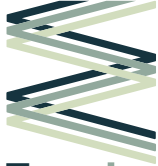


Attachment B7(h)

**Urban Design and Public Domain Study
Appendix 5 Private Domain – Waterloo
Estate (South) – Land and Housing
Corporation**

7.5 PRIVATE DOMAIN

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7.5.1 APPROACH TO BUILT FORM

INDICATIVE STREETWALLS

STREETWALLS

The first 10 metres. Streetwalls ranging in height from 2 to 8 storeys define the public domain and craft the street level experience

Within Waterloo South, streetwalls define the public domain and create the street level experience. The width between and height of streetwall buildings defines the scale of the public domain.

Visual interest is achieved through scale, built form variation and character. Modulated streetwalls support a human scale environment. Key strategies include:

- Setting taller buildings back from the street edge to create a pedestrian scaled public domain at key street frontages.
- Limiting maximum streetwall lengths.
- Providing consistent street wall definition and;
- Supporting the street level experience through scale, variation and a mix of architectural responses.

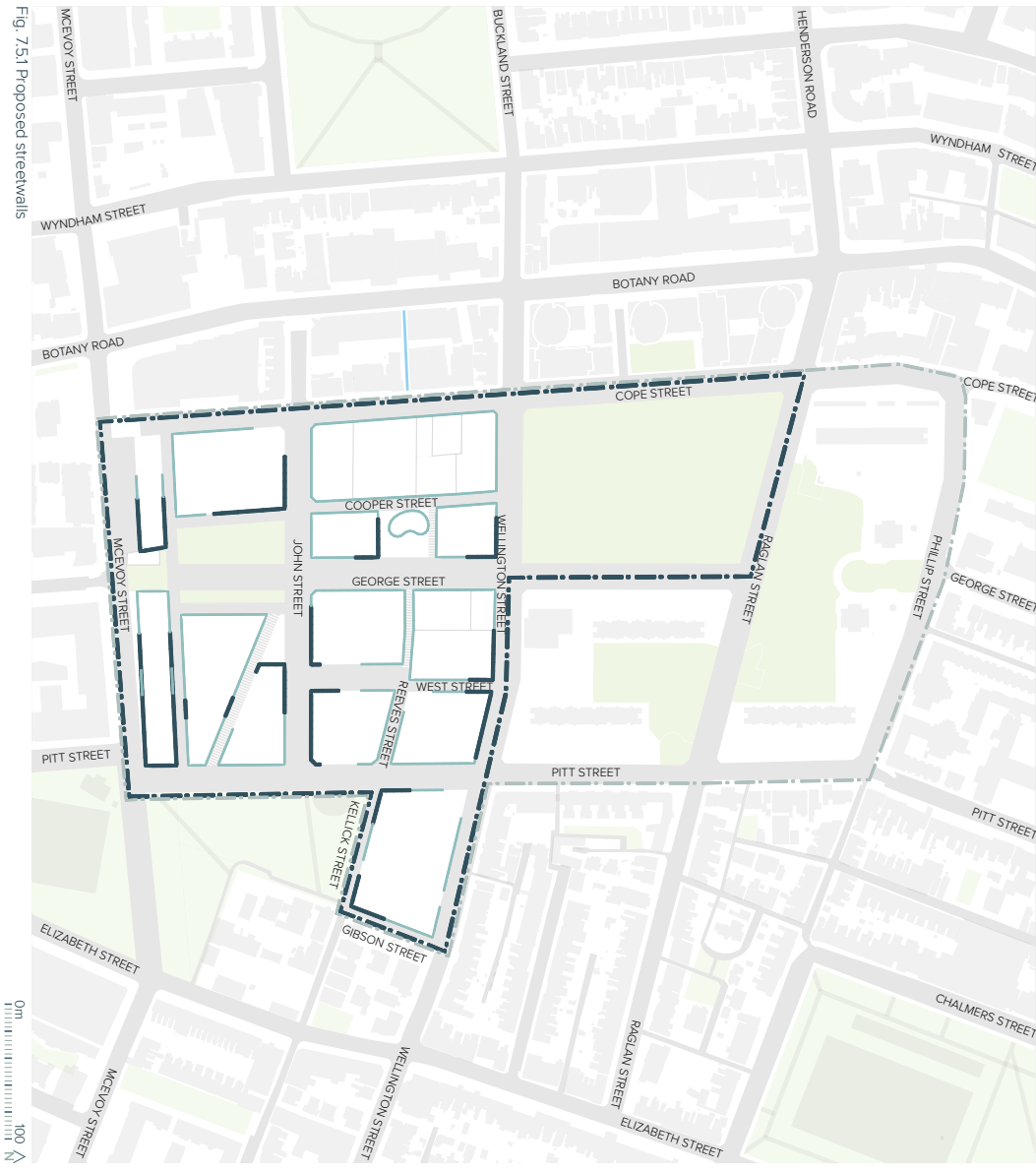


Fig. 7.5.1 Proposed streetwalls

Block Length

Where blocks are over 65 metres in length, breaks in the building form are provided to reduce visual bulk and massing

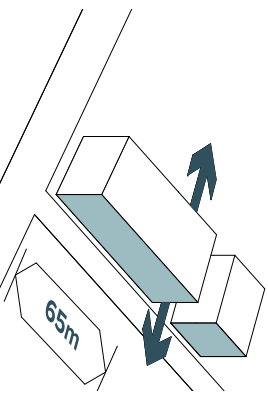


Fig. 75.2 Maximum block length

- Strategies include:
- Full height breaks to provide through site pedestrian links to publicly accessible courtyards and private courtyards
 - Double height through site pedestrian links into publicly accessible courtyards and private communal courtyards
 - Double height visual connections into private communal courtyards



Fig. 75.3 Reduction of block length
Source: George & Allen, Waterloo, Turner, 2019

Facade Length

Changes in facade treatment for buildings over 40 metres provides variety and visual interest at the pedestrian level

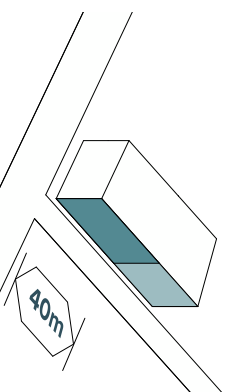


Fig. 75.4 Maximum facade length

- Strategies include:
- A maximum length of 40 metres for a singular facade expression.

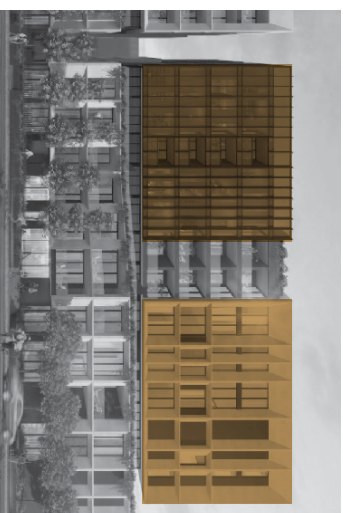


Fig. 75.5 Reduction of facade length
Source: Parkview Apartments, DKO Architects, 2017

Articulation

A mix of frontage widths provides modulation at the street level and views to new activities that work with pedestrian traffic to create an active and vibrant environment

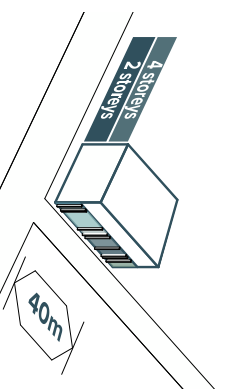


Fig. 75.6 Facade articulation

- Strategies include:
- Variation in form, proportion, position, quantity and composition to provide visual interest
 - Variation in building massing, materials, glazing extent and proportion, material finishes and colour, or architectural detail, to break up massing and height

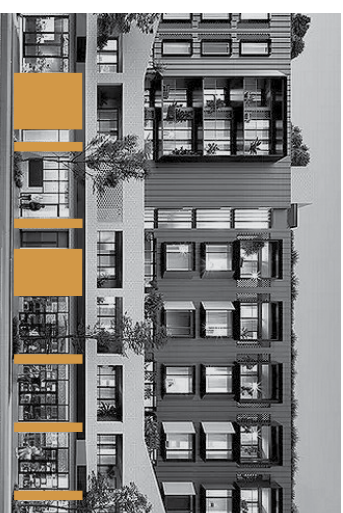


Fig. 75.7 Ground floor facade articulation
Source: The Rathbone, Scott Carver, 2017

For buildings over 4 storeys, modulation in the building form provides visual interest through changes in material, colour and depth of usable space

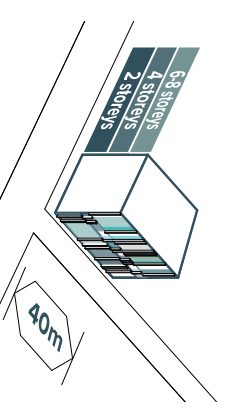


Fig. 75.8 Facade articulation

- Strategies include:
- Contrast in materials, articulation and fenestration patterns
 - Changes in the facade plane through reveals, recesses, recessed or projecting balconies, and bay or sawtooth windows



Fig. 75.9 Facade articulation
Source: Divercity, Waterloo, Turner, 2019



STREET LEVEL SETBACKS

Street level setbacks provide space for active uses along key streets and buffers for increased privacy to the private domain

Street setbacks are transition zones between the public and private domain that provide the opportunity for different interface responses to support social interaction.

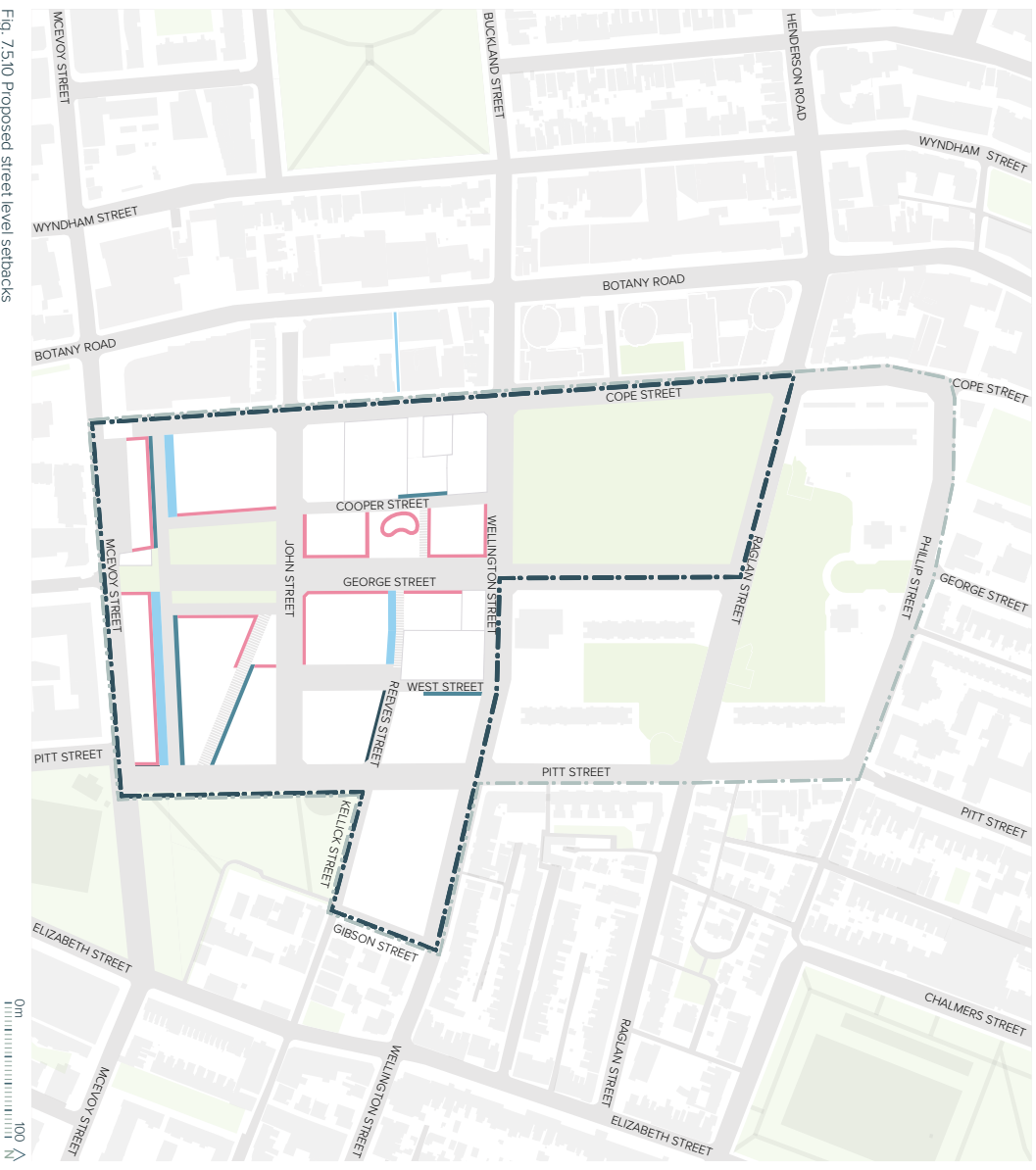
Non-residential setbacks have been provided along key streets to:

- Provide active uses at the interface between public and private domain, adjacent to community spaces, to extend and activate the public domain.
- Respond to flooding and freeboard requirements.

Residential setbacks have been provided along key streets to:

- Provide space for landscape buffers that increase privacy for ground level residential dwellings as a transition between public and private domain.
- Provide semi-private space that fosters social interaction among neighbours.
- Respond to flooding and freeboard requirements and allow for connections between changes in level.

