Royal Elm Park

Design Code

June 2025



05.06.25

Stantec

Preface

Royal Elm Park
A growing community

Royal Elm Park is set to redefine urban living in Reading, offering a dynamic blend of modern residences, world-class amenities, and green spaces. Adjacent to the iconic Select Car Leasing Stadium, this landmark development embodies contemporary design and a strong sense of community.

Residents will enjoy access to expansive park, pedestrian friendly pathways, and vibrant public square, fostering a strong sense of community and well-being.

The development also envisions a range of commercial, business, service, and leisure uses designed to benefit both residents and the wider community — establishing Royal Elm Park as a welcoming destination for locals and visitors alike.

This visionary project not only enhances Reading's landscape but also sets a new standard for sustainable and integrated urban development.













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Purpose of this Document

This document has been prepared by Stantec on behalf of RFC Prop Co Ltd. The Design Code serves as a framework to guide future development within the Royal Elm Park masterplan, ensuring high-quality and consistent design for both the built environment and public spaces. It aims to:

- Provide clear guidance for developing future Reserved Matters Applications (RMAs) while allowing flexibility within established parameters.
- Ensure designs align with the technical requirements of the Parameter Plans and the qualitative aspirations outlined in this document, the Design and Access Statement and Design and Access Statement Addendum.
- Shape the character of the physical environment through detailed, high-standard proposals over time. Balance flexibility in design solutions with a unified vision for the development.
- Promote accessibility and inclusive design principles.



The document is organised into five distinct sections, each serving a specific purpose:

Sections 1 and 2 (Information)

These sections provide general information about the Royal Elm Park masterplan, including an overview of the planning consent and the design principles approved in November 2018.

Sections 3 and 4 (Design Code)

Serving as the core of the design code, these sections offer detailed instructions for architectural and landscape design. Within these sections, guidance is categorized as follows:

Must

Mandatory rules that must be incorporated into any design proposals. These are marked with a specific symbol to emphasize their importance.

Should

Recommended best practices that should be incorporated wherever possible. These guidelines support the scheme's quality and are identified with a dedicated symbol.

All other information in these sections is intended to clarify the design rationale and objectives, providing examples of how the proposals could be realized. Additionally, some figures are illustrative and serve to help interpret the mandatory commitments.

Where appropriate references are made to other documents including the Design and Access Statement and Reading Local Plan 2019 policies.

Sections 5 (Information)

Returning to general information, these sections provide relevant technical considerations including sustainable design and construction, wind, green and blue roofs, daylight and sunlight and housing standards, for all the outline planning permission area.

Structure of the Document

Section 1

Sitewide Context

The purpose of this section is to provide an overview of Royal Elm Park and its context.

Section 2

Urban Design Principles

The purpose of this section is to present the masterplan principles specific to the Outline Planning Permission (OPP).

Section 3

Architectural Design

This section provides detailed instruction on the design of individual buildings.

Section 4

Public Realm and Landscape Design

This section provides instruction on the design of the public realm and Landscape.

Section 5

Technical Considerations

This section provides additional instructions to other technical matters.

Section 1

Sitewide Context

The purpose of this section is to provide an overview of Royal Elm Park and its context.

1.1 Planning Context

Royal Elm Park is located at the existing Select Car Leasing Stadium, previously known as Madejski Stadium, home to Reading Football Club. The site currently includes an expansive car park, a Garden of Remembrance, and an indoor Academy training centre (known locally as the Dome).

The site is approximately 5 km south of Reading Town Centre, within the administrative boundary of Reading Borough Council. Key bus routes link major employment areas (e.g. Green Park) and new housing developments (e.g. Green Park Village, and Kennet Island) with the central area and the rest of Reading.

A Hybrid Planning Permission was granted (RBC Ref: 160199) on 29th November, 2018 for:

Outline Planning Application: (all matters reserved apart from access to the site) for residential development (Blocks 1–6) to provide up to 422 residential units, predominantly 1 and 2 bedroom apartments (Use Class C3), along with associated landscaping and car parking.

Detailed application for residential and mixed-use development comprising:

- 196 residential units (within Block 7 - see Fig. 1) (Use Class C3) including 164 dedicated parking spaces (of which 12 are accessible)
- Convention Centre and ice rink (Use Classes D1/D2)
- 246-bedroom hotel (Use Class C1) and up to 102 serviced apartments (Use Class C1)
- Decked car parking within Convention Centre
- Flexible ancillary retail space (Use Class A1) (within Block 7 only)
- Flexible ancillary retail space (Use Class A3/A4) (within Convention Centre only)
- Multi-storey car park including office provision (1,972 m²) (Use Class B1a) or 1,732 m² of office space (Use Class B1a) and 240 m² of community space (Use Class D1)
- Public open space (including public square and public park), with associated street furniture, public art, and directional signage as part of a wider outline public open space strategy (See Fig. 2)
- Associated access, landscaping, cycle parking, transport interchange, and related infrastructure and engineering works
- Ancillary facilities for storage, management facilities, and plant
- Vehicular and pedestrian access
- Demolition of the existing indoor training facility and enhancement of the existing RFC Garden of Remembrance.



Fig. 1 Detailed Application Block 7.

Detailed Application Boundary 2018

Outline Application Boundary 2018

1 The International - Convention Centre, Ice Rink, Hotel, Serviced Apartments, Retail & Decked Car Park

2 Block 07 - Residential

3 Multi-Storey Car Park

4 Royal Elm Square

5 Select Car Leasing Stadium,

6 Convention Centre & VOCO Hotel

7 Interchange Square - Transport Hub

8 Outline Residential Development (Blocks 1-6)

9 Royal Elm Gardens



Fig. 2 Detailed Application aerial view including public square, Convention Centre and ice rink, Multi-storey car park, Block 7



Fig. 3 Illustrative Masterplan Framework.

1.2 Document Context

It is important for developers and designers to understand fully the many complex principles upon which the development parameters, and Design Code have been prepared. These include:

Royal Elm Park Planning Application

- Description of Development
- Listed Documents for the Outline Part, including Parameter Plans – Condition 44
- S106 Agreement dated 29th November 2018
  - Schedule Two – General Obligations and Development Restrictions
  - Schedule Three – Affordable Housing Obligations
  - Schedule Four – Employment and Skills Plan
  - Schedule Five – Transport Obligations
  - Schedule Six – Land Contamination and Gas Remediation Obligations
  - Schedule Seven – Leisure and Open Space Obligations
  - Annexure 1 – The Plans

In addition to the Design Code a number of other documents will be submitted to the Local Planning Authority that set out strategies for the delivery of Royal Elm Park pursuant to planning conditions.

Outline Application Part Strategies

- Reserved Matters details – Condition 42
- Reserved Matters landscaping details – Condition 43
- Design Code – Condition 45
- Contamination and Land Gas – Conditions 46, 47, and 50
- Arboriculture – Conditions 51, 52, and 54
- Lighting – Condition 58
- Vehicle Access Routes – Condition 60
- Bicycle Parking Facilities – Condition 61
- Wind Conditions and Mitigation – Condition 62

Site Wide Strategies

- Phasing Plan – Condition 64
- Construction Method Statement / CEMP – Condition 65
- Ground Gas Vents – Condition 67
- Proposed Pilling Method – Condition 68
- Leachate Abstraction Wells – Condition 69
- Groundwater Monitoring – Conditions, 70, 71, 72, and 73
- Imported Fill – Condition 74
- External Materials – Condition 75
- Overall Housing Mix – Condition 76
- External Noise Prevention – Condition 77
- Overall Surface Water Drainage Strategy – Condition 79
- Detailed Surface Water Drainage Strategy – Condition 80
- Flood Risk – Condition 82
- Flood Sewage – Condition 83
- Travel Planning – Conditions, 87, 88, and 89
- Security Strategy – Condition 90
- Secured by Design Accreditation – Condition 91
- Residential Area Open Spaces – Condition 92
- Sustainability – Condition 93 and 95
- Overall Floorspace – Condition 96
- Waste Management Strategy – Condition 99
- Signage Strategy – Condition 100

1.3 Outline Planning Permission (OPP)

The outline planning permission can be broken down into a three stage process;

- Stage 1. First, sitewide / outline matters are governed by the hybrid planning permission granted in November 2018 (RBC Ref: 160199).
- Stage 2. Second, Condition 45 of the hybrid planning permission requires a detailed design code to be submitted and approved in writing by the Local Planning Authority.
- Stage 3. Submission of Reserved Matters Application. Reserved Matters are required for individual phases (Condition 42 and 43).

Condition 42 of the hybrid planning permission requires plans and particulars of all reserved matters not detailed in the outline permission, such as:

- Detailed plans and drawings showing the;
  - Access
  - Appearance (to include short to medium views and street/scene)
  - Landscaping
  - Layout (to include the internal layout of buildings and car parking)
  - Scale

Condition 43 of the hybrid planning permission requires the following details to be submitted in accordance with Condition 42 for the approval of the landscaping for the site as a reserved matter:

- Proposed finished ground levels or contours; proposed earthworks; means of enclosure; car parking layouts; other vehicle and pedestrian access and circulation areas, hard surfacing materials, refuse storage facilities, lighting columns, street furniture, fencing/walling, and other ancillary structures.
- Routes and details of proposed and existing functional services above and below ground, including foul and surface water drainage, SUDs details, power, communications cables, and water and gas supply pipelines, including access points.
- Planting plans; written specifications (including cultivation and other operations associated with plant and grass establishment); schedules of plants, noting species, plant sizes, and proposed numbers/planting densities where appropriate.
- Biodiversity enhancements, including integral bird nesting and bat roosting opportunities on and around the new buildings.

The details submitted in pursuance of the reserved matters Condition 42 of the hybrid planning permission as part of reserved matters applications must be in accordance with the principles of the material submitted and listed in Condition 44 of the hybrid planning permission, subject to any subsequent amendments to the documents listed. In summary this includes:

- The Design and Access Statement and its Addendum;
- The Parameter Plans;
- The Illustrative Landscape Masterplan;
- Outline floorplans and illustrative elevations for Blocks 1-6;
- Technical Documents covering the Environmental Strategy, Security, Flood Risk, Ecology, and Transport.

1.4 Site Wide Design Rationale

The following masterplan design rationale and principles are as set out within the original Design and Access Statement and its Addendum. For further context refer to the DAS: Section 5. Design Rationale (page 22).

Development Area

The Site is a historic landfill area, and the landscape embankments associated with the restoration scheme must be retained. These embankments define an elevated platform currently used for a car park and training pitches. Two existing vehicular access points serve the Site and will be retained for future development, along with existing public rights of way along the lower contours of the landscape embankments (See Fig. 4).

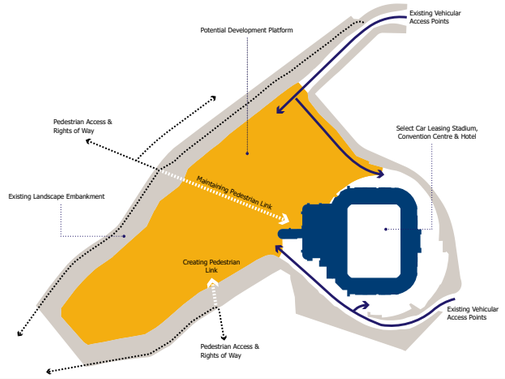


Fig. 4 Potential Development Area

Activity Zone

Given the diverse range of uses, two activity zones have been identified within the development area. The high-activity zone is located in the northeast of the Site, adjacent to the stadium and existing vehicular and pedestrian access points. This area will include an activity hub to support the public uses planned for this location. A lower-activity zone will be designated at the opposite end of the Site, which is a more noise-sensitive environment (See Fig. 5).

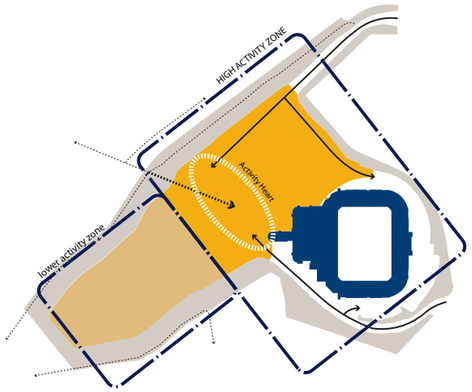


Fig. 5 Activity Zone

Land Use

A cohesive public realm serves as a key element uniting the proposed land uses. At the core of the high-activity zone, a flexible public square will be introduced, strategically positioned to accommodate high pedestrian traffic and support surrounding public uses. Extending into the lower-activity zone, a public park will provide soft landscape elements and places to relax, slow down, and play. A transport interchange will also be provided at the junction of key movement routes (See Fig. 6).



Fig. 6 Land Use

Key Views

Acknowledging the elevated nature of the Site, an iterative landscape and visual analysis was conducted to integrate key viewing corridors into and out of the Site. This process influenced the articulation and scale of the proposed development, with a focus on creating engaging views. A dramatic arrival sequence from Green Park into the public square enhances legibility and place-making (See Fig. 7).

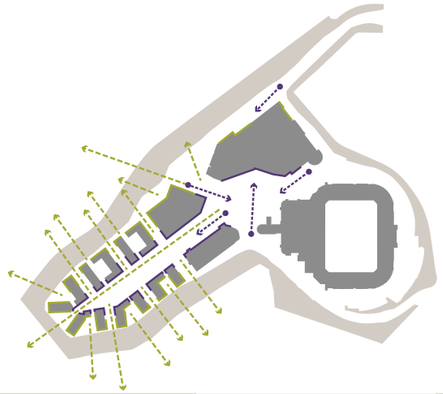


Fig. 7 Key Views and Character Areas

Movement Links

A sustainable movement strategy has been developed to enhance access to the Site, focusing on pedestrians and cyclists. Key improvements include upgraded pedestrian and cycle routes into the Site, along with enhanced public transport services (See Fig. 8) from surrounding areas, including direct connections from Reading town centre. Additionally, a new transport interchange/hub will be provided on-site, facilitating arrivals and departures for visitors and future residents. These measures aim to reduce reliance on private motor vehicles and encourage more sustainable modes of transport (See Fig. 9).

For further context refer to Transport Documents listed in Condition 2 in the Detailed Part of the Hybrid Planning Permission (RBC Ref. 160199) Decision Notice for details including the routes into the site from the A33.

Where the RMA meets the consented scheme, facilities will be provided in line with LTN/1/20 and Manual for Streets as appropriate.

While prioritising sustainable transport options, the strategy also accounts for the need for private vehicle access to serve the proposed uses. This is addressed through the inclusion of a new multi-storey car park and a residential parking strategy. The design has also considered both event and non-event day scenarios, with strategies in place to mitigate the impact of vehicular movement on the Site and its immediate surroundings, ensuring smooth integration with other uses.

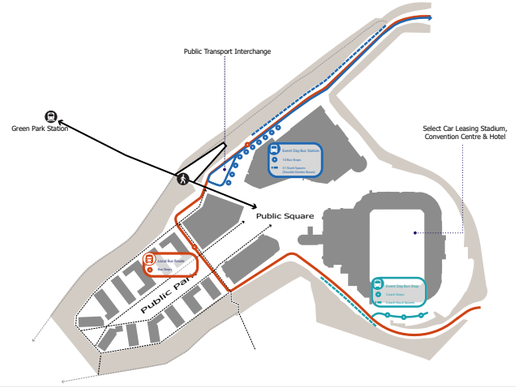


Fig. 8 Public Transport and Pedestrian Routes

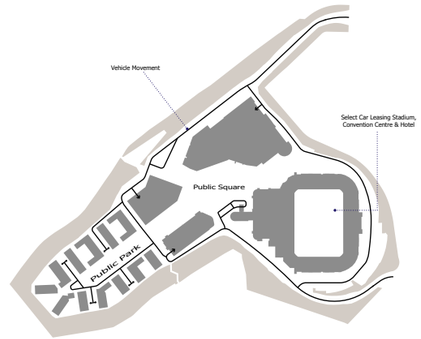


Fig. 9 Vehicular Movement

1.5 Parameters Plan

The Hybrid Planning Permission granted (RBC Ref: 160199) on 29th November, 2018 includes a set of Parameter Plans covering the site (listed at condition 44).

They are listed as follows:

- 24116-RG-M-33 - Hybrid Application Boundary (Fig. 10)
- 24116-RG-M-27B - Hybrid Parameters Plan Movement (Fig. 11)
- 24116-RG-M-26 - Hybrid Parameters Plan Land Use (Fig. 12)
- 24116-RG-M-28 - Hybrid Parameters Plan Building Heights (Fig. 13)
- 24116-RG-M-29B - Hybrid Parameters Plan Ground Levels (Fig. 14)
- 24116-RG-M-30 - Hybrid Parameters Plan Proposed Finished Floor Levels (Fig. 15)

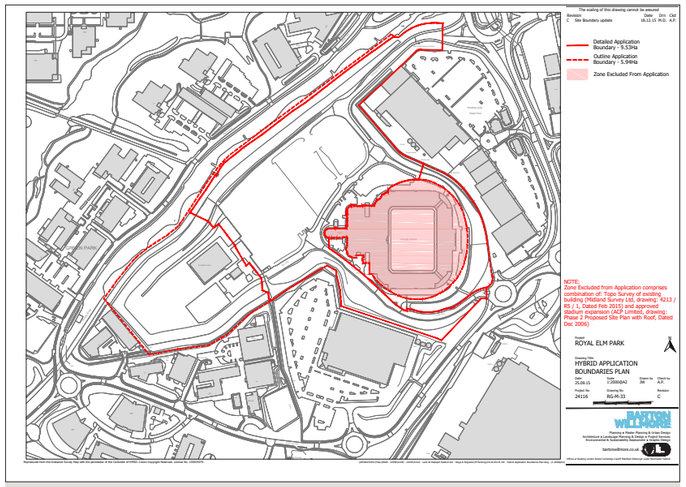


Fig. 10 Hybrid Application Boundary

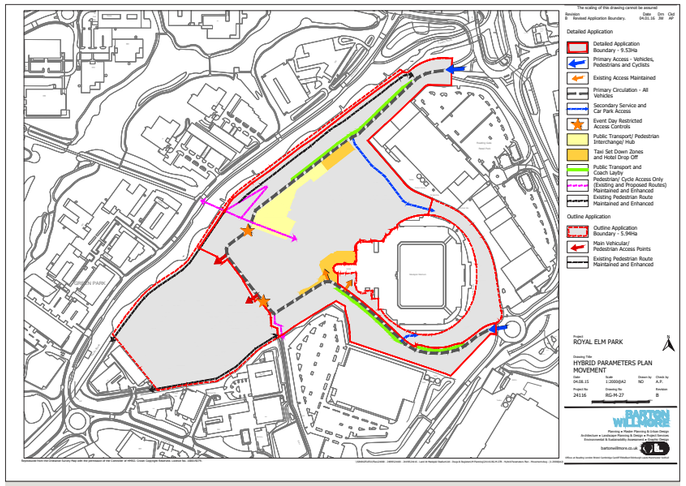


Fig. 11 Hybrid Parameters Plan Movement

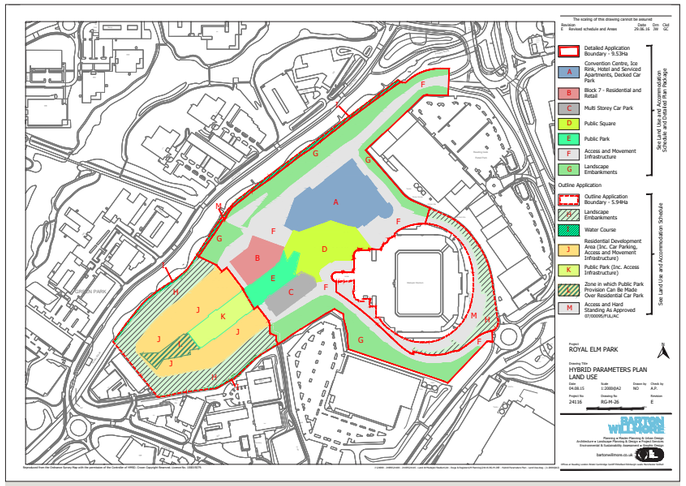


Fig. 12 Hybrid Parameters Plan Land Use

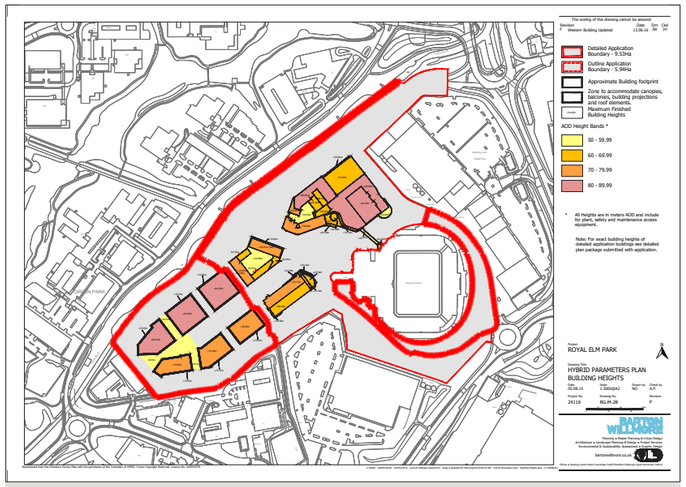


Fig. 13 Hybrid Parameters Plan Building Heights

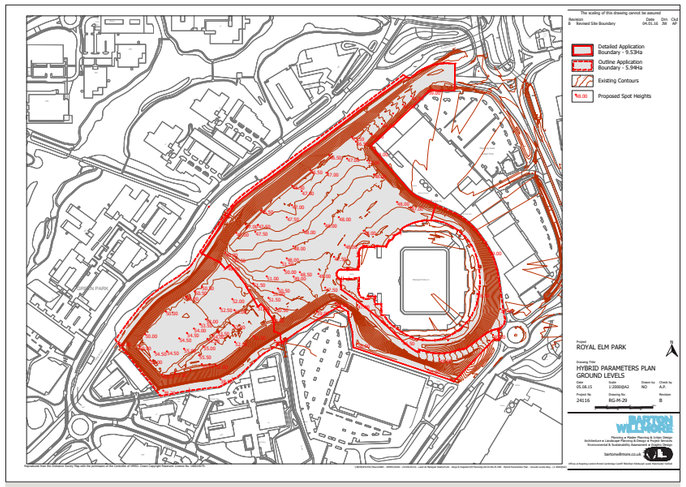


Fig. 14 Hybrid Parameters Plan Ground Levels

Fig. 15 Hybrid Parameters Plan Proposed Finished Floor Levels

Section 2

Urban Design Principles

The purpose of this section is to present the masterplan principles specific to the Outline Planning Permission.

2.1 Context

A masterplan was developed in 2016, comprising an area of approximately 18.8 hectares, for a residential mixed-use development.

The masterplan includes seven residential blocks, a hotel, a convention centre, an ice rink, a multi-story car park, a transport hub at Interchange Square, public open spaces, and landscaped areas.

A hybrid planning application was submitted for the masterplan, which consisted of both a detailed application and an outline application (See Fig. 16).

- Detailed Application Boundary 2018
- Outline Application Boundary 2018
- 1 The International - Convention Centre, Ice Rink, Hotel, Serviced Apartments, Retail & Decked Car Park
- 2 Block 07 - Residential
- 3 Multi-Storey Car Park
- 4 Royal Elm Square
- 5 Select Car Stadium
- 6 Convention Centre & VOCO Hotel
- 7 Interchange Square - Transport Hub
- 8 Outline Residential Development (Blocks 1-6)
- 9 Royal Elm Gardens



Fig. 16 Illustrative Masterplan Framework

This design code document exclusively covers the portion of the site approved under the outline planning permission.

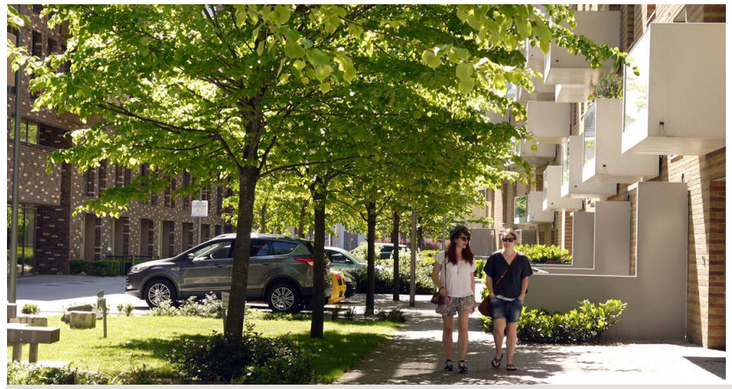
The outline planning permission applies to a site area of approximately 5.94 hectares. It is located to the southwest of the Site and includes a strip of land surrounding the Select Car Leasing Stadium previously known as the Madejski Stadium.

The outline planning permission is for a residential development that comprises 6 blocks, offering up to 422 residential units, predominantly consisting of 1- and 2-bedroom apartments (Use Class C3).

A central park, Royal Elm Gardens, will serve as a focal point of the development, complemented by extensive landscaping to enhance the environment.

The illustrative development is designed to align with the parameters approved as part of the outline planning permission (see Section 1.4, OPP Parameters Plans).

2.2 Vision





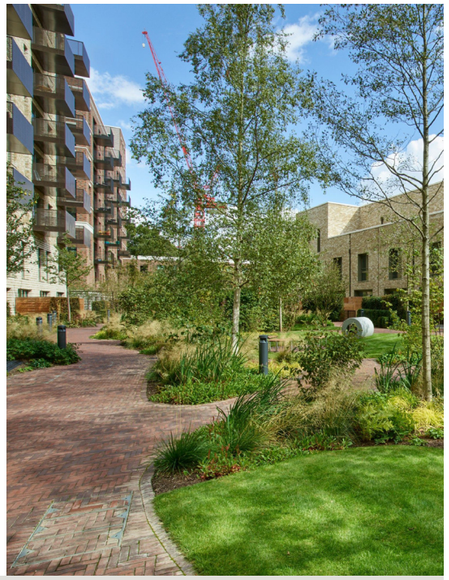
Green streets that encourage walking & cycling and that are safe and attractive.



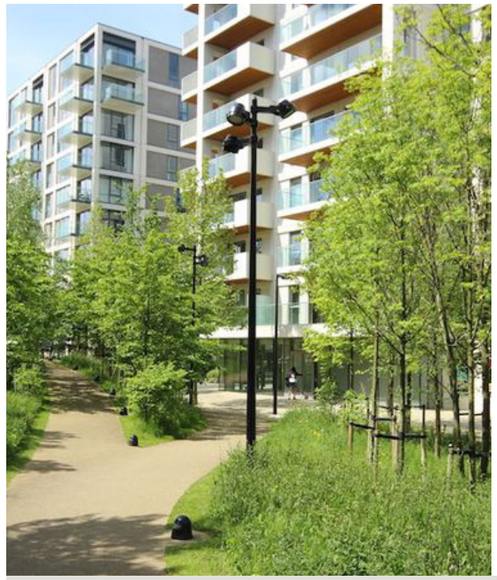


Vibrant and active environment.





Playful courtyards for local residents to enjoy.





Balance between built form and nature.

2.3 Design Principles

The following design principles are as set out within the original Design and Access Statement and its Addendum. For further context please refer to Section 15: Public Park, Section 17; Section 19: Key Views; Section 20: Block Orientation and Massing Principles; Public and Private Realm Principles.

Public Linear Park

A green spine at the heart of the residential development is planned, connecting public spaces and helping to create a sense of community and a strong identity for the place (See Fig. 17).

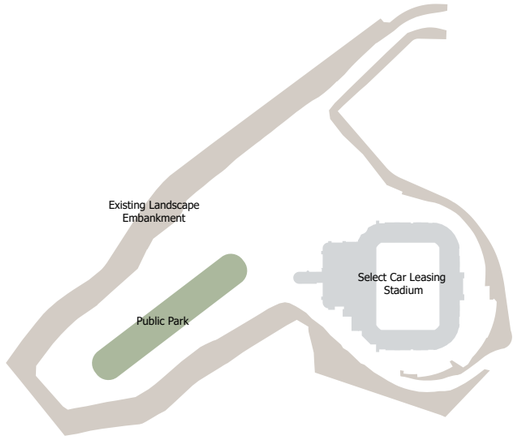


Fig. 17 Public Linear Park

Enclosed Space

Achieving a sense of enclosure is critical to shaping the park into a coherent and comfortable space. By framing the park with surrounding elements, the design emphasises security, privacy, and a clear spatial identity. This approach establishes a strong sense of place, creating a cohesive and inviting environment (See Fig. 18).

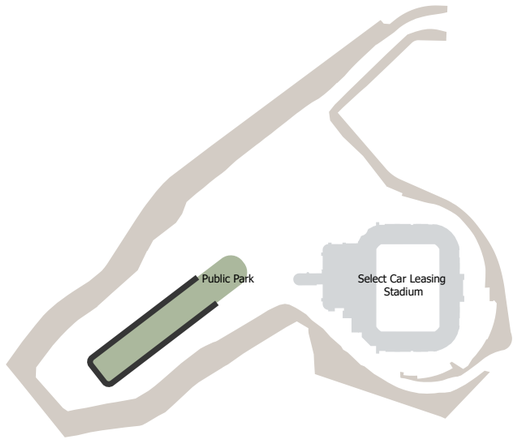


Fig. 18 Enclosed Space

Views Out

The elevated position of Royal Elm Park, situated on a raised plateau, offers a unique opportunity to frame views that extend outward from the site. This distinct setting allows the built form and landscape to interact harmoniously, creating key moments that enhance the experience of both residents and visitors (See Fig. 19).

