Cycle Stands



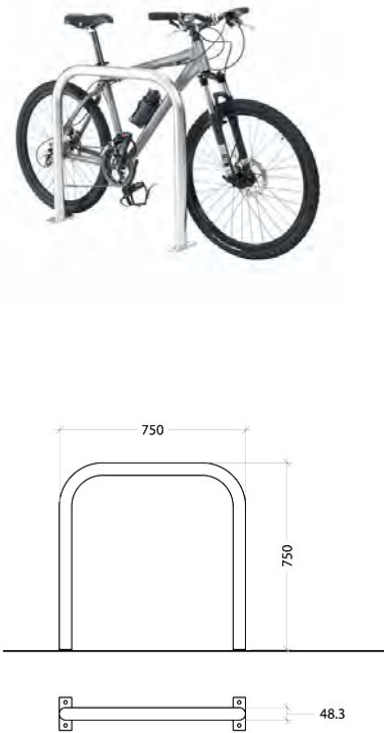
Napier Court cycle provision

Resident Cycling Spaces	Total Dwellings	Ratio	External Visitor Spaces
289	576	50%	20

Example of Cycle Store Layout



Example of Sheffield Stands



Each store has provision of a bike repair station, and a number of Sheffield Stands intended for ambulant use. The majority of the cycle provision is two-tiered cycle stands which require 1750mm access in front to mount the bikes.

Provision for a minimum of 289 cycle spaces is provided.

7.6 Design Principles

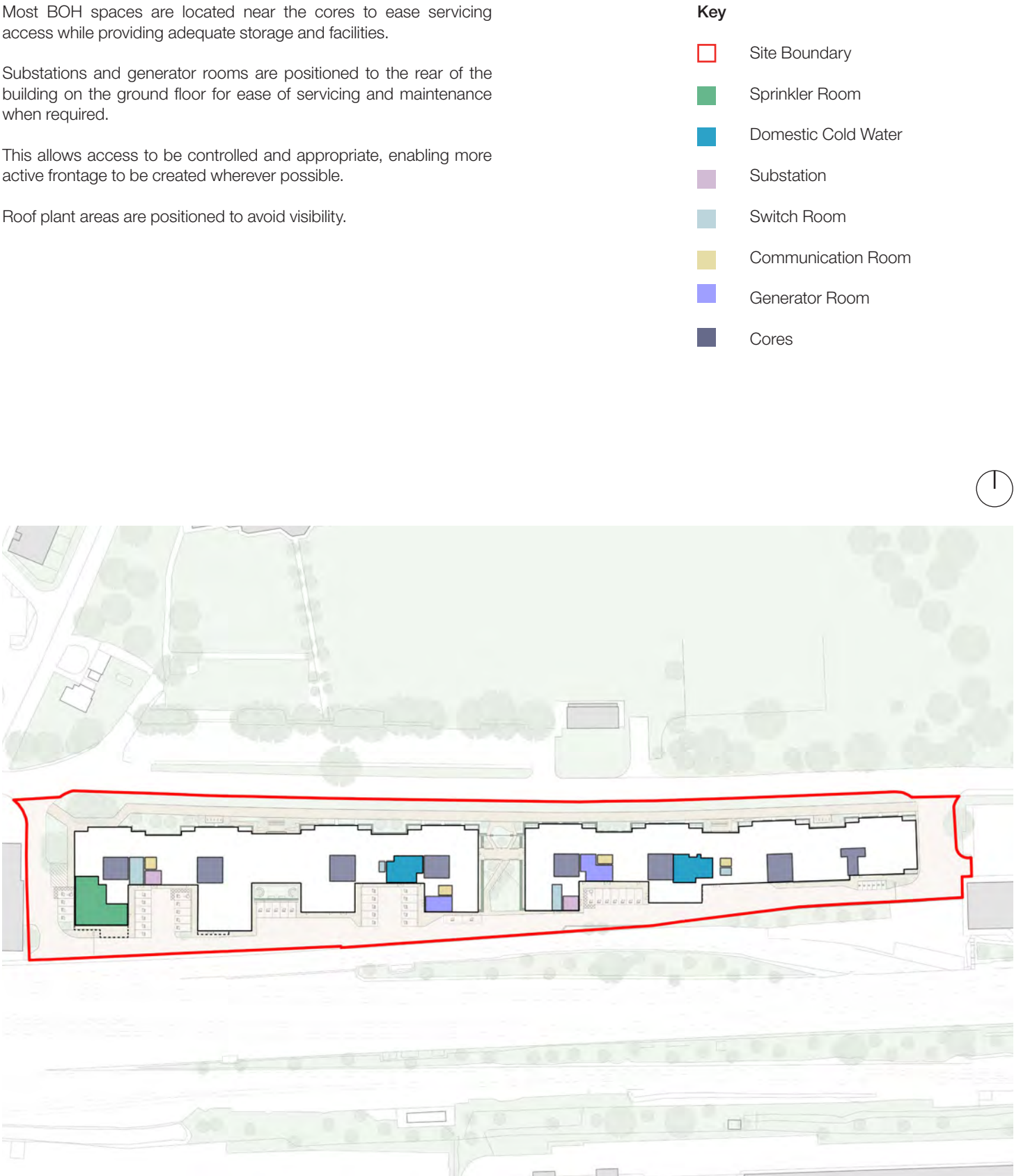
Plant and Back of House

Most BOH spaces are located near the cores to ease servicing access while providing adequate storage and facilities.

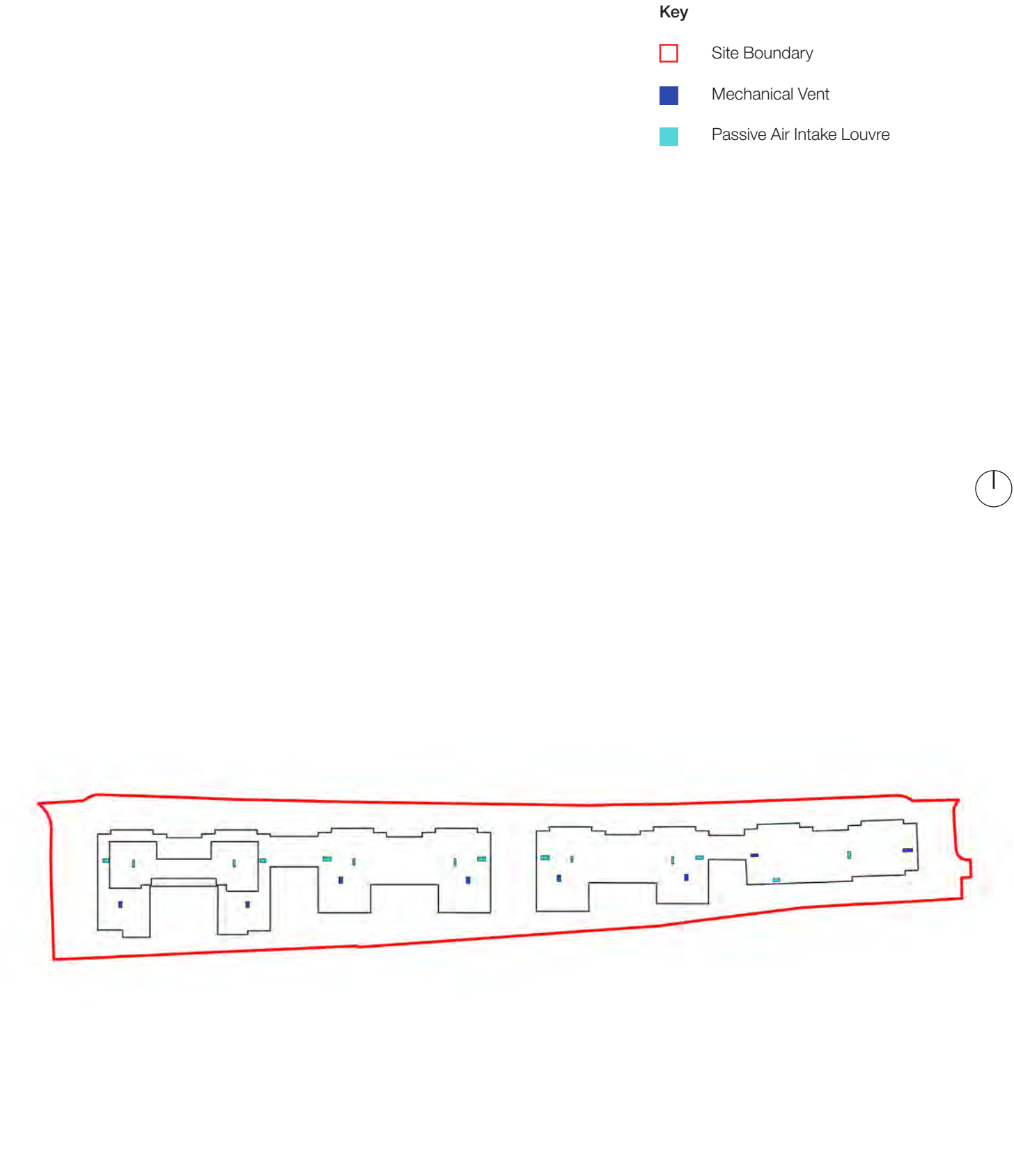
Substations and generator rooms are positioned to the rear of the building on the ground floor for ease of servicing and maintenance when required.