INDICATIVE STREET LEVEL SETBACKS



STREET LEVEL SETBACKS

Street level setbacks provide a protected transition zone between the private and public domain

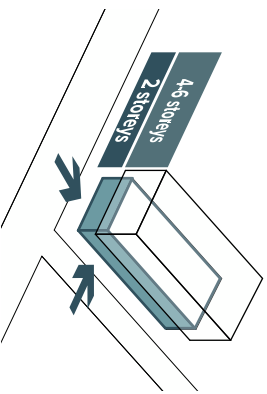


Fig. 75.11 Street level setbacks

- Strategies include:
- For non-residential uses setbacks provide space for entries and outdoor areas for activation
 - For residential uses, setbacks provide space for larger terraces, landscaped buffers to the street, and residential entries for increased passive surveillance, as well as space to respond to freeboard requirements



Fig. 75.12 Street level setbacks
Source: Union Ballmain, Turner, 2019

STREET CORNERS

Setbacks at street corners increases pedestrian visibility and passive surveillance

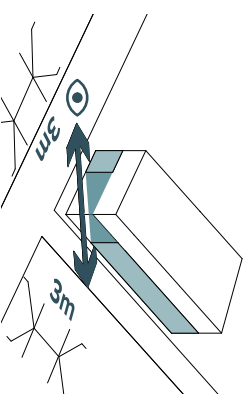


Fig. 75.13 Corner setback

- Strategies include:
- Ground and first level setback at corners to maintain pedestrian visibility
 - Building setback from boundary at corners to maintain pedestrian visibility and wind mitigation



Fig. 75.14 Street corner setbacks
Source: Asper, Turner, 2019

CHANGES IN MATERIAL

Modulation in the building form through changes in material, colour and depth of usable space are provided to reduce visual bulk and massing at the pedestrian level

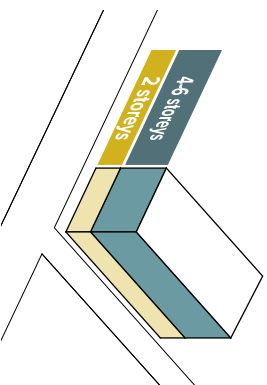


Fig. 75.15 Change of materials on lower levels

- Strategies include:
- Contrast in materials, articulation and fenestration patterns.
 - Changes in facade treatments

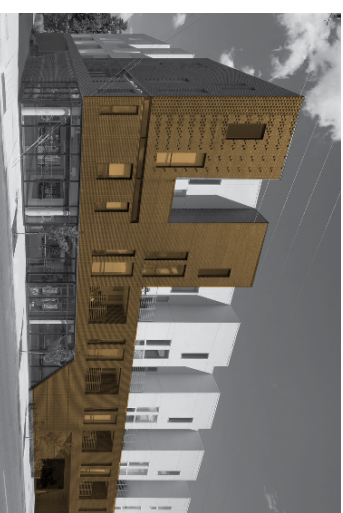


Fig. 75.16 Change of materials
Source: Tejon 35, Meridian 105 Architecture, 2014

CHANGES IN MATERIAL

Modulation in the building form through changes in material, colour and depth of usable space are provided to reduce visual bulk and massing at the pedestrian level

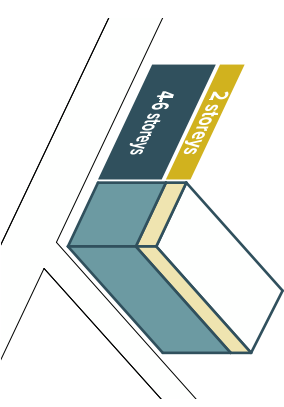


Fig. 75.17 Change of materials on upper levels

- Strategies include:
- Contrast in materials, articulation and fenestration patterns
 - Changes in facade treatments

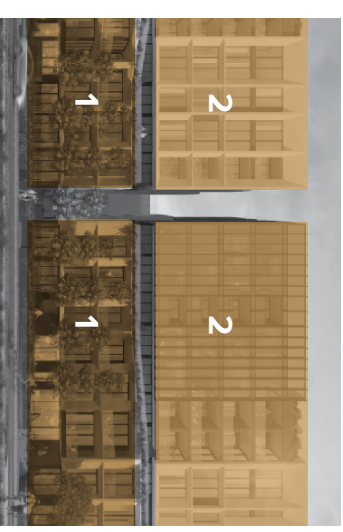
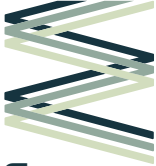


Fig. 75.18 Change of materials
Source: Parkview Apartments, DKO Architects, 2017

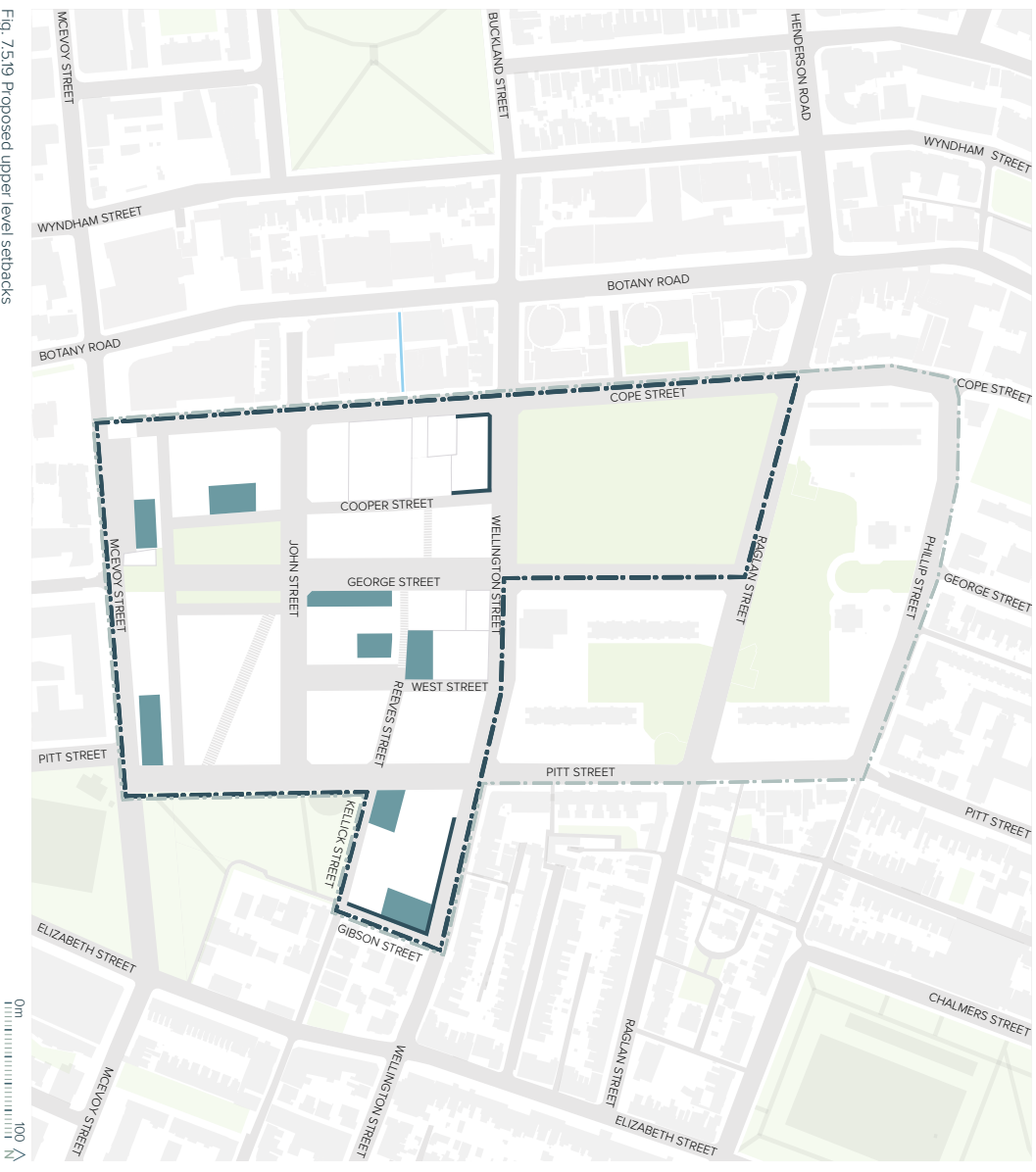


UPPER LEVEL SETBACKS OR CHANGE IN MATERIAL

Upper level setbacks help to decrease perceived building heights to better define and improve the experience at street level

- Upper level setbacks, attics and changes in facade plane have been provided along key streets to:
- Provide human scale to the street through reduced building heights at the interface between the public and private domain.
- Respond to existing context by providing an appropriate transition in height.
- Improve the pedestrian experience through increased daylight access to the public domain.

INDICATIVE UPPER LEVEL SETBACKS OR CHANGES IN MATERIAL / PLANE



UPPER LEVEL SETBACKS

Upper level setbacks are provided to reduce visual bulk and massing, for a maximum 6 storey streetwall height, at critical interfaces to existing context and the public domain

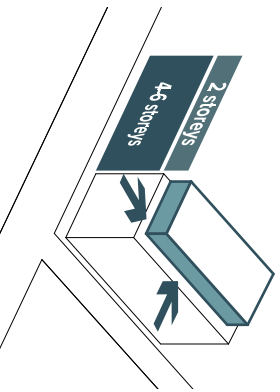


Fig. 7.5.20 Upper level setback

- Strategies include:
- 1 - 2 storey upper level setbacks to maintain existing streetwall heights and relationship to existing context

ATTICS

Attics are provided for additional typologies to increase housing and built form diversity whilst minimising visual bulk and massing impacts

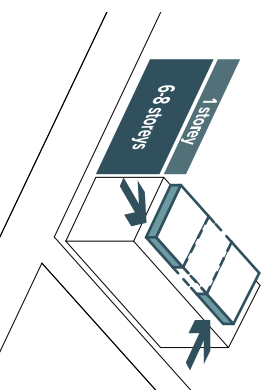


Fig. 7.5.22 Attic level setback

- Strategies include:
- Double height apartments
 - Dormer or clerestory windows

CHANGES IN FACADE PLANE

Modulation in the building form provides visual interest through changes in the depth of usable space and reduces visual bulk and mass

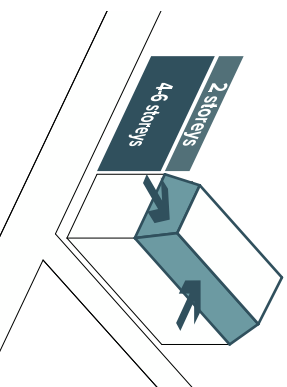


Fig. 7.5.24 Change of facade plane on upper levels

- Strategies include:
- Changes in the facade plane through reveals, recesses, recessed or projecting balconies, and bay or sawtooth windows



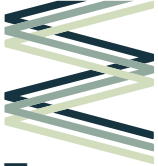
Fig. 7.5.21 Upper level setbacks
Source: Camden Courtyards, Sheppard Robson, 2017



Fig. 7.5.23 Attic level setback
Source: Union Bahrain, Turner, 2019



Fig. 7.5.25 Change of facade plane
Source: Tjomeky, Greve, Studio Local, 2018



NEIGHBOURHOOD BUILDINGS

Neighbourhood buildings provide small 'infill' forms that meet the ground and extrude the fine grained urban character vertically

MAXIMUM FLOORPLATE

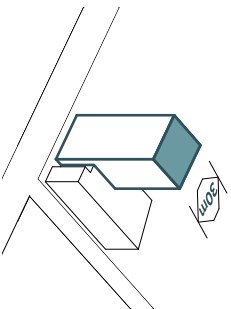


Fig. 7.5.26 Maximum floor plate size

Small floorplate sizes between 500 - 600 square metres GBA (for 15 to 20 storeys respectively) supports a finer grain character at street level.

Maximum dimension of 30 metres in any one direction.

Typically 5 - 6 dwellings per core.

MAXIMUM HEIGHT

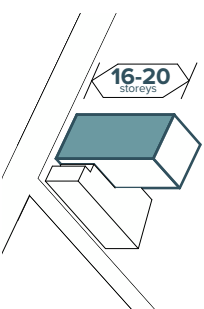


Fig. 7.5.29 Maximum height in storeys

Range in height between 16 - 20 storeys.

Slender form assists in mitigating wind effects and visual bulk and scale.

ENVELOPE

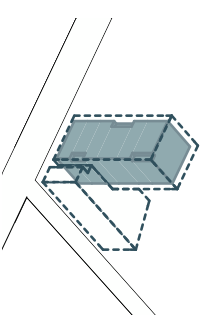


Fig. 7.5.32 Loose-fit envelope

Building envelope efficiency provides a lower efficiency that reflects the smaller floorplate, compared to larger floorplate tall buildings.

Increased amenity is provided through the reduced number of dwellings served by a common core.

Building form with direct relationship to the ground to maintain fine grain vertically.



Fig. 7.5.27 The Book Company HQ, Seoul
Source: NEED Architecture, 2017



Fig. 7.5.28 Rebel 1, Warsaw
Source: WMAA, 2013



Fig. 7.5.30 Building Puyfiredon 1101
Source: Estudio Pablo Gagliardo, 2017



Fig. 7.5.31 Asnières, Paris
Source: Louis Pallard, 2017



Fig. 7.5.33 Lower East Side Towers, NY
Source: Space 4 Architecture, 2017



Fig. 7.5.34 Huma Kabin
Source: UNA Architects, 2016

TALL BUILDINGS

Tall buildings provide a transition in scale that contributes to an attractive skyline and relates to existing heights within the locality

MAXIMUM FLOORPLATE

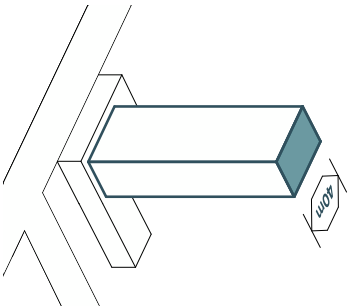


Fig. 7.5.35 Maximum floor plate size

Floorplate size up to 675 square metres. GBA maintain a slender form for reduced visual bulk and scale.

Maximum dimension of 45 metres in any one direction. Typically 6-7 dwellings per core.



Fig. 7.5.38
Gramercy, HK.
Source: Aedas, 2013



Fig. 7.5.39 Park Tower, Antwerp.
Source: Studio Farris Architects, 2014

MAXIMUM HEIGHT

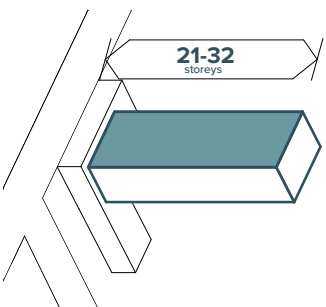


Fig. 7.5.36 Maximum height in storeys

Range in height between 21 - 32 storeys.

Slender form assists in mitigating wind effects.

The PANS OPS Limit (RL 126.4 metres) constrains maximum height. Any breach of the PANS OPS would need to be applied for through the relevant authorities and agencies to ascertain if it would be permissible.



Fig. 7.5.40 The Beacon, HK.
Source: Aedas, 2017



Fig. 7.5.41 Edificio Iainn.
Source: FGMF Arquitectos, 2012



Fig. 7.5.42 Unit Urban Living.
Source: Basíches Arquitectos Associados, 2014

ENVELOPE

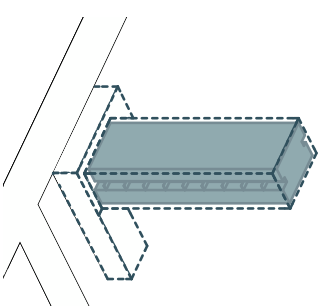
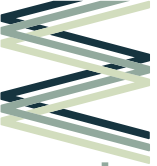


Fig. 7.5.37 Loose-fit building envelope

Building envelope efficiency provides for a higher efficiency that reflects the larger floorplate.

Building form on podium bases that range from 2 to 8 storeys.



7.5.2 RESPONSE TO SOLAR, WIND, FLOODING, ESD, NOISE AND POLLUTION

The built form for Waterloo South responds to key environmental constraints that includes solar access, wind, flooding, pollution and noise

SOLAR RESPONSE



Fig. 7.5.43 Solar access analysis

The desired built form outcome for Waterloo South has been developed with consideration to achieving or exceeding minimum required solar access under the relevant state and local policies

The Waterloo South public domain and built form have been designed to achieve solar access to existing and future parks for a minimum of 4 hours between 9am and 3pm to a minimum 50% fixed area of the park area at mid winter.