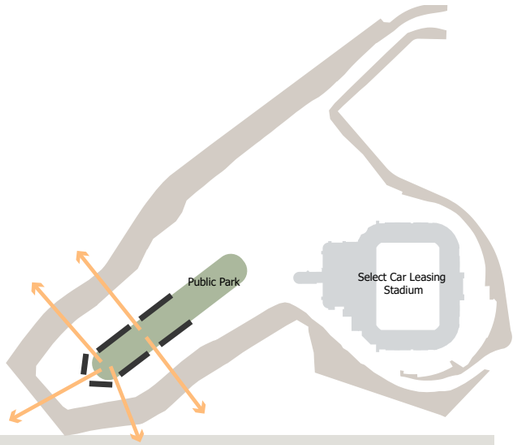


Fig. 19 Views Out

Open Spaces Hierarchy

A clear hierarchy of open spaces is a central element of the urban design principles, ensuring the development offers a variety of environments that address diverse needs while maintaining coherence and balance. Each layer of open space is carefully designed to complement the overall urban structure. The smaller private green areas, provide intimate and tranquil environments for residents (See Fig. 20).

Refer to Policy EN9: provision of open space.

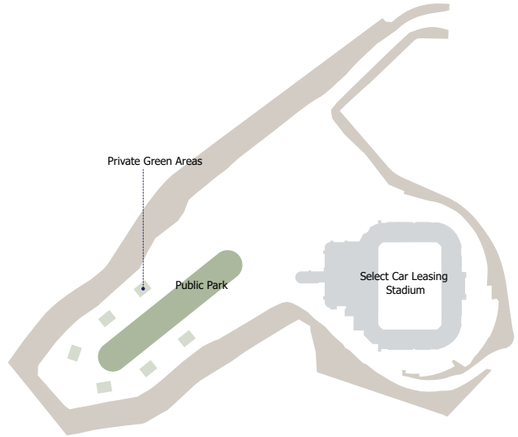


Fig. 20 Podium Gardens

Promoting Active Travel

The development is designed with a strong emphasis on pedestrians, prioritising walking and cycling. Vehicle access is limited to essential routes for residential areas, with most parking located below buildings or streets. This approach reduces vehicle movement, fostering a peaceful and accessible environment for residents. The masterplan also promotes a safe environment, with well-designed walking and cycling routes (See Fig. 21).

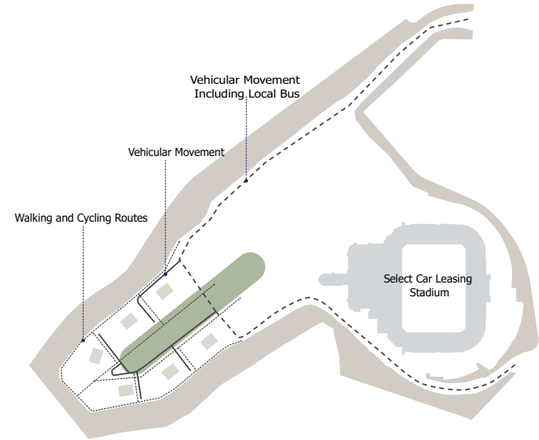


Fig. 21 Promoting Active Travel

Maximise Sunlight

Maximising sunlight in the open spaces has been a key consideration in the massing and design of the development. The buildings have been carefully shaped and positioned to allow optimal sun penetration into the open spaces. The massing of the blocks has been articulated to create openings and spaces that allow sunlight to reach the courtyards and public areas creating an inviting environment for residents and visitors (See Fig. 22).

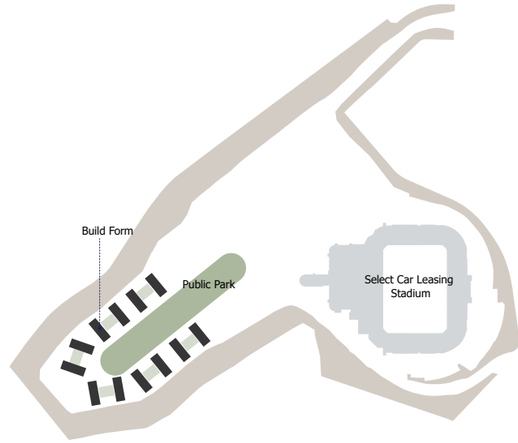


Fig. 22 Maximise Sunlight

2.4 Illustrative Plan

The illustrative masterplan (See Fig. 23) demonstrates a potential approach to bringing the development forward, applying the urban design principles to the proposal.

The linear park lies at the heart of the development, serving as the central unifying element that connects all proposed uses. It provides soft landscaping and spaces for relaxation, leisure, and play. Surrounding the park, the six residential blocks (See Fig. 24) are strategically positioned to create a sense of enclosure and define the edges of the green spine.

This plan illustrates a vision for a vibrant and well-integrated community, focused on quality public spaces. For further context please refer to the DAS: Section 14. Masterplan Design Evolution (page 62) and Section 19 Landscape, Drainage & Ecology Strategy (page 82).

Application Boundary



Fig. 23 Illustrative Masterplan



Fig. 24 Illustrative Masterplan Block 1-6

2.5 Open Space

The heart of the development should be the linear park, located at the centre of the site. This park will serve as a focal point for the development, enhancing the quality of public open space and promoting community interaction.

A clear hierarchy of open spaces should be established, progressing from the expansive linear park to shared communal zones, and then to private communal spaces for residents (See Fig. 25-26).

The landscape at Royal Elm Park will create an attractive setting while providing usable open spaces for local residents. The landscape comprises the following four main zones:

Royal Elm Gardens: A central green space located at the heart of the development, offering a communal area for residents and visitors.

Mews Streets: Local access routes connecting residential blocks, featuring shared surfaces that accommodate both vehicles and pedestrian movement, as well as street-level parking.

Residential Courtyards: Private, semi-enclosed spaces nestled within the residential blocks, designed exclusively for the use of residents.

The Landscape Edge: An existing band of scrub and woodland plantings surrounding the site. Steeply sloping in places this zone incorporates an existing footpath, The Foundry Brook.

For further context please refer to the DAS: Section 15 Land Uses & Amount (page 66) and Section 119 Landscape, Drainage & Ecology Strategy (page 82).



Fig. 25 Open Space Diagram OPP

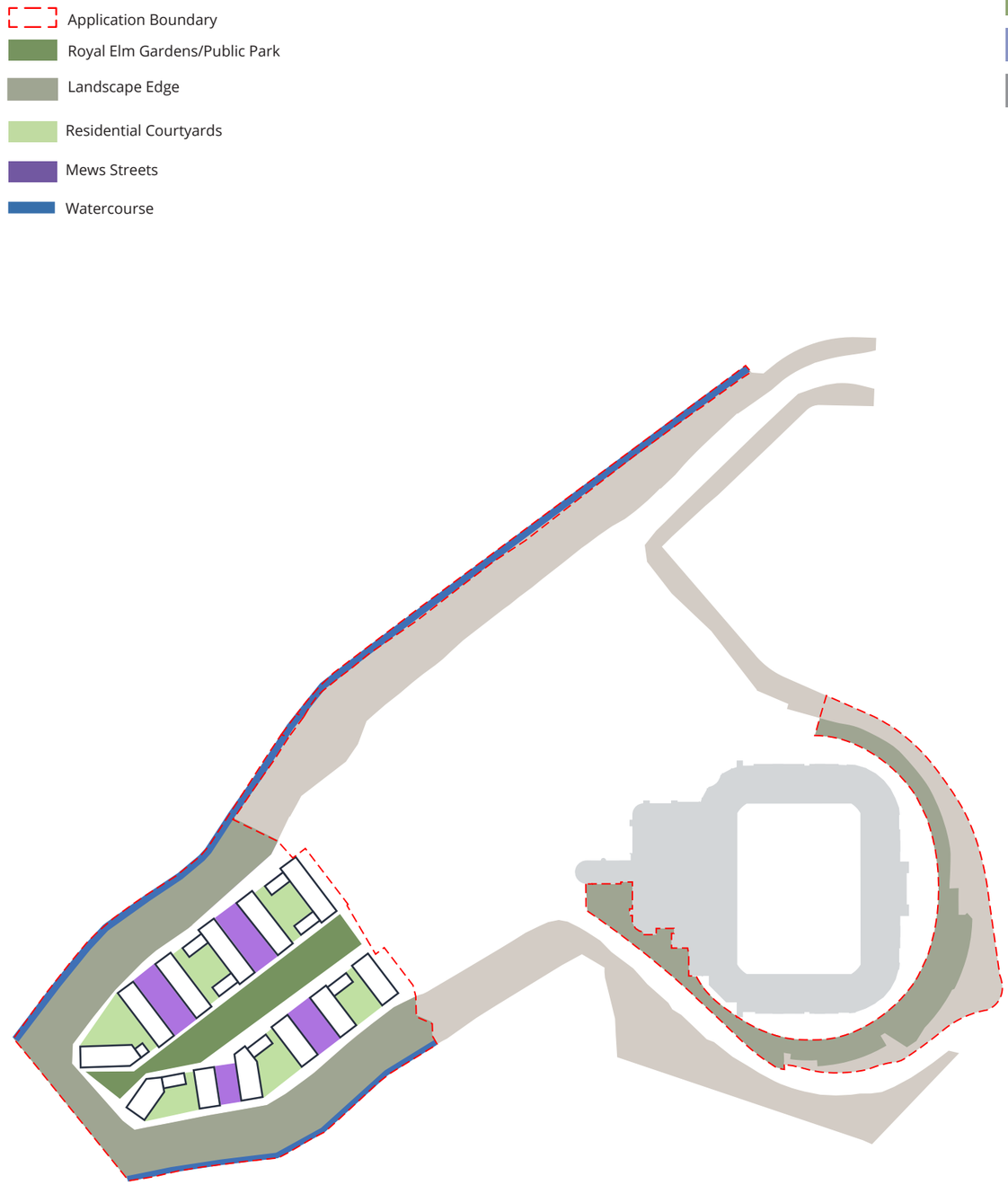


Fig. 26 Open Space Diagram OPP in context of overall hybrid permission site area

2.6 Urban Design and Townscape

A series of perimeter blocks should be designed to contain and enclose the central park, defining its boundaries while shaping the surrounding streets and open spaces (See Fig. 27-28). These blocks are intended to organize the layout of the development, facilitate movement, and create a sense of place.

Active and permeable frontages should be incorporated along shared zones and the linear park, with functional elements such as entrance doors, communal lobbies, and courtyard access points. These frontages are designed to encourage interaction and movement.

Active frontages should be strategically placed in key locations to support pedestrian flow, promote engagement with the surrounding open spaces, and ensure that the spaces are well-used and integrated into the daily life of the development.

For further context please refer to the DAS: Section 20 Layout & Appearance Principles (page 96).

Fig. 27 Urban Design and Townscape Diagram OPP

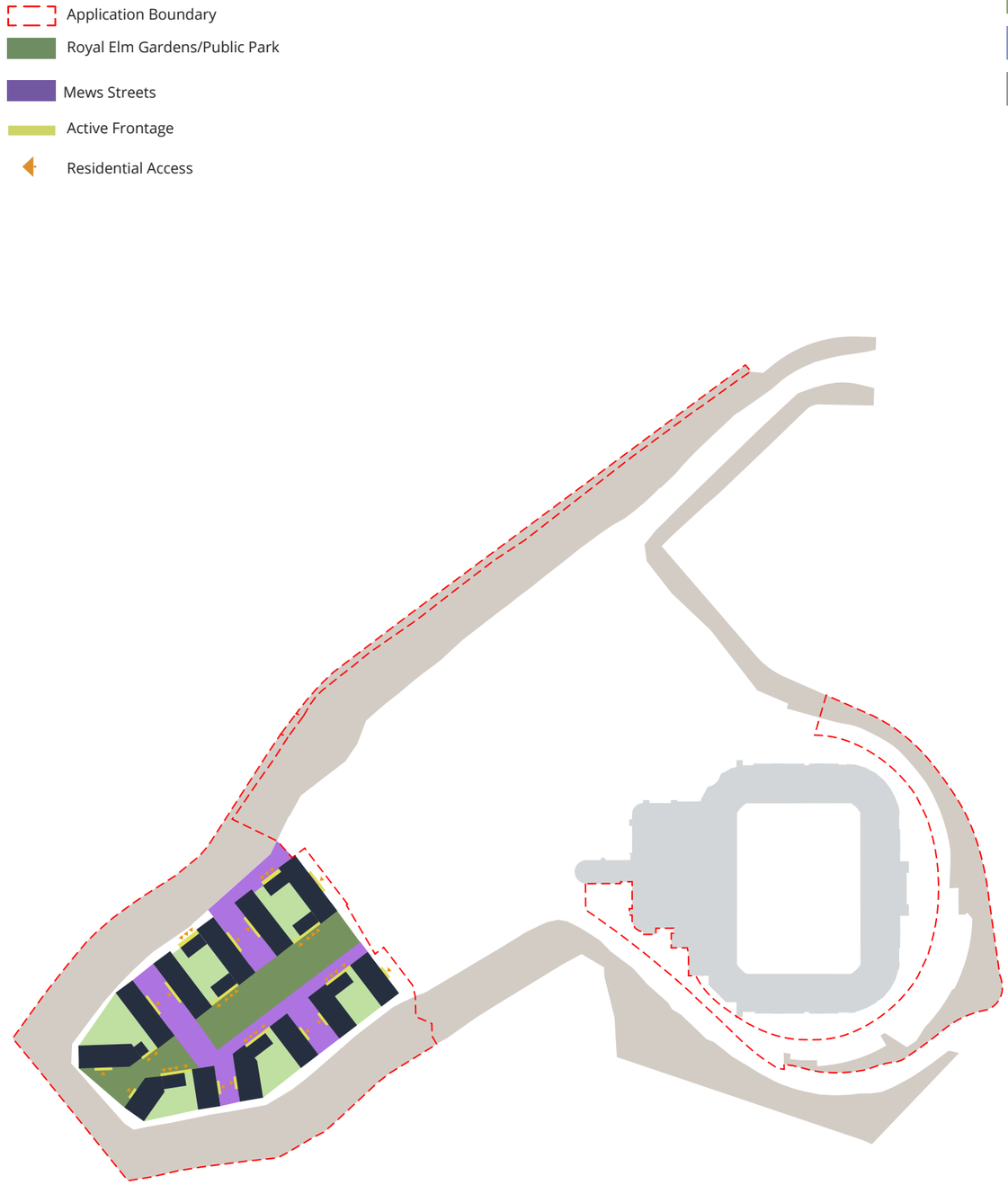


Fig. 28 Urban Design and Townscape Diagram OPP in context of overall hybrid permission site area

2.7 Access and Movement

There are two vehicular access points to the site, both located at the eastern edge, where the high-activity zone has been identified.

In the hierarchy of movement, pedestrians are given priority over vehicles wherever practical to create a dynamic, vibrant place that promotes interaction and accessibility. The key areas are the pedestrian and cyclist zones (See Fig. 30-32).

Access to each undercroft car park will be from a single point, away from the main pedestrian & cycle desire paths to provide a safer, pedestrian-friendly environment. In limited areas, where ramped access to car park is shared by both cyclist and cars, this will be carefully designed with appropriate safety measures and signage.

Royal Elm Park, with well-managed vehicular traffic that minimizes the number of cars in the area, will feature a central movement corridor for pedestrians and cyclists. This corridor will connect Royal Elm Square to all residential blocks, and offer a panoramic viewing spot at its opposite end.

Where appropriate Manual for Streets (MfS) will be used to inform layouts & dimensions for streetscapes. MfS provides guidance, not explicit dimensions when it comes to street scape widths, allowing each scheme to be considered on its individual merit.

Figure 7.1 in MfS provides guidance on widths suitable for the passing of different types of vehicle e.g. 4.8m allows a car and a delivery vehicle to pass. The relevant minimum widths will be applied to vehicle routes across the scheme.
Minimum footway widths of 2.0m and shared cycle/pedestrian paths of 3.0m will be provided.

For further context refer to the DAS: Section 17. Hybrid Access & Movement Strategy (page 70 and 71), for movement and access, including Street Typology Strategy (page 78) and Section 4.4 Public Realm and Landscape Design: Mews Street: Movement for Mews Street detailed design guidance and design consideration for 'Deadends'.

Refer to Manual For Streets.

Refer to Policies:
TR1 - Achieving the transport strategy.
TR4 - Cycle Routes and Facilities
TR5 - Car and Cycle Parking and Electric Vehicle Charging

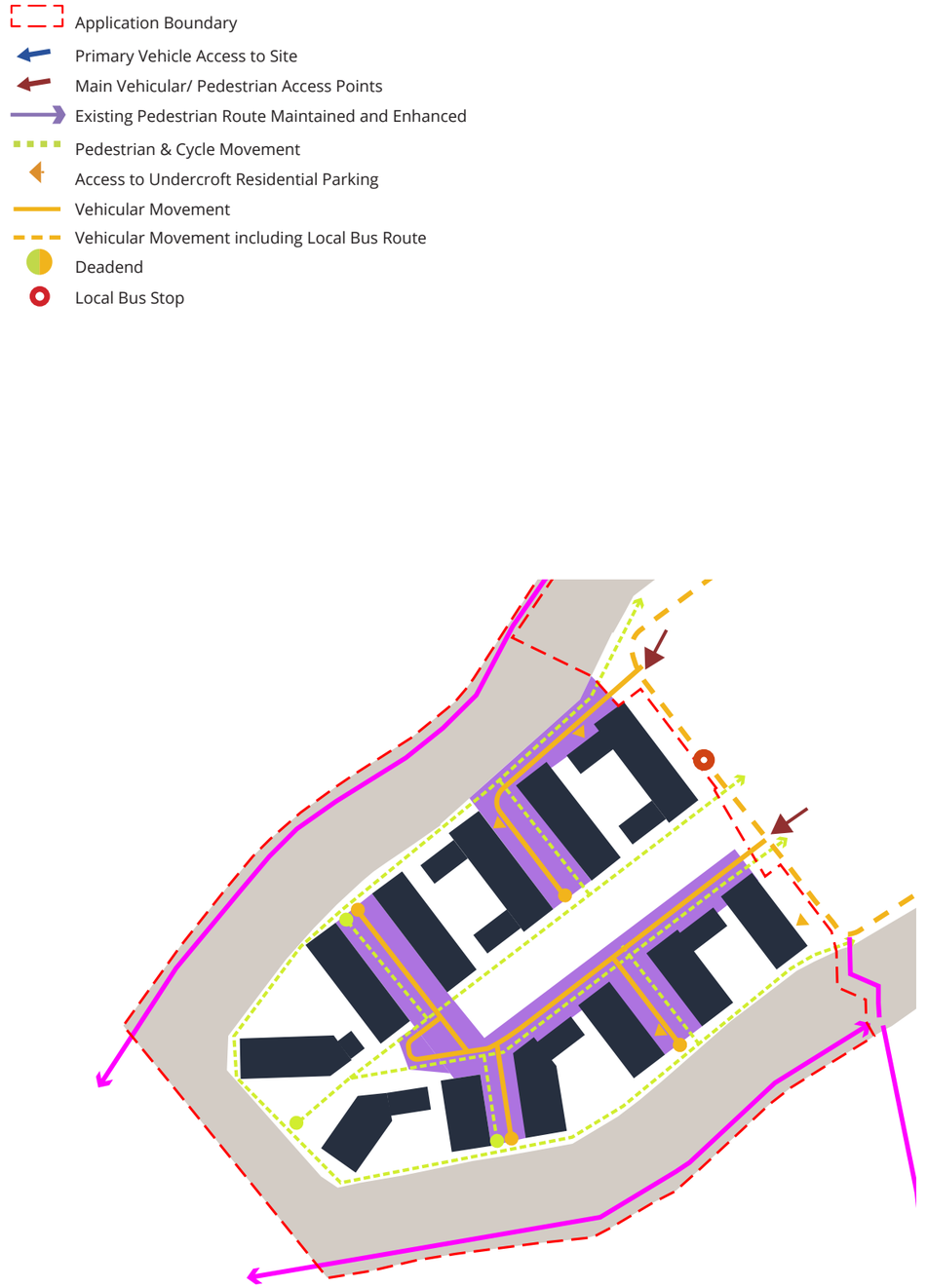


Fig. 30 Access and Movement Diagram OPP (Non Event Day)

Application Boundary
Primary Vehicle Access to Site
Main Vehicular/ Pedestrian Access Points
Existing Pedestrian Route Maintained and Enhanced
Pedestrian & Cycle Movement
Access to Undercroft Residential Parking
Vehicular Movement
Vehicular Movement including Local Bus Route
Deadend
Local Bus Stop

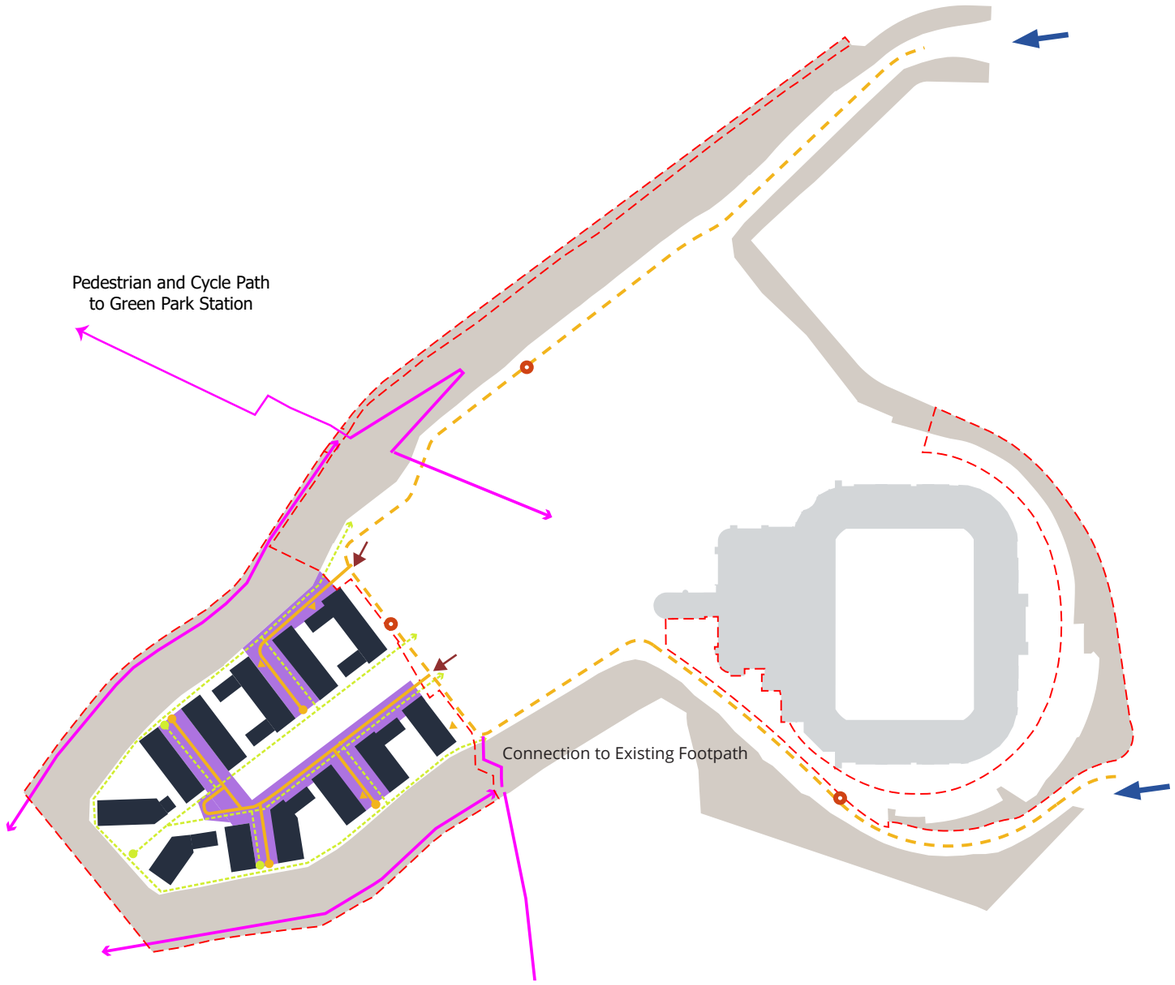


Fig. 31 Access and Movement Diagram OPP in context of overall hybrid permission site area (Non Event Day)

Application Boundary
Primary Vehicle Access to Site
Vehicular Movement
Deadend
Away Day Coaches
Public Transport Interchange including Local Buses and Shuttle Buses

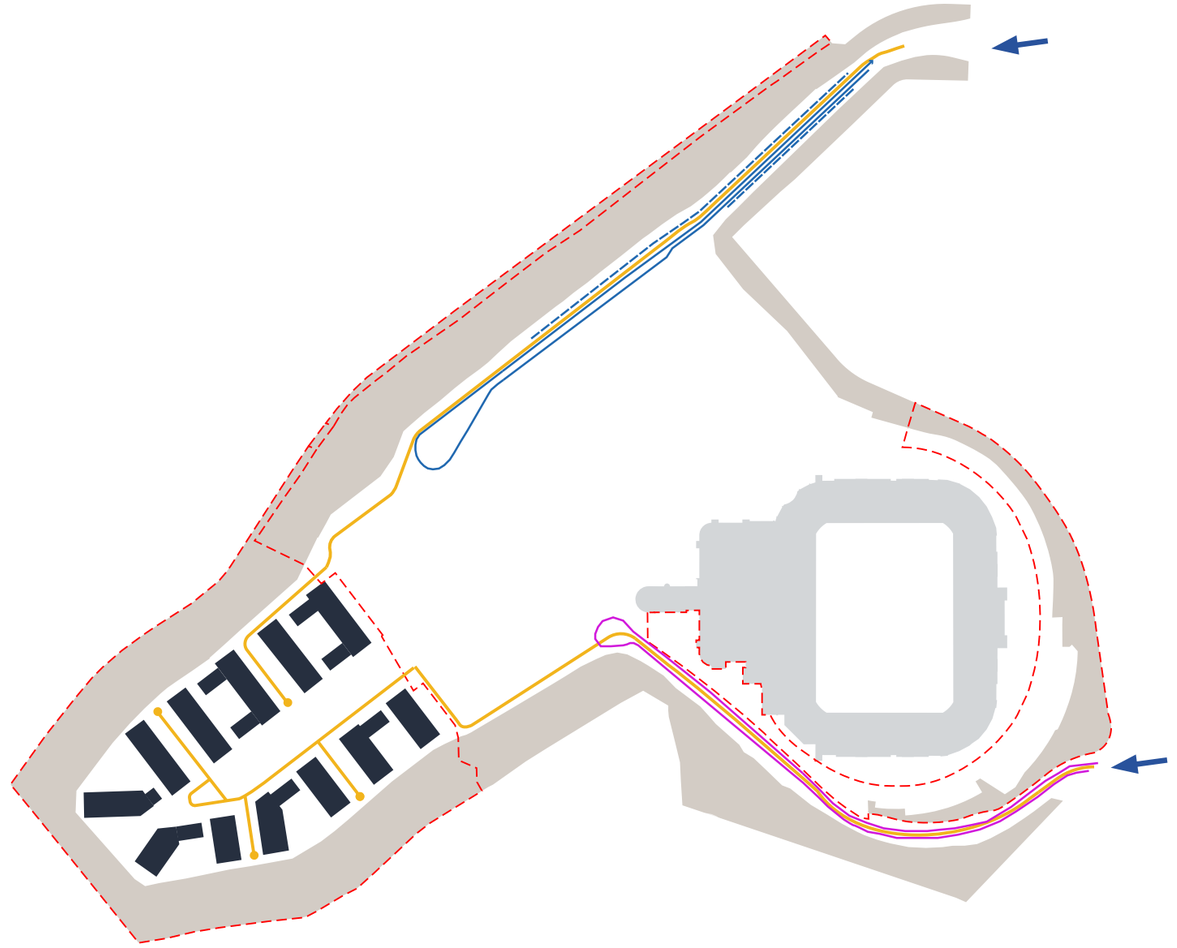


Fig. 32 Vehicular Access and Movement Diagram OPP in context of overall hybrid permission site area (Event Day)

2.8 Parking and Servicing

A secure residents parking area will be provided in the undercroft car park, with managed resident and visitor parking at ground level/on street (See Fig. 33-34).

The internal access roads will provide access for service, refuse and Emergency vehicles. Where through routes & loop roads are not present, turning heads will allow Emergency, service and refuse vehicles forwards entry and exit.

It is expected that refuse and service access will be from a shared surface spine road within the central open space and parkland area.

Visitor cycle parking will be provided across the scheme in the form of Sheffield Stands.

Refer to PBA - Addendum to 32605 TN_028 for visitor cycle parking strategy/ location.

EV charging for cars will be included across the scheme.

Refer to Part S of Schedule 1, requirement S1 and regulation 44D of the Building Regulations 2010 or the latest for details on EV charging cars.

Refer to Reading Borough Council Electric Vehicle Charging Infrastructure Strategy 2023

Refer to Draft Reading Transport Strategy 2040 Policy RTS29 Ultra-Low Emission Vehicles 29.7

Refer to PBA - Addendum to 32605 TN_028 for Swept Path Analysis.

Refer to Policy TR5 Car and cycle parking and electric vehicle charging .