This allows access to be controlled and appropriate, enabling more active frontage to be created wherever possible.

Roof plant areas are positioned to avoid visibility.



Ground Floor Plan



Eleventh Floor Plan

7.6 Design Principles Plant and Back of House

Key

Site Boundary

Sprinkler Room

Domestic Cold Water

Substation

Switch Room

Communication Room

Generator Room

- 1

Block B + C Primary Generator - Maintenance access from external double doors.
- 2

Block A Primary Substation - Maintenance access from external double doors.
- 3

Block A Primary Switchroom - Maintenance access from double doors into undercroft.
- 4

Sprinkler Tank Room
- 5

Block A Primary Comms Room - Comms room which has maintenance access from external double doors
- 6

Block B Secondary Switchroom - Smaller internal switchroom which can be accessed internally from the amenity space
- 7

Block B Secondary Comms Room - Comms room which has maintenance access from internal doors
- 8

Block C Primary Switchroom - Maintenance access externally from double doors
- 9

Block C Primary Substation - Maintenance access from external double doors. Located next to access road to the south - vehicle access into the substation can be straight off the access road.
- 10

Block C Primary Comms Room - Maintenance access internally with fire protected lobby and dedicated ventilation.
- 11

Domestic Cold Water Room
- 12

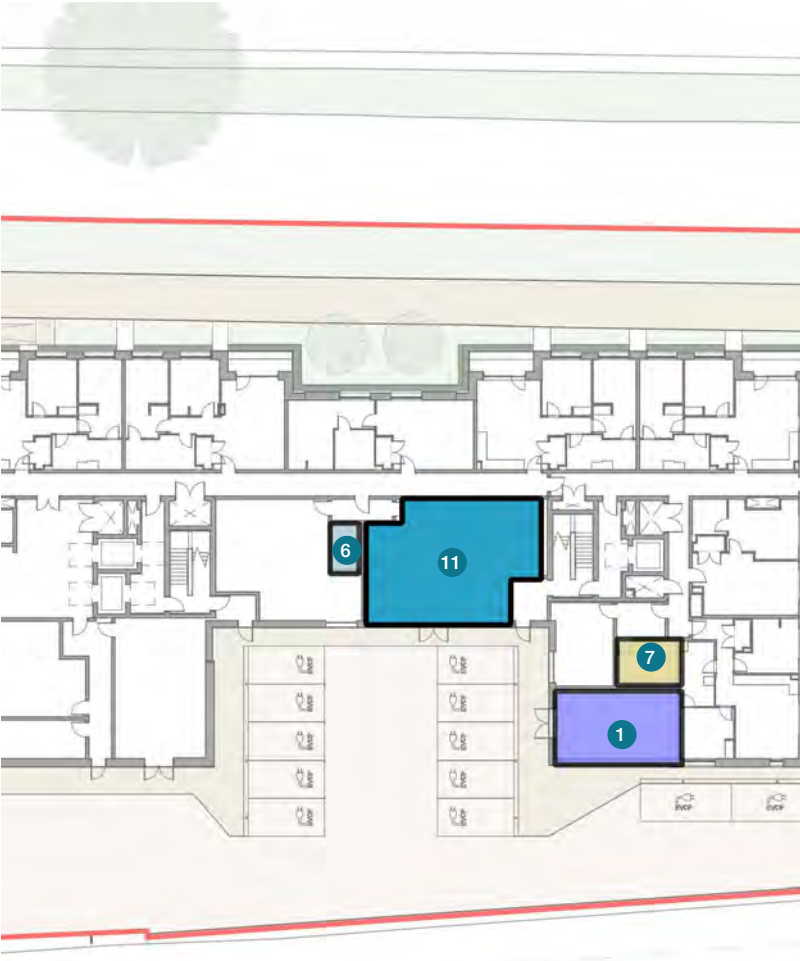
Block D Secondary Switchroom - Smaller room with maintenance access internally.
- 13

Block D Secondary Comms Room - Smaller room with maintenance access internally.

Block A



Block B



Block C



Block D



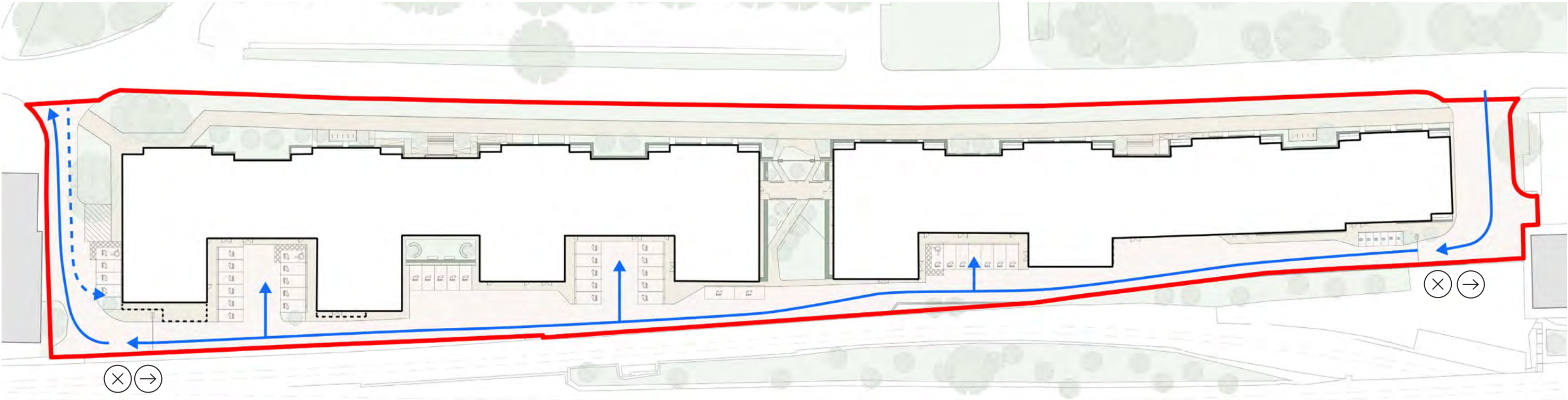
7.7 Design Principles Vehicular Access

Resident vehicular access is provided via a service road to the rear of the site. Secure vehicular access is from the east in a one way direction as shown in the diagram below, residents are able to park in parking spaces along the access road. On exit residents follow the one way service road leaving the development via a secure barrier and exit to the west of Block A.

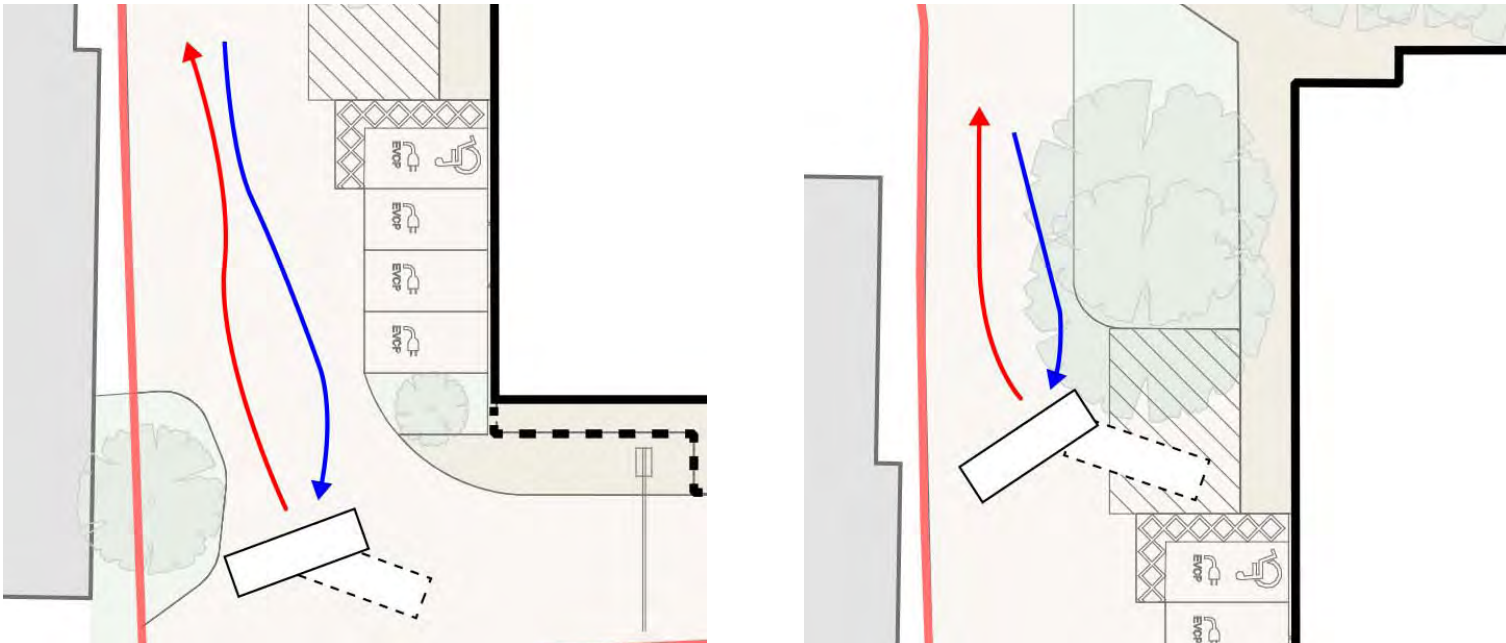
Visitor parking is accessed from the entrance / exit to the west of Block A as shown in the diagram below.