Building envelopes have been designed to ensure that **70-75% of the primary envelope facade area - North, East and West - receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid winter.**

Refer to Appendix 79 for further details.

WIND RESPONSE



Fig. 7.5.44 Wind tunnel model
Source: Windtech, 2020

Wind tunnel testing of Waterloo South indicates that wind conditions for the majority of trafficable outdoor locations within and around the development will be suitable for their intended uses

Wind mitigation measures that have been incorporated as part of the Waterloo South public domain and built form include:

- Inclusion of densely foliating evergreen shrubs, capable of growing to a height of 1m above a 0.5m planter box
- Chamfering of 2 buildings
- Inclusion of 3.0m wide ground level awning along key façades with the exception of George Street which provides a 2.5m wide ground level awning to accommodate existing trees.
- Inclusion of 2.0m high screen along the southern perimeter of 1 affected podium
- Retention of trees as noted in the tree retention plan
- Inclusion of trees as noted in the tree replenishment plan

Refer to the report by Windtech for further details.

FLOODING



Fig. 7.5.45 WSUD mitigation response
Source: AECOM, 2020

Flooding and stormwater analysis of Waterloo South indicates the proposed development does not worsen the flood levels compared to existing conditions

Consideration of a range of flood mitigation measures have been considered as part of the Waterloo South public domain and built form, these include:

- On-site detention
- Provision of appropriate building flood planning levels (FPLs), to offset adverse flood impacts during extreme weather events. The adopted criteria for setting of FPL was the maximum of Probable Maximum Flood (PMF) level and the 100 year Annual Recurrence Interval (ARI) + 0.5m level.
- Building setbacks
- Improved drainage and sound emergency response frameworks
- A shelter in place strategy for the buildings over evacuation has been adopted, to avoid unnecessary vehicle or pedestrian movements during an extreme storm event, as the duration of inundation is relatively short and the rate of rise is relatively rapid.
- For public open space areas, a refuge point within a facility that can be accessed easily.
- WSUD measures implemented in the public domain for water quality enhancement.

Refer to the report by AECOM for further details.

POLLUTION (AIR QUALITY)



Fig. 7.5.46 Topography influences air quality
Source: SLR, 2020

Landscaping and built form measures to mitigate pollution have been considered as part of the development of Waterloo South

The existing air-quality throughout Waterloo South has been reviewed. The following mitigation measures have been considered as part of the Waterloo South public domain and built form:

- Built form has been designed to avoid street canyons
- Vegetation barriers to help mitigate air pollution
- Vegetation planned for the development to optimise the air quality throughout Waterloo South.

Refer to the report by SLR for further details.

NOISE

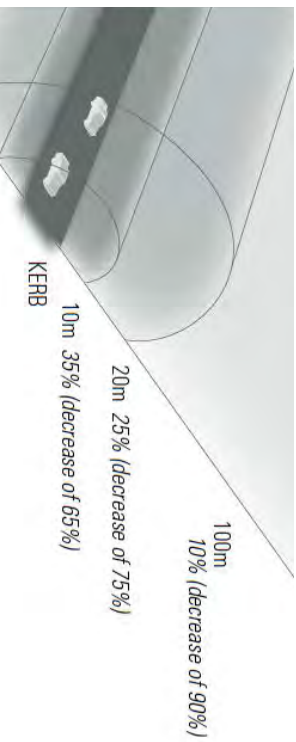


Fig. 7.9.47 Percentage of pollutant concentration relative to kerbside concentration
Source: DoP, 2008

A range of mitigation measures have been considered as part of the development of Waterloo South

The existing noise environment throughout Waterloo South is dominated by road traffic noise. The following mitigation measures have been considered as part of the Waterloo South public domain and built form:

- Providing options for building layout and orientation to reduce noise impacts on residential dwellings at higher levels in order to meet City of Sydney internal noise requirements
- Provide quiet spaces within the precinct by using the built environment to shield areas from local road traffic noise
- Include traffic calming measures to reduce noise from local traffic.

Refer to the report by SLR for further details.

7.5.3 INDIVIDUAL LOT STUDY

Lot S was selected to test outcomes and verify the projected yield targets

The individual lot study tests the design ideas and strategies, their outcomes and verifies the projected yield targets and amenity for the existing and future context against the Place Performance Measures, Apartment Design Guide and the City of Sydney Development Control requirements.

Lot S

Lot S was chosen for the detailed site study as it contains a mix of built form heights and typologies with a mix of building uses that includes residential, retail and supermarket uses. The site is also constrained by the alignment of the train line and the heritage listed pressure tunnel that crosses diagonally below the lot.

Lot Selection

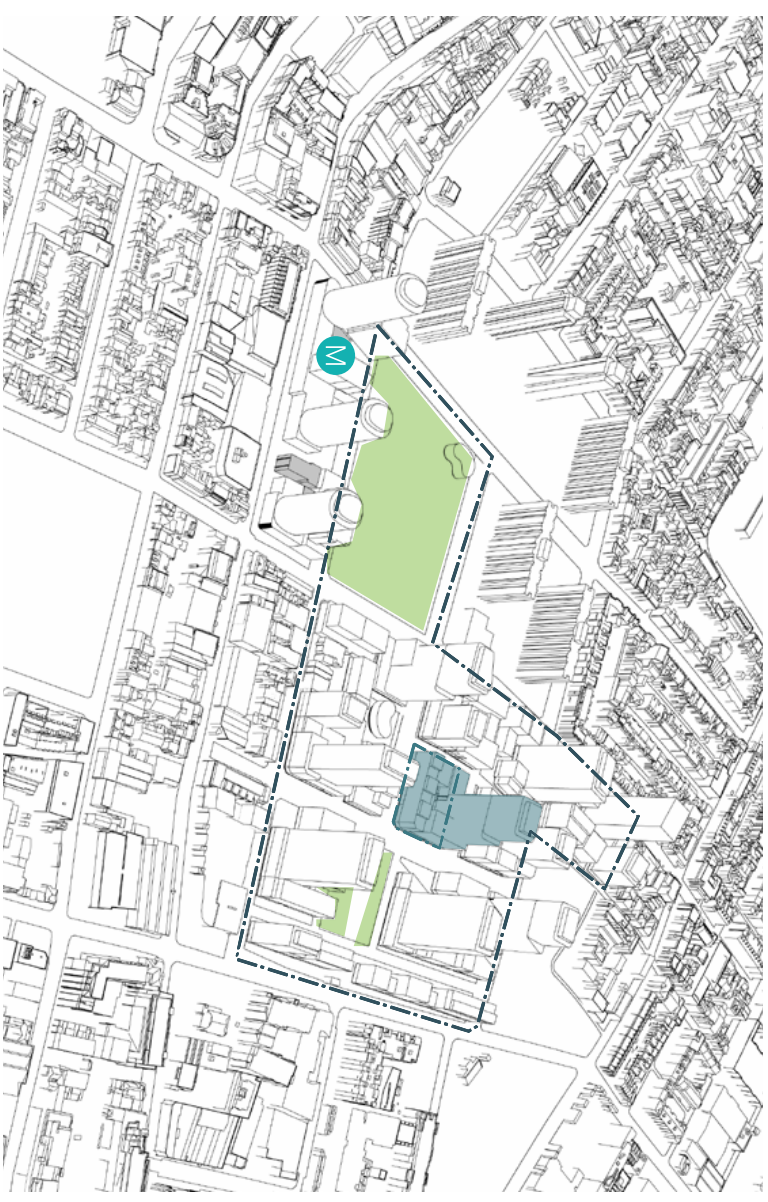
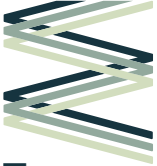


Fig. 7.5.48 Selected lot analysis

- Legend**
- Waterloo South Boundary
 - Lot S Boundary
 - M Metro Station
 - Open Space
 - Built form



POLICY CONTEXT

Good apartment design delivers better living environments for residents, and enhances streetscapes and neighbourhoods across the state.

SEPP 65 and the Apartment Design Guide (ADG) encourages a more consistent approach to apartment design across the state, more certainty for councils, architects and applicants, and promotes design innovation through Design Review Panels.

The ADG helps to achieve better design and planning for residential apartment development, by providing benchmarks for designing and assessing these developments. The ADG provides objectives, design criteria and design guidance on how residential development proposals can meet the principles through good design and planning practice.

If a DCP contains provisions that specify requirements, standards or controls identified in Schedule 6A of SEPP 65, those DCP provisions will have no effect, and the relevant ADG provisions will prevail.

SEPP 65, NSW Dept. of Planning & Environment, 2017

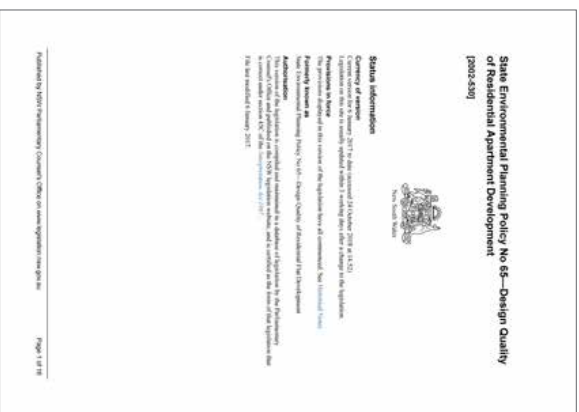


Fig. 7.5.49

SEPP 65 – Design Quality of Residential Apartment Development provides a consistent planning framework to improve the design quality of residential apartment development in NSW. It gives legal force to the ADG.

Schedule 1 sets out nine design quality principles, which must be considered when designing proposals, and during the development assessment process:

- Context and neighbourhood character
- Built form and scale
- Density
- Sustainability
- Landscape
- Amenity
- Safety
- Housing diversity and social interaction
- Aesthetics

Apartment Design Guide, NSW Dept. of Planning & Environment, 2015



Fig. 7.5.50

The ADG provides design guidance to improve the planning and design of residential apartment development. Apart from the non-discretionary development standards, the ADG is not intended to be and should not be applied as a set of strict development standards.

Parts 3 and 4 provide detailed objectives, design criteria and design guidance of provisions siting a development and designing the building, including the ADG provisions identified in clause 6A of SEPP 65 that prevail over any similar provisions in a Council DCP:

- Visual privacy
- Solar and daylight access
- Common circulation and space
- Apartment size and layout
- Ceiling heights
- Private open space and balconies
- Natural ventilation
- Storage

A development needs to demonstrate how it meets the objectives and design criteria set out in Parts 3 and 4. The design criteria sets a clear and measurable benchmark on how the objective can be practically achieved.

If it is not possible to satisfy the design criteria, developments must demonstrate how, through good design, the objective can be achieved. The design guidance can be used to assist in this. For example:

ADG Objective 3B-2 Design guidance: **Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%**

**Planning Circular,
NSW Dept. of Planning & Environment, 2017**



Fig. 7.5.51

The Planning Circular provides guidance on the application of the ADG in the development assessment process under SEPP 65

- ADG Objective 3D-1** Design criteria:
Developments to **achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9am and 3pm mid winter.**
- ADG Objective 4A-1** Design criteria:
Living rooms and private open spaces of at least **70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter.**
- A **maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter.**

**Sydney DCP 2012,
City of Sydney**

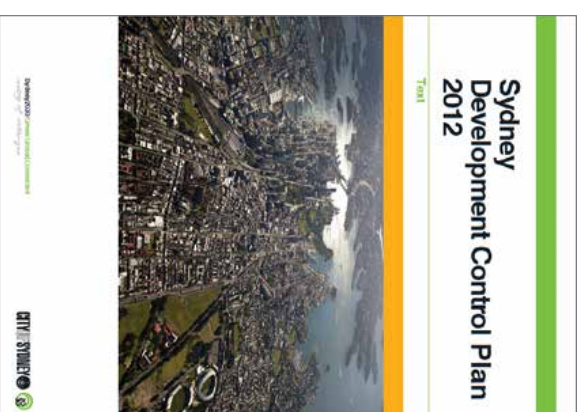
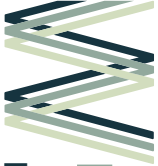


Fig. 7.5.52

The Sydney DCP 2012 provides detailed guidance on the implementation of policy outlined in the Sydney LEP 2012.

The Sydney DCP provisions includes the recognition and support of distinctive character areas, including heritage, and design which responds to this, the enhancement of the public realm, integration of Sustainable Sydney 2030 objectives, and encouraging ecologically sustainable development. For example:

- Clause 4.2.3.1 (2)** provision states:
Development sites and neighbouring dwellings are to achieve a minimum of 2 hours direct sunlight between 9am and 3pm on 21 June onto at least 1 square metre of living room windows and **at least 50% of the minimum amount of private open space.**
- Clause 4.2.3.1 (3)** provision states:
New development must not create any additional overshadowing onto a neighbouring dwelling where that dwelling currently receives less than 2 hours direct sunlight to habitable rooms and 50% of the private open space between 9am and 3pm on 21 June.



LOTS S ANALYSIS

LOT S TYPICAL BLOCK

Lot S was chosen for a detailed site study to explore the following unique combination of elements:

- The site provide a transition between Waterloo Common to the south and the rest of the Estate.
- The site is also challenged by an east/west slope.
- A mix of street typologies that includes George Street, a shared slow street, a shared zone laneway and a pedestrian laneway.
- A mix of built form heights ranging from 4 to 31 storeys, with streetwall heights ranging from 4 to 8 storeys.
- A courtyard building typology.
- A mix of building uses that includes residential, community and retail uses, including a supermarket.
- Shadow impacts from and to adjacent buildings.