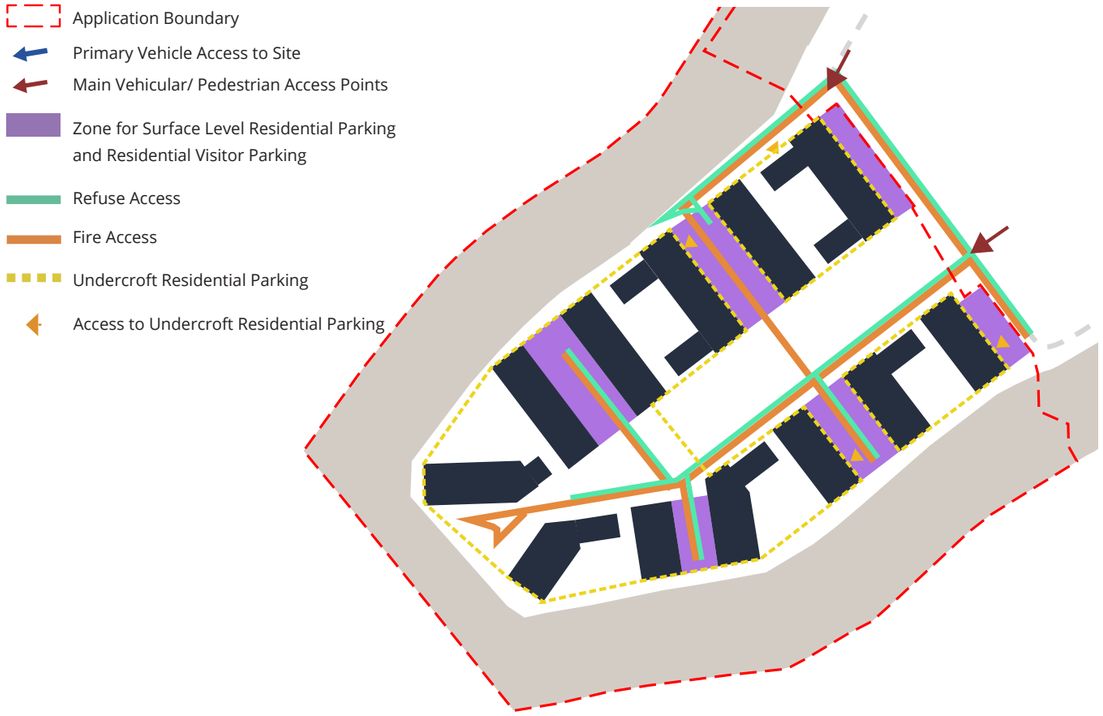


Fig. 33 Parking and Servicing Diagram OPP

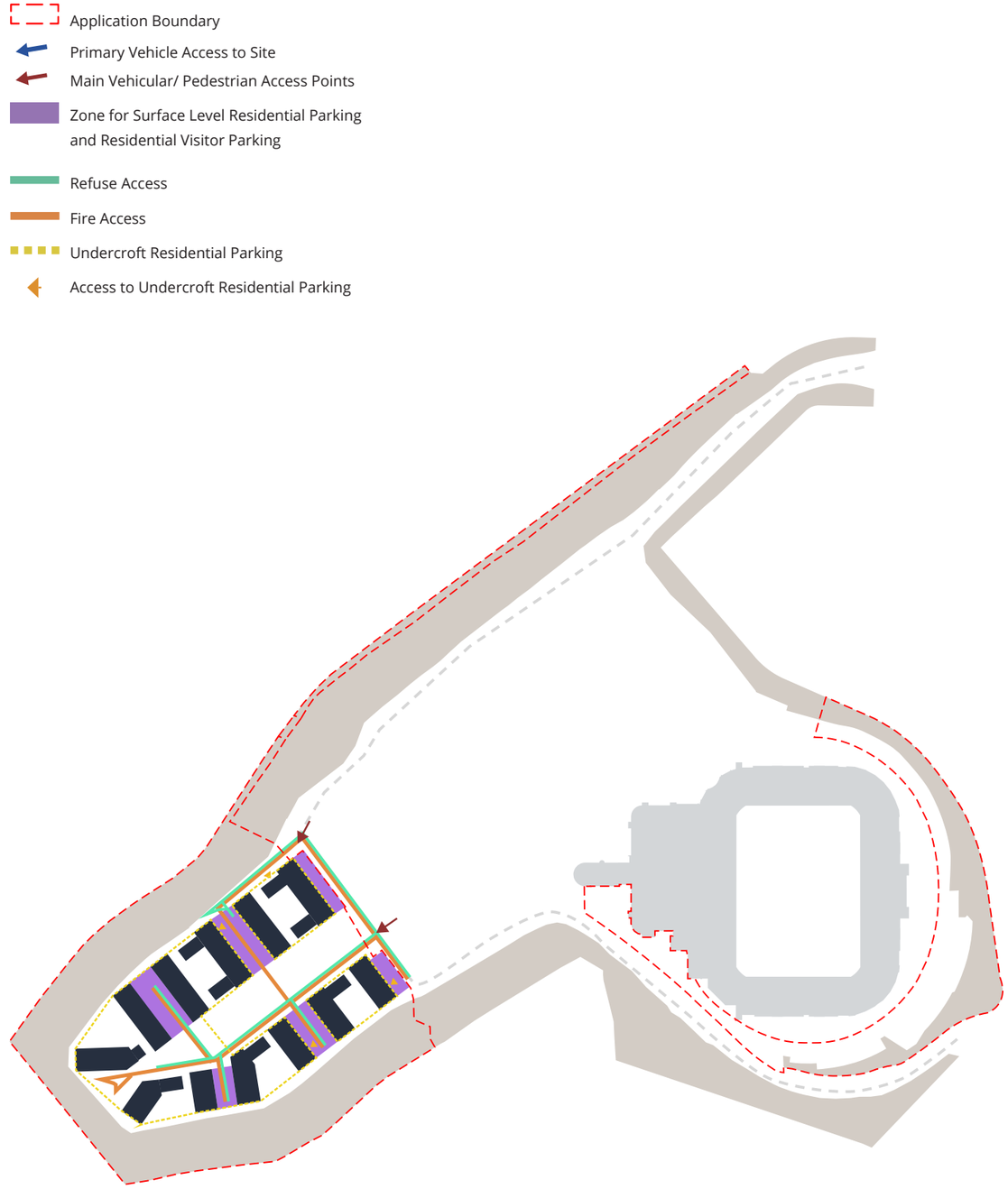


Fig. 34 Parking and Servicing Diagram OPP in context of overall hybrid permission site area

2.9 Public and Private Spaces

Royal Elm Park is thoughtfully designed to balance public accessibility with private residential spaces (See Fig. 35-36), ensuring a harmonious living environment for all.

The level of public accessibility to each space has been carefully considered. The development offers a mix of public, semi-private, and fully private amenity spaces.

Royal Elm Gardens will be fully accessible to all residents and the general public. Similarly the mews streets will be fully accessible to all. The residential courtyards will only be accessible to residents of the block surrounding the courtyard.

Individual ground floor homes, will in many areas, benefit from private gardens, and terraces. The existing landscape and woodland belt will remain visually accessible, however the steep topography in this area will prevent pedestrian access. (Note: Private balconies are provided for upper storey units.)

For further context refer to the DAS: Section 20. Layout & Appearance Principles in Design and Access Statement (page 97, 101 and 104) and Section 3 Public Realm Update in Design Access Addendum (page 32).

Refer to Policy: EN9 of the Local Plan



Fig. 35 Public and Private Spaces Diagram OPP

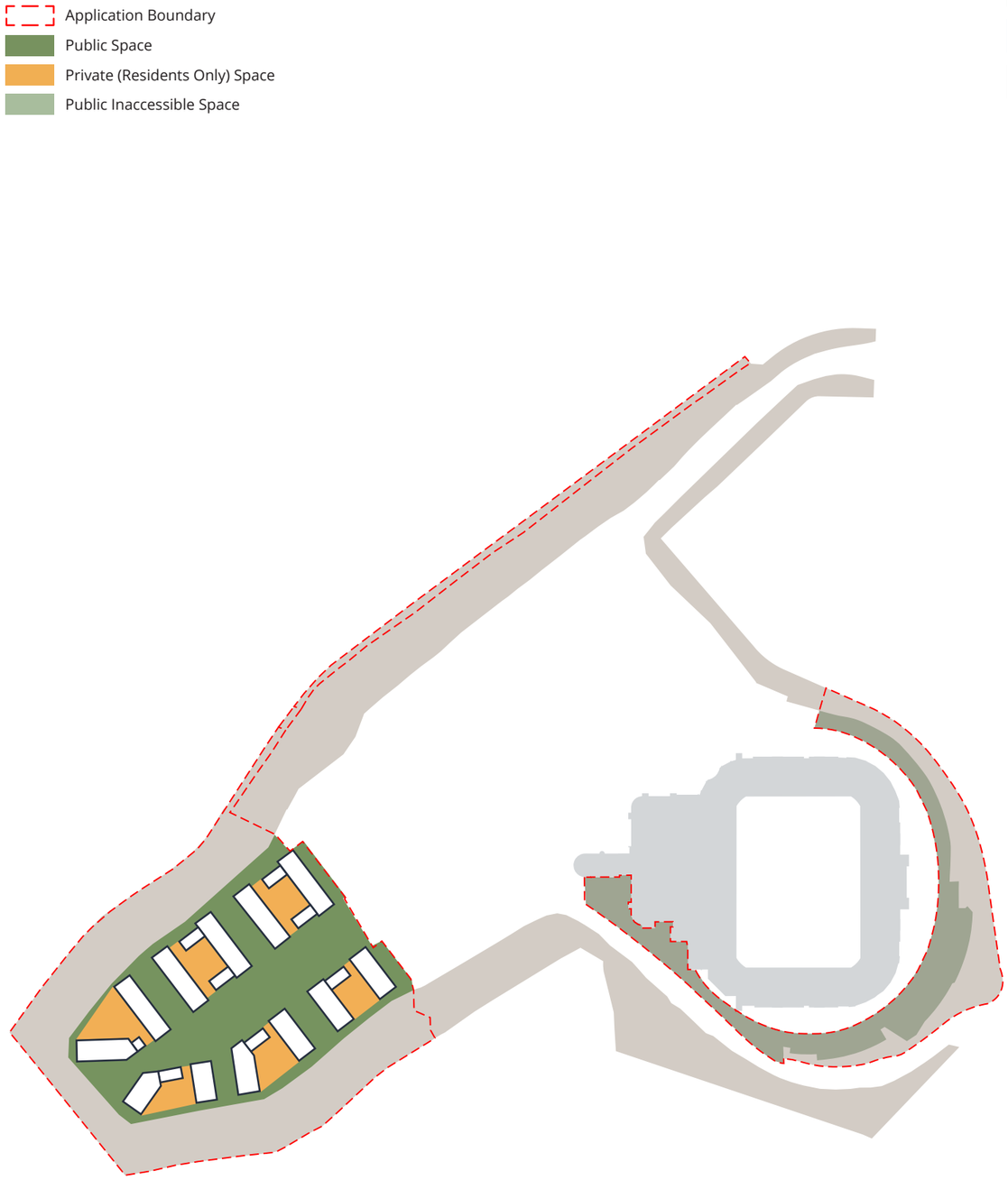


Fig. 36 Public and Private Spaces Diagram OPP in context of overall hybrid permission site area

2.10 **Playspaces**

Royal Elm Park is committed to fostering a family friendly environment by providing thoughtfully designed play spaces (See Fig. 37-38) that serve children of various age groups.

A 480m² Local Equipped Area for Play (LEAP) is located within Royal Elm Gardens, designed for children's active play.

100m² of doorstep play space is provided in every residential courtyard, providing convenient play areas for younger children.

434m2 of incidental play (informal designated + incidental combined) is provided.

For further context refer to the DAS: Section 4 Play, Recreation & Leisure Update (page 46).



Fig. 37 Playspaces Diagram OPP

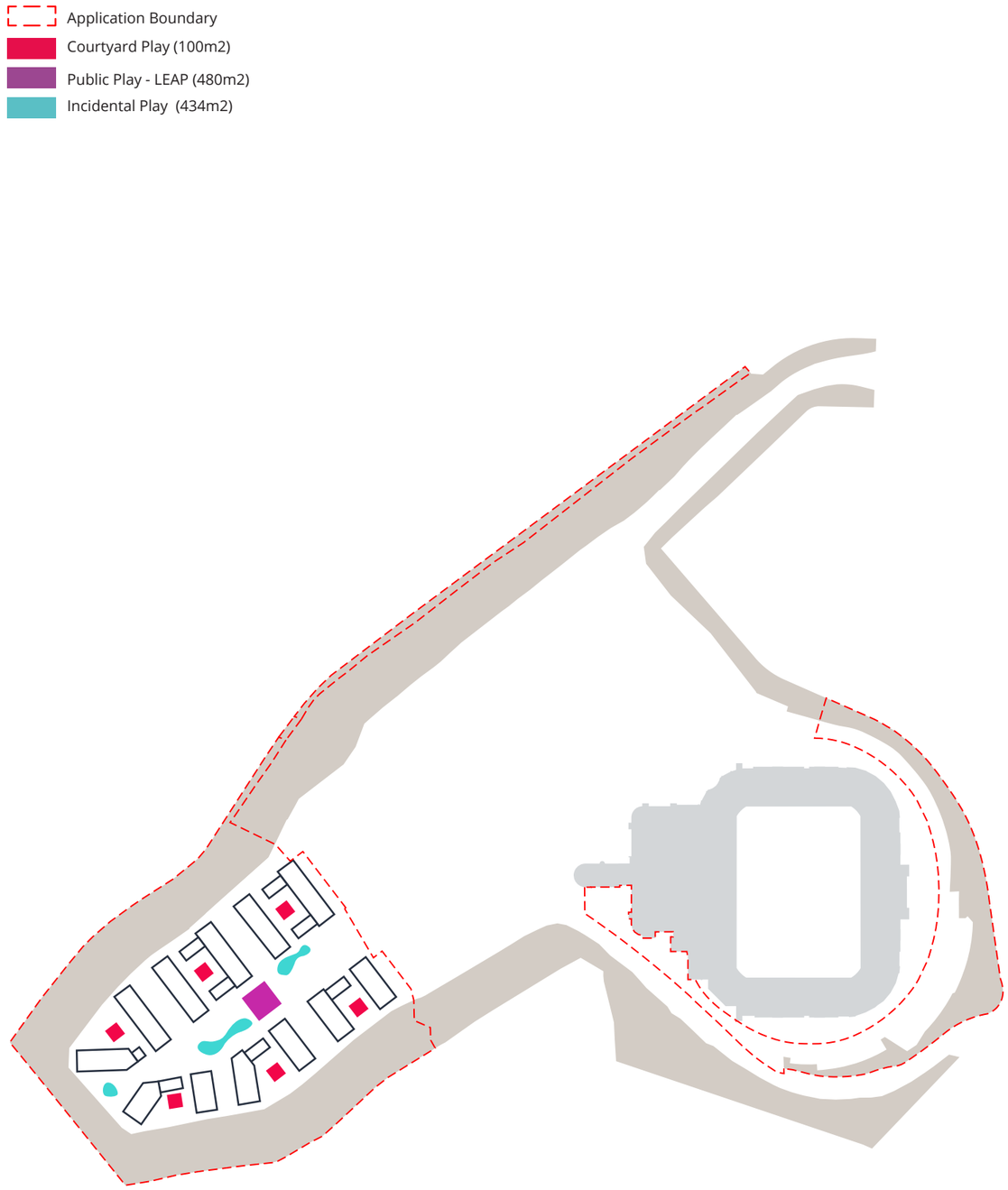


Fig. 38 Playspaces Diagram OPP in context of overall hybrid permission site area

2.11 Views

The elevated position of the site offers sweeping, panoramic views across South Reading and the wider landscape. The building layout and landscape design have been carefully planned to maximize these views from both the public spaces and private residences (See Fig. 39-40).

Royal Elm Gardens benefits from natural surveillance, with residential dwellings overlooking the space on all sides. This enhances security and creates a safe, welcoming environment.

For further context refer to the DAS: Section 20. Layout & Appearance Principles (page 99).



Fig. 39 Views Diagram OPP

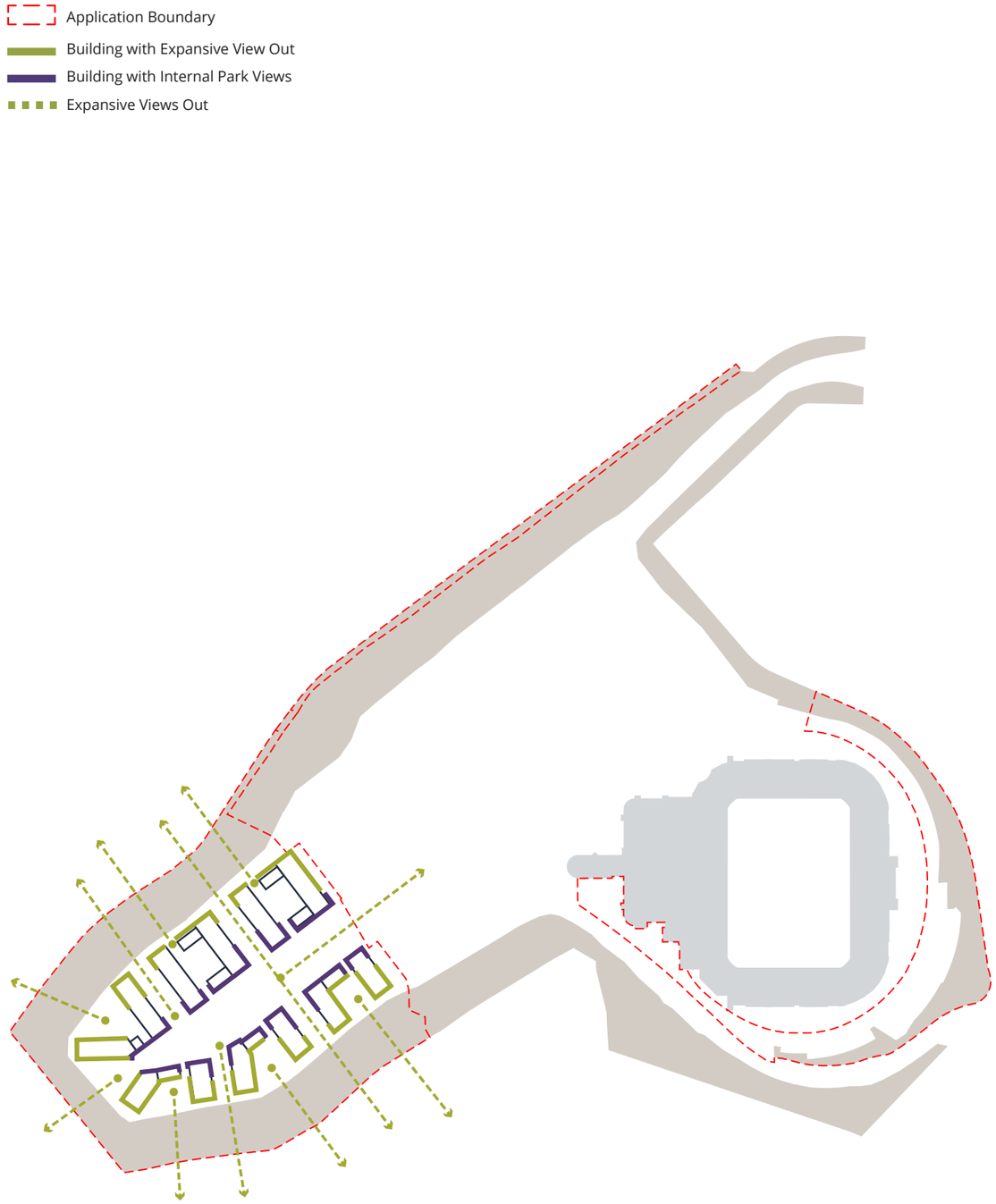


Fig. 40 Views Diagram OPP in context of overall hybrid permission site area

Section 3

Architectural Design

This section provides detailed instruction on the design of individual buildings.

3.1 Layout

This section outlines the layout design principles for the six residential blocks, which must adhere to the following guidelines:

- The development must be structured in a series of "finger" blocks to minimise the number of north facing units (see Fig. 41).
- To clearly define the park, separate public and private spaces, and create a sense of enclosure, additional massing must be introduced between 'finger' blocks (see Fig. 42).
- A clear hierarchy of open spaces must be established, progressing from the expansive linear park to shared communal zones between the blocks, and finally to private green spaces within the blocks (see Fig. 43).
- The width of the courtyards must be carefully proportioned to ensure a balance of openness, privacy, and sufficient daylight and sunlight (See Fig. 44).
- New buildings must not cast excessive shadows on neighbouring properties or proposed public spaces.
- The parcels must be designed within the Parameter Plans approved under the Hybrid Planning Permission granted (RBC Ref: 160199) on 29th November, 2018. The separation distances proposed in the courtyards shown on Illustrative Masterplan in Outline Hybrid Planning Permission (RBC Ref. 160199) are reasonable and any reductions to these should be kept to 2m or less.
- Streets must be designed with a minimum width of 18 metres to ensure sufficient sunlight, parking and a comfortable pedestrian experience.
- Residential units should have a primary orientation facing within 90 degrees of south to allow for reasonable levels of direct sunlight. Living areas should be positioned to benefit from the most sunlight, with windows to the south or southeast where possible.

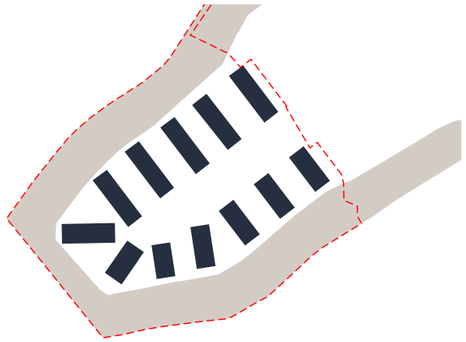


Fig. 41 Linear Blocks

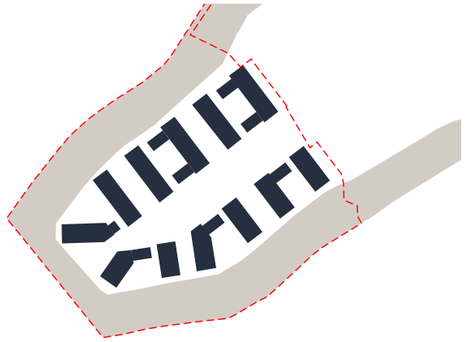


Fig. 42 Define The Park

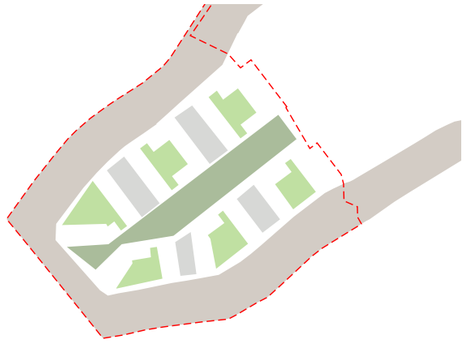


Fig. 43 Hierarchy Open Spaces

For further context refer to Section 1- Sitewide Context, 1.4 Parameters Plan and Section 5 Technical Consideration: Sunlight and Daylight in this document.

Refer to Policy CC7 Design and public realm.

Please also refer to the DAS: Section 20. Layout & Appearance Principles (page 96).



Fig. 44 Illustrative Layout Diagram. Blocks 1 - 6

3.2 Scale and Massing

The design thoughtfully incorporates variations in building height and volume, creating a dynamic and cohesive architectural composition. This section presents the principles that the massing must follow. For further context refer to Section 5 Technical Consideration: Sunlight and Daylight in this document.

- The finger blocks, oriented northwest to southeast, must have the highest massing, ranging between 6 and 8 storeys (See Fig. 45).
- Lower massing must be introduced between the finger blocks to allow for sun penetration into the courtyards and surrounding open spaces (see Fig. 46 Reduced Massing to Allow Sun Penetration).
- Articulation in the massing must be achieved through variations in height and volume, creating a visually dynamic and cohesive design (see Fig. 47 Modulate Roofscape Through Height and Massing).
- Gaps between the blocks must be provided to ensure views and connections to the linear park, while also enhancing permeability and access throughout the site.
- Buildings must be positioned and massed to allow adequate sunlight into key spaces, particularly living areas and gardens. Where possible, these spaces should have access to direct sunlight during the day.
- Buildings and unit layouts should be designed in line with the principles set out by the consented detailed Block 7. This block has undergone detailed testing, highlighting 99% of the rooms tested will achieve compliance with the BRE Guidance for daylight.
- Gardens and amenity spaces of neighbouring properties must retain access to sunlight. The building mass must be carefully designed to allow for sunlight to penetrate into key garden areas, particularly in the winter months when the sun is lower (see Fig. 48 Illustrative Massing Diagram. Blocks 1 - 6).

The modulated roofline created by the finger blocks contributes to a rhythmic and harmonious architectural language across the development.

The illustrative massing on the following page demonstrates how these principles combine to create a functional, balanced, and visually appealing design.

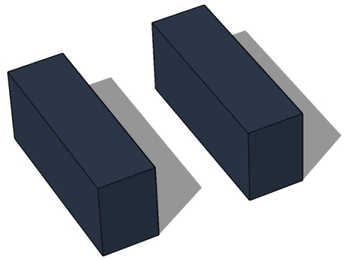


Fig. 45 Linear Block Massing

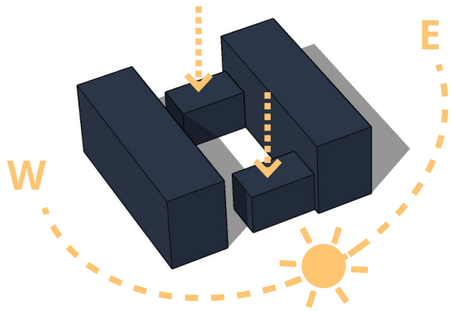


Fig. 46 Reduced Massing to Allow Sun Penetration

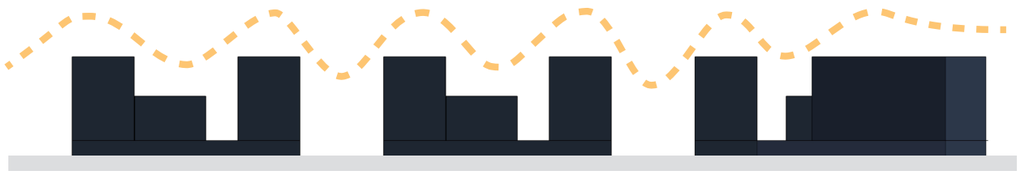


Fig. 47 Modulate Roofscape Through Height and Massing

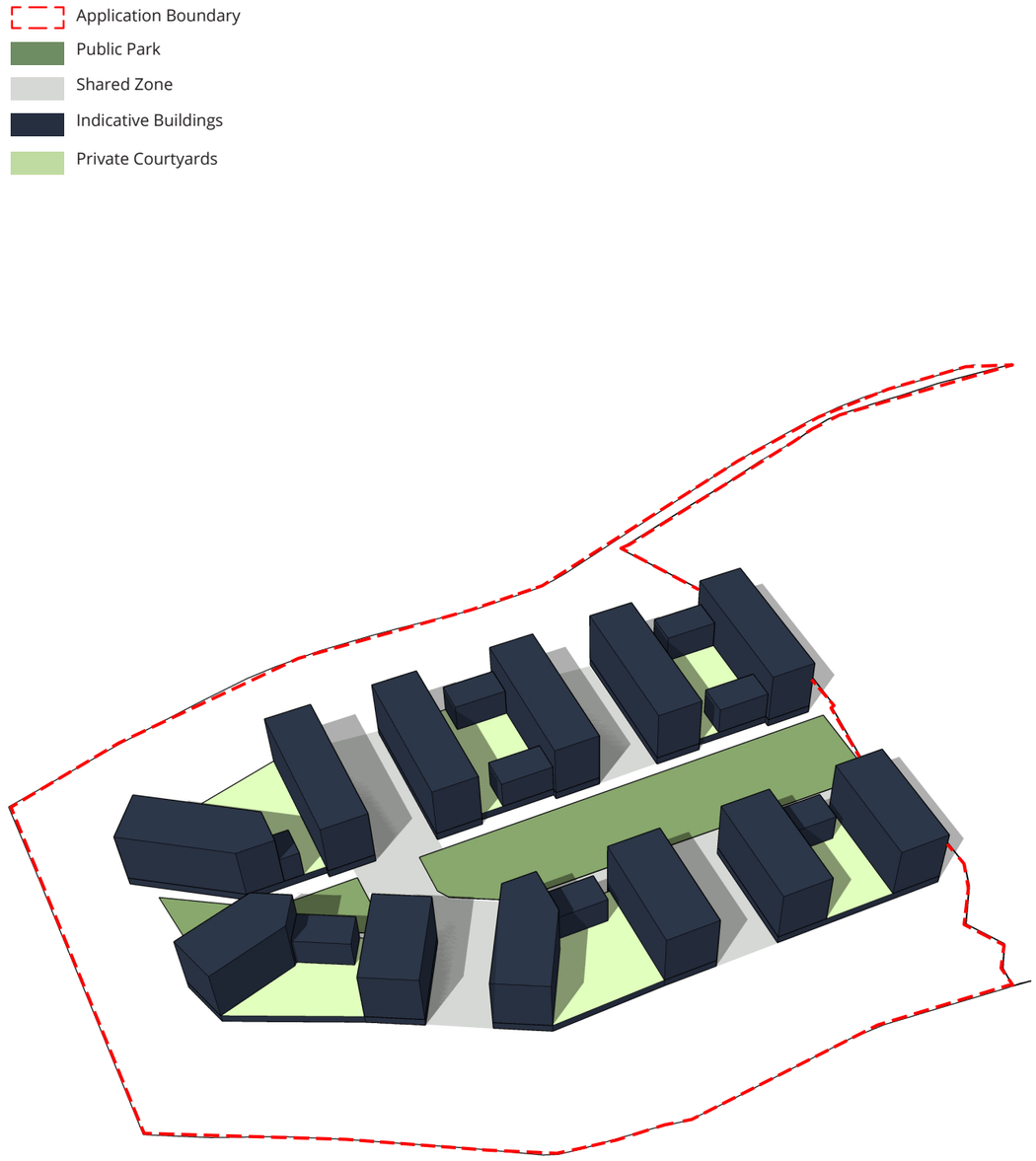


Fig. 48 Illustrative Massing Diagram. Blocks 1 - 6

3.3 Building Typologies

This section presents the building typologies designated for the site, as shown in the indicative layout below. Two distinct typologies have been selected based on the site's orientation and location (See Fig. 49), contributing to a unique townscape and offering diverse spatial experiences.