Further tracking diagrams below illustrate the potential for turning between the proposed building and Thames Quarter without requiring access beyond the controlled barrier, where a turning from Napier Road has occurred in error.

- Key
- Resident Vehicular Access
 - Visitor Vehicular Access
 - No Entry (Access One Way)



Tracking diagrams



7.8 Design Principles

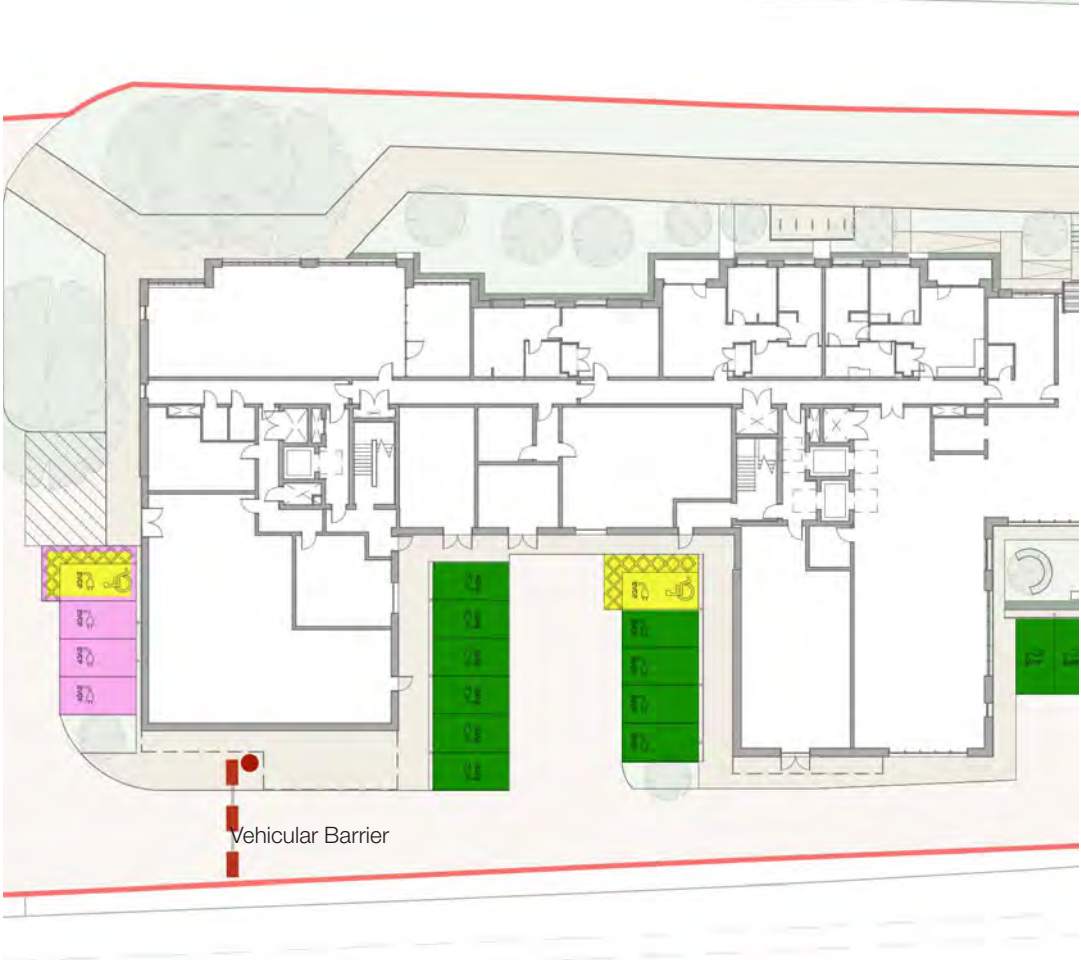
Parking Spaces and EVC Spaces

The proposal incorporates 39 parking spaces at grade level.

These parking spaces provide a mix of functions including visitor spaces, motorbike spaces and accessible spaces.

- Key**
 - Residents Parking
 - Accessible Parking
 - Motorbike Parking
 - Visitor Parking
 - EVC Parking
 - Vehicle Barrier

Block A



Block B



Block C



Block D



7.9 Design Principles

Deliveries

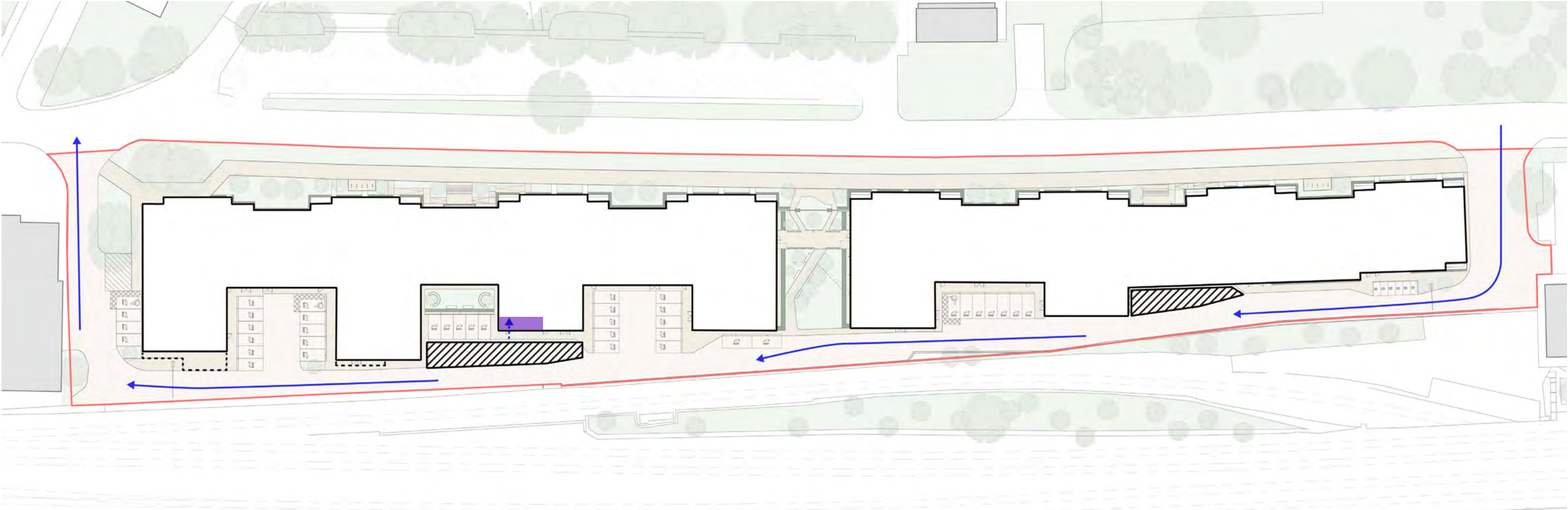
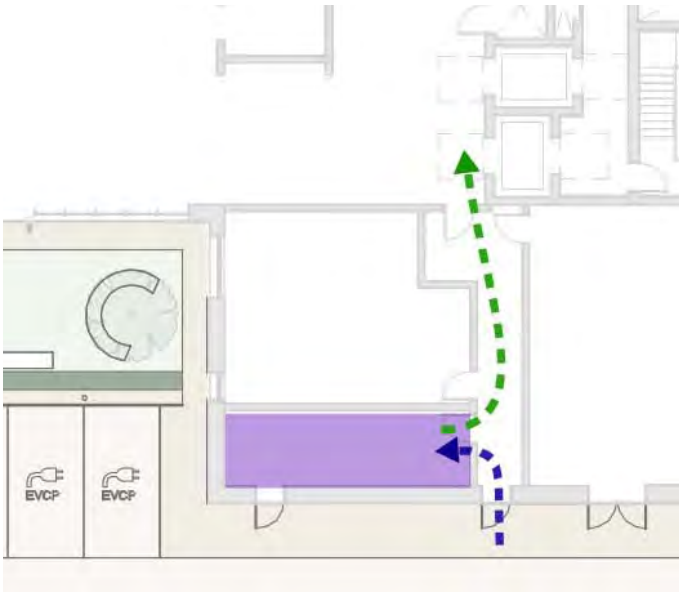
Our proposal includes layby provision for a total of 8no delivery vehicles positioned across the south of the site.

The delivery vehicles will enter from the east, use the intercom to gain access through the vehicular barrier and then navigate to the appropriate layby. Here the drivers can walk to the Block A parcel stores. On the external side of the door will be an intercom linked to the reception allowing the delivery drivers to gain access to the store to drop off the goods. The internal door will be secure using access control and a maglock. This will allow residents with a key fob to enter the store but also maintain a secure line.