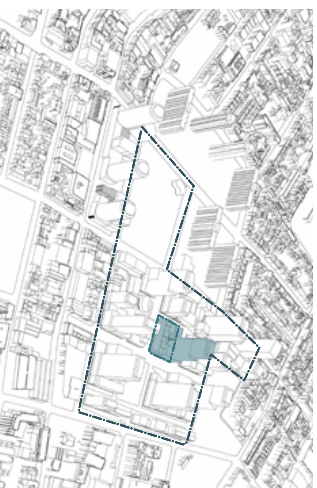


Fig. 7.5.53 Lot S



- Legend**
- Open Space
 - Proposed Waterloo Metro Development
 - Proposed Future Built Form
 - Analysed Lot Boundary
 - Existing High and Moderate Value Trees Retained
 - New Proposed Trees

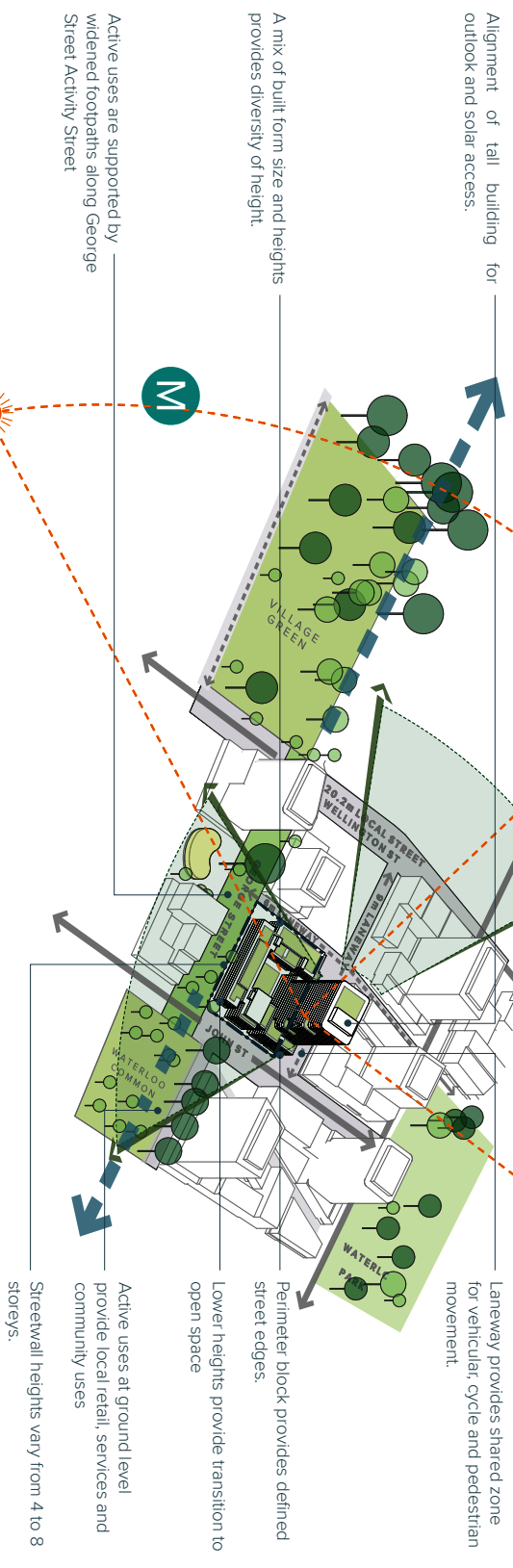
Fig. 7.5.54 Lot S Mossing



LOT 5 SITE ANALYSIS



Open Space Accessibility
Residential entries are within 100m of an open space typology (public or private) to connect residents to nature for increased health and well-being



- Legend**
- Open Space
 - Proposed Waterloo Metro Development
 - Proposed Future Built Form
 - Analysed Lot Boundary
 - Existing High and Moderate Value Trees Retained
 - New Proposed Trees
 - Sun path on June 21
 - Views
 - Pedestrian Boulevard
 - Streets
 - Lot Boundary

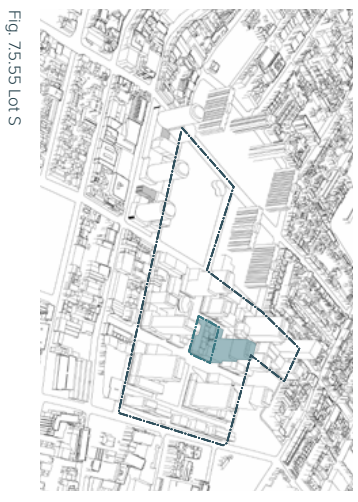
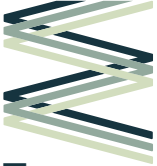


Fig. 75.55 Lot 5

Fig. 75.56 Lot 5 site analysis



LOTS OPEN SPACE

A range of open space typologies are provided to retain existing trees, provide access to open space within 200 metres of building entries and support a range of social interaction opportunities for the community.



Urban Forest

Landscape setbacks and setback zones retain existing high and moderate value trees to provide mature landscape elements. Proposed trees build upon the existing tree lined street character.



Fig. 7.5.57 Lot S urban forest

- Legend**
- Existing high and moderate value trees retained
 - Proposed trees
 - George Street Activity Street
 - Landscape retention zone

- Tree Retention**
- High value trees 1 (33%)
 - Moderate value trees 2 (24%)

- Tree Replacement Ratio**
- 3 : 1
Target for Waterloo South

Productive Landscape Target
(30% provided within public open space and 70% within the development lots)



Fig. 7.5.58 Setbacks for tree retention
Joynton Avenue, Green Square
406 PLANNING PROPOSAL _ 08.04.2020



Fig. 7.5.59 Urban plaza
Civic Place, Green Square



Open Space

Land dedication for an increased public domain provides for the retention of existing high and moderate trees. Communal open space at street and roof levels provide for a range of open space typologies and maximise solar access to these spaces.

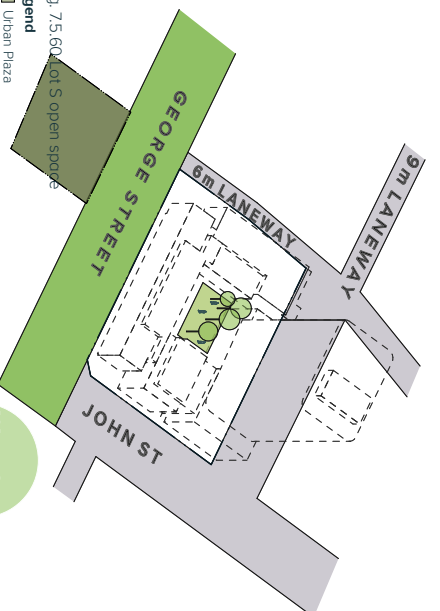


Fig. 7.5.60 Lot S open space

- Legend**
- Urban Plaza
 - George Street Activity Street
 - Communal Open Space

Lot S Site Area

3,985 m²

- Open Space**
- Deep Soil (Provided at street level) 350 m² (8% of site area)
 - Communal Open Space (Above street level) 860 m² (21% of site area)
 - Vertical Villages (Additional communal spaces / 50 dwellings) 360 m² (9% of site area)

Total Open Space

4,570 m² (38% of site area)



Fig. 7.5.61 Communal open space
Big Yard, Berlin



Fig. 7.5.62 Common open space on roof level, The Commons, Melbourne



Landscape Replacement Area Control (LRA)

A mix of open spaces, vertical gardens and planter boxes on private open space provides greater access to nature to promote health and well-being.

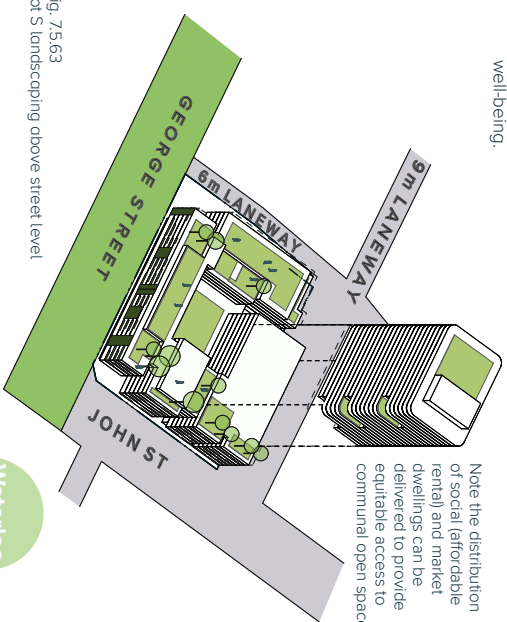


Fig. 7.5.63 Lot S landscaping above street level

Landscape Replacement Area (LRA)

Target LRA - 80% of Site area
3,188 m²
Within S, 38% of the target LRA is provided as open space

- Additional 42% of landscape to meet the target LRA is provided through:**
- Landscaped Areas (Non-trafficable space above street level) 690 m² (17% of site area)
 - Planter Boxes (Horizontal area of planters within private open space) 600 m² (15% of site area)
 - Vertical Gardens (Vertical area of landscaped facade) 400 m² (10% of site area)



Fig. 7.5.64 Vertical village open space
The Carve, Oslo



Fig. 7.5.65 Rooftop productive garden
The Commons, Melbourne

Note the distribution of social (affordable rental) and market dwellings can be delivered to provide equitable access to communal open space



LOT S STREET INTERFACE

A richer and more varied street level experience is supported through the **fine grain lot sub-division**. This provides **flexibility** in staging and enables more innovative responses.



Street Level Connectivity
Through site connections add to the network of accessible and safe connections to promote walking and cycling.

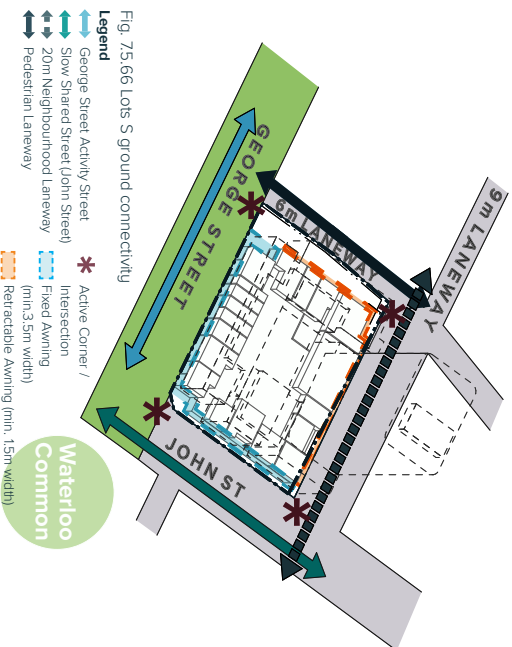


Fig. 7.5.66 Lot S ground connectivity

- Legend**
- George Street Activity Street
 - Slow Shared Street (John Street)
 - 20m Neighbourhood Lane
 - Pedestrian Lane
 - Active Corner / Intersection
 - Fixed Awning (m/n, 3.5m width)
 - Retractable Awning (m, 1.5m width)

Waterloo Common

- Small Block**
Built form articulation is required
- Intersection Density**
No. Intersections 4
Target minimum 10 building entries / 100m facade
- Building Entries**
Retail Entries 17
Community Entries 1
Residential Entries 3

Pedestrian Shelter

Awnings are required for non-residential uses to provide pedestrian shelter



Fig. 7.5.67 The living street
The Woonerf, The Netherlands



Fig. 7.5.68 Active street corners
Sunny Hills, Sydney



Adaptable Ground Floors and Active Frontages
A range of non-residential frontage widths from extra small to large encourages a mix of business and services and promotes active public frontages for an activated street level experience.

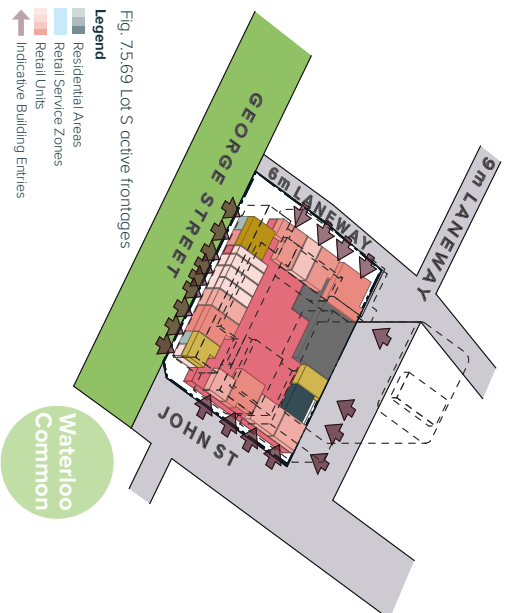


Fig. 7.5.69 Lot S active frontages

- Legend**
- Residential Areas
 - Retail Service Zones
 - Retail Units
 - Indicative Building Entries

Waterloo Common

- Ground Plane Diversity (Non-Residential)**
A range of frontage sizes provides street level diversity
- Active Frontage:**
Retail Frontage 193 m² (87%)
Community Frontage 154 m (70%)
Residential Frontage 14 m (6%)
27 m (1%)
- Non-Residential Area:**
Retail Area 3,800 m²
Community Area 3,580 m²
Ground Plane Transparency (Non-Residential) 220 m²
- 75% of facade to provide interior visibility to activate the public domain

Potential Frontage Sizes:

Frontage Size	Potential
XS	14.8%
S	21.3%
M	16.4%
L	24.4%
XL	23%



Fig. 7.5.70 Active ground plan



Building Character Diversity
The built form arrangement provides lot division flexibility to enable a finer grain of individual buildings that could be delivered separately. This supports staging flexibility and design excellence through design diversity.

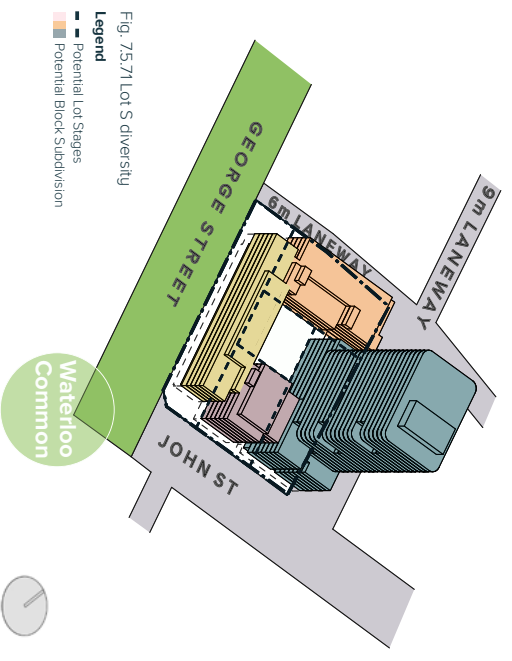


Fig. 7.5.71 Lot S diversity

- Legend**
- Potential Lot Stages
 - Potential Block Subdivision

Waterloo Common

- Block and Building Sub-division**
The mix of building form and height provides the opportunity to stage the block into a range of smaller components that can be delivered separately to provide built form diversity, with the flexibility to accommodate a diverse range of uses over time through floor-to-floor heights that can be adapted to non-residential uses.
- Building Envelope Heights (Floor to Floor Heights)**
Basement 1 4.5 m (For future adaptation to non-residential uses)
Ground Level 4.5 m (For future adaptation to non-residential uses)
Level 1 3.7 m (For future adaptation to non-residential uses)
Typical Residential 3.1 m (To achieve 2.7m ADG floor-ceiling height)



LOT S BUILDING STRATEGY

The building strategy provides a 'loose-fit' envelope that supports an active ground plane and design diversity, with taller buildings providing slender forms that reinforce the finer grain at street level.

Flexible Urban Form

Building envelopes are 25 - 30% larger than the gross floor area to allow for building articulation and amenity to support buildings that contribute to a lively, attractive and safe neighbourhood.