The design and placement of these typologies are optimized to maximize exposure to sunlight and daylight, ensuring that both private and public areas benefit from natural illumination.

The arrangement of these buildings also supports a strong connection between the built form and open spaces, creating comfortable and inviting environments for residents and visitors.

Precedent images on the following page (See Fig. 50-53) demonstrate how these two typologies can be harmoniously integrated, enhancing the overall design.

The subsequent pages outline the specific principles that each typology must adhere to, ensuring a cohesive and functional development.

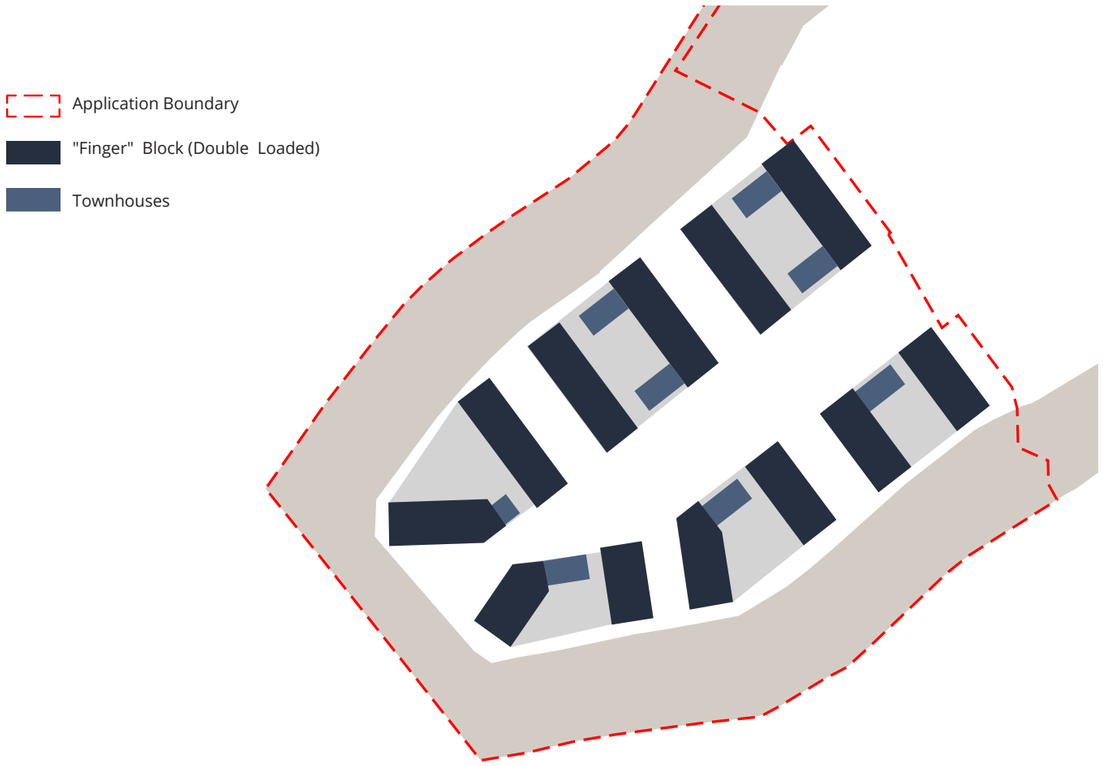


Fig. 49 Building Typologies Key Map



Fig. 50 Thamesmead, Proctor & Matthews (Example for Reference)

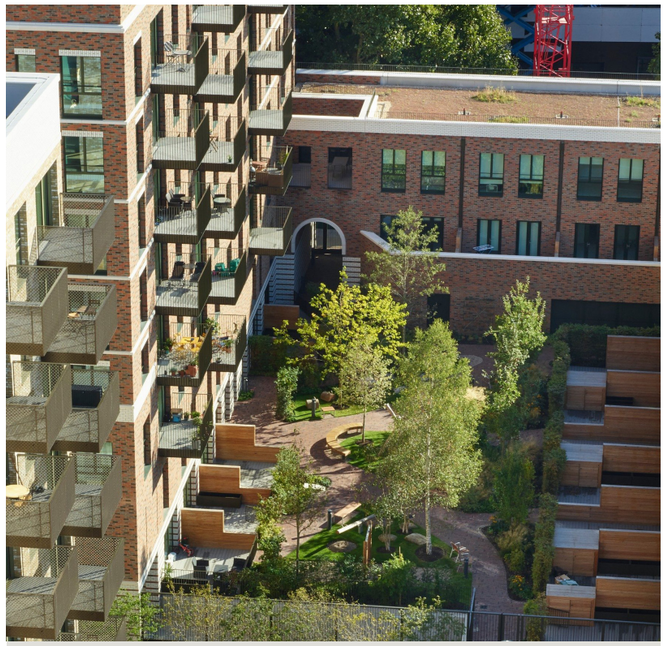


Fig. 52 South Gardens (Example for Reference)



Fig. 51 Prospect East PTE (Example for Reference)



Fig. 53 William Street Quarter AHMM (Example for Reference)

"Finger" Block (Double Loaded)

- This linear building typology is well-suited for a north-south orientation (See Fig. 55).
- The width of the block should typically range from 14-16 metres.
- Building height should range from 6 to 8 storeys, in accordance with the height limits established in the parameters plan.
- The layout provided is indicative (See Fig. 54). The layout should be designed to maximise dual-aspect units and minimise the north facing units.
- The core configurations are shown for illustrative purposes, and alternative layouts can be considered for design flexibility. However, these must comply with the latest regulations, including fire safety standards.
- The length of the block should not exceed 50 metres to prevent excessive overshadowing and enhance the permeability of the site.
- Room depths should be kept to a minimum wherever possible. Locating non-habitable spaces such as hallways, bathrooms and storage at the rear of the units should help maximise daylight within the habitable spaces. Where this is unavoidable, the kitchen spaces should be located at the rear of the living spaces and the primary living room features located closest to the windows to ensure adequate daylight access to the main living space.

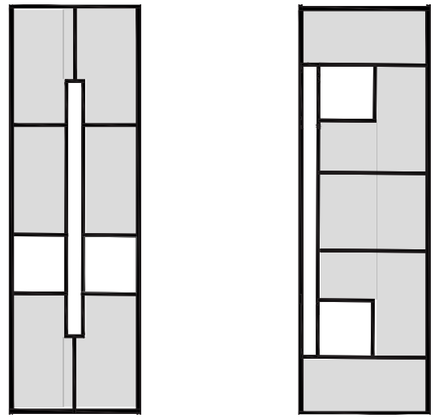


Fig. 54 Illustrative Double Loaded and Gallery Layout Typology

*Second staircase required subject to building height.

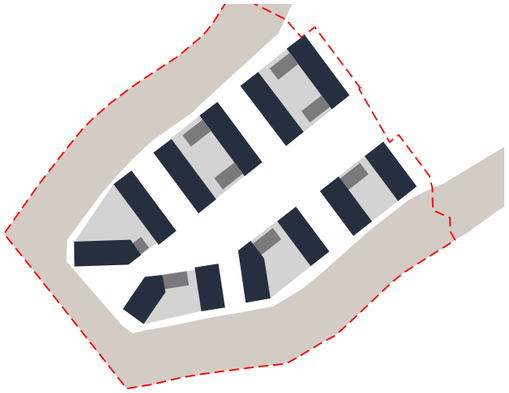


Fig. 55 Building Typology. "Finger" Blocks



Fig. 56 Royal Wharf. Ballymore (Example for Reference)

Townhouses

- This typology (See Fig. 57) is strategically located along the south and north edges of the block, maximising sunlight access into the courtyards and open spaces, and creating a harmonious relationship with the landscape (See Fig. 58).
- The building height for townhouses will typically not exceed 4 storeys, maintaining a human-scale design.
- The length of the townhouse block should not exceed 20m to ensure a balanced, cohesive form that complements the surrounding urban context.
- Private entrances should be provided for each townhouse, promoting a sense of ownership and privacy for residents, while also activating the streetscape.
- Townhouses should include small front gardens or terraces, which could include rooftop terraces, to enhance residents outdoor living and connection to the public space (See Fig. 59).

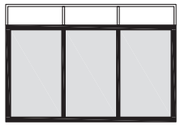


Fig. 57 Illustrative Townhouses Layout

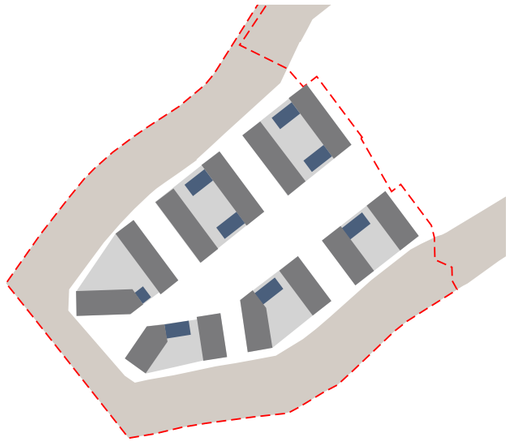


Fig. 58 Building Typology. Townhouses



Fig. 59 Proctor & Matthews (Example for Reference)

3.4 Building Composition

A variety of building heights and typologies will be required to create the desired townscape characteristics and place making principles set out in the code. The buildings are categorized into two groups based on their number of storeys: medium rise and lower buildings (See Fig. 60).

Each group follows a set of design principles that guide the composition of the building, emphasizing the differentiation between the top, middle and base sections (See Fig. 61-64).

These principles aim to create a cohesive and visually pleasing overall form taking into consideration the proportion, height, and context of the buildings.

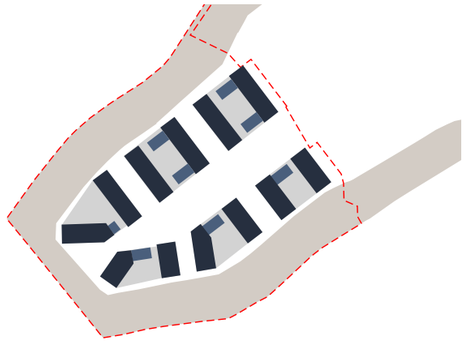


Fig. 60 Key Plan



Fig. 61 Gently articulated top and base (Example for Reference)



Fig. 62 Clear definition of top and base (Example for Reference)



Fig. 63 Top is expressed through materiality and recesses (Example for Reference)



Fig. 64 Clear definition of the base (Example for Reference)

Medium Rise Buildings

- Medium rise buildings within the development range from 6 to 8 storeys in height (See Fig. 65).
- The base of these buildings is subtly designed to blend into the surroundings, establishing strong, grounding presence while allowing the structure to appear to float within the landscape. This can be achieved through material colour and/or texture, for example brick detailing. Depending on the levels the base can be treated as a single or double floor.
- The middle section emphasises horizontal proportions, reinforcing a sense of balance and cohesion within the building's form.
- The top section must be treated as a subtle element, articulated in a manner that remains integral to the overall architectural composition. The top section must have a smaller footprint and be recessed from the shorter sides of the linear block.
- For all phases design integrity, the top section recess should be consistent. Approx. 2m recess must be provided where facing Royal Elm Gardens. A more generous recess must be provided where facing the outside of the development to minimise the visual impact.

Lower Buildings

- Lower buildings are defined as structures up to four storeys (See Fig. 66).
- The base is carefully designed to enhance the human scale experience and improve the relationship with the street.
- The composition should emphasize a vertical rhythm, reflecting the natural architectural expression of this typology when multiple units are combined.
- The top section should be expressed in a way that complements the rigidity and elegance of the linear block.

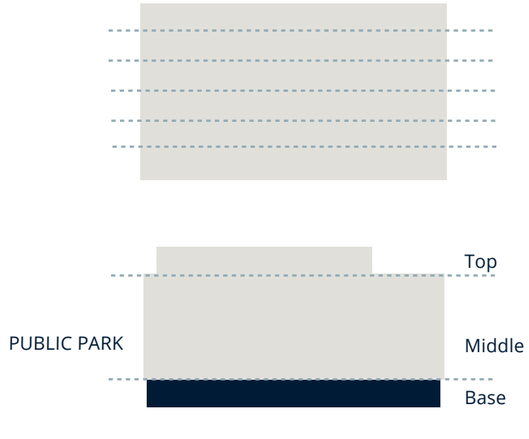


Fig. 65 Medium Building Diagram (Linear Block)

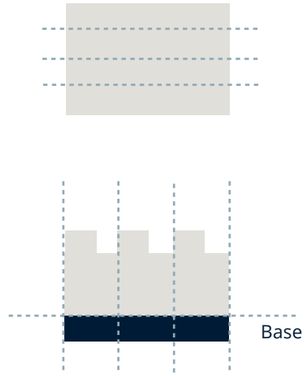


Fig. 66 Lower Building Diagram (Townhouse)

3.5 Character Area

The Royal Elm Park development should be designed as a cohesive and unified character area.

The vision for the site features pavilion blocks that appear to be suspended within the landscape, unified by a consistent architectural language (See Fig. 68).

To respond effectively to the context, urban design, and landscape, different design considerations should be applied to the following identified zones:

- Royal Elm Gardens
- Royal Elm Mews Streets
- Royal Elm Terrace

This section defines the principles for each zone. Clear guidelines are provided to ensure a cohesive and high quality outcome, while allowing flexibility in design.

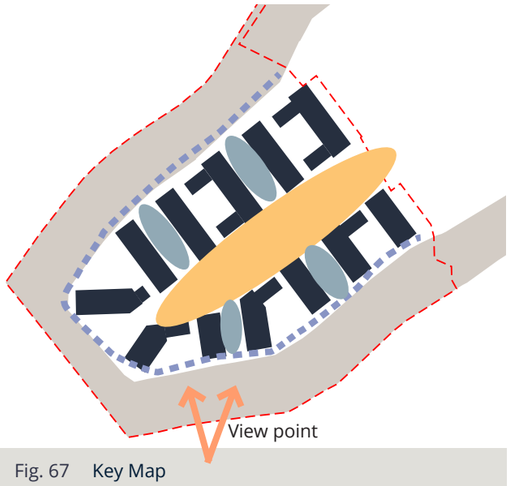


Fig. 67 Key Map

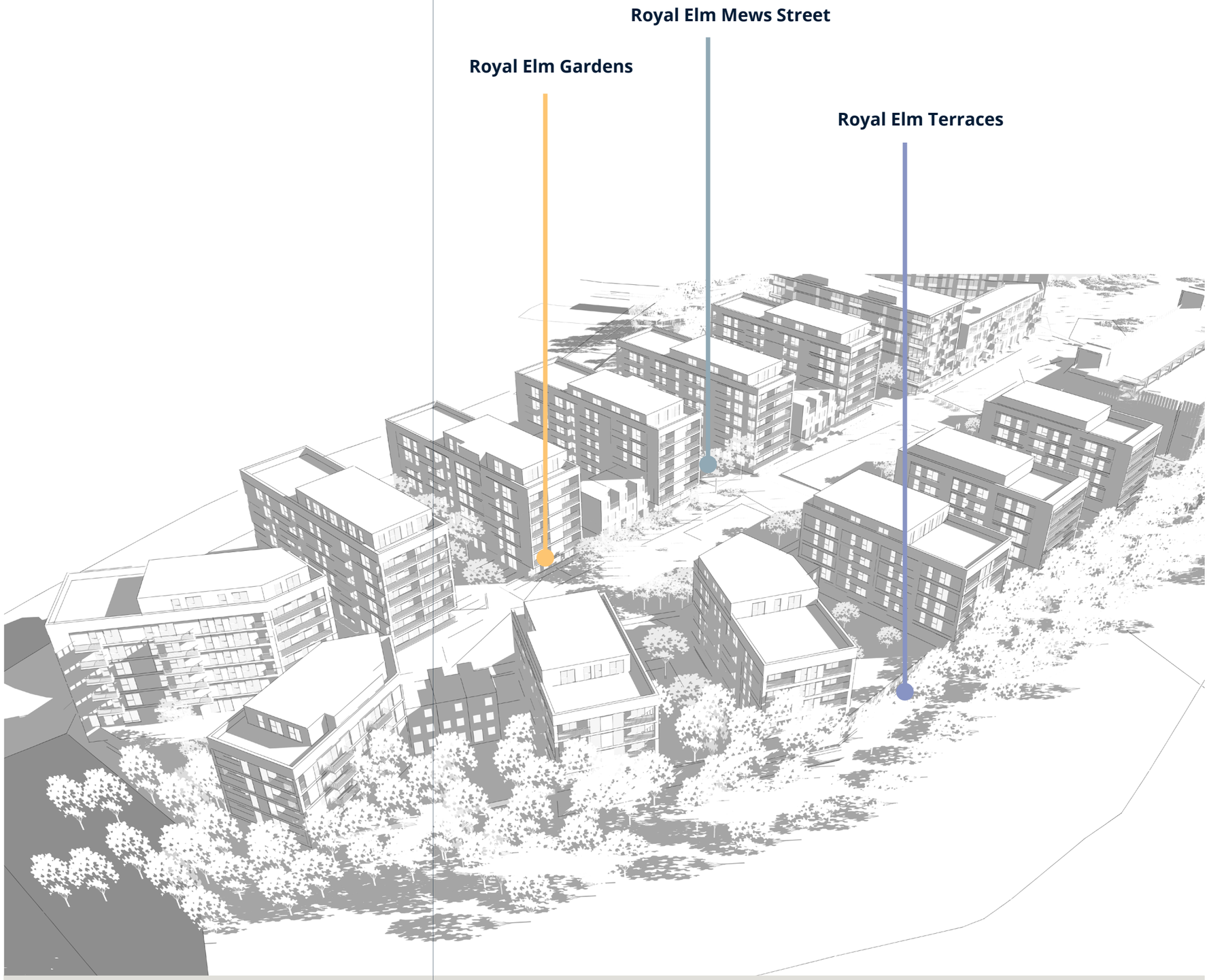


Fig. 68 Illustrative Aerial View - Blocks 1 to 6

Royal Elm Gardens

The Royal Elm Gardens is defined by the combination of linear blocks and townhouses creating a dynamic view along the park (See Fig. 70).

The modulating roofline between these two typologies adds rhythm and harmony to Royal Elm Gardens while supporting its function as a primary movement corridor.

The linear buildings are thoughtfully integrated into the landscape, allowing for a seamless transition between built form and open space.

The architecture serves as a subtle background to the surrounding landscape, enhancing the sense of openness and connection.

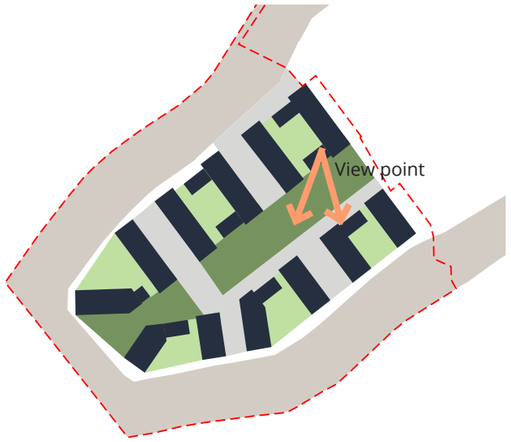


Fig. 69 Key Map



Fig. 70 Illustrative View - Royal Elm Gardens

Royal Elm Gardens - Elevation Principles

This section outlines the key principles for the elevation design, divided into the two typologies (linear blocks and townhouses) assigned to this zone. Each typology follows a distinct approach to elevation design. These principles aim to create a cohesive, dynamic, and visually pleasing composition along the central park, ensuring seamless integration with the surrounding environment.

Linear Block

- The façade composition of the linear blocks (See Fig. 71-72) should be cohesive and harmonious, with architectural details that create rhythm and repetition, contributing to a unified design visible from the park.
- The façade design must clearly distinguish between the base, body, and top sections.
- The body of the façade must emphasize a horizontal orientation.
- The top of the building should be treated as a subtle element with vertical rhythm to help distinguish it from the body.
- The building's base should be articulated as a single or double floor, depending on site levels, with a consistent rhythm achieved through uniform window and fenestration patterns.
- The main body of the building should be framed with clearly defined edges, establishing a strong and simple architectural presence that integrates smoothly with the surrounding landscape.

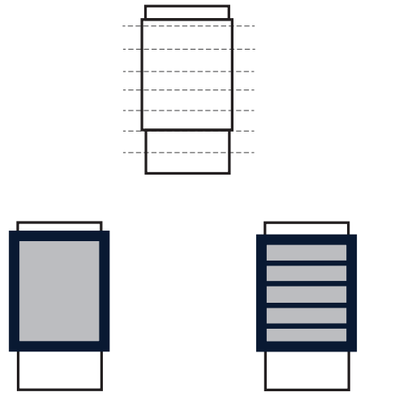


Fig. 71 Concept Design: Elevation Principles

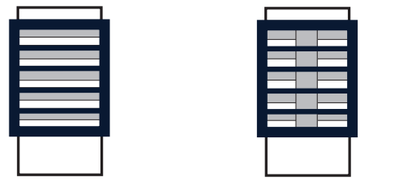


Fig. 72 Concept Design: Different

- Windows and fenestrations should be limited to a select range of sizes and shapes to maintain visual consistency.
- The elevation may include either recessed or projecting balconies, as long as their edges are clearly defined.
- Private amenity spaces, such as balconies (See Fig. 74), should be incorporated along this elevation to encourage active engagement with the linear park, offering residents opportunities to enjoy views and fostering a strong connection to the outdoor environment.

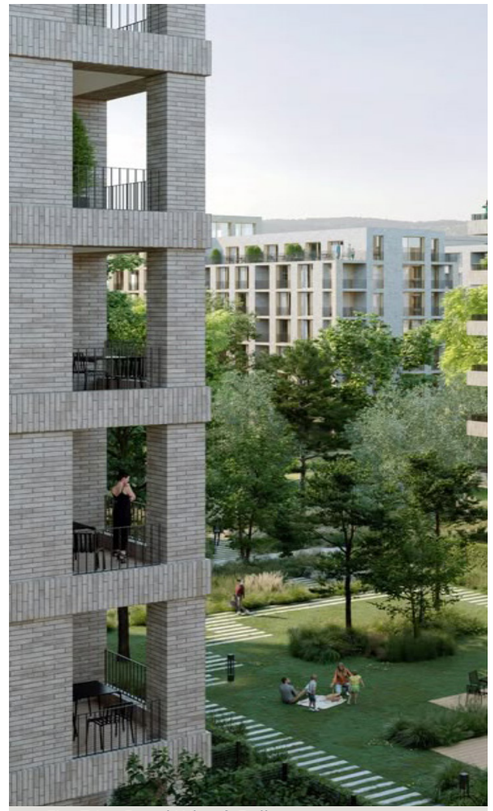


Fig. 74 Royal Wharf. Ballymore
(Example for Reference)

Royal Elm Gardens - Elevation Principles

Townhouses

- The façade composition of the townhouses (See Fig. 75) should be cohesive and harmonious, with architectural details that establish rhythm and repetition, contributing to a unified streetscape.
- The arrangement of the townhouses must emphasize a vertical rhythm, reflecting the repetitive nature of the typology (See Fig. 76).
- Each building must clearly define the ground floor, with visible entrances, spacious openings, and architectural detailing that creates a sense of arrival and supports wayfinding.
- A consistent pattern of windows and fenestrations should be used to create a regular rhythm across the façade (See Fig. 79).
- Windows and fenestrations should be limited to a select range of sizes and shapes (See Fig. 78).
- Distinct roof profiles (See Fig. 77) must be incorporated to introduce variation and contrast to the linear blocks, enhancing the overall aesthetic. These roof profiles contribute to the building's silhouette, adding visual interest and architectural richness.
- Although the specific type of roof profile is not specified, all townhouses must use the same roof profile to maintain a cohesive design along the park.

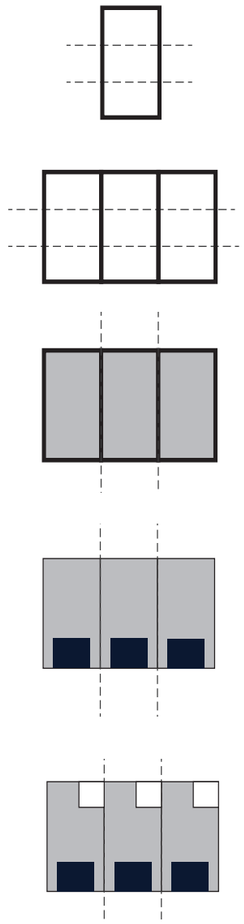


Fig. 75 Elevation Concept Design



Fig. 76 Rhythm and repetition contribute to a unified streetscape. (Example for Reference)



Fig. 77 Roof profile creates visual interest. (Example for Reference)



Fig. 78 Limited range of window sizes. (Example for Reference)

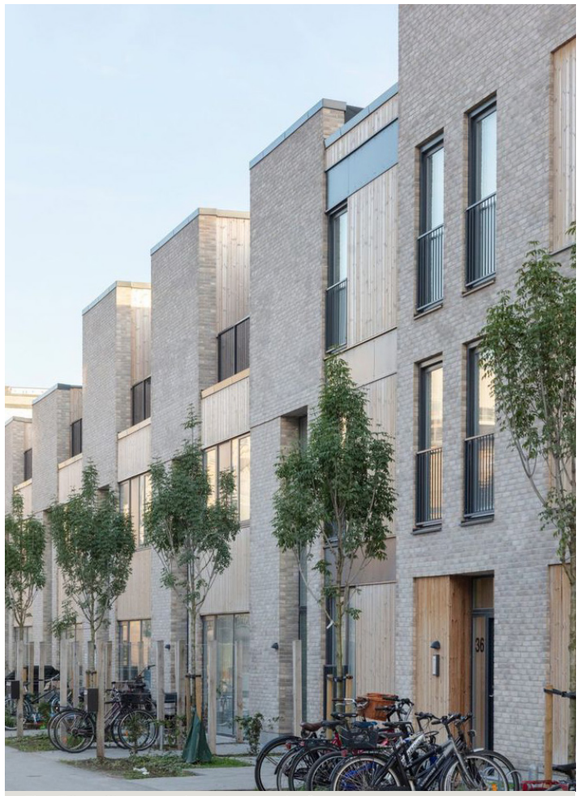


Fig. 79 Clear vertical rhythm in façade composition. (Example for Reference)

Royal Elm Gardens - Elevation Principles

This section (See Fig. 80) shows the elevation design principles applied to each architectural typology, presenting them collectively in a streetscape elevation to analyse and appreciate the composition and interplay of diverse architectural elements.

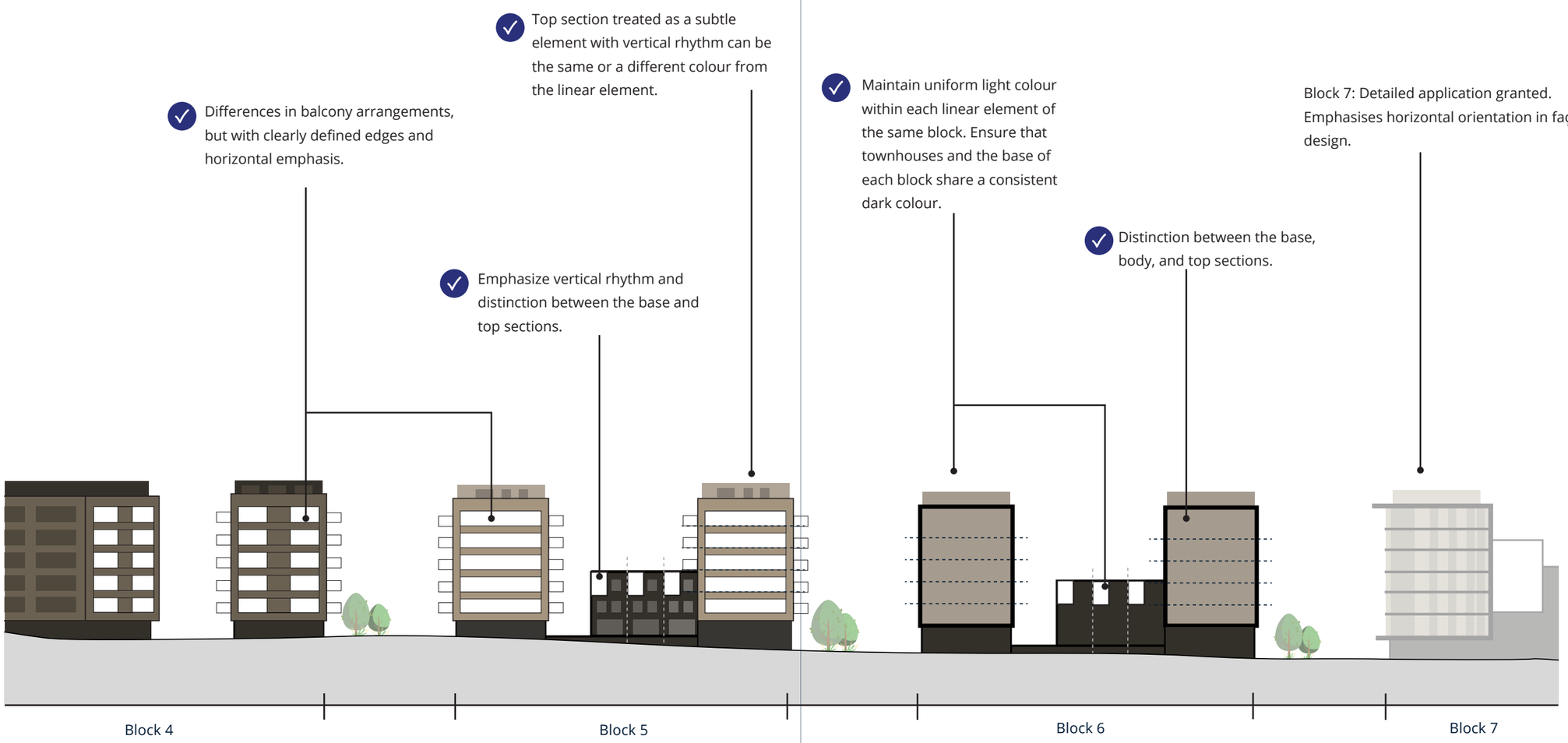


Fig. 80 Royal Elm Gardens Elevation Principles Diagram

Royal Elm Mews Streets

The Royal Elm Mews Streets is defined by tertiary streets, providing access to communal residential blocks and parking.