Key

Parcel Store

Delivery Vehicle Parking



7.10 Design Principles

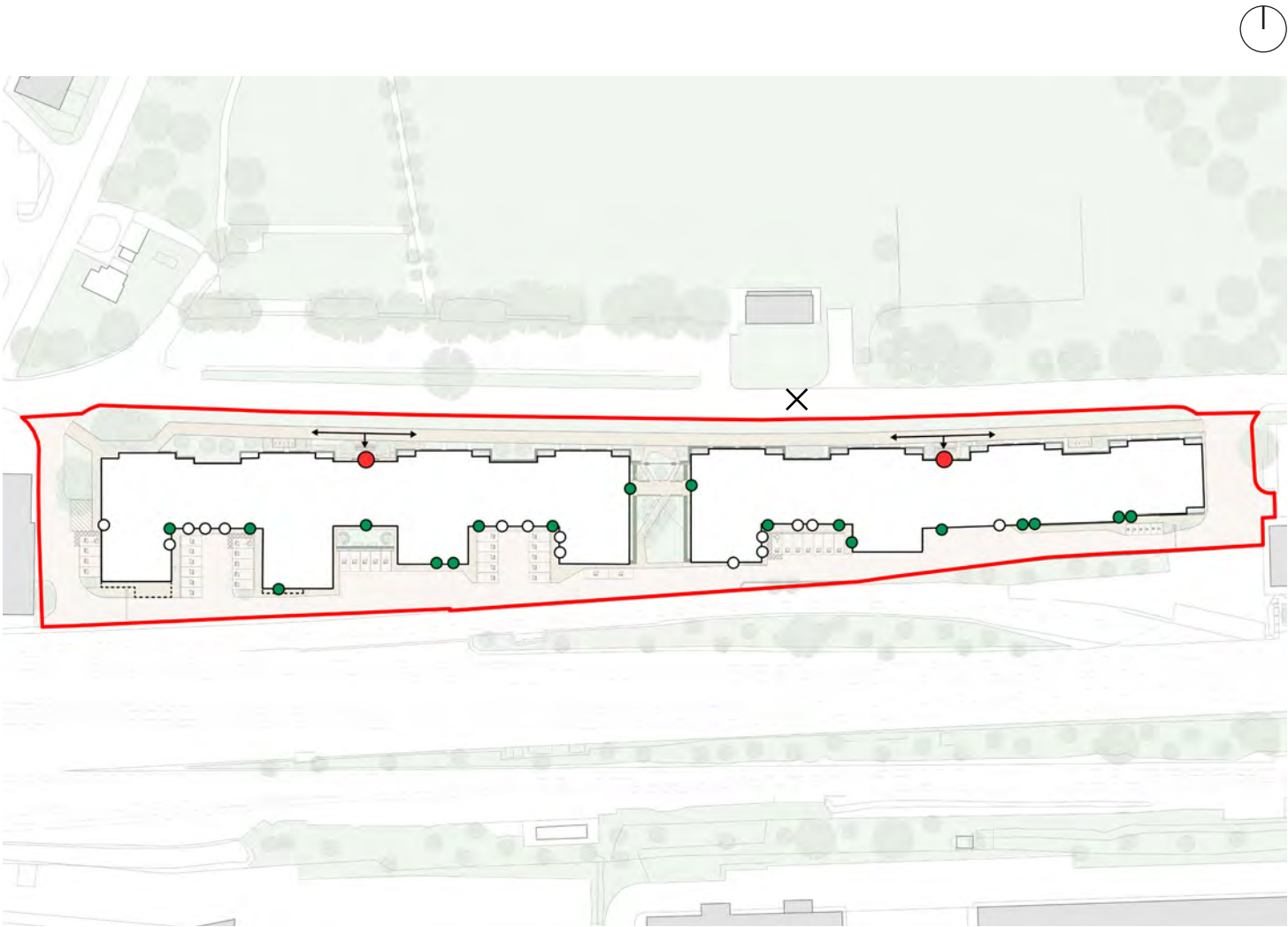
Pedestrian Access and Security

Pedestrian Access

Secure access to both buildings is located to the centre point of each building allowing increased activity and animation of the building frontage.

Accesses into plant or servicing spaces will be allowed onto safe hardstanding areas away from vehicular routes.

A potential crossing to Kings Meadow has been discussed with Reading Borough Council and the preferred crossing location is illustrated in the plan



Key

- Site Boundary
- Kings Meadow Crossing
- Primary Controlled Entrance
- Ancillary Residential Controlled Access
- Management Controlled Access

Security

The ground floor of the development is heavily focussed on active frontage to ensure animation and activity whilst also providing excellent passive surveillance of exterior spaces.

All areas of the development will be overlooked by apartments providing further surveillance.

CCTV will extensively cover the development estate with a link back to the main receptions staffed by 24 hour concierge.

All entrances at ground floor will be included in this CCTV coverage and will have access control for entry to residents or building management only.



Key

- Site Boundary
- Active Frontage (passive surveillance)
- Thames Quarter (passive surveillance)

Ground Floor

Typical Floor

7.11 Design Principles

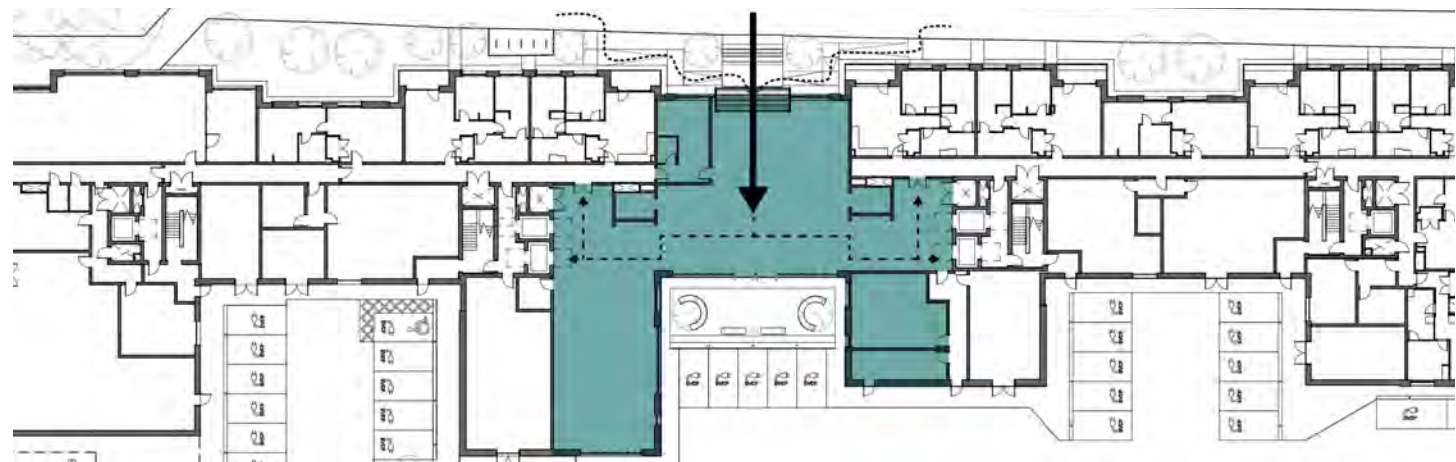
Pedestrian Access and Routes

Entrance to Blocks A & B

This image shows the entrance for Blocks A and B. It faces Kings Meadow and has stepped access with two DDA compliant ramped entrances either side.

The entrance is marked by decorative metalwork that makes it a focal point of the scheme.

- Key
- Entrance Area
 - Entrance
 - Main Route
 - Accessible Route



All internal layouts are shown indicatively

5plus

Entrance to Blocks C & D

This image shows the entrance for Blocks C and D. It has stepped access and one DDA compliant ramped entrance on the left hand side.

The reception area allows level access to lifts, lobbies and other amenities for residents

- Key
- Entrance Area
 - Entrance
 - Main Route
 - Accessible Route



7.12 Part M4(3) Compliance Key Features

Quantum

The overall quantum of the accessible provision is in line with Reading Design Guidance which is 5% provision. The following pages illustrate how these apartments could be modified to have full compliance with M4 (3). As outlined in the Reading Design Guide, the market accessible apartments can be adaptable and the Council has discretion over the affordable accessible units, wether they become full M4 (3) compliant or adaptable. This totals 29 (19 one bed & 10 two bed) units across the scheme.

Approach routes

To create a step-free approach route that is suitable for wheelchair users a ramp, gentle slope or level pathway which is a minimum of 1200mm in width to allow wheelchair users to access and turn a full 360 degrees with no obstruction is required. Gateways between the approach and communal or private entrances must have a minimum: clear opening width of 850mm, 300mm nib to leading edge, and a 200mm nib to the following edge. A flat space spanning 1500mm in both width and depth is required at each end of an approach for wheelchair users to pass or turn around spaced a maximum of 10m from one another. Fully diffused automatic lighting activated via daylight timer or motion detection is required for external sections of an approach route along with suitable ground surfacing.