16+ STOREYS	Target Efficiency 74%
Achieved Efficiency	70%
8-15 STOREYS	Target Efficiency 72.5%
Achieved Efficiency	70%
3-7 STOREYS	Target Efficiency 70%
Achieved Efficiency	70%
1-2 STOREYS (Non-Residential)	Target Efficiency 90%
Achieved Efficiency	90%
(Residential)	Target Efficiency 60%
Achieved Efficiency	63%

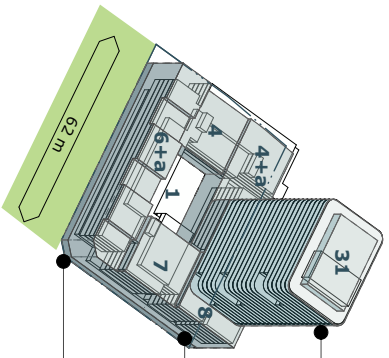


Fig. 5.72 Lot S efficiency

- Legend**
- Building Envelope Area (BEA) 0.6m Min
- Building Articulation Zone (BAZ) 1.2m - 2.5m or greater

Building Efficiency	Achieved
Site Area	3,895 m ²
Building Envelope Area (BEA)	35,520 m ²
Gross Floor Area (GFA)	27,620 m ² (78% of BEA)

Yield Analysis	Achieved
Studio / 1 Bed	118 (39%)
2 Bed	155 (51%)
3 Bed	30 (10%)
Total	304

Tall Buildings
Maximum Gross Building Area (GBA) to provide slender forms:
31 Storey Maximum Floorplate 675 m²

Vertical Village

Target 1 communal private open space / 50 dwellings

Parking & Loading

Reduction of parking rates in recognition of proximity to Waterloo metro station allows for reduced Basement footprints and the flexibility to retain existing trees and provide deep soil zones for landscaping.

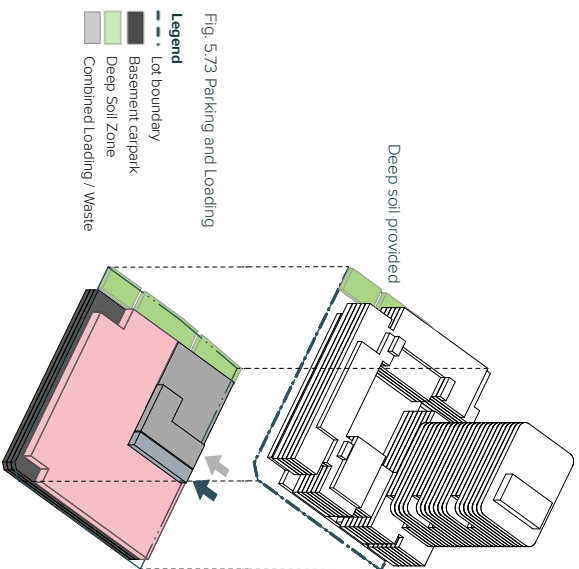


Fig. 5.73 Parking and Loading

- Legend**
- Lot boundary
- Basement carpark
- Deep Soil Zone
- Combined Loading / Waste

Carpark Area	11,900 m²
No. Cais	300
No. Levels	2.5

Combined Access and Services Strategy

Combined basement access reduces the number of vehicle entries on streets for a more active ground plane to promote active transport modes. Vehicle entries are located in quieter streets to reduce impact to local traffic flows.

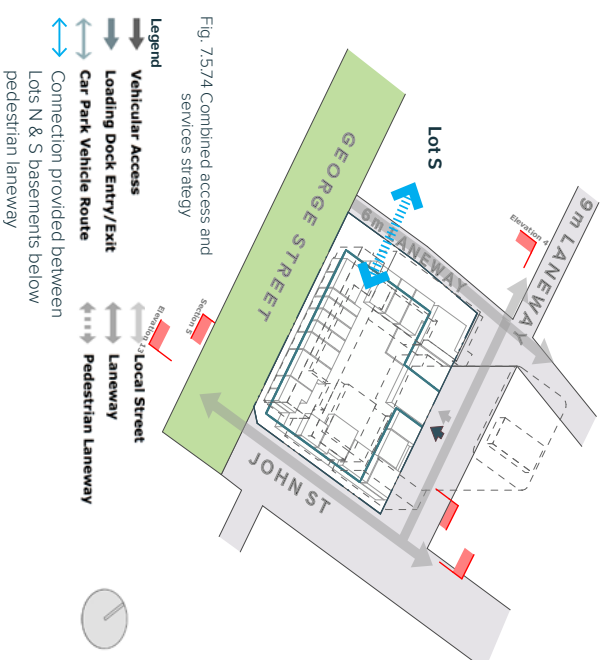


Fig. 7.5.74 Combined access and services strategy

- Legend**
- Vehicular Access
- Loading Dock Entry/Exit
- Car Park Vehicle Route
- Connection provided between Lots N & S basements below pedestrian laneway
- Local Street
- Laneway
- Pedestrian Laneway

Loading & Servicing
Combined waste, loading and services provided within Lot S to meet Lot S and N requirements to minimise vehicle entries at street level

Building Entries
Target for Inactive Facades Maximum 7m inactive / blank facade

In circumstances where blank or inactive facades greater than 7m is unavoidable, public art, street murals or affordances to be provided to present an attractive and interesting appearance.

LOT S _ SOLAR ACCESS SUMMARY

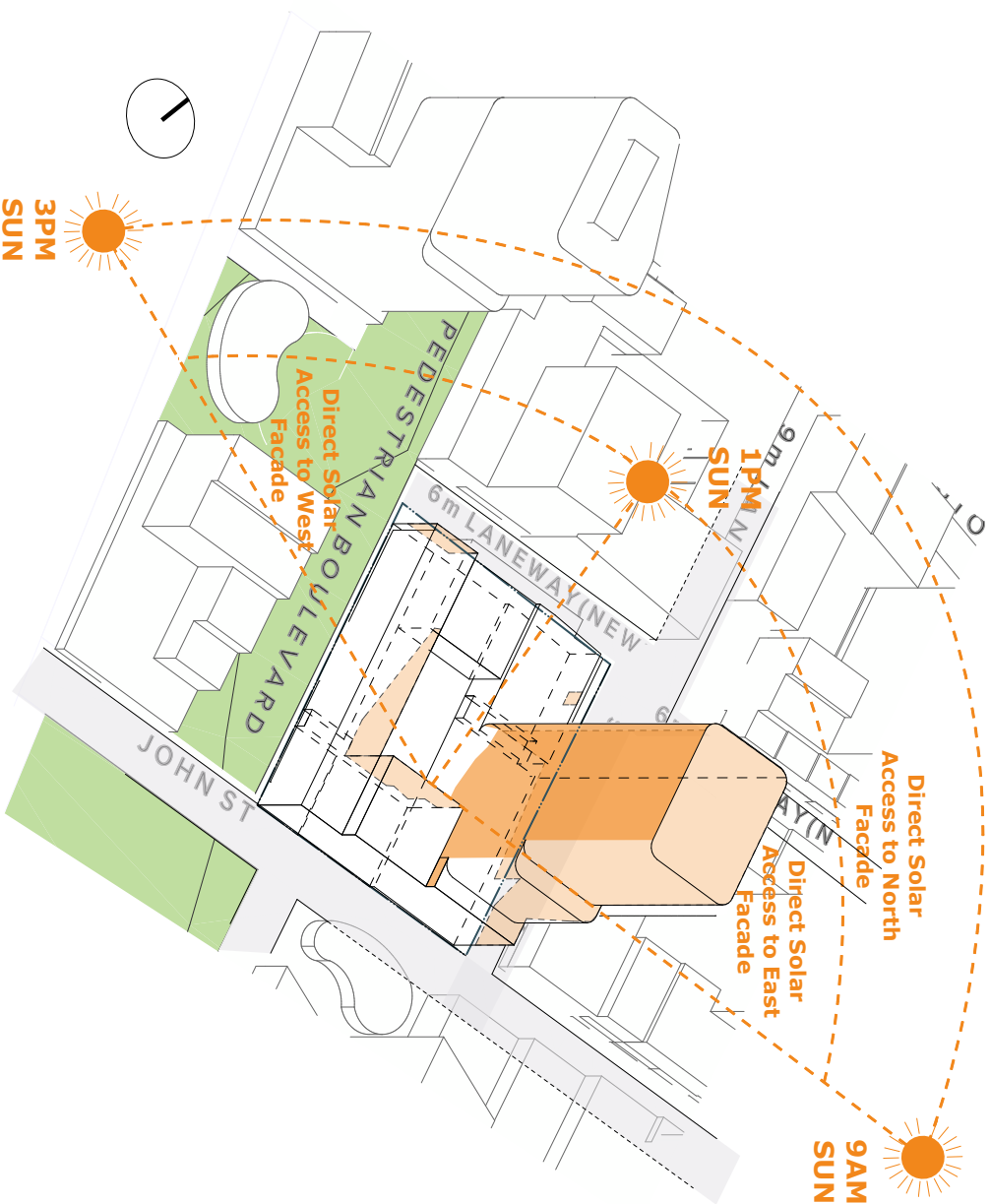
The Waterloo South Indicative Concept Proposal building envelopes have been tested to ensure that **70-75% of the primary envelope facade area - North, East and West - receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid winter.**

The individual lot analysis validates the assumptions for the building envelopes, with Lot S meeting or exceeding the **ADG Objective 4A-1 Design Criteria for a minimum 70% of apartments to receive 2 hours direct sunlight between 9am and 3pm mid winter.**

SOLAR AND DAYLIGHT ACCESS (ADG 4A)

- Area of primary facade (West) that receives min. 2 hours direct sunlight
- Area of primary facade (East and North) that receives min. 2 hours direct sunlight

Fig. 75.75 Solar access





LOT 5 _ SOLAR ACCESS TO FACADES

73% of the primary envelope facade area (North, West and East) receives a minimum 2 hours solar access between 9am to 3 pm at mid-winter.

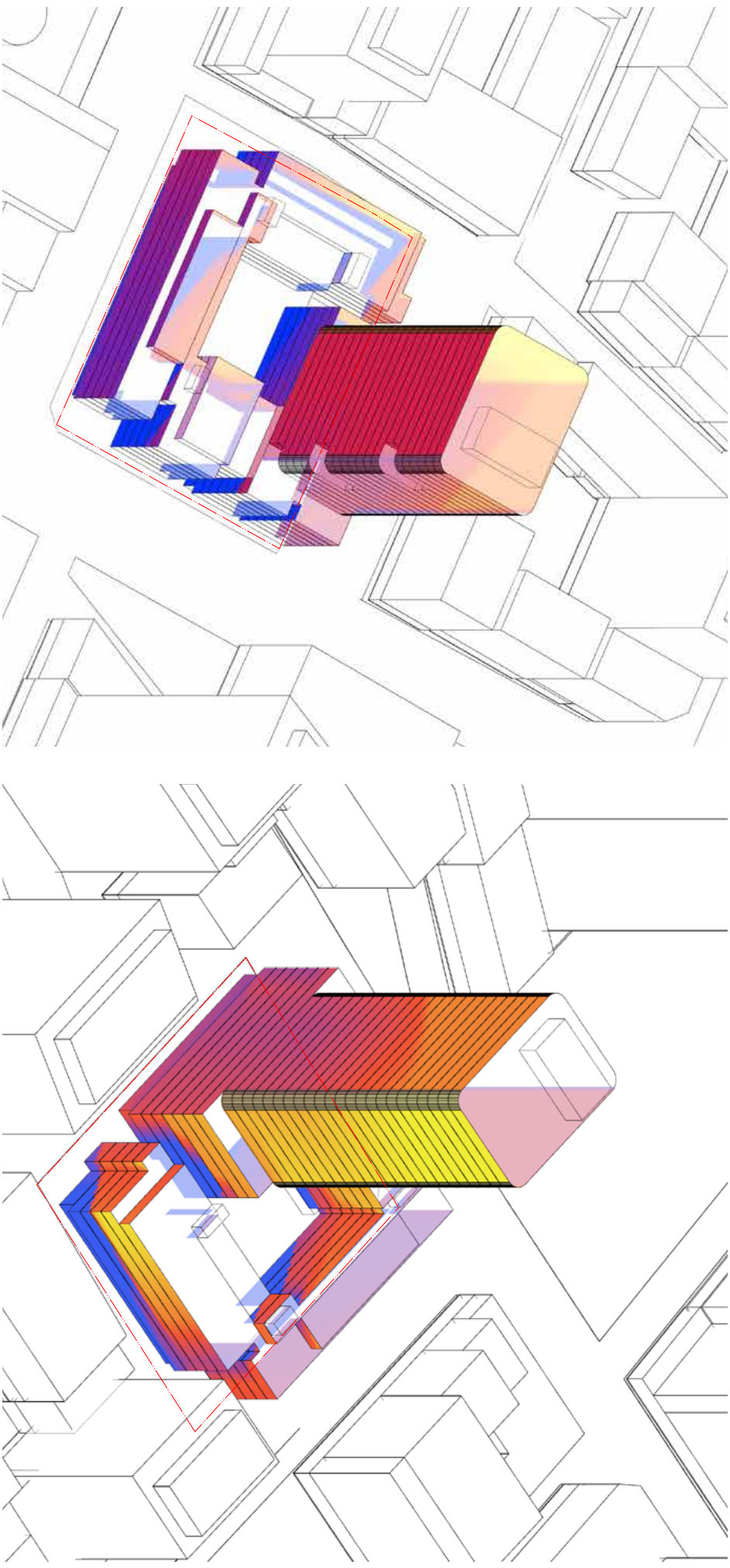


Fig. 75.76 Solar access to primary facades - West facade

Fig. 75.77 Solar access to primary facades - North and East facades

LOT 5 _SOLAR ACCESS TO COMMUNAL OPEN SPACE

Communal open spaces located on roof levels achieve a minimum of 50% direct sunlight to the principal usable part for a minimum of 2 hours between 9am and 3pm mid winter: **COMMUNAL OPEN SPACE (ADG 3D)**