This area is designed to support a balance of both residential functionality and aesthetic appeal (See Fig. 82).

The street maintains consistency in massing with the linear blocks, contributing to a sense of enclosure and a cohesive urban fabric.

The integration of balconies and projecting elements on the block façades adds rhythm, articulation, and visual interest to the street, reinforcing a dynamic streetscape.

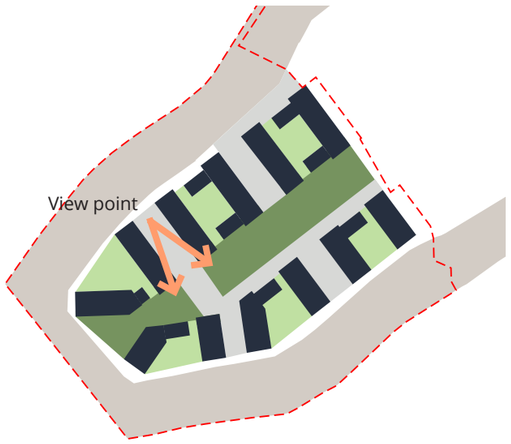


Fig. 81 Key Map



Fig. 82 Illustrative View Royal Elm Mews Street

Royal Elm Mews Streets - Elevation Principles

This section outlines the key principles for elevation design in the Mews Streets zone. Given that only one typology is allocated in this area, two approaches have been established to create dynamic and diverse elevations, introducing elements of surprise and visual interest along these streets.

- Linear Block- Long Elevation. Grid Approach. (See Fig. 83)
- Linear Block- Long Elevation. Continuous Surface Approach. (See Fig. 88)

Both approaches must adhere to the following principles:

- The arrangement of façades along the street must ensure a coherent relationship between the blocks, creating a unified and harmonious streetscape along the Mews Streets.
- The façade design must have a distinction between the base, body, and top sections.
- The body of the façade must emphasize a horizontal orientation.
- The top of the building should be treated as a subtle element with vertical rhythm to help distinguish it from the body.
- The building's base should be articulated as a single or double floor, depending on site levels, with a consistent rhythm achieved through uniform window and fenestration patterns.
- Each building must have clearly defined entrances that are easily visible, featuring spacious openings and architectural details that create a welcoming arrival experience.
- Projecting balconies (See Fig. 86) must be incorporated to create a dynamic composition and enhance visual interest in this area. Recessed balconies may be considered in select locations to respond to specific detail design.
- Windows and fenestrations should be limited to a select range of sizes and shapes to maintain visual consistency.
- If additional materials or colours (See Fig. 87) are integrated into the building, ensure smooth transitions between them to maintain a seamless and unified appearance, between both the continuous and grid approach.

Linear Block - Long Elevation. Grid Approach

- The design should incorporate a repetitive framework, organizing the façade into proportional elements and varying planes to create depth and visual interest.
- A subtle grid framework (See Fig. 84) must be applied to maintain a cohesive aesthetic between both approaches. The grid and the continuous surface.
- To further reinforce the horizontal emphasis and add rhythm and visual interest to the façade, the following elements must be incorporated: horizontal sills, brick details, and horizontal cladding patterns (See Fig. 85).

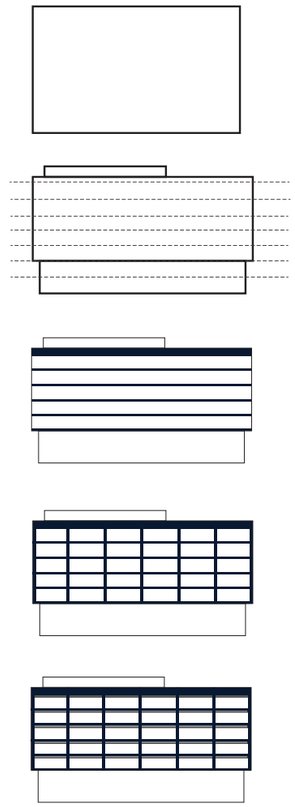


Fig. 83 Elevation Concept Design. Grid Approach.



Fig. 84 Subtle grid (Example for Reference)



Fig. 85 Varying planes to create depth and visual interest. (Example for Reference)

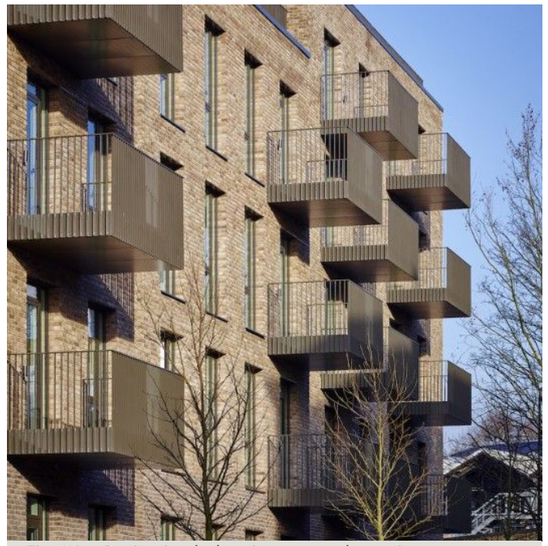


Fig. 86 Projecting balconies create dynamic composition. (Example for Reference)

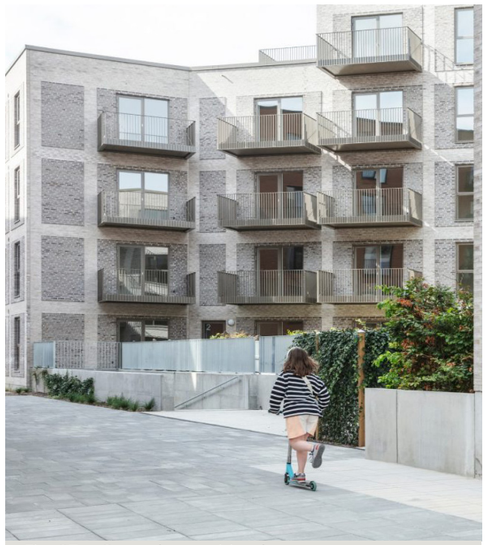


Fig. 87 Smooth transition between colours. (Example for Reference)

Royal Elm Mews Streets - Elevation Principles

Linear Block - Long Elevation. Continuous Surface Approach.

- The design must organize the façade into proportional elements and fenestrations (See Fig. 89-90), ensuring ample solid surfaces around the corners to enhance the continuous surface approach.

- To further reinforce the horizontal emphasis and add rhythm and visual interest to the façade, horizontal details, cladding patterns, and sills must be incorporated into the design (See Fig. 91-92).

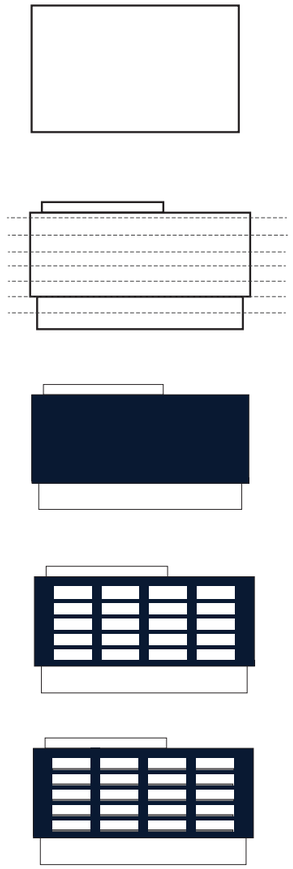


Fig. 88 Elevation Concept Design.
Continuous Surface Approach.



Fig. 89 Horizontal fenestrations. (Example for Reference)



Fig. 90 Continuous surface with proportional fenestrations. (Example for Reference)



Fig. 91 Horizontal emphasis through detail. (Example for Reference)



Fig. 92 Patterns add visual interest. (Example for Reference)

Royal Elm Mews Streets - Elevation Principles

This section (See Fig. 93) synthesizes the elevation design principles applied to each approach, presenting them collectively in a streetscape elevation to analyse and appreciate the composition and interplay of diverse architectural elements.

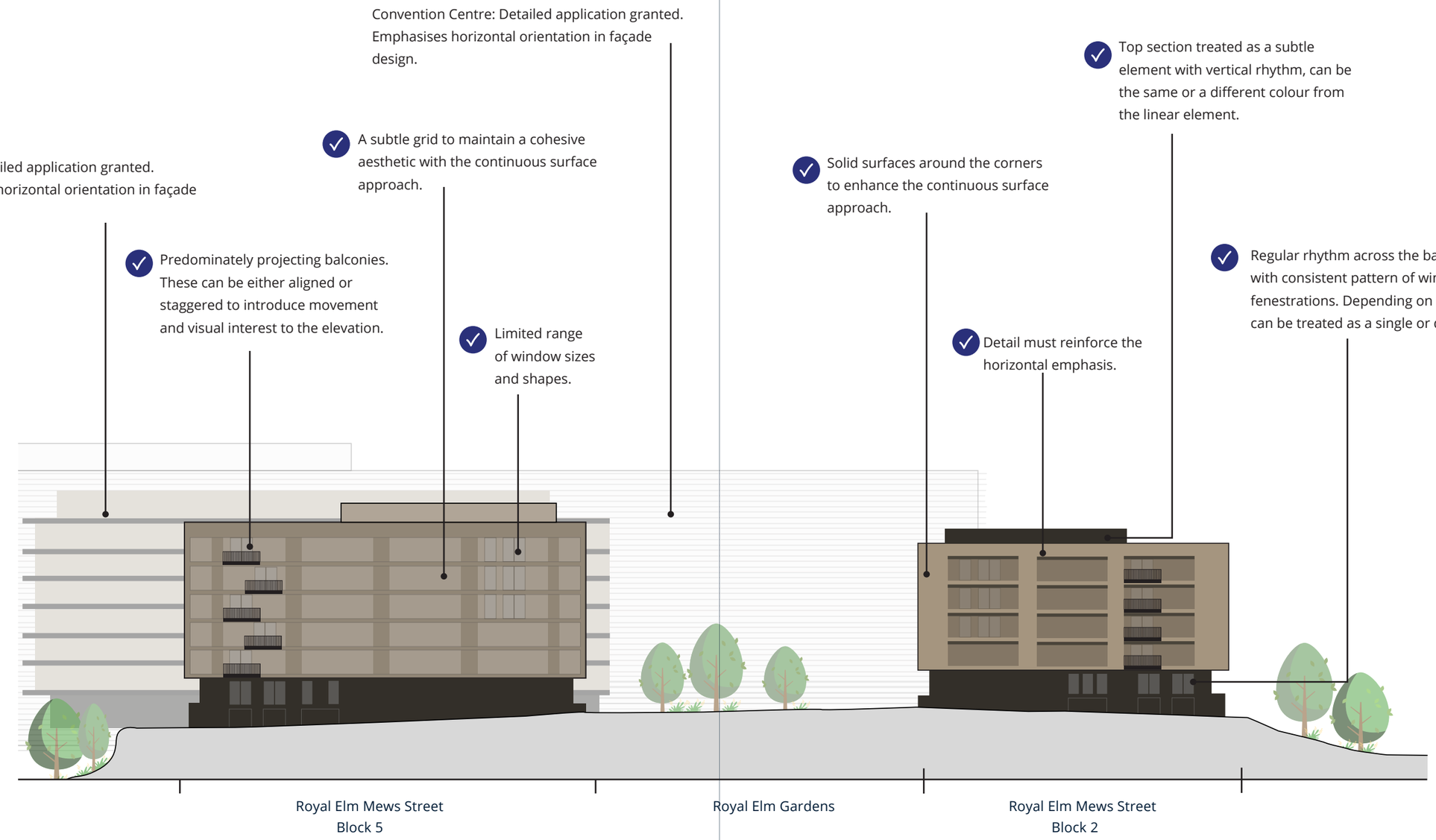


Fig. 93 Royal Elm Mews Street Elevation Principles Diagram.

Royal Elm Terrace

The Royal Elm Terrace area defines the edge of the development. Due to the elevated position of Royal Elm Park, the massing and elevation require careful consideration to maintain visual harmony (See Fig. 95).

The linear blocks are elevated above a two-storey base, with the ground floor primarily dedicated to parking.

Special attention must be given to the ground floor level by organizing the façade into proportional elements and fenestrations that allow natural ventilation and light into the parking area.

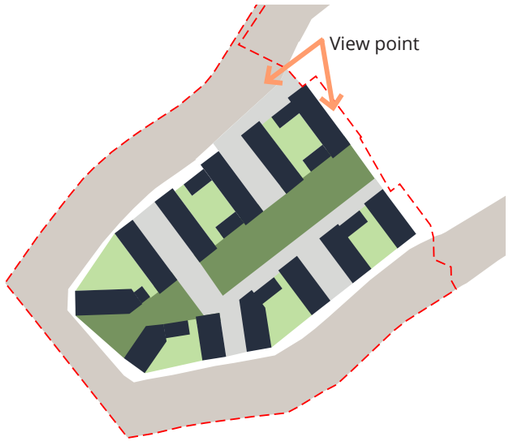


Fig. 94 Key Map



Fig. 95 Illustrative View Royal Elm Terrace

Royal Terrace Gardens - Elevation Principles

This section outlines the key principles for elevation design, divided into the two typologies (linear blocks and townhouses) assigned to this zone. Each typology follows a distinct approach to elevation design. These principles aim to create a cohesive, dynamic, and visually pleasing composition when seen from outside of the development, ensuring seamless integration with the surrounding environment.

Linear Block

- The façade composition of the linear blocks (See Fig. 96-97) should be cohesive and harmonious, with architectural details that create rhythm and repetition, contributing to a unified design visible from outside of the development.
- The façade design must have a distinction between the base, body, and top sections.
- The body of the façade must emphasize a horizontal orientation.
- The top of the building should be treated as a subtle element with vertical rhythm to help distinguish it from the body.
- The building's base should be articulated as a single or double floor, depending on site levels, with a consistent rhythm achieved through uniform window and fenestration patterns.
- The body of the massing should be framed with clearly defined edges, establishing a strong and simple architectural presence that integrates smoothly with the surrounding landscape.

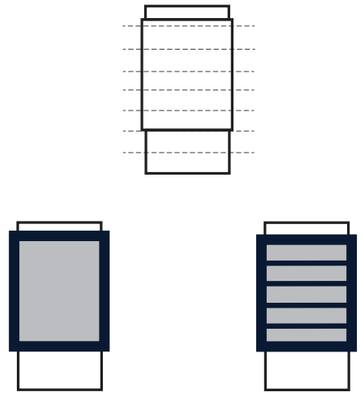


Fig. 96 Concept Design: Elevation Principles

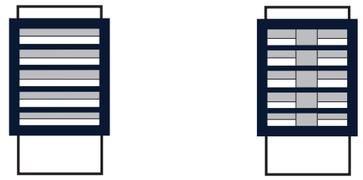


Fig. 97 Concept Design: Different Balcony Arrangements

- Windows and fenestrations should be limited to a select range of sizes and shapes to maintain visual consistency.
- The elevation may include either recessed or projecting balconies, as long as their edges are clearly defined.
- Private amenity spaces, such as balconies, should be incorporated along this elevation to encourage active engagement with the open spaces outside of the development, offering residents opportunities to enjoy views and fostering a strong connection to the outdoor environment.

Royal Elm Gardens - Elevation Principles

Townhouses

- The façade composition of the townhouses (See Fig. 98) should be cohesive and harmonious, with architectural details (See Fig. 100) that establish rhythm and repetition, contributing to an unified streetscape.
- The arrangement of the townhouses must emphasize a vertical rhythm, reflecting the repetitive nature of the typology.
- Each building must clearly define the ground floor (See Fig. 101), with visible entrances, spacious openings, and architectural detailing that creates a sense of arrival and supports wayfinding.
- A consistent pattern of windows and fenestrations should be used to create a regular rhythm across the façade.
- Windows and fenestrations should be limited to a select range of sizes and shapes.
- Distinct roof profiles must be incorporated to introduce variation and contrast to the linear blocks, enhancing the overall aesthetic. These roof profiles contribute to the building's silhouette, adding visual interest and architectural richness.
- Although the specific type of roof profile is not specified, all townhouses must use the same roof profile to maintain a cohesive design along the park.
- Certain townhouses may incorporate ground floor garages (See Fig. 99), depending on the topography and location.

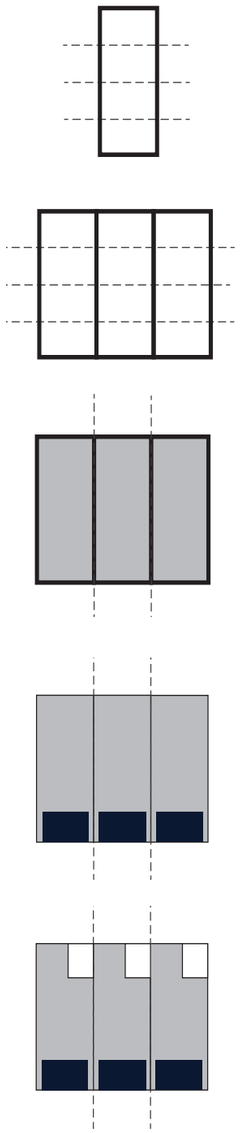


Fig. 98 Elevation Concept Design



Fig. 99 Well designed street frontage with private garages. (Example for Reference)

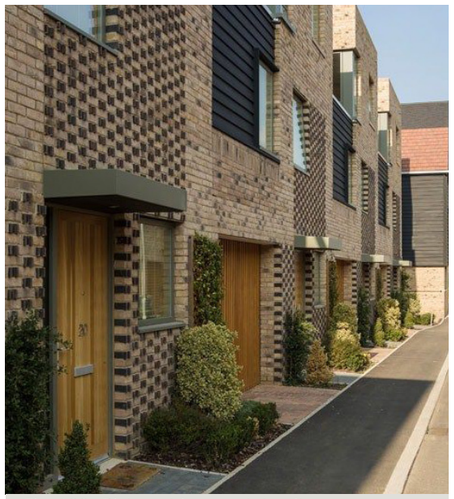


Fig. 100 Rich architectural detail. (Example for Reference)



Fig. 101 Clearly defined ground floor. (Example for Reference)

Royal Elm Terrace - Elevation Principles

This section (See Fig. 102) synthesizes the elevation design principles for the Royal Elm Terrace zone, integrating the main principles presented for the typologies and introducing specific instructions applicable exclusively to this area.

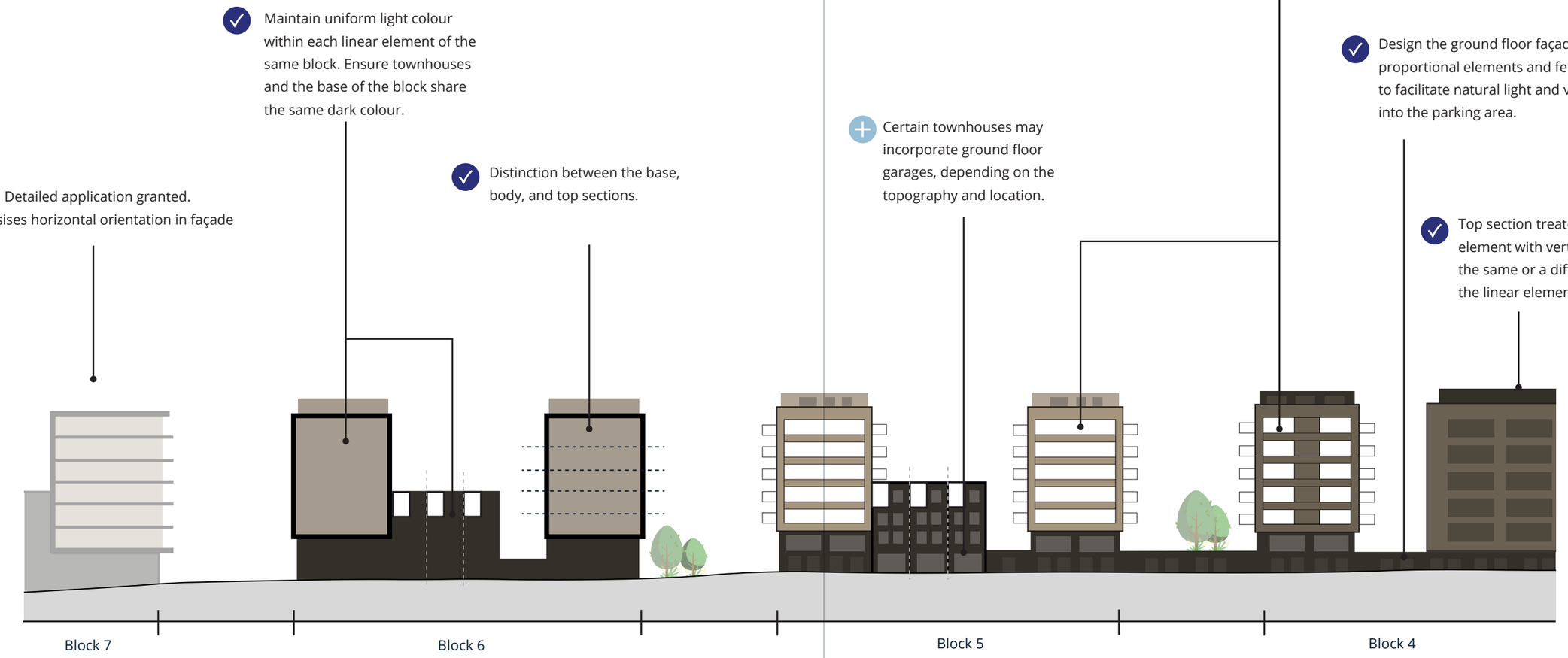


Fig. 102 Royal Elm Terrace Elevation Principles Diagram

3.6 Materiality

The proposed material palette (See Fig. 103) is designed to enhance the overall visual quality, character, and sense of place within the wider masterplan, creating a memorable and inviting environment for both residents and visitors.

- The Royal Elm Park development is intended to be a cohesive and unified area, which will be reflected in the selection of materials across the six residential blocks.
- The primary material used across the site is brick.
- The colour palette will consist of earth tones that complement the broader colours of the masterplan, while also establishing a distinct identity for this area.
- Dark brown tones must be used for the base of the buildings and townhouses.
- In contrast, light browns and beige must be used for the body of the linear blocks. This approach will reinforce the concept of buildings suspended within the landscape.
- The tops of the linear blocks must always be treated as subtle elements, avoiding undue prominence. To achieve this, light cladding materials, such as metal cladding, should be used as the main material.
- For the tops of linear buildings, both dark and light colours can be used.
- No more than three different brick types may be used on a single elevation.
- Materials and construction systems must be of high quality, durable, and easy to maintain.

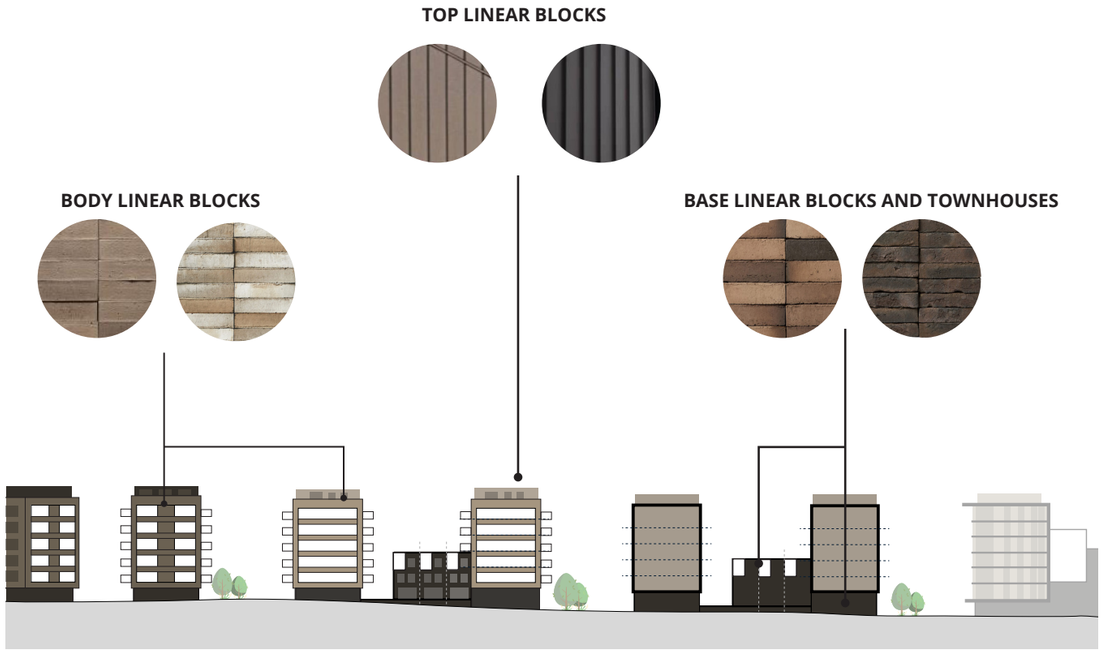


Fig. 103 Royal Elm Gardens Elevation Principles Diagram

3.7 Roofscape

Incorporating diverse roof profiles and parapets can enhance architectural variety and visual interest in a development. Different approaches may be considered based on building typologies, as outlined below.

Linear blocks

- Simple roof forms are recommended to maintain a subtle top element that doesn't dominate the building's design.
- Recessed or parapet roofs can be considered for this typology (See Fig. 104 & 108).

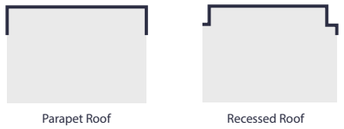


Fig. 104 Linear Blocks Roofscape

Townhouses

- In contrast, townhouses must feature different roof styles to introduce variety and contrast.
- To ensure a cohesive design, all townhouses should have the same roof profile.
- Castellated roofs or sawtooth roofs can be considered for this typology (See Fig. 105-107).

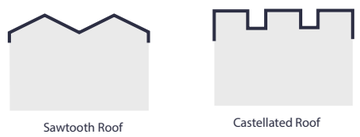


Fig. 105 Townhouses Roofscape



Fig. 106 Castellated roof creates visual interest. (Example for Reference)



Fig. 107 Townhouses with sawtooth roof. (Example for Reference)

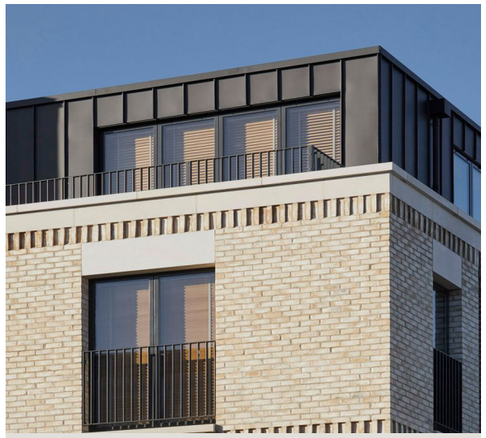


Fig. 108 Recessed roof with different material. (Example for Reference)

3.8 Privacy

For further information refer to Policy CC8: Safeguarding amenity

- The design should prioritize residents' privacy. The positioning and orientation of living spaces, balconies, and private outdoor areas must be thoughtfully planned to minimize direct overlooking and maintain sufficient privacy for occupants. This can include staggering windows and balconies where facing another facade.

- A typical guideline for the minimum distance between habitable rooms is 18 metres (See Fig. 109). However, shorter distances may be acceptable if the design effectively mitigates overlooking concerns and ensures adequate natural light within the dwellings.

- The separation between blocks on side elevations can be reduced to a minimum of 5 metres, provided that privacy is preserved through design measures. These may include incorporating dual-aspect layouts without windows on that elevation or strategically positioning windows to prevent direct overlooking (See Fig. 110) and ensuring that windows at such distance are non-habitable.

- To ensure residents' privacy and prevent private spaces from being overlooked by the public, residential façades facing public areas must incorporate a minimum defensible space (See Fig. 111). For further detail refer to Section 4 Public Realm and Landscape Design: Building Edges.