External and internal ramps forming part of an approach route

External and internal ramps must have a gradient between 1:20 & 1:15 with the length of each flight meets the requirements of Diagram 3.1 (see below) and must have a clear minimum width of 1200mm. Landings of ramps need to be flat and 1200mm clear of any gate or door and must be present at each end of a ramp and should there be any change in direction an intermediate landing must be implemented.

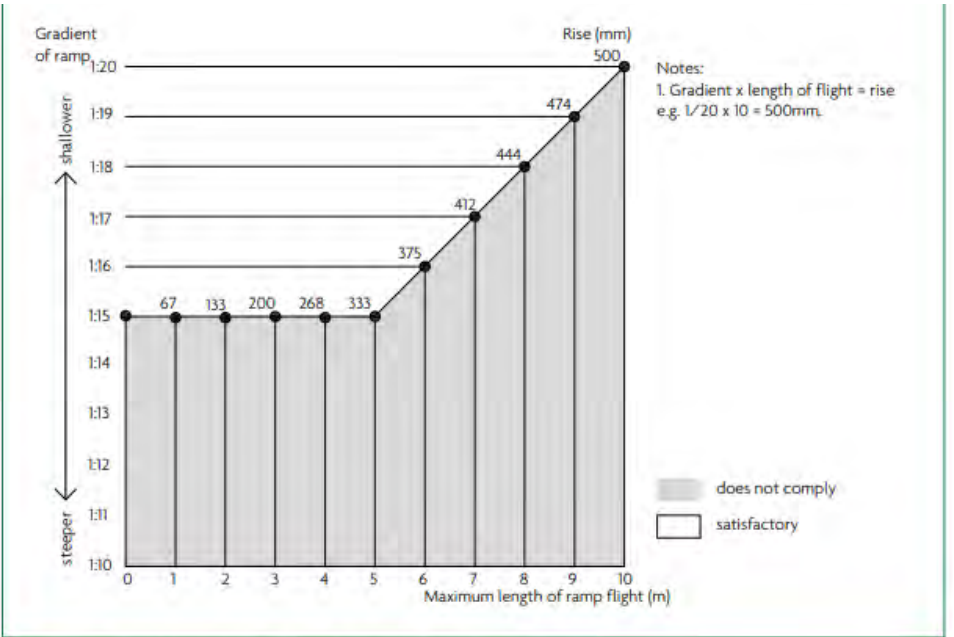


Diagram 3.1 Maximum length of ramp at a given gradient

Car parking and drop-off

To enable access for wheelchair users the parking space of dwellings should be level and have a minimum clear headroom of 2200mm with suitable ground surfacing. Within communal parking areas bays require an additional minimum clear access zone of 1200mm on each side. In a private dwelling a standard parking bay is required with additional clear access zone of 1200mm to one side and the rear. Drop-off points are required to be level with suitable ground surfacing, drop off points should be located close to the principle communal entrance of the core dwelling building.

Communal lifts and stairs

Lift cars are required to be a minimum of 1100mm in width & 1400mm in depth with doors having a clear minimum opening width of 800mm. Landing and car controls must be located between 900 and 1200mm above the car floor and a minimum of 400mm from the inside of the front wall. The lift car requires a minimum time of 5 seconds before doors begin to close after fully opening.

The principal communal stair that is used to access a dwelling should meet the provisions of part K.

Communal entrances

For wheelchair users to enter the principal communal entrance there needs to be a level landing with a minimum depth of 1500mm outside the entrance with fully diffused lighting luminaires activated via daylight timer or motion detection, with a minimum of 1200mm & 1500mm of it covered. A clear turning circle of 1500mm in diameter provided inside the entrance area behind the entrance door when closed is required. The entrance needs a minimum clear opening width of 850mm as seen in diagram 3.2 (see below) and a minimum nib of 300mm is provided to the leaning edge of the door and a minimum of 200mm for the following edge. Doors need to be located centrally within the thickness of the wall while maintaining the depth of the reveal on the inside door face at 200mm. The ground surface cannot impede wheelchair movement and door entry controls are mounted 900-1000mm above ground level and a minimum of 300mm away from any projecting corner.

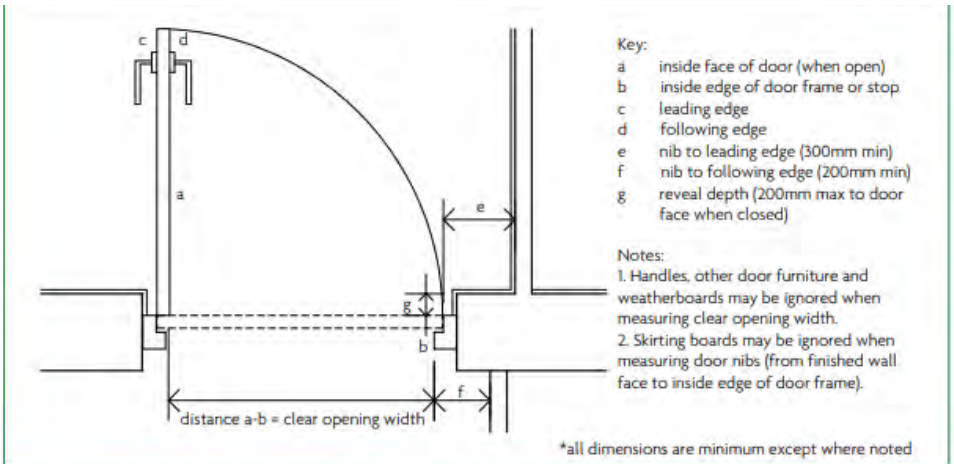


Diagram 3.2 Measurement of clear opening width and other features of external and internal doors

Private entrances

The main private entrance to the individual dwelling should have a level external landing with a minimum width and depth of 1500mm clear of any door swing with fully diffused lighting luminaries activated via daylight timer or motion detection. The external landing should be covered for a minimum width and depth of 1200mm. A minimum of 1500mm is required for wheelchair turning circles inside the entrance when the door is closed. The door should have a minimum clear opening width of 850mm, and double doors require the minimum clear opening width and should be located reasonably central within the thickness of the wall. Where there is a lobby or porch the doors should be a minimum of 1500mm apart and a minimum of 1500mm between door swings. Door entry controls are mounted 900-1000mm above ground level and a minimum of 300mm away from any projecting corner and a fused spur suitable for the fitting of a powered door opener, is provided on the hinge side of the door.

Hall and door widths

Each hall or landing is required to have a minimum clear width of 900mm. It is essential to ensure that there are no localised obstructions directly opposite or in close proximity to doorways. To enhance accessibility, a 300mm nib will be incorporated at the leading edge of each door within the entrance storey.

Internal circulation and internal doors

In adherence with specific usage requirements and in accordance with Approved Document Part M, all corridors within the buildings must comply with standards related to size, lighting, materials, signage, doors, and colours. Notably, these corridors maintain a consistent width, and there are no changes in level throughout.

Vision panels in corridor doors have been strategically designed to facilitate visibility of individuals, whether seated or standing. To enhance accessibility, pull handles are exclusively fitted on the pull side of doors, while fingerplates are installed on the push side. This design consideration is particularly beneficial for individuals with learning difficulties and visual impairments.

To prevent potential hazards, handles have been designed not to extend down to floor level, as this type of handle may pose a risk of entanglement with footplates or wheels of wheelchairs. Moreover, sufficient space has been allocated between lobby doors, ensuring that wheelchair users have ample clearance to navigate through one door before opening the next. These design choices collectively contribute to a more inclusive and user-friendly built environment.