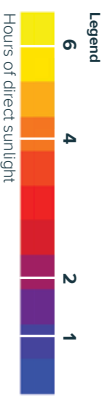
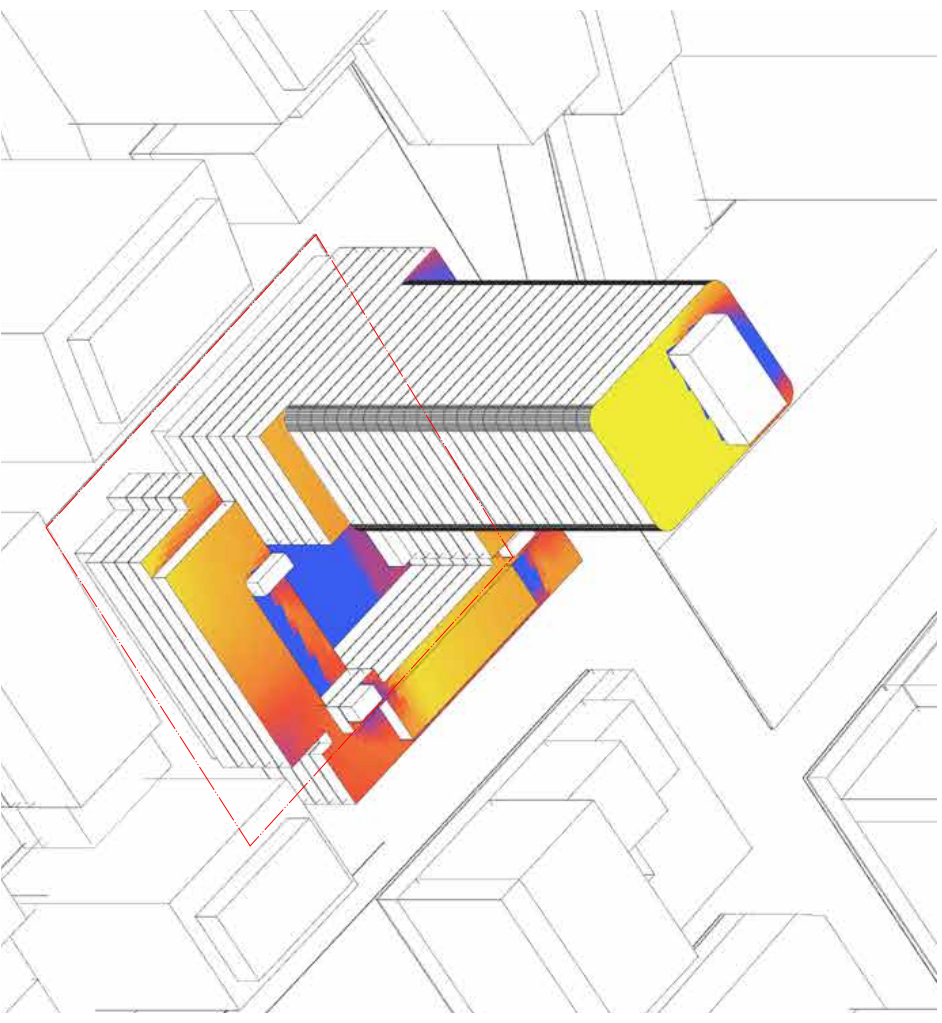
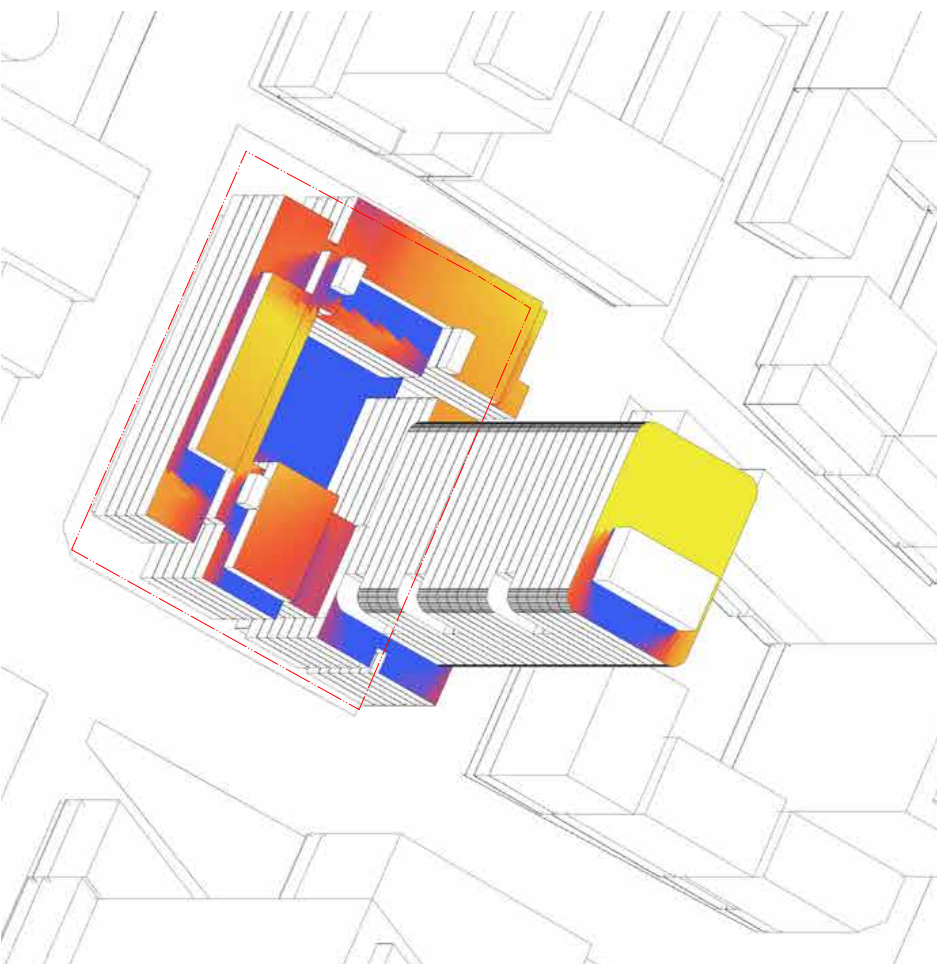
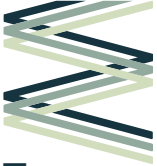


Fig. 75.78 Solar access to communal open space - View from the West

Fig. 75.79 Solar access to communal open space - View from the North-East



LOT S _ ADG DESIGN CRITERIA

The building strategy provides a 'loose-fit' envelope that provides a building articulation zone, supports an active ground plane and design diversity. Taller buildings provide slender forms that reinforce the finer grain at street level.



Building Envelope and Height

Building envelopes have been designed with consideration to ADG guidance for building depth and separation

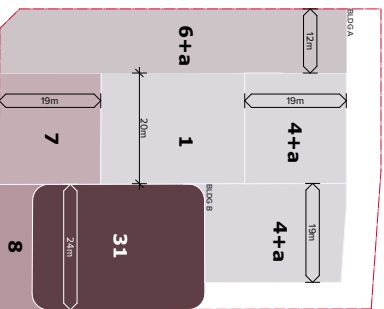


Fig. 75.80 Lot S Building Envelope Plan



Typical Podium Level

The apartment configuration for podium levels are designed to maximise amenity, respond to the streetwall alignments and podium setbacks, and provide good passive surveillance of the public domain and communal open spaces.

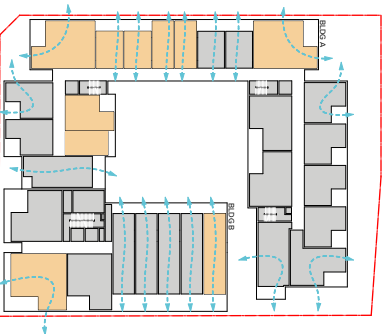


Fig. 75.81 Lot S typical mid-level floor plan



Typical Upper Level

The apartment configuration for upper levels are designed to maximise amenity through optimum orientation for solar access, slender floorplates for good natural ventilation and daylight, and a variety of outlooks for district views.

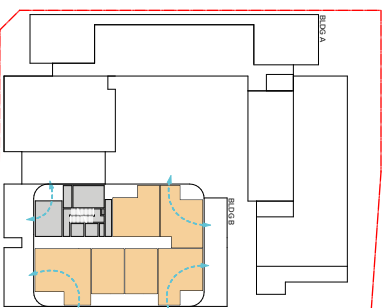


Fig. 75.82 Lot S typical lower level floor plan

0m
25m
N

0m
25m
N

0m
25m
N

Communal Open Space (ADG 3D)

Minimum 25% of Site Area

Building A	Building B
✓	✓

Additional communal open spaces provided for vertical villages

50% of the principal usable area receives 2 hours sunlight between 9am-3pm mid-winter

Deep Soil (ADG 3E)

7 - 15% of Site Areas

✓	✓
---	---

Visual Privacy (ADG 3F)

- Habitable/Balconies
- Non-Habitable

min. 6m
min. 3m

✓	✓
---	---

5-8 Storeys

- Habitable / Balconies
- Non-Habitable

min. 9m
min. 4.5m

✓	✓
---	---

+9 Storeys

- Habitable / Balconies
- Non-Habitable

min. 12m
min. 6m

✓	✓
---	---

Solar and Daylight Access (ADG 4A)

Minimum 70% of apartments receive 2 hours sunlight between 9am-3pm mid-winter
Max. 15% apartments with no direct sunlight

Building A	Building B
✓	✓

Natural Ventilation (ADG 4B)

Minimum 60% of apartments are naturally cross ventilated in the first 9 storeys

63%	60%
-----	-----

Ceiling Heights (ADG 4C)

- Habitable
- Non-Habitable
- 2 Storey Apartments
- Main Living Floor
- Secondary level
- Attic Spaces
- Height at Edge
- Minimum Ceiling Slope
- Mixed Use Areas

min. 2.7m
min. 2.4m
min. 2.7m
min. 2.4m
min. 1.8m
min. 30°
min. 3.3m

✓	✓
---	---

Apartment Size and Layout (ADG 4D)

Apartment Type	Building A	Building B
• Studio	min. 40 m ²	✓
• 1 Bedroom	min. 50 m ²	✓
• 2 Bedroom (1 Bath)	min. 70 m ²	70 - 89 m ²
• 3 Bedroom	min. 90 m ²	90 - 95 m ²
• 4 Bedroom	-	-

Sizes range from 35- 40 m² (Provided for diversity)

Private Open Space (ADG 4E)

- Studio
- 1 Bedroom
- 2 Bedroom
- 3 Bedroom

min. 4 m²
min. 8 m²
min. 10 m²
min. 12 m²

✓	✓
---	---

Common Circulation and Spaces (ADG 4F)

No. Apartments / Core

max. 8 - 12

✓	✓
---	---

Note:

Compliance is based on the 3 scenarios provided for the detailed lot studies on the following pages

LOTS _ ILLUSTRATIVE BLOCK PLANNING

BASEMENT 3 & 4

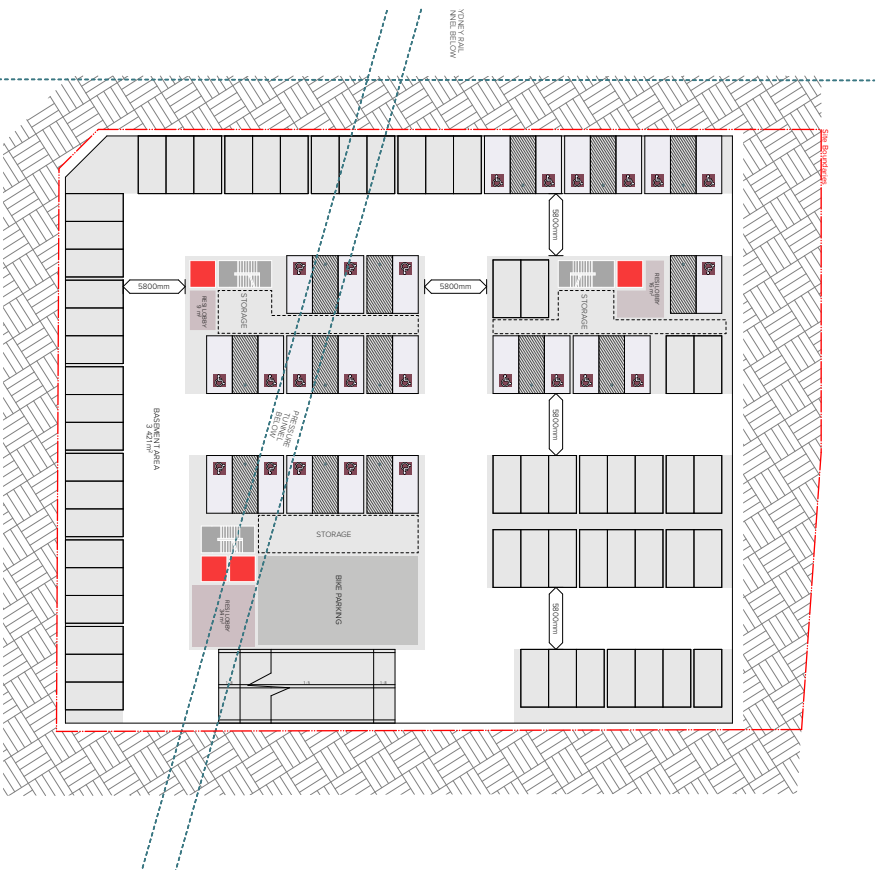


Fig. 7.5.83 Basement 03-04

BASEMENT 2

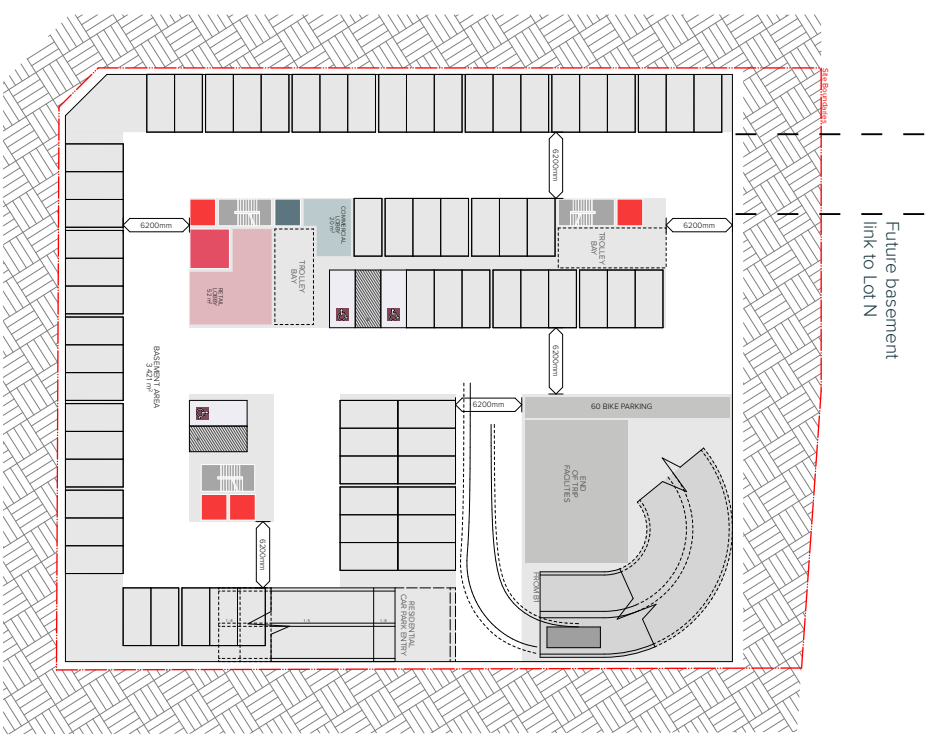
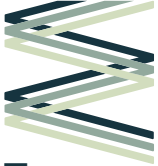