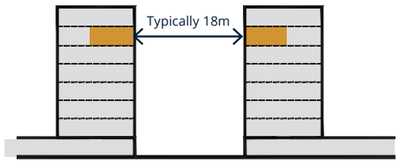


Fig. 109 Diagram. Typical minimum distance between habitable rooms

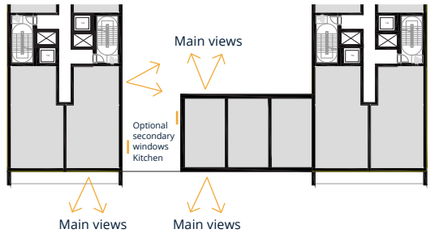


Fig. 110 Diagram. Example of layout solutions that minimise overlooking issues

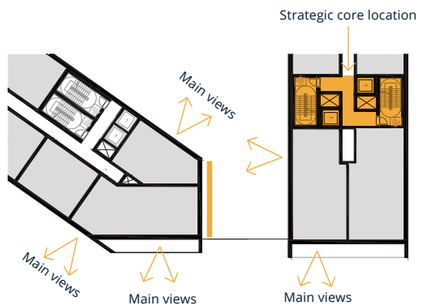


Fig. 111 Diagram. Example of layout solutions that minimise overlooking issues

3.9 Communal Entrance

For further context refer to Section 5 Technical Consideration: Secured by Design in this document.

- Communal residential entrances must be located on the mews streets, with a design that enhances their legibility and identification.

- Communal residential entrances must be clearly defined and made distinct from private residential entrances.

- Entrances should be well articulated with a distinct architectural expression to give the building a unique character. This can be achieved through:

  - Projecting porticoes
  - Projecting or recessed alignment
  - Special material treatment

- Entrances must allow ample natural daylight into the communal lobby. Double-height entrances can enhance the light and spaciousness of a communal entrance (See Fig. 112).

- Entrance lobbies should feature high-quality, durable materials used in a thoughtful and imaginative manner to enhance the communal spaces (See Fig. 113-114).

- Residential lobbies should be secure yet allow for visibility to and from the communal areas.

- Exterior lighting must be installed at each communal entrance to reinforce its identity and character.

- Both entrances and lighting must be robust to mitigate the risk of vandalism.



Fig. 112 Precedent: Entrance enhance through the use of accent materials and double height.

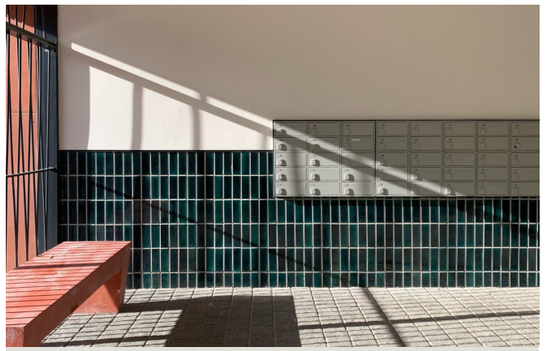


Fig. 113 Precedent: Entrance lobby with high quality, durable materials.



Fig. 114 Precedent: Entrance enhance through the use of accent materials.

3.10 Active Frontage

- Active frontages must be maximised across the proposal (See Fig. 115).
- Residential entrances (both private and communal) and habitable room windows facing the street (See Fig. 116) must be provided where possible at ground level along public routes.
- As a principle, public routes should be fronted by active uses e.g. front entrance doors, kitchen/living/dining spaces. Bedrooms should be allowed to face onto public routes in situations where the finished floor level is sufficiently raised above the ground level of public areas (See Fig. 117).

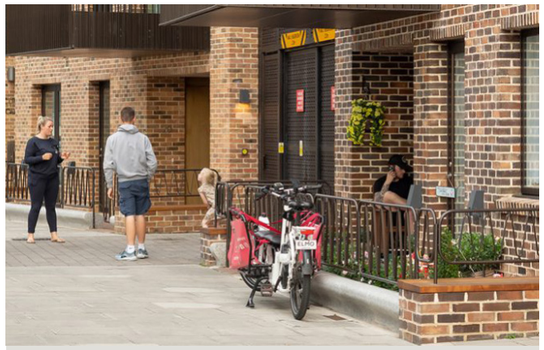


Fig. 115 Precedent: Design encourages activity and natural surveillance.



Fig. 116 Precedent: Habitable rooms with generous defensible space facing street.



Fig. 117 Precedent: Raised finished floor level provides active frontage ensuring privacy.

3.11 Private Entrances for Individual Dwellings

- Front doors for ground floor units directly accessed from the street must be provided where feasible to optimise activity along the street frontage.
- The detailed design of private entrances must protect the privacy of the occupants whilst still encouraging natural light to hall through fanlights (See Fig. 118).
- The front door frame must relate to the windows frame material. The door material can express a contrast or separate accent from the rest of the façade (See Fig. 120).
- Front doors that are visible from the public realm and/ or communal areas must have coordinated colours and neutral finishes.
- Defensible space must be included in the public realm to mediate between the public space of the street and the private dwellings.
- Ground floor front doors must be visible from the street with a direct route to the door (See Fig. 119).



Fig. 118 Precedent: natural light provided to hall through fanlights.

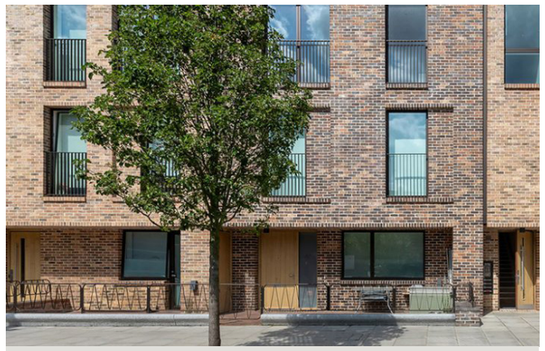


Fig. 119 Precedent: Front doors that are visible from the public realm.



Fig. 120 Precedent: The door material expresses a contrast from the rest of the façade.

3.12 Gaps Between Buildings

- The gaps between buildings must be thoughtfully designed to allow for visual permeability (See Fig. 121), enabling a seamless connection between the built form and its surrounding environment.
- These intentional openings must facilitate the penetration of natural light and create a dynamic interplay between the interior and exterior spaces.
- The openings will enhance the visual experience but also will promote a sense of openness, connectivity, and integration (See Fig. 122) within the architectural composition.
- The architectural language employed in the design of the gaps must align harmoniously with the overall building design. This ensures that the gaps are perceived as an integral part of the building composition, where their form, materials, and detailing seamlessly integrate with the surrounding architecture.
- The design must also consider the potential for the gaps to provide secondary access points for residents. By strategically locating these openings, residents can enjoy additional pathways and circulation routes within the development.



Fig. 121 Precedent: Openings allow for visual permeability.



Fig. 122 Precedent: Openings promote sense of openness, connectivity.

3.13 Windows

For further context refer to Section 5 Technical Consideration: Sunlight and Daylight in this document.

- Windows to residential habitable rooms must be determined by daylight/sunlight overheating. Window dimensions must be tested in early stages for overheating and daylight provision.
- A limited range of window sizes should be used across the building (See Fig. 124).
- Window frames and doors colour palette must be carefully coordinated with the overall palette of the building (See Fig. 123) to achieve a harmonious and aesthetically pleasing composition.
- Generous window reveals should be provided. Fully flush windows are not allowed.
- Buildings must be designed to maximize access to natural light for using window placements and openings that allow light penetration. Façade analysis undertaken has shown that the areas of lowest daylight potential sit between the blocks and on internal corners of the courtyards.
- Windows in habitable rooms should be reasonably sized in relation to the room size. Windows serving main living rooms should be maximised where possible, with bedroom windows being sized with overheating in mind (See Fig. 125).



Fig. 123 Precedent: Window frames and doors colour palette must be carefully coordinated with the overall palette of the building

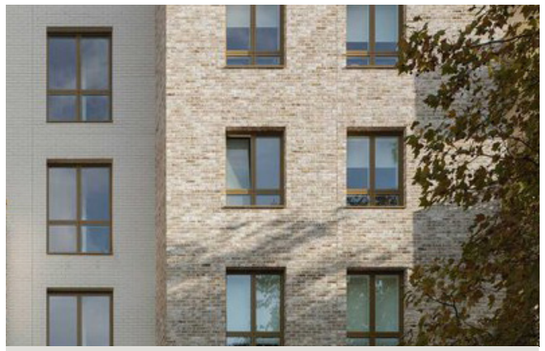


Fig. 124 Precedent: Limited range of window sizes.

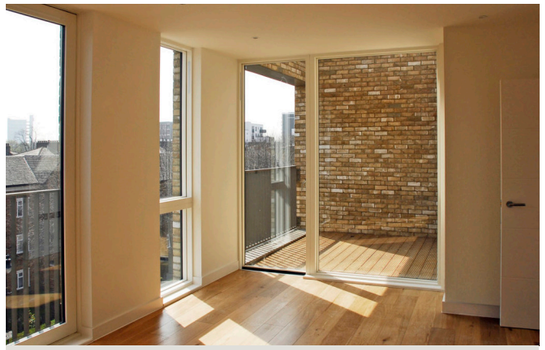


Fig. 125 Precedent: Overheating and daylight provision determines sizes of window.

3.14 Materials and Detailing

- Materials and construction systems must be of a high quality, durable and easy to maintain.
- The primary material utilised across the site must be brick.
- Recycled, reclaimed and locally made materials should be considered where appropriate.
- Timber cladding, lightweight composite cladding system and low quality materials must be avoided.
- Variation in the brick within an individual façade is allowed but it must happen within a limited range. The colour of the mortar must complement the tone of the brick.
- Accents including detailing features like banding, string courses, soldier courses, decorative feature brickwork, precast concrete / wet cast stone surrounds and soffits must be included.
- Architectural detailing must be used to enhance the overall aesthetic quality and visual impact.
- Brick detailing should be incorporated to enrich the texture and materiality of the elevation, contributing to a cohesive and harmonious design (See Fig. 126).
- Chosen brick detailing and materials must complement the surrounding context and existing architectural elements.
- A consistent design language and theme throughout the elevation must be proposed ensuring that all architectural details work harmoniously together.
- Vertical or horizontal details must be included to enhance the composition of the elevation.
- Main entrances at ground floor must be expressed through durable tactile accent materials (See Fig. 128).



Fig. 126 **Precedent:** Brick detailing is contributing to a cohesive and harmonious design.

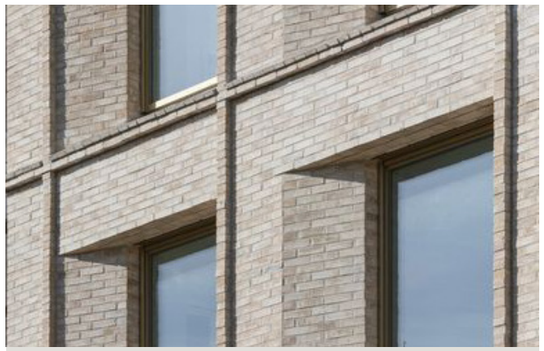


Fig. 127 **Precedent:** Brick detailing incorporated to enrich the texture and materiality of the elevation.



Fig. 128 **Precedent:** Entrance expressed through durable tactile accent materials.

3.15 Balconies

For further context refer to the DAS: Site Wide Lighting Strategy (page 94/95).

Also refer to Section 5 Technical Consideration: Sunlight and Daylight in this document.

For further information refer to Institution of Lighting Professionals: 'Guidance notes for the reduction of obtrusive light' document and 'Domestic Exterior Lighting' document.

- Overall, development should feature a variety of balconies: projecting, semi recessed or recessed.
- Where feasible, balconies for dual aspect units, which include a north-facing aspect should locate the balcony away from the north facing façade.
- Balcony drainage must be considered and coordinated with downpipes.
- Balustrade and parapet heights must comply with building regulation requirements.
- Balustrades must be designed to enhance the individuality and identity of each building.
- The visual permeability of the balustrade must balance the need for light within the apartment with the need for privacy.
- Metal balustrades must be powder coated, and be finished with a horizontal top rail (See Fig. 129).
- For metal railing balustrades, a slim bar section should be used to ensure high quality design. A 10 x 50/ 12 x 40mm section should be used for flat sections.
- Lighting to balconies, where proposed, must be provided by simple surface-mounted luminaries switched from inside of the property.
- Mounting positions for lighting may be varied across the elevation to suit the geometry of the balconies. A direct view of luminaries to balconies from street level must be avoided to avoid glare and manage the scaling of the elevation after dark.
- Balcony lighting must ensure it serves the purpose and provides the correct level of illumination, ensures no disturbance to neighbouring properties, ecology and the night sky. Up & down projector luminaires must not be permitted.
- Balcony soffits must be provided and be of high quality robust materials (See Fig. 130).
- Balcony positions should be considered where daylight potential is lowest and those areas should be served by at least one non-overhung window and/ or balconies should be staggered.



Fig. 129 **Precedent:** Powder coated railing with horizontal top rail.



Fig. 130 **Precedent:** Balcony soffit

3.16 Cycle Storage

- The development must provide a convenient and generous space for cycle storage (See Fig. 131).
- Residential cycle storage must be located in a designated secure area inside residential buildings.
- The minimum storage provision must follow the minimum RBC Cycle Parking Standards.
- Stacked cycle racks (See Fig. 132) can be used to increase parking density, as long as their design does not preclude use by young or elderly people.
- Spaces must be provided for special bicycles requiring extra space (children, cargo bikes, 3 wheels bikes etc.).
- Direct entrance from the street and/or internal courtyard should be provided when possible.
- Cycle storage access should be located in areas of good natural surveillance.
- Cycle storage should have level access. Where this isn't feasible, such as when the storage is located in a basement without a level entrance, adequate lift access must be provided.



Fig. 131 Precedent: Sheffield stands

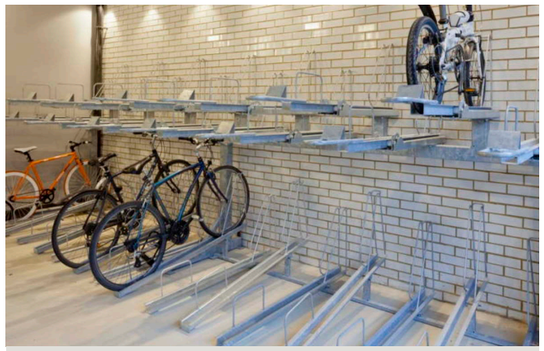


Fig. 132 Precedent: Stacked cycle racks.

3.17 Rainwater Pipes

- Rainwater pipes draining the roof should be located in a central riser.
- Any visible rainwater pipes should be concealed, for example located in the courtyard or integrated into a balcony recess.
- Any visible rainwater pipes should be carefully integrated within an overall elevation strategy (See Fig. 133).
- Colour and type of rainwater goods must be coordinated in terms of material and finish with railings, balustrades, and window frames. Plastic rainwater goods are not permitted.
- Localised rainwater harvesting for gardening should be included to support irrigation. Space for small tanks or rainwater butts (See Fig. 134) should be included in the design of terraces and patios.

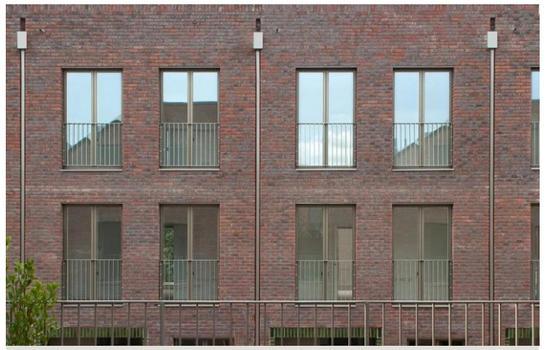


Fig. 133 Precedent: Rainwater pipes integrated within an overall elevation strategy.

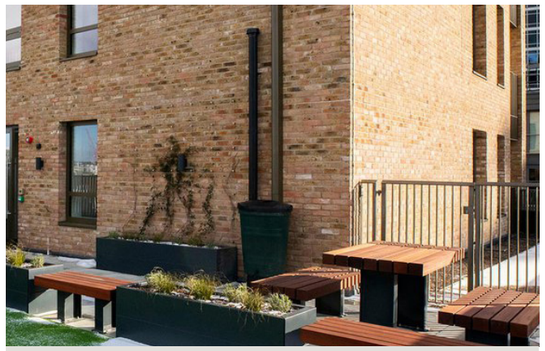


Fig. 134 Precedent: Rainwater butt

3.18 Plant Rooms and Ancillary

- Storage and ancillary spaces will typically be located in the rear of the plan to optimise the extent of active frontage onto the street.
- Ventilation can be provided from the ground floor on the street side but ventilation grilles must be screened with materials and designed in line with the main elevation.
- Ventilation grilles on the ground floor must be all designed with materials coherent with the finishes of the entrance doors and gates (See Fig. 135 & 137).
- Ventilation grilles can be screened behind brick walls, for example hit and miss brickwork (See Fig. 136).
- Where the edges of podium car parks are exposed through level change or to allow for natural ventilation, these edges should be treated with suitable materials in line with the agreed material palette.
- Large areas of ventilation grills should be avoided.
- The location of substations should be carefully considered with hit and miss brick screening provided to provide visual enclosure.
- Substations should be located within the building envelope or semi basement car park. Access arrangements should be approved with the relevant authority.



Fig. 135 Precedent: Plant Room door material is coherent with the finishes of the entrance door.

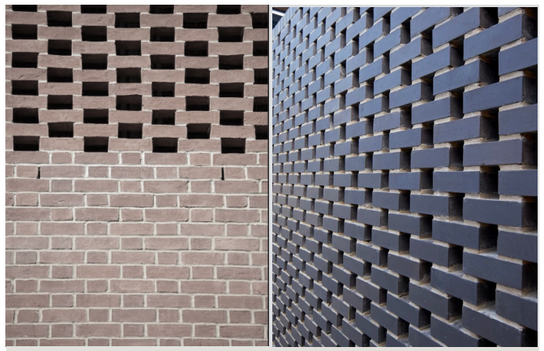


Fig. 136 Precedent: Hit and miss brickwork.



Fig. 137 Precedent: Plant Room door material is coherent with the finishes of the entrance door.

3.19 Utilities

- With exception of rainwater pipes, no surface mounted pipework and service runs are allowed on any façades. This includes lightning conductor tapes. All incoming services must rise within building and not externally.
- Any air-bricks (See Fig. 138) or vent terminals must be carefully integrated into building façades. Plastic air-bricks are not allowed.



Fig. 138 Precedent: Ceramic air-brick, colour matches brick.

Section 4

Public Realm and Landscape Design

This section provides instruction on the design of the public realm and landscape.

4.1 Royal Elm Gardens

Royal Elm Gardens is a 300-metre-long park at the heart of the new residential community. Its primary purpose is to provide residents of Royal Elm Park with a safe and secure public park to fulfill residents' lifestyle needs as the central feature of the community. The park serves as a key connection, linking all residential blocks to one another and to the neighbouring Royal Elm Square. For further context refer to the DAS: Section 19. Landscape, Drainage & Ecology Strategy (page 82).

For further information refer to Policy CC7 Design and public realm

This design code focuses on the western residential section of Royal Elm Gardens. The eastern section, extending towards Royal Elm Square, is covered by an existing detailed planning consent. These two areas are naturally divided by the main through-route within Royal Elm Park (See Fig. 139).

Design Rationale

Six key design principles have shaped the vision for Royal Elm Gardens:

- Establish a lush, green environment at the heart of the residential community.
- Provide a space for relaxation and retreat.
- Create areas for play and recreation.
- Ensure a safe and welcoming environment with good natural surveillance from local residents.
- Unify the development as a cohesive whole.
- Ensure proposals align with and complement the existing design for Royal Elm Gardens East.

Dimensions and Levels

Dimensions

- Area: 7,400m2

Boundary

- The boundary of Royal Elm Gardens follows the edge of the development parcels.

Levels

- Royal Elm Gardens gently rises from 51.5m at its eastern end to 54.5m approximately two-thirds of the way along its length, creating a 3m elevation change over 130m. The remaining western section remains level at approximately 54.5m. This elevation is influenced by the basement parking located beneath the neighbouring blocks and the western end of Royal Elm Gardens.

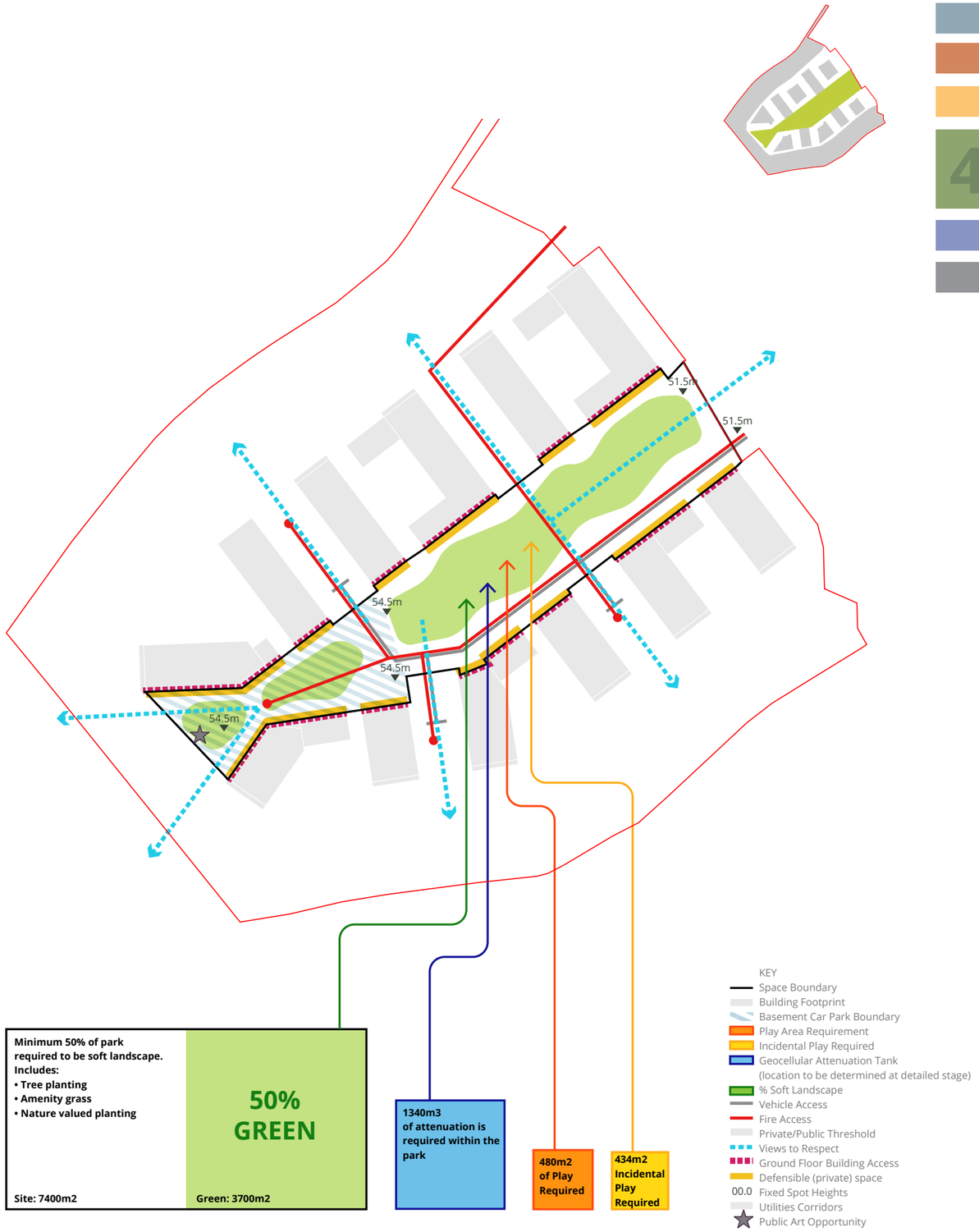


Fig. 139 Royal Elm Gardens Principles Diagram

4.2 Royal Elm Gardens

Function

Views

- ✓ The site's elevated setting provides valuable long-range views, which must be carefully integrated into the landscape design.
- ✓ Block orientation and park layout must be planned to frame and enhance key views, ensuring they contribute to a high-quality design.
- \+ Landscape features should be strategically positioned to take advantage of scenic views, maintaining a strong visual connection to the wider surroundings.
- \+ Given the long and narrow form of Royal Elm Park, the design should emphasise and enhance internal sightlines, creating visually engaging spaces within the park itself.
- ✓ Passive surveillance must be ensured through thoughtful layout and visibility, encouraging a sense of safety and security throughout the park.

Sense of Place

Royal Elm Gardens should create a strong sense of place, offering a distinctive and welcoming environment that reflects its local character and community identity.

This can be achieved through:

- \+ Using Local Identity & Materials – Materials, planting, and design elements should reflect the history, ecology, and culture of this region.
- ✓ Create Diverse & Inclusive Spaces – Spaces must be designed for all ages and abilities, including areas for relaxation, play, and social interaction.
- ✓ Incorporate Seasonal Interest & Biodiversity – A variety of trees, shrubs, and flowers must be used to ensure year-round visual appeal and support local wildlife.
- \+ Integrate Art & Interpretation – Public art, storytelling elements, or historical references should be included to reinforce the park's unique character and local identity.
- \+ Encourage Community Interaction – Gathering areas, flexible-use spaces, and features should be included to support everyday social and recreational activities.

Movement

For further context refer to Section 2.7 Access and Movement in this document.

- ✓ Prioritise Pedestrian & Cycle Movement – Routes must be designed to ensure pedestrians and cyclists have direct, safe, and convenient access throughout the park, with minimal interaction with vehicles.
- ✓ Respond to Desire Lines – Pathways must follow the natural movement patterns of users, creating intuitive and efficient connections between key destinations.
- \+ Create a Calm & Safe Environment – A sense of calm should be achieved through the use of carefully chosen materials, low kerbs, and soft landscaping that naturally guide movement and define spaces without harsh physical barriers.
- ✓ Ensure Accessibility for All – Paths must be smooth, well-maintained, and suitable for all users, including wheelchair users, parents with pushchairs, and those with mobility impairments.
- \+ Limit Vehicular Access – Vehicle movement should be restricted to essential access only, with service and emergency vehicle routes discreetly integrated into the design.
- ✓ Connect to Wider Networks – The park must link seamlessly with existing pedestrian and cycling networks to encourage active travel beyond its boundaries.
- ✓ Deliveries: Deliveries will be permitted to park on main access road. In order to achieve this the roadway must be 4.8m wide supported by parking restrictions/ enforcement to deter general parking.

Function

Building Edges

- ✓ Homes directly addressing the courtyard must have appropriate defensible space to provide usable amenity space and privacy.
- ✓ Minimum Garden Size: A minimum 1.5m-deep (not including width of boundary treatment) front garden must be provided in front of all ground-floor residential homes (See Fig. 140).
- ✓ Boundary Definition: The front garden space must be clearly enclosed by a structure such as a 1.1m high brick wall, 1.1m high railing, with matching gates or a combination of both to establish a strong boundary while maintaining visual appeal (See Fig. 141).
- \+ Greenery and soft landscaping elements should be incorporated to enhance the space, providing a welcoming atmosphere and softening structural boundaries.
- ✓ Material Selection: Materials used for boundaries and landscaping must complement the building facade and blend harmoniously with the surrounding environment.
- \+ Cohesive Streetscape: To maintain a consistent and visually appealing streetscape, materials and design elements should align with other front gardens within Royal Elm Gardens for a unified composition.

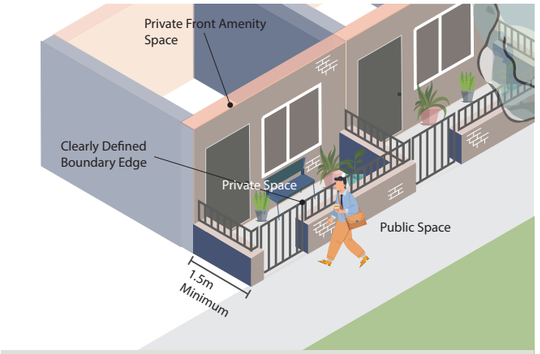
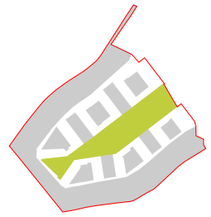


Fig. 140 Precedent



Fig. 141 Clear public/private boundary treatment



Royal Elm Gardens

Function

Uses

- Amenity grass areas must be provided and should be large enough to accommodate casual physical activities such as frisbee or playing catch.
- A variety of seating options must be incorporated, including grass lawns, benches, and informal seating such as steps or rocks (See Fig. 142).
- Both shaded and sunlit areas must be included to offer comfort in different weather conditions.
- A mix of sheltered and open spaces should be designed to provide varied experiences and cater to different user preferences.
- The landscape should create moments for pause and reflection, integrating elements that encourage people to stop and appreciate their surroundings.
- Cycle parking must be included, ensuring convenient and accessible facilities for cyclists.



Fig. 142 Variety of places to sit

Play

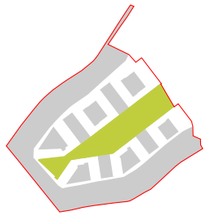
- A 480m² LEAP (Local Equipped Area of Play) must be provided within the space (See Fig. 143).
- 434m² of incidental play must be provided within the space (See Fig. 144).
- The LEAP should be seamlessly integrated into the landscape design, complementing the surrounding environment.
- The LEAP must balance functionality and aesthetics, ensuring it is both an engaging play space and visually appealing, as it is highly visible from nearby homes.
- Elsewhere in Royal Elm Park, interactive and sculptural play features should enhance the landscape and support placemaking, incorporating natural or innovative designs that enrich the space's character.