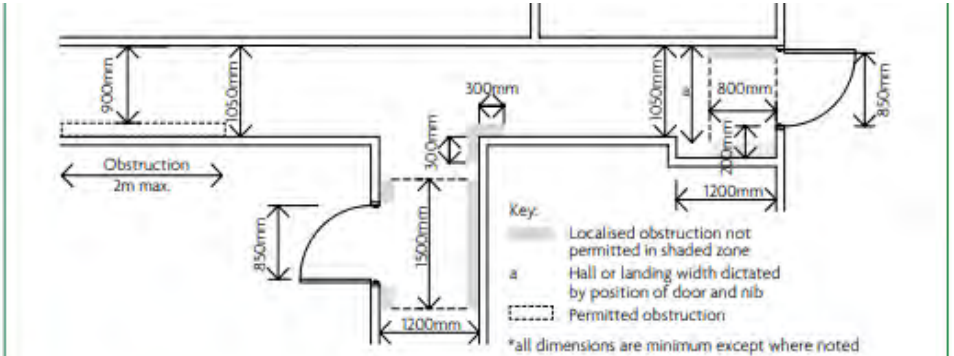
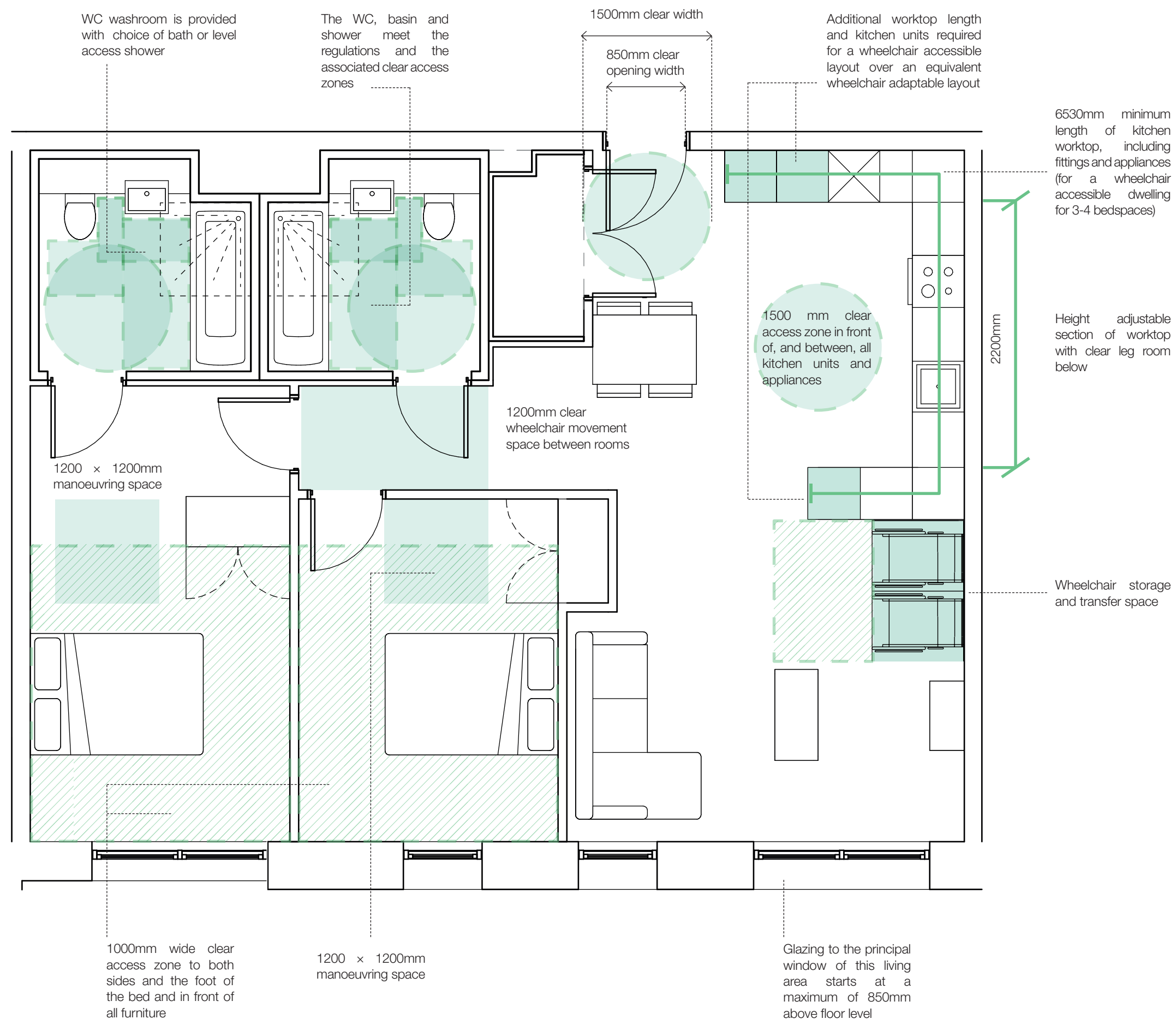


Diagram 3.4 Minimum door and hall widths and restrictions on localised obstructions

7.13 Accessible Apartment

Apartment Type 2-Bed

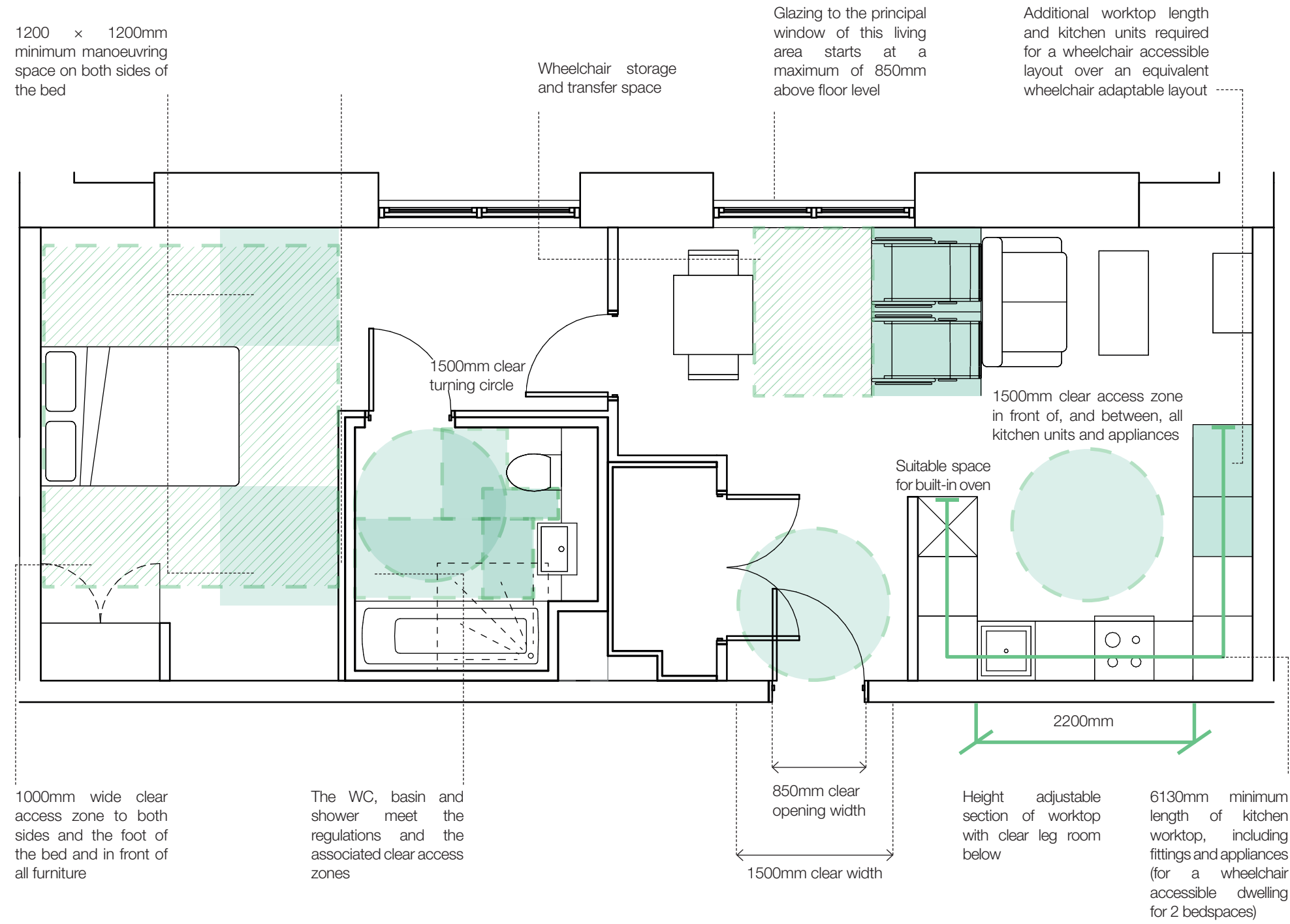
Opposite is the diagram showing an accessible 2-bed apartment type that is compliant with M4(3). It highlights the key criteria involved in the design and spatial arrangement. 10 of these apartments are provided for within Block A.