Fig. 7.5.84 Basement 02



LOT S _ ILLUSTRATIVE BLOCK PLANNING

BASEMENT 1

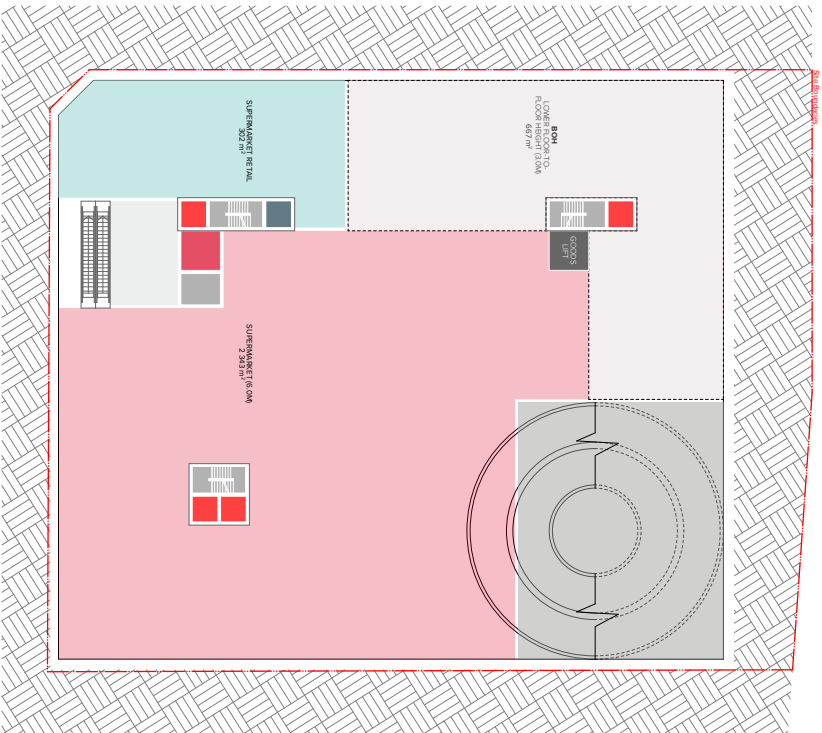


Fig. 75.85 Basement 01

LOWER GROUND LEVEL

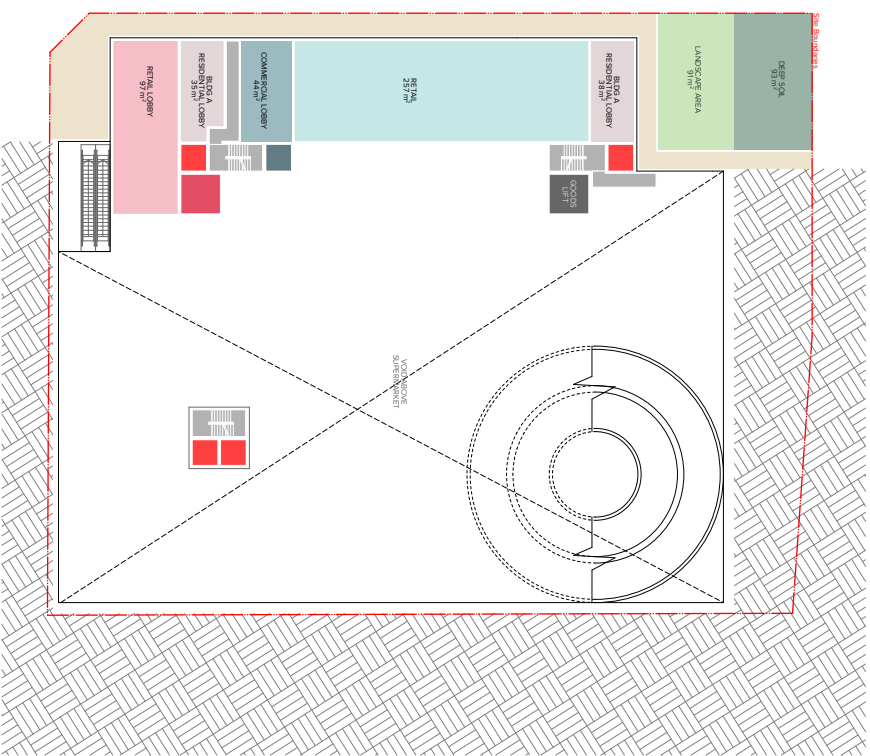


Fig. 75.86 Lower Ground Level

LOTS 5 - ILLUSTRATIVE BLOCK PLANNING

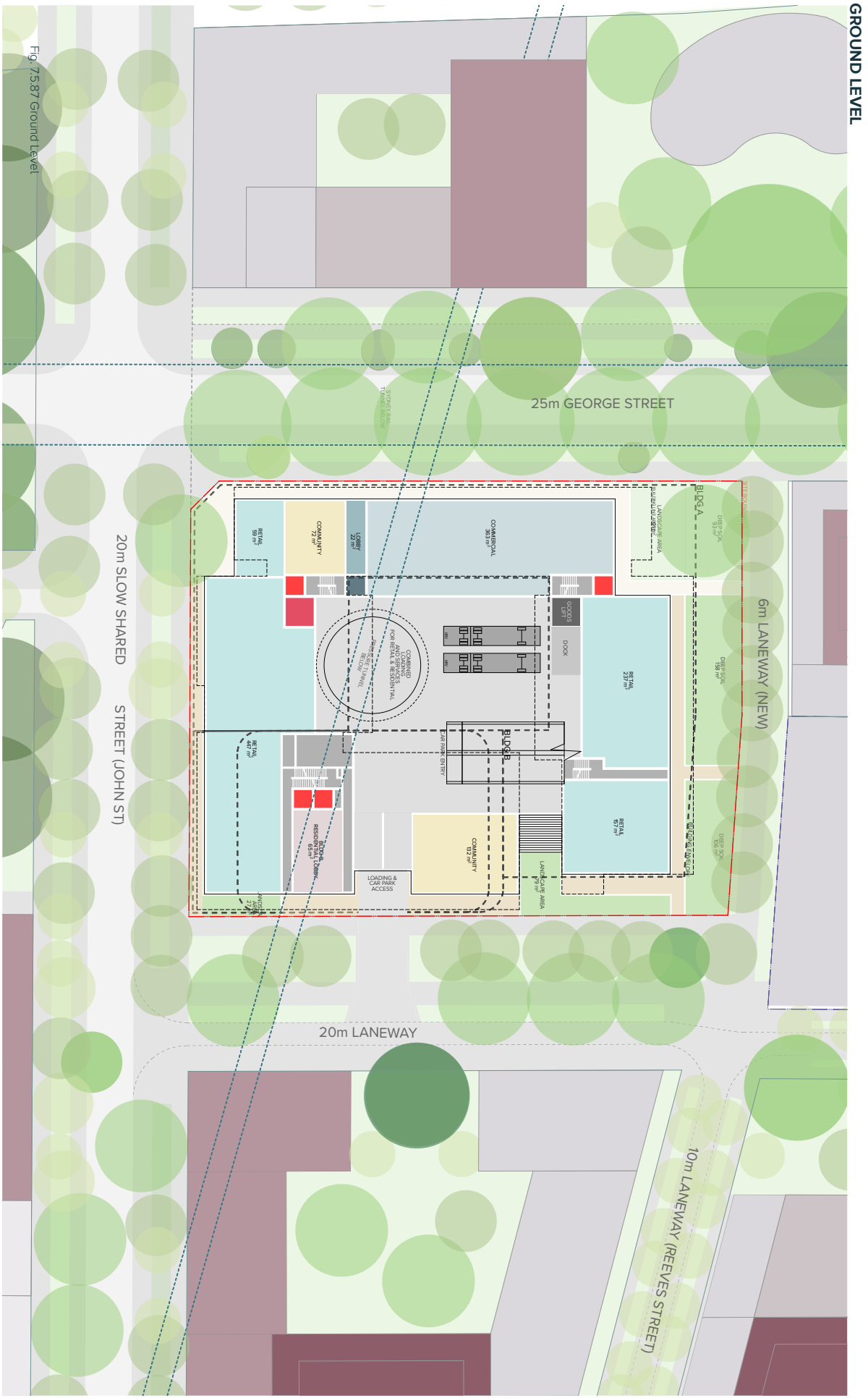
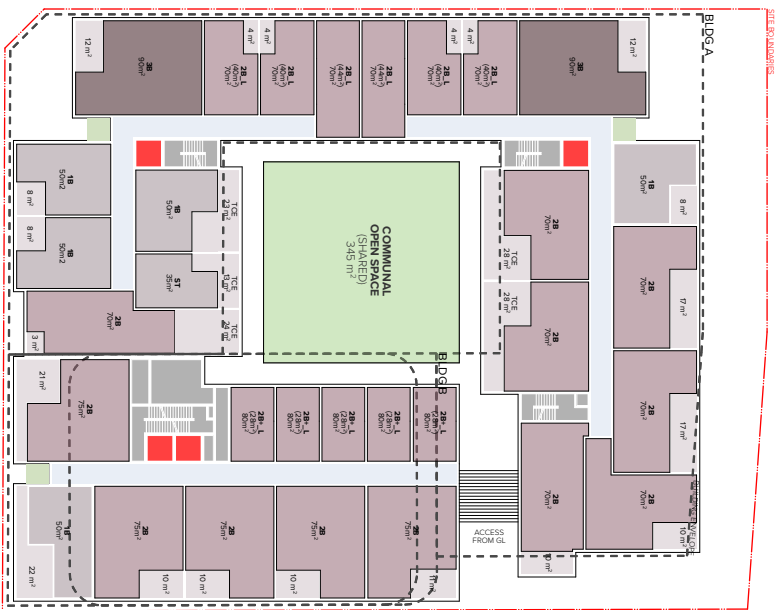


Fig. 7.5.87 Ground Level



LOTS S - ILLUSTRATIVE BLOCK PLANNING

LEVEL 1



LEVEL 2



Fig-75.88 Level 01

Fig-75.89 Level 02

LOTS _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 3



Fig. 75.90 Level 03

LEVEL 4



Fig. 75.91 Level 04



LOT S_ ILLUSTRATIVE BLOCK PLANNING

LEVEL 5



LEVEL 6



Fig: 75.92 Level 05

Fig: 75.93 Level 06

LOT 5 _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 7



Fig. 75.94 Level 07

LEVEL 8

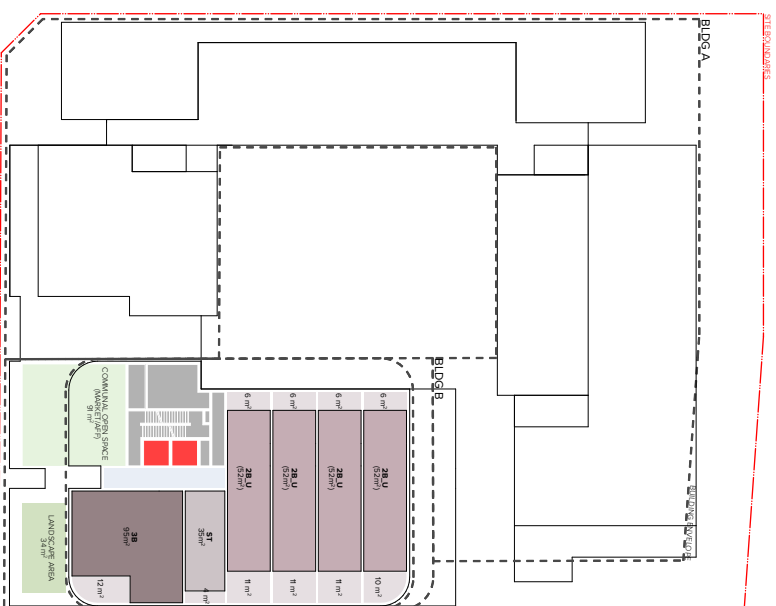
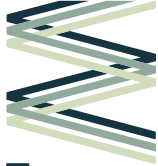
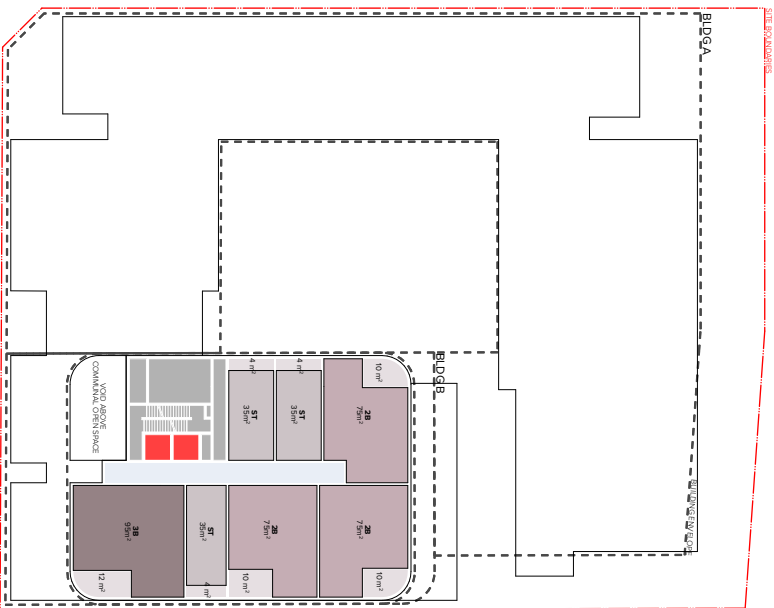