Fig. 143 Attractive, sculptural play features



Fig. 144 Incidental play features



Function

Fire and Servicing Access

- Fire and servicing access must be provided where required. As these access needs are likely to be infrequent, care should be taken to ensure the space remains visually appealing and functions primarily as an attractive park area while maintaining necessary emergency and service routes.

Drainage

As part of the surface water drainage strategy for Royal Elm Gardens, a total of 1,340 m³ of attenuation capacity is required, to be accommodated either within or beneath the site, alongside associated interconnecting pipework.

- A range of attenuation solutions should be considered, including open basins, green/blue infrastructure features, and underground geocellular storage systems.
- The park layout must retain a visually appealing and accessible character, integrating the necessary infrastructure in a way that preserves the site's usability and attractiveness to the public.
- Tree planting must be carefully coordinated with the drainage layout to avoid root intrusion into attenuation structures, unless compatible systems—such as tree-friendly geocellular modules (e.g. Silva Cell/stockholme tree pits or equivalent)—are employed.

Hard and Soft Landscape

Hard Materials

The selection and arrangement of hard materials at Royal Elm Gardens must support a high-quality, durable, and visually cohesive public space that prioritises pedestrians and cyclists while enhancing the park's character. The following principles must be applied:

- Hard surfaces must be robust, long-lasting, and weather well, requiring minimal maintenance over time recognising the ground conditions present at Royal Elm Park.
- Use a Consistent and Cohesive Palette – Materials must complement the park's character and surrounding architecture, using a unified and limited selection of materials and finishes.
- Incorporate Permeable Surfaces – Where possible, permeable paving and other sustainable drainage solutions must be integrated to support surface water management and reduce runoff.
- Define Spaces Subtly – Different textures, tones, and patterns in paving should be used to delineate spaces without relying on intrusive physical barriers.
- Select Materials with a Local Connection – Where feasible materials with local significance should be incorporated to reinforce a sense of place and connection to the area.

Soft Landscape

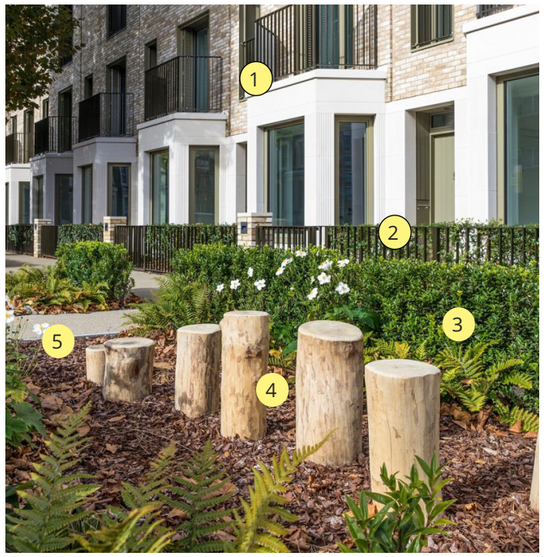
- At least 50% of the surface area of Royal Elm Gardens should consist of soft landscaping, including grass lawns, planting, vegetation, hedgerows, and trees.
- Biodiversity-enhancing planting must be incorporated to support local wildlife, including pollinator-friendly species, flowering plants, shrubs, and native trees.
- Tree selection and placement must account for appropriate root zones, ensuring adequate space for healthy growth and long-term success. Where necessary, root barriers or structured soil systems should be used to prevent conflicts with infrastructure. See tree planting section for further information on trees.

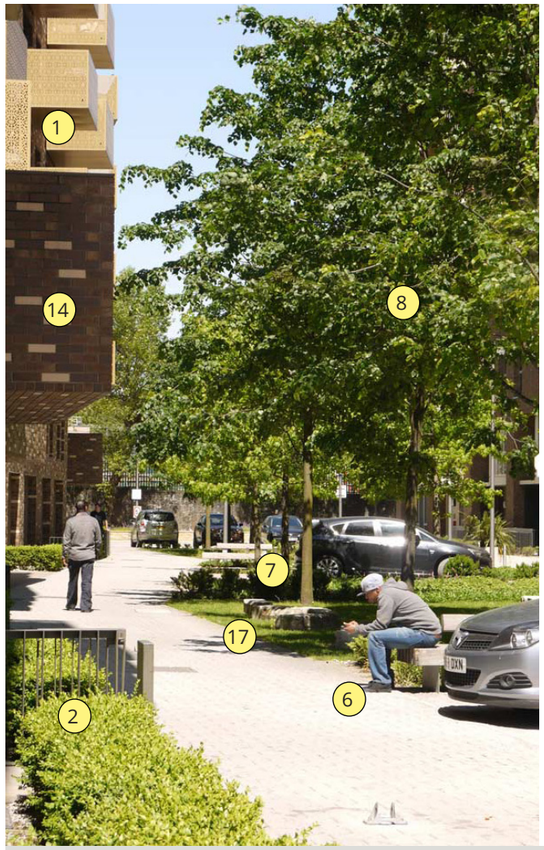
Royal Elm Gardens

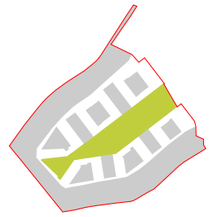
Design Quality and Character

This section provides a series of precedent images providing illustrative guidance for material quality, design detailing, soft landscape and furniture.

1. Surveillance into the space.
2. Clear definition between Private (front garden) and public space.
3. Variation in planting height to create a verdant experience.
4. Incidental play amongst landscape.
5. Changes in material texture, colour and feel to provide variation.
6. A pedestrian priority environment.
7. High quality ornamental planting.
8. Trees with large rooting material volume capable of achieving a large canopy.
9. Social seating, individual or in groups.
10. Amenity lawn areas large enough for incidental games.
11. Integrated water attenuation features.
12. Planting supporting biodiversity.
13. Landscape features/public art providing interest.
14. Quality materials used to help define different spaces and uses.
15. High quality play equipment provides visual interest and caters to all ages.
16. Shady and sunny spots.
17. Provide hard and soft areas.
18. Open and intimate spaces.











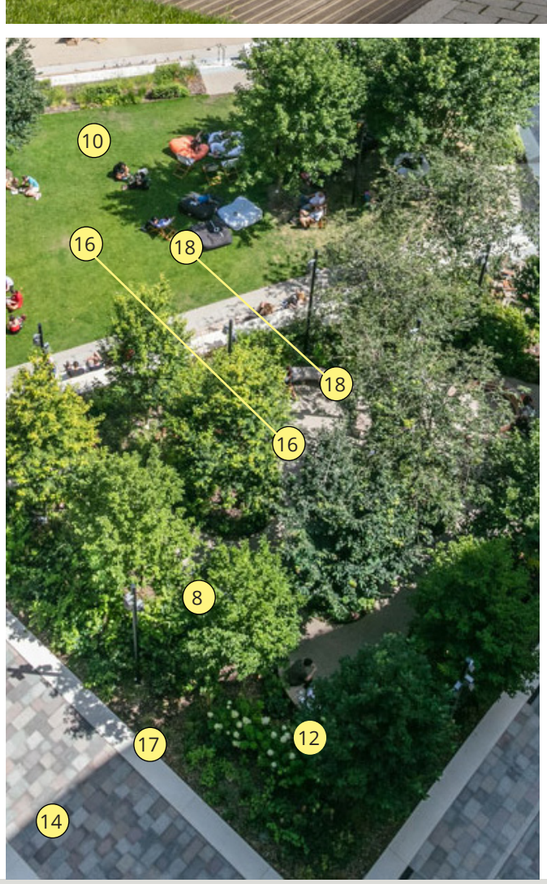






Fig. 145 Precedent Imagery

4.3 Residential Courtyards

Courtyards provide secure, safe, and welcoming private amenity spaces for residents. Thoughtful design can create enjoyable environments for children to play while also ensuring that all residents benefit from aesthetically pleasing and functional spaces.

Courtyards should be lush and garden-like, incorporating generous greenery to create a tranquil and inviting atmosphere (See Fig. 146). Planting should enhance biodiversity and seasonal interest while softening the built environment. At the same time, courtyards should provide open spaces, such as lawns or seating areas, that encourage social interaction, relaxation, and opportunities to enjoy sunlight.

Sightlines should be carefully considered to balance passive surveillance with privacy, ensuring a safe and welcoming atmosphere. While the courtyard should feel open and inviting, it should also provide secluded spots and maintain privacy for dwellings that directly address the space.

Design Rationale

Key design principles have shaped the vision for Residential Courtyards:

- Safety & Security – Create a secure environment with passive surveillance, clear sightlines, and sensitive lighting.
- Privacy – Offer seclusion and screening for homes facing the courtyard, while keeping the space inviting.
- Soft Landscape – Use diverse plants to form a garden-like setting, enhance biodiversity, and soften structures.
- Play & Recreation – Integrate child-friendly play areas into the landscape.
- Social Spaces – Provide seating, lawns, and gathering spots for community engagement.
- Sunlight & Shade – Mix open, sunlit areas with shaded spots for comfort.
- Durability – Choose weather-resistant materials and plants suited to the local climate for long-term resilience.

Dimensions and Levels

Dimensions

- Area: Varies, typically ranging from around 500m2 to 800m2

Boundary

- Defined by the surrounding buildings.

Levels

- Generally flat, with some level changes at the threshold with Royal Elm Gardens. These changes must be integrated into the landscape proposals.



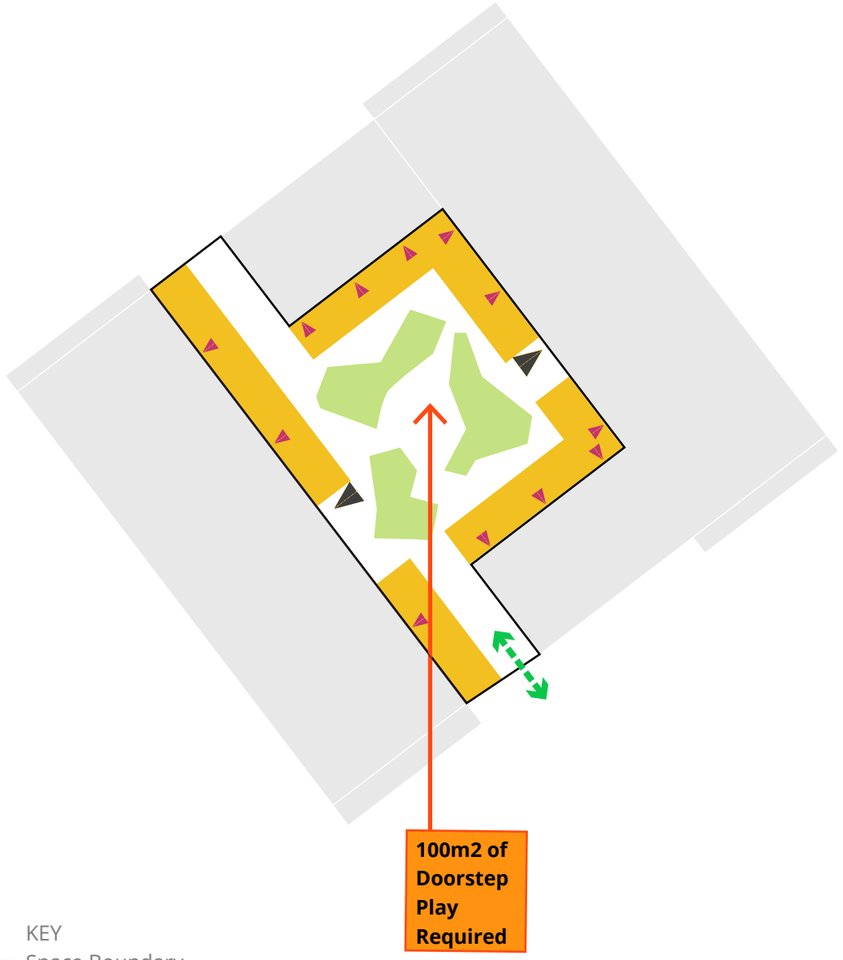


Fig. 146 Residential Courtyards Principles Diagram

Residential Courtyards

Function

Building Edges

- Homes directly addressing the courtyard must have appropriate defensible space to provide usable amenity space and privacy.
- Define garden edges using fencing, walls, hedging, or a combination of these to create an attractive boundary that integrates with the landscape.
- Boundaries should be designed to balance privacy with a sense of openness, avoiding excessive enclosure.

See diagram (Fig. 147) for additional guidance.

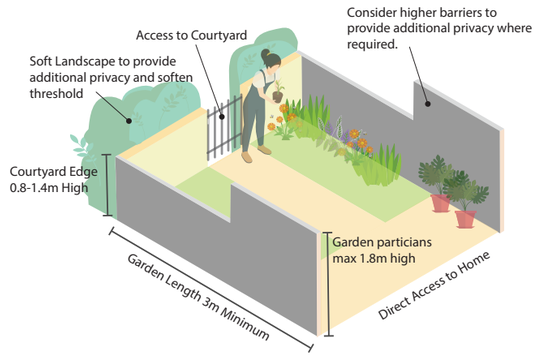


Fig. 147 Building Edges Diagram

Uses

- Play: Each courtyard must include 100m² of doorstep play to conform to local planning standards.
- Play: Play should be integrated into wider courtyard landscape. As courtyards are already secure play area fencing is not required.
- Socialising: Provide areas for small outdoor gatherings with seating, picnic tables, and outdoor cooking facilities to encourage community interaction.
- Tranquil Spots: Alongside social areas, include secluded spaces where residents can enjoy quiet moments surrounded by nature, with comfortable seating and shade.

Movement and Access

- Direct DDA compliant access to courtyard from building must be provided.
- Direct access from courtyard to Royal Elm Gardens should be provided through a secure gate.
- Encourage visual connectivity between Royal Elm Gardens and the courtyard through thoughtful threshold design.

Microclimate

- Incorporate a diverse range of shade-providing trees to create comfortable microclimates, balancing sun and shade.
- Ensure a variety of sheltered spots for respite from wind and sun exposure.

Sense of Place

- Incorporating local features such as public art, sculptural play, or creative detailing can help reinforce a sense of local identity and pride.
- Design proposals should be creative and include these elements throughout residents' amenity space. Consider a variety of scales, styles, and interactive elements to create moments of interest, interaction, or simply fun.



Lighting

- Use low-level, warm-toned LED lighting to enhance safety while preserving a residential ambience (See Fig. 148).
- Lighting must be carefully positioned and used only where necessary along key routes, entry points, and gathering areas without causing glare or light pollution.

Maintenance & Longevity

- Select low-maintenance, resilient plant species suited to urban conditions.
- Ensure hardscape elements are robust, weatherproof, and designed for longevity with minimal repair needs.



Fig. 148 Subtle, low level lighting. (Example for Reference)

Hard and Soft Landscape

Hard Materials

- Durable, sustainable materials should be used that are weather-resistant and require minimal maintenance.
- Consider texture, colour, and tactility to enhance the sensory experience of the space (See Fig. 149).
- Within courtyards, adopt a softer, garden-like material palette, such as gravel, wood chippings, and brick paving, to create a more relaxed atmosphere.



Fig. 149 Calm, natural materials used. (Example for Reference)

Soft Materials

- Prioritise native and climate-appropriate plants to support local biodiversity.
- Ensure year-round appeal by selecting a mix of evergreen and seasonal species for continuous visual interest.
- Trees must have adequate rooting medium and sufficient space to sustain healthy growth into maturity.
- Consider multi-layered planting (trees, shrubs, groundcover) to create a lush, immersive landscape experience.

Residential Courtyards

Design Quality and Character

This section provides a series of precedent images providing illustrative guidance for material quality, design detailing, soft landscape and furniture.

1. The courtyard features areas for social gatherings, relaxation, and play.
2. Multiple seating options, including chairs and benches, are spread throughout the space.
3. Ground-floor homes have private gardens that provide private amenity space and privacy.
4. Back garden fencing providing privacy between gardens.
5. Multi-purpose landscape: lawns, play, social spaces and biodiversity mixed together.
6. A variety of play features located across spaces.
7. Incidental play features integrated into courtyard design.
8. Sculptural or artistic features within the central green space add visual interest.
9. A mix of tree canopy and open spaces allows for both shaded and sunny areas
10. Use of different plant heights and types creates visual interest and biodiversity.
11. Lighting fixtures are subtly incorporated to ensure the space is usable and safe during the evening.
12. The courtyard features multiple zones for quiet relaxation, social interaction, and play, catering to diverse user needs.









Fig. 150 Precedent Imagery

4.4 Mews Streets

Mews Streets (See Fig. 151) are located between the residential blocks, providing residents access to homes as well as deliveries, and essential services such as fire and maintenance.

Parking is provided in the Mews Streets which is mainly for the use of visitors.

The Mews Streets are visually open-ended. The streets frame striking vistas across south Reading from the site's elevated position.

For further context refer to Section 2.7 Access and Movement in this document.

Design Rationale

Key design principles have shaped the vision for Mews Streets:

- Pedestrian-Friendly – Create a high-quality shared surface that prioritizes pedestrians while accommodating parking and servicing.
- Integrated Greenery – Incorporate soft landscaping and vertical greenery, such as climbers and trees, to enhance the streetscape.
- Clear Building Access – Maintain unobstructed, welcoming entrances with clear sightlines.
- Cohesive Street Character – Use materials and planting to create a visually harmonious environment.

The area between the end of Mews Streets and the landscape bank surrounding the scheme should be carefully design and opportunities explored.

- 'Floating' decks and cantilevered platform should be proposed as shown in the DAS: Section 3. Public Realm Update.
- Link to the perimeter pedestrian and cycle movement paths should be explored. The need to ensure the maximum quantity of existing vegetation on the embankment is maintained.

Dimensions and Levels

Dimensions

- Width: 20m minimum
- Length: Varies
- Area: Varies, typically ranging from around 600m2 to 800m2

Boundary

- Defined by the surrounding buildings.

Levels

- Typically flat

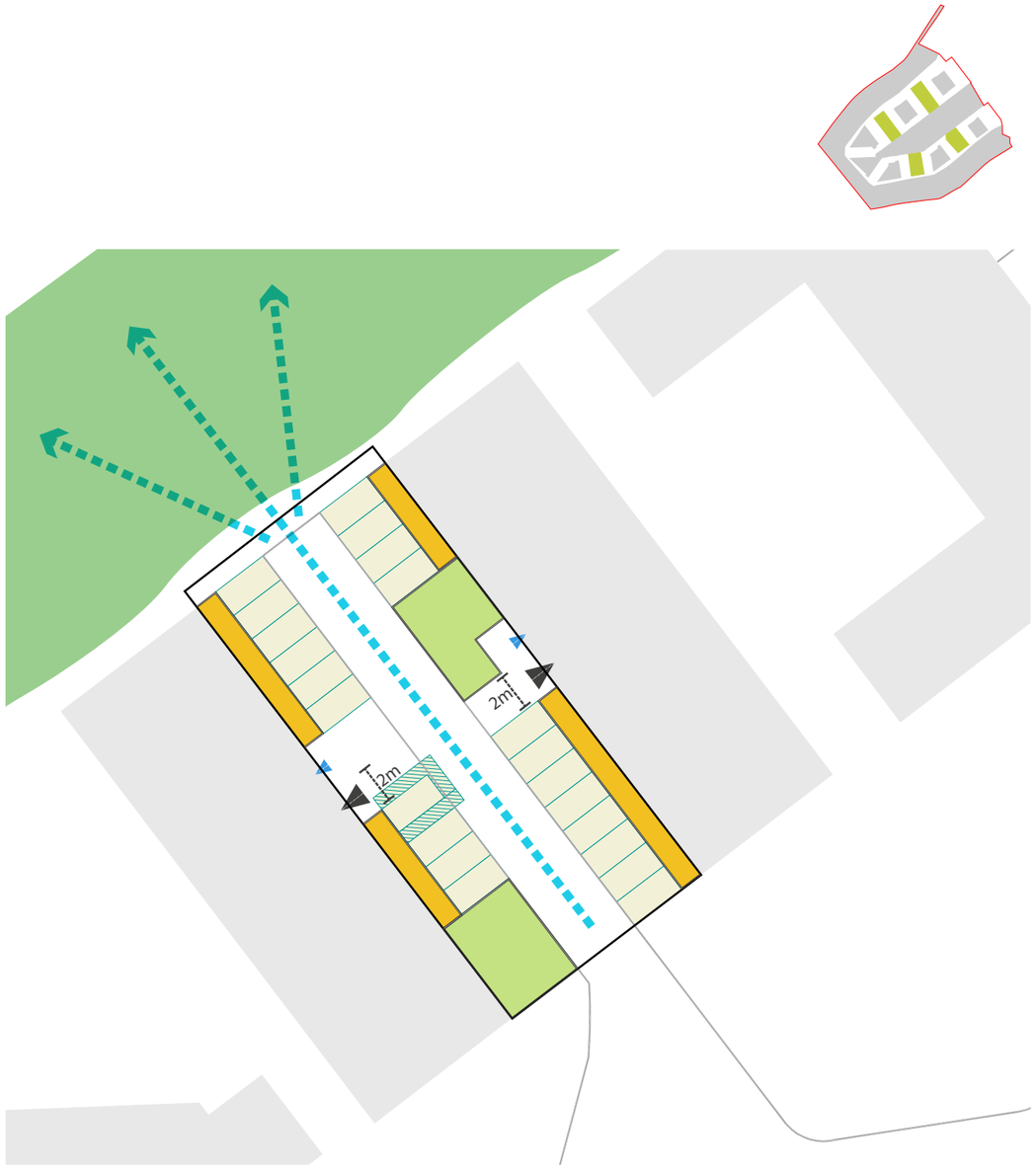
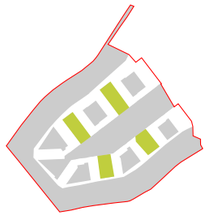


Fig. 151 Mews Street Principles Diagram



Mews Streets

Function

Building Edges

- Space must be provided in front of Building primary entrances. Parking spaces must not be located in front of the building's Primary Entrances.
- Layout must ensure there is enough space in front of secondary entrances such as for bin and cycle stores.
- Ground-floor residential homes facing Mews Streets must have a planted buffer to ensure privacy and a well-defined streetscape.
- Where homes have direct access to Mews Streets (e.g., front doors opening onto the street): A minimum 1.5m-wide front garden is required.
- Boundary Definition: The front garden space must be clearly enclosed by a structure such as a brick wall, railing, or a combination of both to establish a strong boundary while maintaining visual appeal.
- Homes without direct access to Mews Streets: A minimum 1.2m buffer planting must be provided in front of the homes to maintain privacy.
- Greenery and soft landscaping elements should be incorporated to enhance the space, providing a welcoming atmosphere and softening structural boundaries.
- Materials used for boundaries and landscaping must complement the building facade and blend harmoniously with the surrounding environment.

Uses

- Car Parking: Parking must be efficiently located on Mews Streets to eliminate the need for parking within Royal Elm Gardens.

Views

The site's elevated setting offers valuable long-range views. Mews Streets serve as key visual corridors, connecting Royal Elm Gardens with views across South Reading.

- A clear and direct line of sight from Royal Elm Gardens through each Mews Street must be provided.

Movement

- Shared Surface: The streetscape is likely to take the form of a shared surface. Design must accommodate pedestrians, cyclists, and vehicles safely and comfortably.
- To ensure there is no conflict at a deadend with pedestrians and cyclists traveling along Royal Elm Gardens, a last parking space must be enlarged and an aisle beyond the last parking space must be extended. This is to provide an additional manoeuvring space to enable forwards in, forwards out (See Fig. 152).
- The design must be inclusive and accessible to all users, with specific consideration for individuals with disabilities and visual impairments.
- Surface Materials: Use different materials, textures and/or colours to define functional zones, such as parking areas, building entrances, and pedestrian pathways, ensuring clarity in movement and accessibility.



Fig. 152 Mews deadend design

Hard and Soft Landscape

Hard Materials

- Use durable, sustainable, and weather-resistant materials that require minimal maintenance .
- On carriageways materials selected must be able to withstand vehicle use while maintaining visual appeal.
- Consider texture, colour, and tactility to enhance the sensory experience of the space (See Fig. 153).

Soft Materials

- Prioritise native and climate-appropriate plants to support local biodiversity.
- Ensure year-round appeal by selecting a mix of evergreen and seasonal species for continuous visual interest.
- Provide trees with an adequate rooting medium and sufficient space to sustain healthy growth into maturity.
- Use multi-layered planting (trees, shrubs, groundcover) to create a lush, immersive landscape experience.
- Incorporate vertical greening, such as climbers, green walls and trees, to enhance the green presence and visual impact.



Fig. 153 Surface materials used to support function

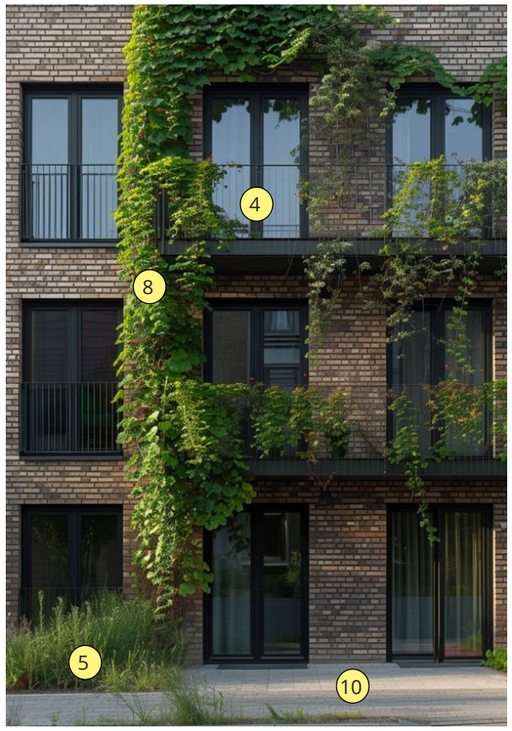
Mews Streets

Design Quality and Character

This section provides a series of precedent images providing illustrative guidance for material quality, design detailing, soft landscape and furniture.

1. A pedestrian priority environment.
2. Parking integrated into landscape design.
3. Clear space in front of building access points.
4. Good surveillance into the space.
5. Ground-floor homes have soft landscape directly outside windows to provide privacy.
6. Clear definition between Private (front garden) and public space for ground-floor homes with direct access to mews.
7. Simple material palette to provide consistency.
8. Vertical greening used to help soften the space through trees, climbers and green walls.
9. Trees with large root area capable of growing to maturity.
10. Quality surface materials used to help define different spaces and uses.