7.14 Accessible Apartment

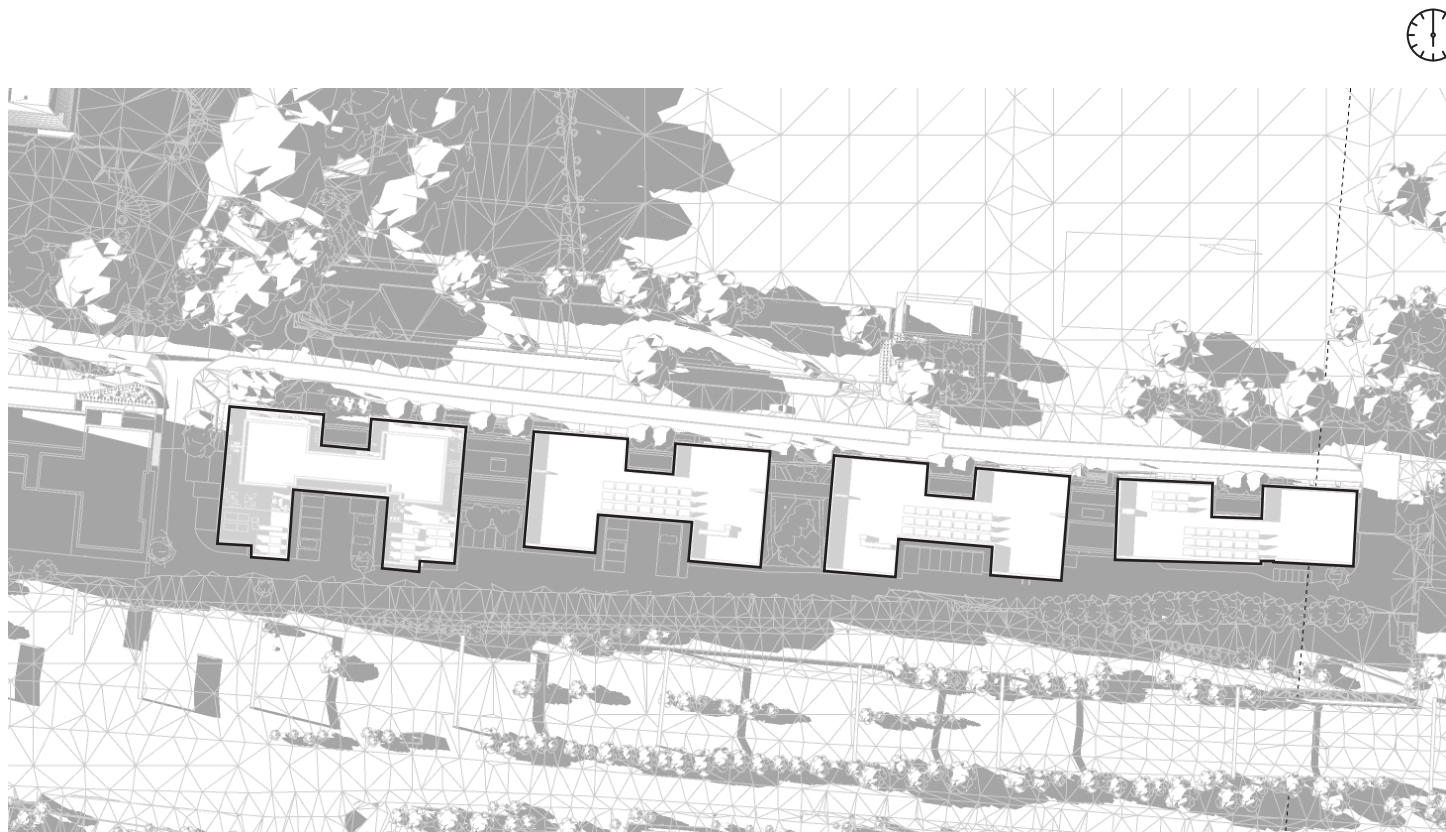
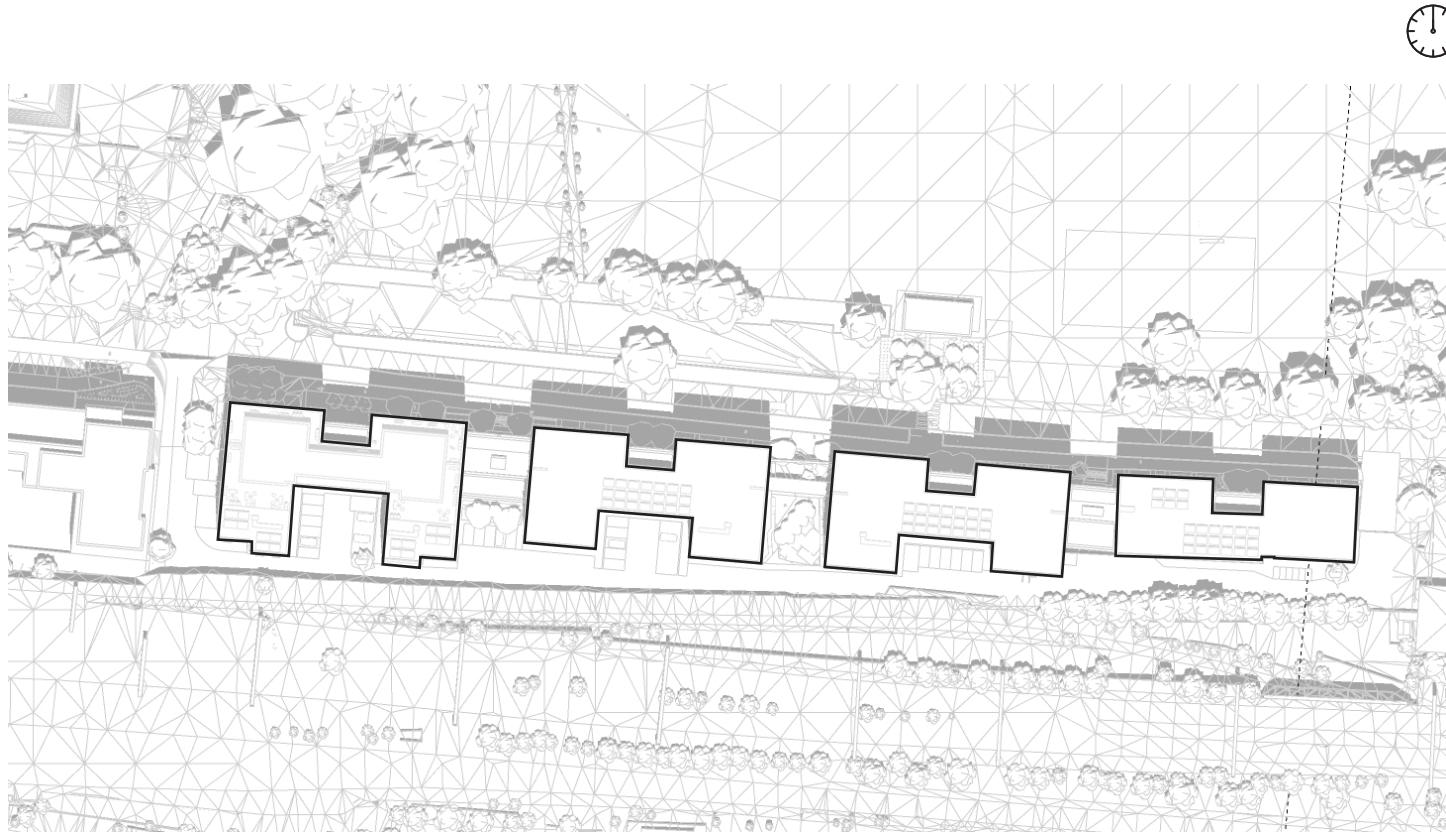
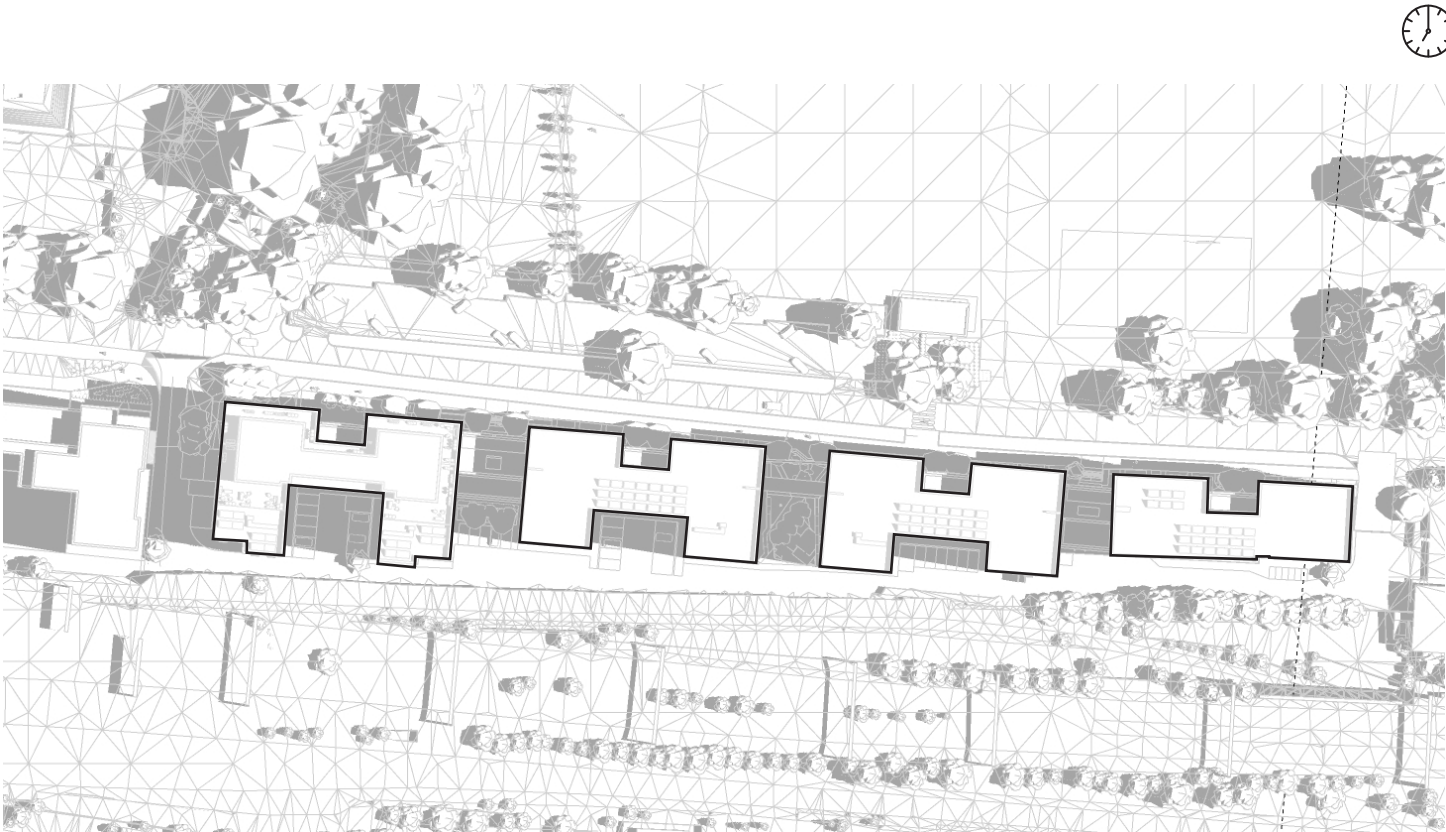
Apartment Type 1-Bed

Opposite is the diagram showing an accessible 1-bed apartment type that is compliant with M4(3). It highlights the key criteria involved in the design and spatial arrangement. 19 of these apartments are provided for in the scheme, which can be interchangeable across levels 1 - 10 throughout Blocks A - D.

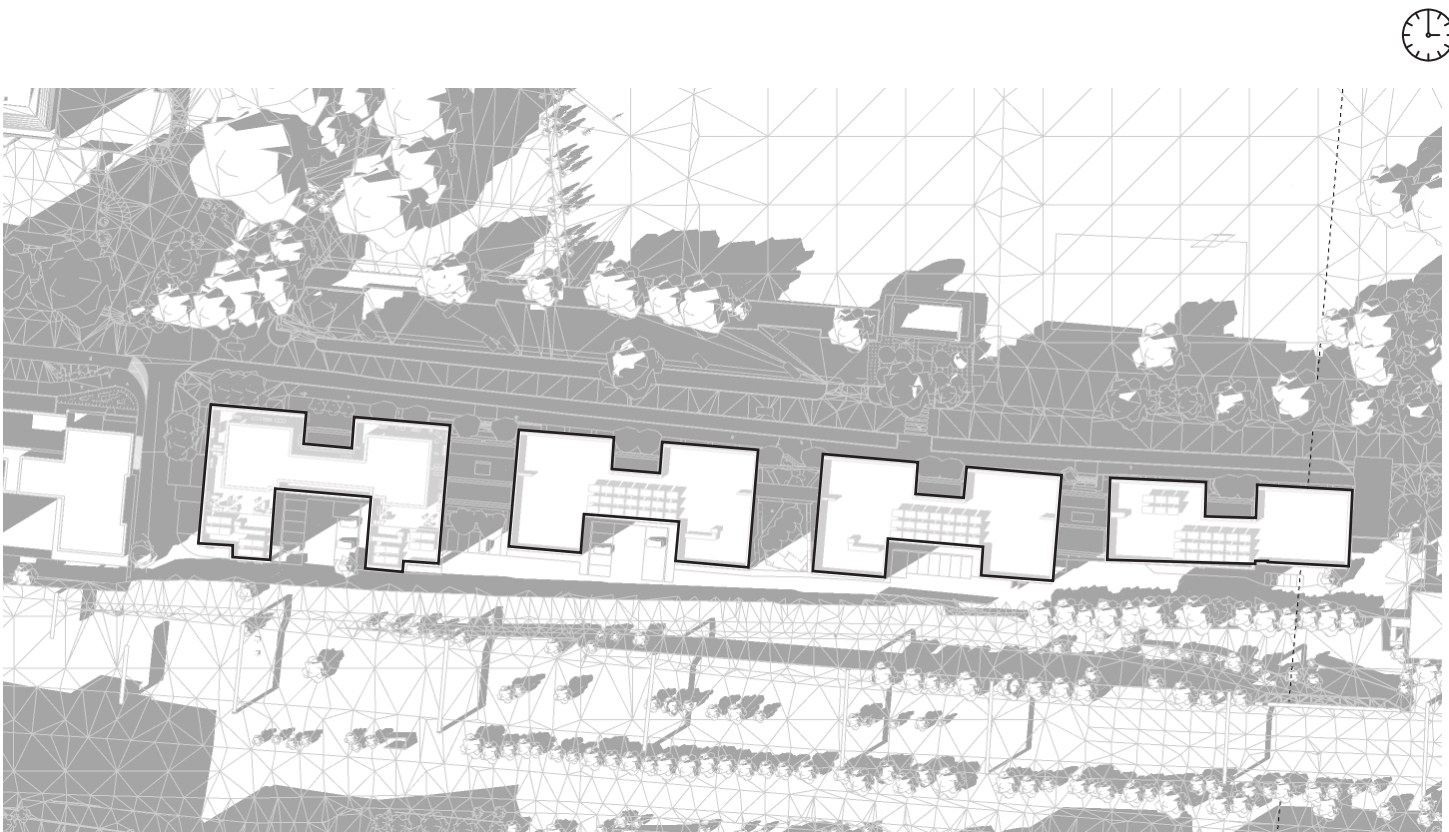
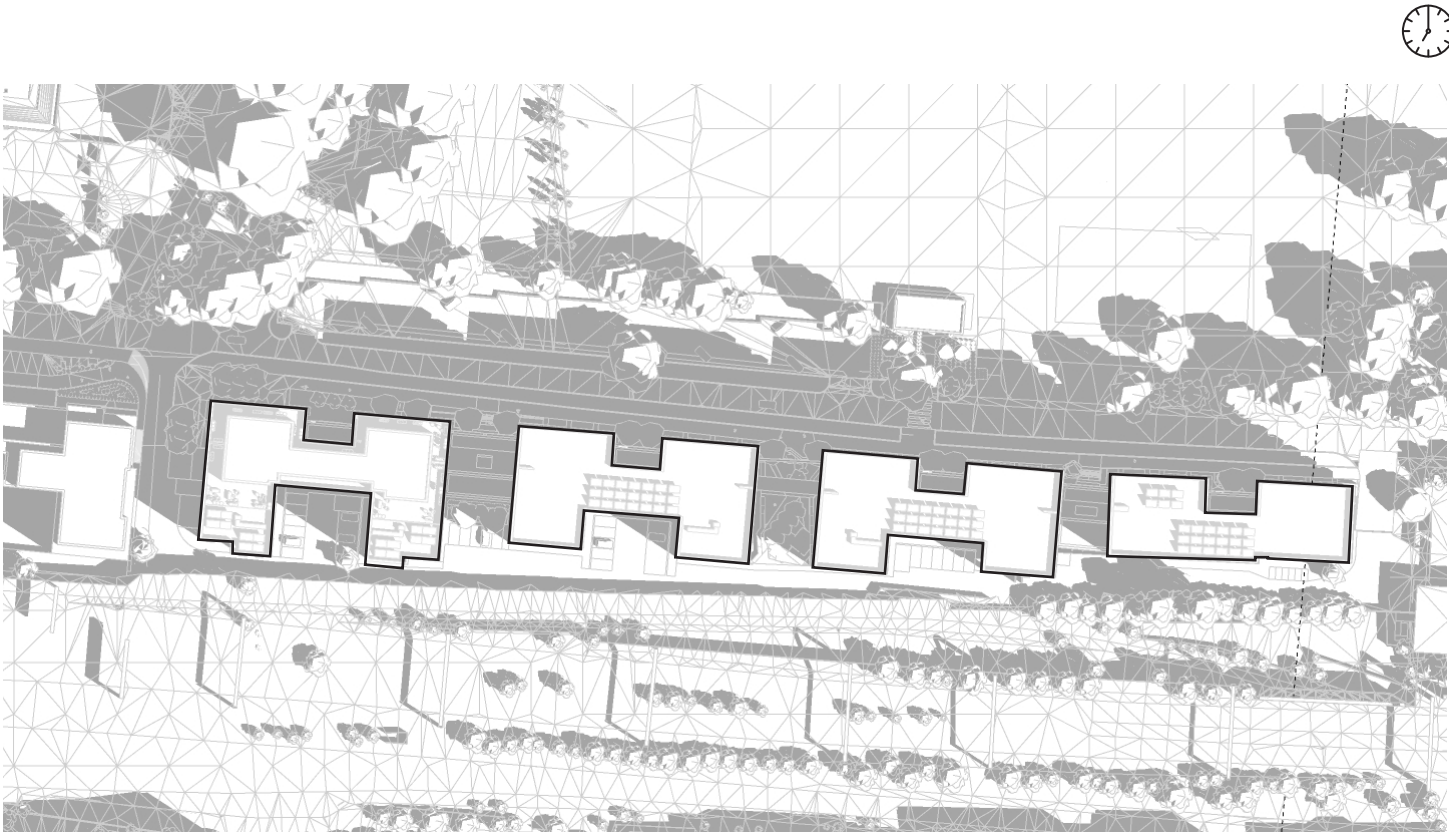


7.15 Sun Path Analysis

Summer Solstice



7.16 Sun Path Analysis
Autumn Equinox



7.17 Swept Path Analysis Refuse Vehicle