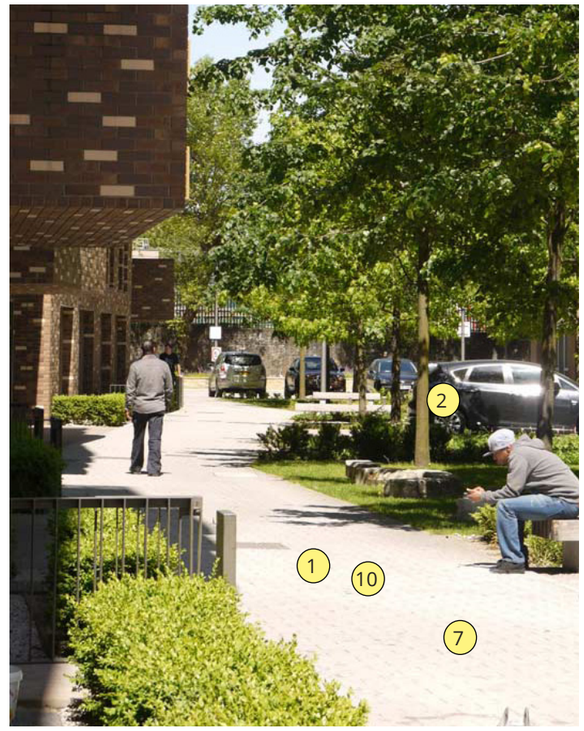
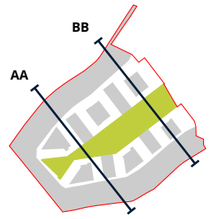






Fig. 154 Precedent Imagery



4.5 Site Sections

Design Code Section

KEY
- Building - Residential
- Building - Parking
- Exisitng landform
- Top of exisitng landform line
- 1 Residents courtyard gardens
- 2 Private amenity space - back gardens
- 3 Private amenity space - front gardens
- 4 Play feature
- Above slab soil volume for planting
- Area for attenuation and soil volumne for planting
- Area for utilities
- 5 Indicative tree planting
- 6 Royal Elm Gardens amenity space
- Road/path
- 7 Existing vegetation

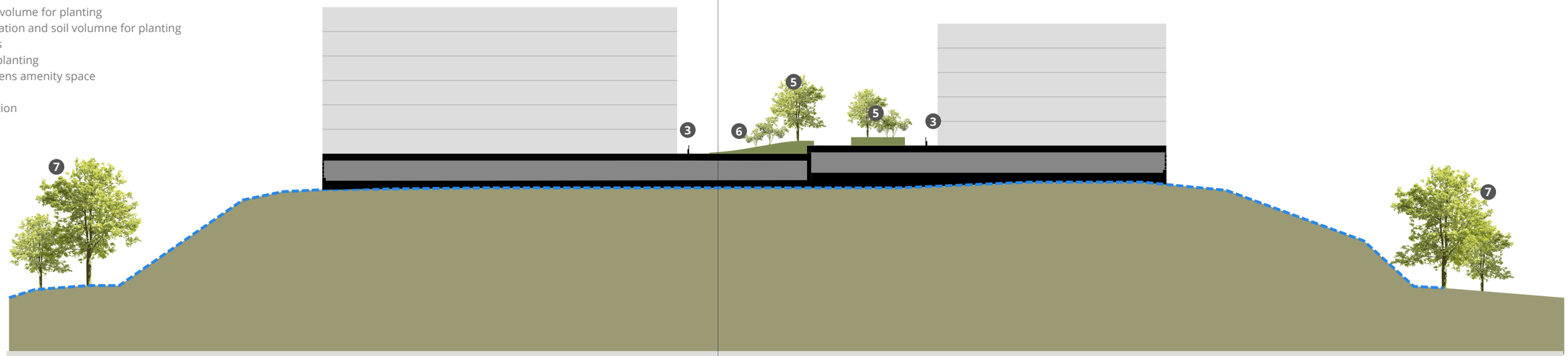


Fig. 155 Landscape Section AA

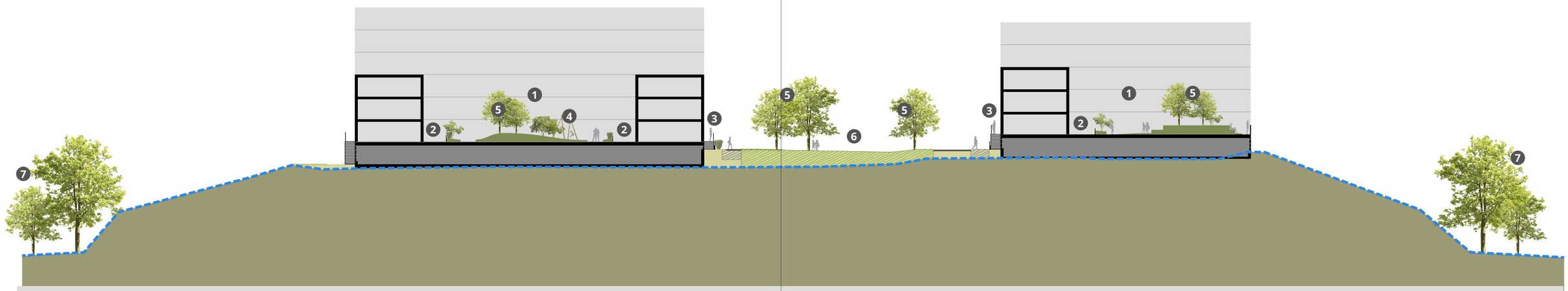


Fig. 156 Landscape Section BB

4.6 Tree Planting

The success of Royal Elm Park is dependent on the establishment of the trees planted both within Royal Elm Gardens and the Mews Streets. Critical to this is the provision of a suitable quantity of growing medium for each tree as the sites former use means there is little or no natural topsoil on site. For further context refer to the DAS: Section 19. Landscape, Drainage & Ecology Strateg (page 86).

The list below shows a list of suitable species and the required volume of growing medium. In Mews Streets achieving these growing material volumes will require the use of below ground tree cells.

For further information refer to policy EN14: Trees, Hedges and Woodland

Tree Planting Instructions

- All tree planting must be carefully coordinated with below ground features such as services and drainage cells to ensure the tree planting objectives of this code are met.
- Each tree must have a suitable volume of growing medium as recommended by the Tree Design Action Group. www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_speciesguidev1.4.03.pdf.
- Trees planted for ornamental value only should be limited.

Tree Specification

	Tree Size.* Small/Medium/Large	Anticipated tree height 50yrs	Anticipated tree width 50yrs	Soil volume	Potential location
Taxodium distichum	M	>25	8	30	Royal Elm Gardens
Liquidambar styraciflua 'Jane Roberts'	M	17-20	6-8	30	Royal Elm Gardens / Roads
Acer x freemanii 'Autumn Blaze'	M	15-25	8	30	Royal Elm Gardens
Alnus cordata	M	15-25	8	30	Royal Elm Gardens
Tilia cordata 'Greenspire', 'Rancho',	M	15	6-8	30	Royal Elm Gardens
Liquidambar styraciflua	L	15-25	15	47	Royal Elm Gardens
Carpinus betulus	L	15-25	10	47	Royal Elm Gardens
Quercus Ilex	L	15-25	15	47	Royal Elm Gardens
Quercus palustris	L	15-25	15	47	Royal Elm Gardens
Acer campestre	L	15	10	47	Royal Elm Gardens
Tilia cordata	L	>25	15	47	Royal Elm Gardens / Mews
Acer campestre 'Streetwise' or 'Elsrijk'	M	15	6-8	30	Royal Elm Gardens / Mews
Alnus cordata	M	15-25	6-8	30	Royal Elm Gardens / Mews
Pyrus calleryana Chanticleer	M	10-15	6-8	30	Royal Elm Gardens / Mews
Betula pendula	M	15-25	6-8	30	Royal Elm Gardens / Mews
Crataegus laevigata 'Paul Scarlet'	M	<10	6-8	30	Royal Elm Gardens / Mews
Ilex 'Nellie R.Stevens'	S	8	<10	17	Royal Elm Gardens / Mews
Pinus sylvestris	L	>25	15	47	Royal Elm Gardens
Sorbus aria (option var. Majestica)	S	10-15	6	17	Royal Elm Gardens / Mews
Ulmus cultvars	M	15-25	6-8	30	Royal Elm Gardens / Mews

*Recommended 50% of trees specified to be large canopy trees



4.7 Public Art

Public art plays a key role in creating a distinctive local identity, engaging communities, and fostering pride in a place. It enhances placemaking, supports wayfinding, and encourages a sense of ownership and involvement.

- Artworks must be interpreted broadly—not limited to figurative or abstract sculptures, but including landform interventions, written word, light and sound-based installations, and artistic integration within landscape features such as street furniture, signage, and paving. These elements must be contextually responsive and contribute to the creation of a strong and recognisable character.
- The proposed landscape framework, with its interconnected public spaces and varied typologies, must provide opportunities for public art at multiple scales and locations.
- Public art must be integrated across different scales—from fine-grain material details to prominent installations such as monuments, interactive landforms, or large-scale features that serve as landmarks.

The following four types of public art (See Fig. 157-160) illustrate varied approaches suitable for implementation at Royal Elm Park:



Fig. 157 Public Art/Placemaking: Positioned at key locations to enhance local identity.

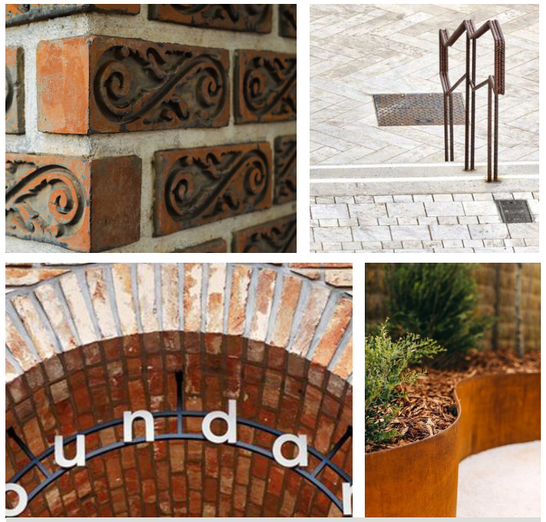


Fig. 158 Art Details: Small interventions that enthuse identity and a sense of care.



Fig. 159 Play Features: Art/sculptures integrated within or alongside play equipment.



Fig. 160 Ecological Enhancing Art: Art providing visual interest while supporting biodiversity.

4.8 Landscape Management and Maintenance

The management and on-going maintenance of the hard and soft landscape elements in three distinct areas of Royal Elm Park – Royal Elm Gardens, Residential Courtyards and Mews Streets – will need to reflect the aspirations of a new quality public realm within a developing residential community.

This maintenance regime will ensure the successful establishment of planting and the long-term care of the hard landscape to maintain the desired aesthetics and functionality. This will involve regular inspections and maintenance visits to ensure that the area is: free from litter; that it is kept in a safe and welcoming condition; that street furniture elements are maintained in a good state of repair; that the planting is kept lush, vigorous, and successful as intended in the detailed design; and finally that any defects are made good, particularly during the defects period.

Maintenance Operations 1-2 years

Operations will generally be carried out weekly, monthly, quarterly, twice yearly, or annually in line with a detailed maintenance matrix from the contractor. For general planting works maintenance operations during the defects period (years 1-2 after planting/construction) will include:

- Weeding to reduce competition from unwanted species and ensure healthy strong growth and establishment;
- Watering;
- Checking irrigation, aeration and other systems;
- Checking plants are firmly bedded in and in good condition;
- Pruning, both at ground and elevated levels;
- Replacement, in the next planting season, where planting has failed or suffered from pest damage or vandalism;
- Litter removal;
- Checking hard surfaces, signage and site furniture for defects and repairing as necessary in line with the original specification;
- After periods of water inundation, a detailed inspection of all hard and soft landscape affected to ensure no damage has occurred, debris/litter removal and jet wash cleaning of all hard surfaces to remove any silt;
- Checking of permeability of paving, SuDS features and drainage channels;
- Hard landscape chewing gum removal, check and repair joints after movement or settlement;
- Lay equipment – Keep play equipment clean, safe and in good repair according to the original design/specification.

Maintenance Operations 3-5 years

Operations will generally be carried out weekly, monthly, quarterly, twice yearly, or annually in line with a detailed maintenance matrix from the contractor.

During the establishment period (years 3-5) maintenance operations will continue to ensure the successful establishment of the new planting works and keep the site in a good state of repair. Operations will include:

- Weeding to maintain planting beds in a weed free condition for the third year. After this planting should be sufficiently established to keep weeds to a minimum however periodic checks will take place to ensure that inappropriate weeds are removed;
- Pruning and inspection of trees;
- Litter removal and maintenance of all hard landscape features will continue to ensure they are maintained in a good state of repair;
- After periods of water inundation, a detailed inspection of all hard and soft landscape affected to ensure no damage has occurred, debris/litter removal and jet wash cleaning of all hard surfaces to remove any silt;
- Hard landscape chewing gum removal;
- Check and repair joints after movement or settlement and check for integrity of units and uneven surfaces;
- Play equipment – Keep play equipment clean, safe and in good repair according to the original design/specification. Repairs must not invalidate specific manufacturer's guarantees.

Maintenance 6+ years

An ongoing programme of management and maintenance will be carried out with the aim of ensuring the site is safe for users and ensuring the continued successful development and retention of landscape features.

Strategic Management of Green Open Space

Management and maintenance operations will be in accordance with the approved Landscape Management Plan (LMP) that accompanies the site wide application for REP. Management and maintenance will commence upon implementation and will continue for an agreed period in line with the approved LMP and any subsequent LMPs for each Phase. This will be undertaken by a suitably qualified Management Company.

Once appointed, the Management Company will ensure that all management set out within the LMP and LMPs for each Phase is undertaken by a suitably qualified landscape management contractor and in accordance with BS 4428: 1989 'Code of practice for general landscape operations'. The Management Company will appoint advising professionals as required e.g. Arboricultural consultant; ecological consultant & drainage consultant.

Section 5

Technical Considerations

This section provides relevant technical considerations including sustainable design and construction, wind, green and blue roofs, daylight and sunlight and housing standards, for all the outline planning permission area.

5.1 Sustainability

This section outlines design guidelines which must or should be applied to the development to achieve the sustainability aims and objectives set out in the following approved planning application documents and planning policies:

- Design and Access Statement (Barton Willmore, now Stantec, January 2016)
- Sustainability Statement (Hoare Lea, January 2016)
- Energy Strategy (Hoare Lea, January 2016)

For further context refer to the DAS: Section 21. Energy & Sustainability Strategy in Design and Access Statement (page 110).

Also refer to the relevant condition to be discharged: Condition 93 and Condition 94

The application was prepared in accordance with Part L of the Building Regulations (2013). Part L was amended in 2021 and therefore the Energy Strategy should be revisited during detailed design to ensure compliance with current Building Regulations. The principles and approaches detailed within the Energy Strategy remain relevant and are referred to within this Design Code.

Approved Documents Part L, 2021.

Policy CC2 Sustainable Design and Construction,

Policy CC3 Adaptation to Climate Change,

Policy CC4 Decentralised Energy,

Policy CC5 Waste Minimisation and Storage,

Policy H5 Standards for New Housing.

Material Resource Management and Material Selection

- The Development must use timber that is sourced from certified sustainable sources, for example FSC Certified Timber.
- The design should use locally sourced materials, in particular aggregates.
- The design should consider the use of reused and recycled materials. In particular, the reuse of site-won demolition materials for aggregate should be considered.
- The Development should select materials with low formaldehyde and Volatile Organic Compounds (VOCs) to mitigate impacts on indoor air quality.

Waste Management

For further context refer to the relevant condition to be discharged: Condition 99.

Construction Phase Waste Management

- The Development must identify and monitor waste reduction targets to reduce the quantity of waste sent to landfill.
- At least 80% of excavation, demolition and construction waste arising from construction activities must be diverted from landfill, through reuse and recycling approaches.
- 'Designing out waste' approaches should be followed to maximise the use of standard-sized components and materials (reducing wastage on site).

Operational Waste Management

- The storage and waste strategy must be designed in accordance with RBC guidance at the time of the Reserved Matters application.
- Dwellings should be provided with space within kitchen zones to capture general and recyclable waste.

Energy Supply and Demand

- The Development should follow the energy hierarchy approach outlined in Energy Hierarchy in Development Diagram (See Fig. 161).
- Glazing specification must balance heat losses, heat gains and availability of daylight.
- Fabric insulation levels and air permeability must achieve Part L Building Regulations requirements.
- Efficient lighting must be provided for all dwellings.
- External and communal lighting should be coupled to daylight and presence detection sensors to minimise unnecessary use and reduce light pollution.
- Mechanical Ventilation and Heat Recovery (MVHR) should be specified to manage heating, internal temperatures and indoor air quality.
- Insulated pipework and duct work (with air sealing to ductwork) should be specified to minimise losses and gains.
- Variable speed pumps and fans should be incorporated to minimise energy consumption for distribution of services.
- The design should include low carbon technologies to generate power where possible.
- The design should include solar photovoltaic panels (PV) to generate power where possible.
- The use of low and zero carbon technologies must be considered, including consideration of solar photovoltaic (PV) panels.

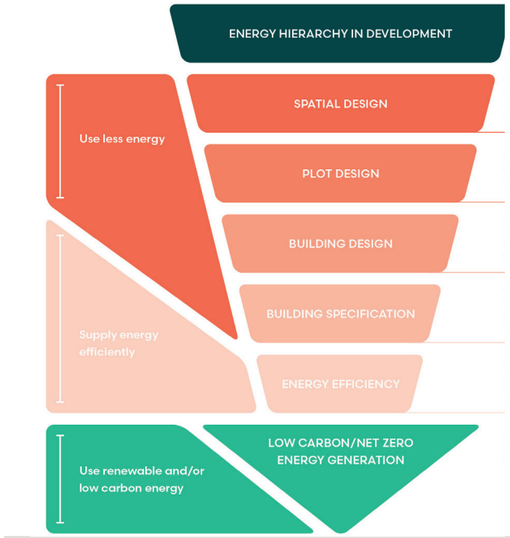


Fig. 161 Energy Hierarchy in Development (Stantec 2024)

Responsible Material Use and Waste Management (Sustainable Construction)

- The Resource Hierarchy should be followed, guiding principles for retaining materials at their highest value – see The Resource Hierarchy Diagram (See Fig. 162).

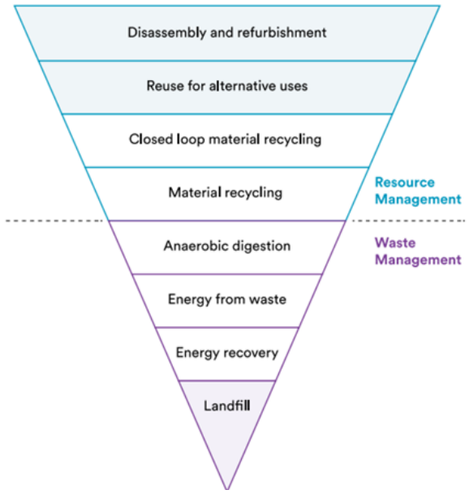


Fig. 162 The Resource Hierarchy (David Greenfield, 2013)

Water Use

- Major leak detection systems must be included to identify a major leak should one arise.
- Water efficient fixtures and fittings must be specified to reduce water consumption in line with the Part G of the Building Regulations. Measures to reduce consumption to the Optional Technical Standards of Part G should be included where possible.
- Water meters should be provided to enable users to monitor usage and target reductions where possible.
- Use of rainwater harvesting should be considered for external use, for example landscape irrigation.
- Use of greywater recycling should be considered.

Climate Risk and Resilience

For further context refer to Section 5.3 Green/ Blue Roofs, of this document.

- Dwellings must manage the risk of overheating, in accordance with the requirements of the Building Regulations (Approved Document Part O, 2021).
- Sustainable Drainage Systems (SuDS) must be included to manage surface water and run-off at the Development (See Fig. 163).

Sustainable travel

For further context refer to the DAS: Section 21. Energy & Sustainability Strategy in Design and Access Statement (page 110).

Also refer to Section 2.7 Access and Movement and Section 3.16 Cycle Storage, of this document.

- The Development must include measures to enable residents and visitors to travel sustainably, reducing environmental impacts and providing benefits for health and wellbeing.
- The design must include connections to existing pedestrian and cycle links.
- Secure cycle storage must be provided within buildings.

Biodiversity and green infrastructure

For further context refer to Section 5.3 Green/ Blue Roofs.

- The design must include features for biodiversity and nature.
- The design should include planting habitats and provision of roosting opportunities for birds and bats.
- Features such as green roofs and permeable paving should be explored to manage volumes of rainfall run-off.



Fig. 163 Precedent: Rain garden (National Design Guide)

5.2 Wind Considerations

Wind microclimate studies are completed on proposed developments in line with the Lawson criteria for pedestrian safety to determine the suitability of the development. In addition, areas are evaluated against the Lawsons pedestrian comfort criteria in line with their intended land use, to verify if the wind environment is likely to be suitable for the desired usage.

Typically, evaluations of potential developments are carried out quantitatively with the use of CFD and / or wind tunnel tests. These evaluations use measured wind climate data for the region, recorded at controlled locations to derive a wind climate model / wind roses.

For the proposed development at Royal Elm Park, to date CFD simulations have been performed (See Fig. 164-165) using wind data from Heathrow airport. These simulations predict substantially positive results and a good overall environment, with the design evolving to maximise the performance for wind microclimate for isolated spots.

For further context refer to Section 3, Architectural Design and Section 4, Public Realm and Landscape Design, of this document.

Also refer to the relevant condition to be discharged: Condition 62.

For further information refer to Policy CC8 Safeguarding amenity

- As part of the reserved matters applications details assessing the wind conditions and proposed mitigation measures, that will provide acceptable pedestrian comfort for each phase, must be provided. This is required by Condition 62.
- Any wind mitigation measures provided through landscape design and planting must be coordinated with overall landscape and planting design principles.
- Any mitigation measures provided through buildings design and buildings components like canopy/recessed entrance/ screens must follow proposed design principles for elevations, materials and detailing.

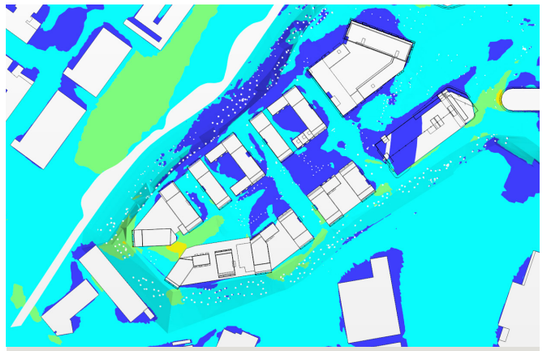


Fig. 164 Lawson Comfort: Worst-Seasonal

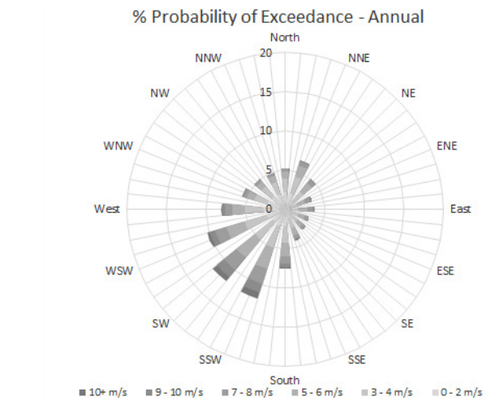


Fig. 165 Wind Rose Diagram showing how wind speed and direction will be distributed on site.

5.3 Green/Blue Roofs

Detailed Surface Water Drainage Stratergy

Green roofs (See Fig. 166) or blue-green roofs (See Fig. 167) could be incorporated into the surface water drainage strategy through installation on flat roofs. Green and blue-green roofs enable the provision of sustainable drainage, whilst not resulting in the reduction of developable area or reduction of any other proposed land uses. As existing, roof runoff is proposed to convey freely via guttering and downpipes to the surface water drainage network serving the site.

With the implementation of green or blue-green roofs, surface water will benefit from source control, with rainwater slowly permeating through the growing medium, and in the case of blue-green roofs, storage in attenuation cells or further storage substrate. Subsequently, rainwater is released at a controlled rate to the surrounding surface water network, reducing roof runoff-rate through attenuation and the controlled release of rainwater, providing flexibility to reduce the volume of below-ground storage required. Blue-green roofs provide greater attenuation compared to green roofs, resulting in larger reductions in below-ground storage. Evapotranspiration provided by planting reduces the volume of surface water runoff generated by the site. Where green or blue-green roof attenuation is proposed, priority should be given to reducing or entirely removing the geocellular storage component of the proposed hybrid detention basins.

Green and blue-green roofs filter pollutants, attenuate runoff, and enhance the delivery of biodiversity and amenity on site. Alongside water quantity, water quality, biodiversity and amenity value added, green and blue-green roofs provide a range of other benefits including, improved building energy and solar voltaic performance and acoustic dampening.

As a result of updated climate change allowances, there may be the requirement to demonstrate minor additional attenuation volumes. Blue-green roofs could provide some or all of the additional attenuation required. Green or blue-green roofs can aid the overall water quality performance of the site.



Fig. 166 Precedent: Green Roof



Fig. 167 Precedent: Blue-Green Roof



Fig. 168 Precedent: Green Roof Edge

Overall Surface Water Drainage Stratergy

To take the surface water drainage strategy as approved, forward to a future Reserved Matters application, there are three potential options for the inclusion of blue/blue-green roofs:

Option 1) Propose no roof runoff source control as per the extant planning permission.

Option 2) Propose roof runoff source control in the form of shallow green roofs (≤250mm total depth).

Option 3) Propose roof runoff source control in the form of shallow blue-green roofs (≤250mm total depth).

For further context refer to the DAS: Section 19. Landscape, Drainage & Ecology Strategy (page 90).

Also refer to Section 5.1 Biodiversity and green infrastructure in this document.

Refer to Overall Surface Water Drainage Strategy approved under Condition 79 - Ref,. 240524-RARP-XX-XX-DR-CD-001-Issue 01 dated 11/1/2016) and S106 Schedule 2.

For further information refer to Policy EN18: Flooding and sustainable drainage systems.

Where Option 1 is taken forward, the roof runoff source to discharge pathway will comprise the following:

- Roof runoff conveys freely via guttering and downpipes to the surrounding surface water drainage network.
- Roof runoff is attenuated within geocellular storage alone, or geocellular storage in combination with either permeable paving or hybrid detention basins.
- Following attenuation, roof runoff subsequently discharges at the approved controlled rate.

Where Option 2 or 3 are taken forward, the roof runoff source to discharge pathway will comprise the following:

- Rainwater landing on proposed flat roofs slowly permeates through a growing medium, and in the case of blue-green roofs, is additionally collected within attenuation cells or a further storage substrate layer. A proportion of the volume of rainwater is lost through evapotranspiration. Subsequently, rainwater is released at a controlled rate to the surrounding surface water drainage network via guttering and downpipes.
- Roof runoff is preferably attenuated within geocellular storage alone, or geocellular storage in combination with permeable paving. Owing to the reduced rate and volume of roof runoff, there is flexibility to reduce the volume of below-ground storage required, with priority given to reducing or entirely removing the geocellular storage component of the proposed hybrid detention basins. Blue-green roofs provide greater attenuation compared to green roofs, resulting in larger reductions in below-ground storage which in the case of Royal Elm Park being developed on a capped landfill would be advantageous.
- Following attenuation, roof runoff subsequently discharges at the approved controlled rate.

Options 2 and Option 3 should be fully explored.

5.4 Daylight and Sunlight Considerations

Daylight for Habitable Rooms

All habitable rooms, particularly living rooms, kitchens and bedrooms, should aim to achieve the recommended levels of daylight as per the 2022 BRE Guidance. This ensures that spaces are bright and reduce reliance on artificial lighting. Where not possible, design should demonstrate that the daylight levels have been maximised.

Unit layouts and glazing sizes should be followed across all Reserved Matters applications, taking precedence from consented Block B7, which achieves very high levels of internal daylight within habitable spaces. However, the potential for overheating should also be carefully considered.

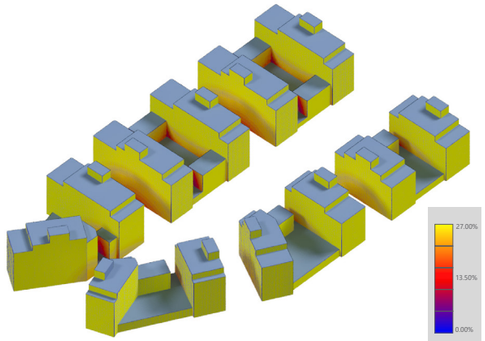


Fig. 169 VSC Facade Study

Sunlight for Habitable Rooms and Open Spaces

As per BRE Guidance a habitable unit should have at least one room achieving 1.5 hours of sunlight on March 21st. As such units should be designed to have at least one room facing within 90 degrees of due south where possible. It would be preferable if the main living space achieves compliance with the unit, however this assessment applies to any habitable room.

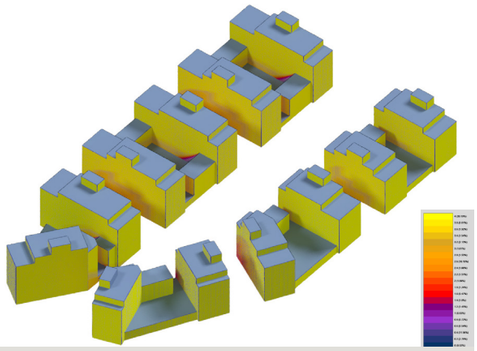


Fig. 170 SE Facade Study

Mitigating Negative Impacts of Overshadowing

Light-coloured building materials on both internal and external walls and surfaces should be used to enhance natural light within the building and reduce the reliance on artificial lighting.

Assessment Tools

For further information refer to Policy CC8 Safeguarding amenity.

Any assessment of the detailed daylight, sunlight or overshadowing within the proposed development must be undertaken in line with the methodologies recommended within the BR209 Document; Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. This must include an assessment of either Daylight Illuminance or Daylight Factor for daylight and Sunlight Exposure for sunlight (See Fig. 169-170).

5.6 Noise

The site must be designed in line with the good acoustic design principles in the Professional Practice Guidance on Planning, Noise and Residential Developments (ProPG). This guidance document sets out how noise should be considered and is based on the noise criteria contained within BS 8233:2014 Guidance on sound insulation and noise reduction for buildings. This standard recommends noise criteria for both internal and external living environments.

For further context refer to the relevant condition to be discharged: Condition 77 and Condition 78.

For further information refer to Policy EN17: Noise generating equipment.

5.5 Housing Quality and Standards

Accessibility

Residential Development must comply with the nationally-described space standard.

Residential Development must be accessible and adaptable in line with M4(2) of the Building Regulations, unless it is built in line with M4(3) (see below).

At least 5% of dwellings will be wheelchair user dwellings in line with M4(3) of the Building Regulations. Any market homes provided to meet this requirement will be 'wheelchair adaptable' as defined in part M, whilst homes where the Council is responsible for allocating or nominating an individual may be 'wheelchair accessible'.

For further context refer to Approved Document Part M.

Also refer to Section 3.9 Architectural Design: Communal Entrances in this document.

For further information refer to Policy H5: Standards for new housing.

Secure by Design for Homes

Residential developments should comply with the principles outlined in Secure by Design for Homes 2025 or any subsequent document that supersedes it.

Secure by Design is an initiative led by the police, aiming to provide guidance and promote the adoption of crime prevention measures among those involved in the specification, design, and construction of new homes. The recommendations provided in the guide have been proven to effectively diminish crime opportunities and alleviate the fear of crime, ultimately fostering the creation of safer, more secure, and sustainable environments.

For further context refer to the relevant conditions to be discharged: Condition 90, Condition 91.

Also refer to Security Strategy Plan (AI43 Revision E dated 7th October 2016).

For further information refer to Exterior Lighting Strategy (DOC-1699647-151007-BA-Exterior Lighting Strategy-03) by Hoare Lea Refer to Section 5response to Thames Valley Police in Design and Access Statement Addendum (page 57).

Team

This document has been prepared and submitted on behalf of RFC Prop Co Limited, by a team of consultants led by Stantec.

RFC Prop Co Limited

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- Urban Design, Architecture and Masterplanning
- Landscape Design
- Town Planning
- Transport
- Flood and Drainage
- Sustainability

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