Fig. 75.95 Level 08



LOT S _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 9



LEVEL 10 & 12

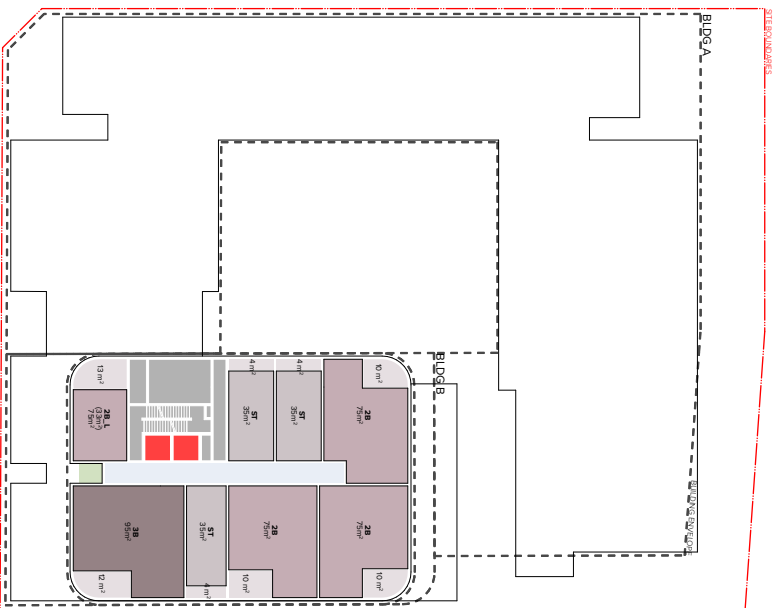


Fig. 75.96 Level 09

Fig. 75.97 Level 10 and 12

LOTS _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 11 & 13

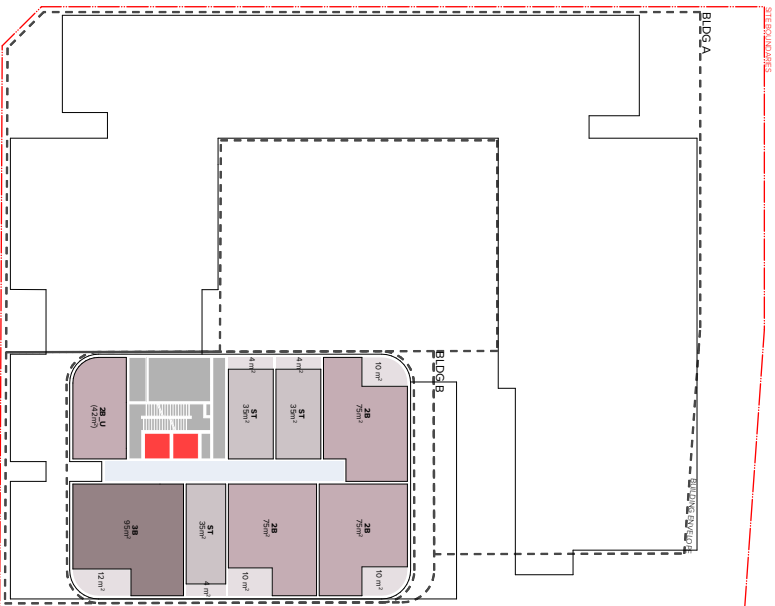


Fig. 75.98 Level 11 and 13

LEVEL 14

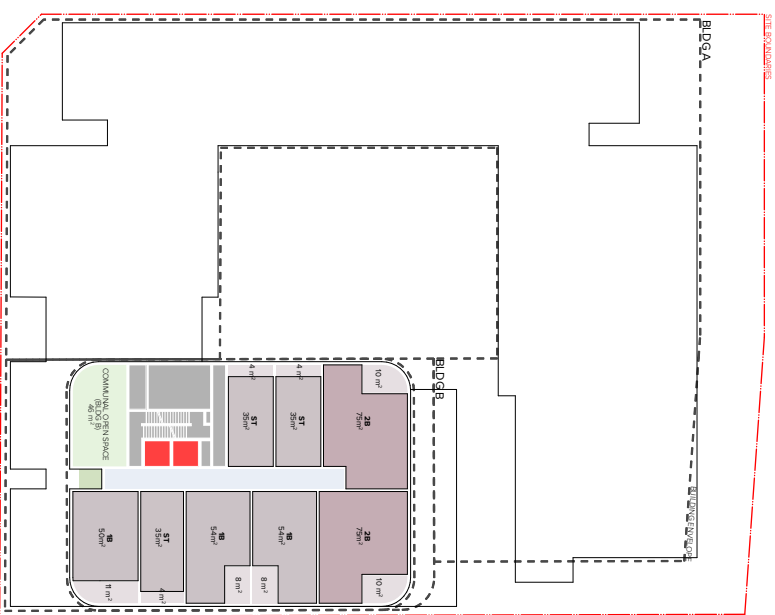


Fig. 75.99 Level 14



LOT S _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 15

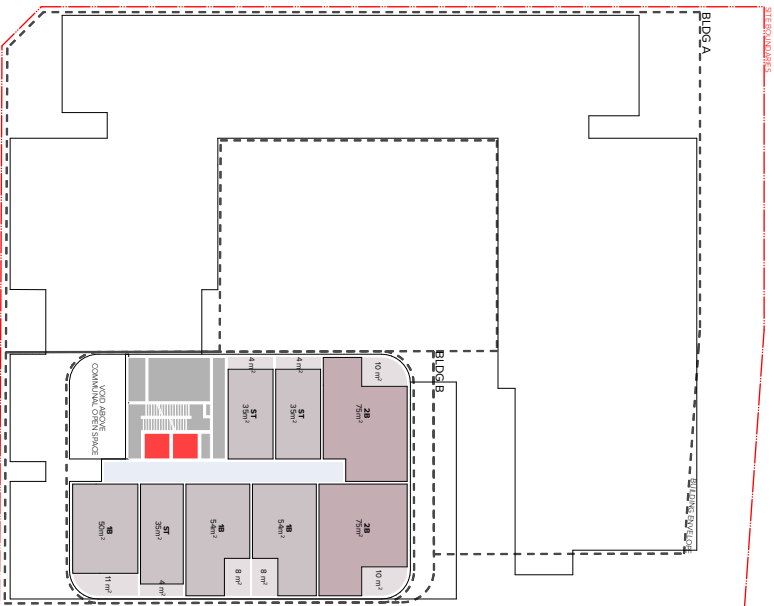


Fig. 75.100 Level 15

LEVEL 16 & 18

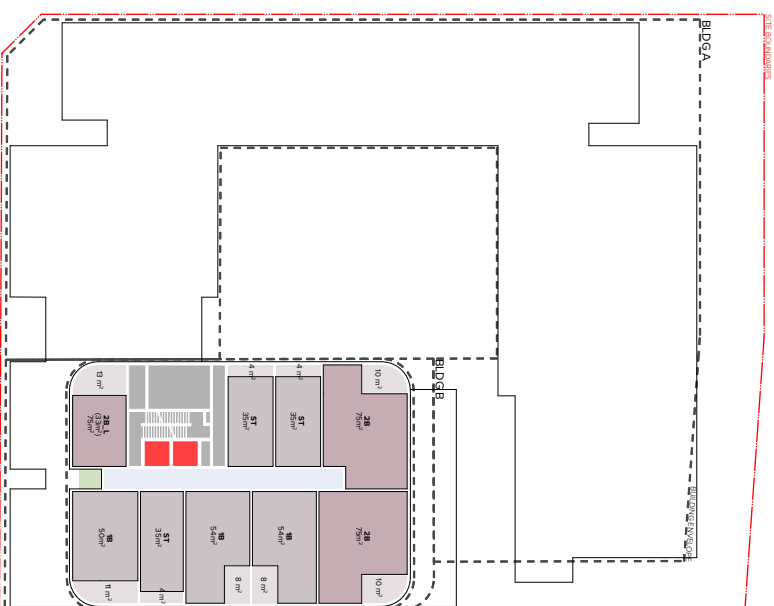


Fig. 75.101 Level 16 and 18

LOTS _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 17 & 19

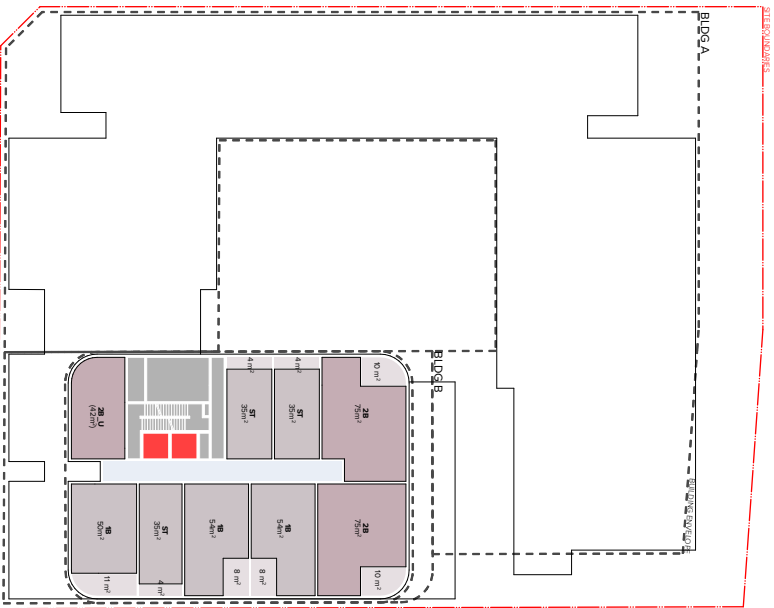


Fig. 75.102 Level 17 and 19

LEVEL 20 - 22

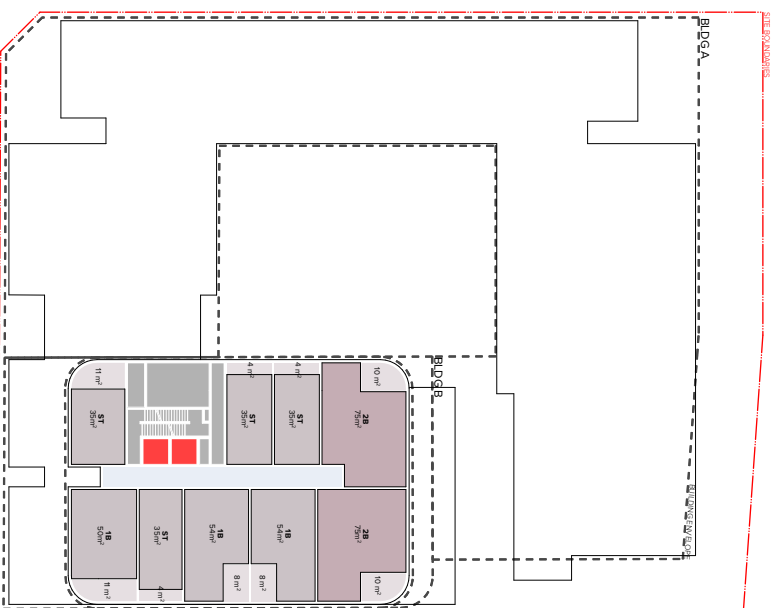
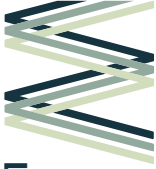


Fig. 75.103 Level 20 - 22



LOT S _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 23 & 24

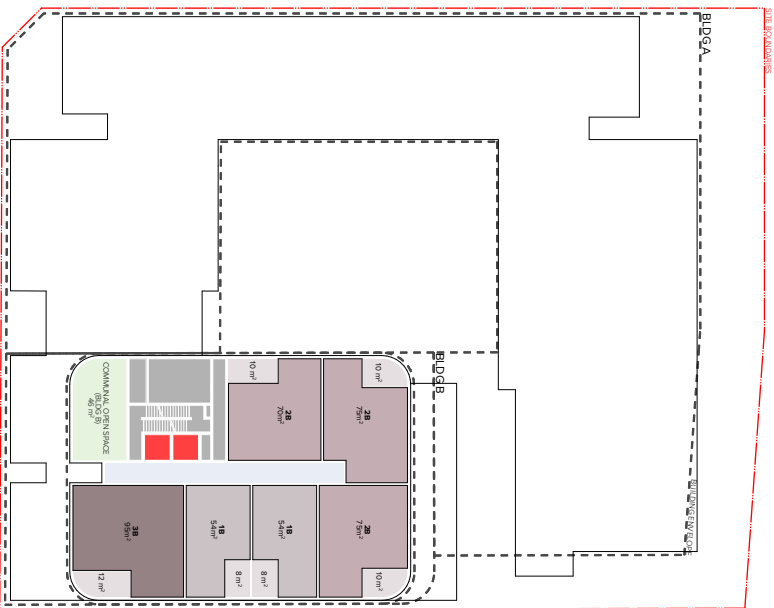


Fig. 75.104 Levels 23 and 24

LEVEL 25, 27 & 29

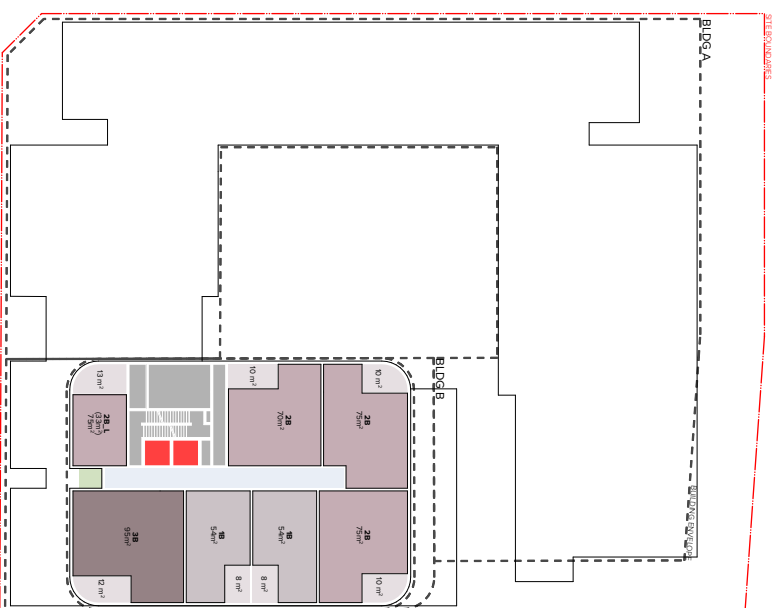


Fig. 75.105 Levels 25, 27 and 29

LOT 5 _ ILLUSTRATIVE BLOCK PLANNING

LEVEL 26, 28 & 30

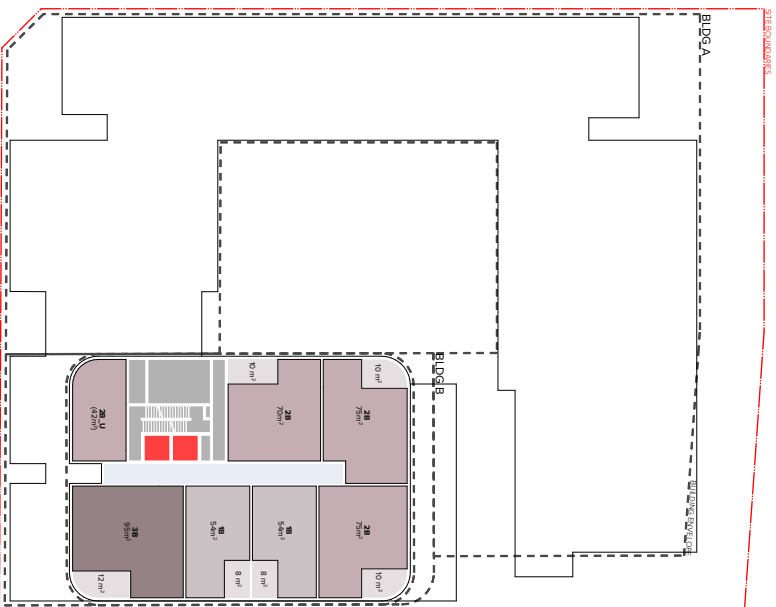


Fig. 75.106 Levels 26,28 and 30

ROOF LEVEL

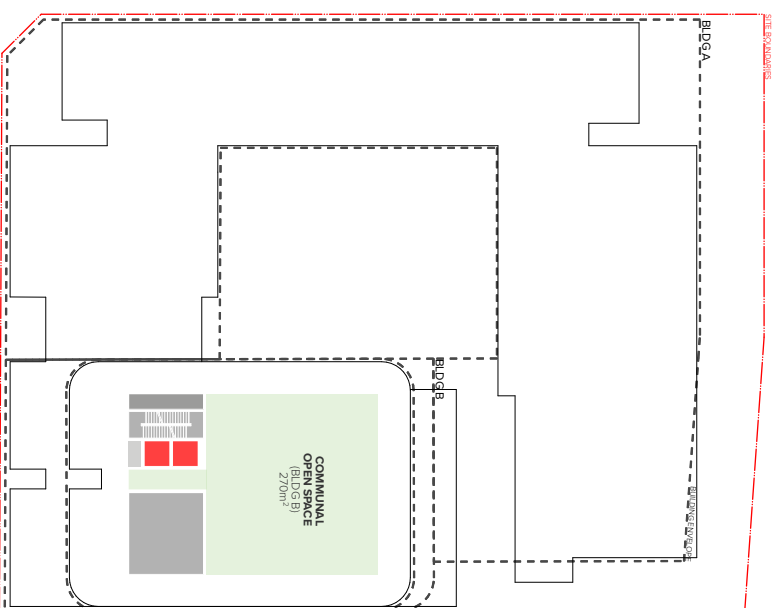


Fig. 75.107 Roof level



LOT 5 _ GFA ANALYSIS

The building strategy provides a 'loose-fit' envelope that provides a building articulation zone, supports an active ground plane and design diversity. Taller buildings provide slender forms that reinforce the finer grain at street level.

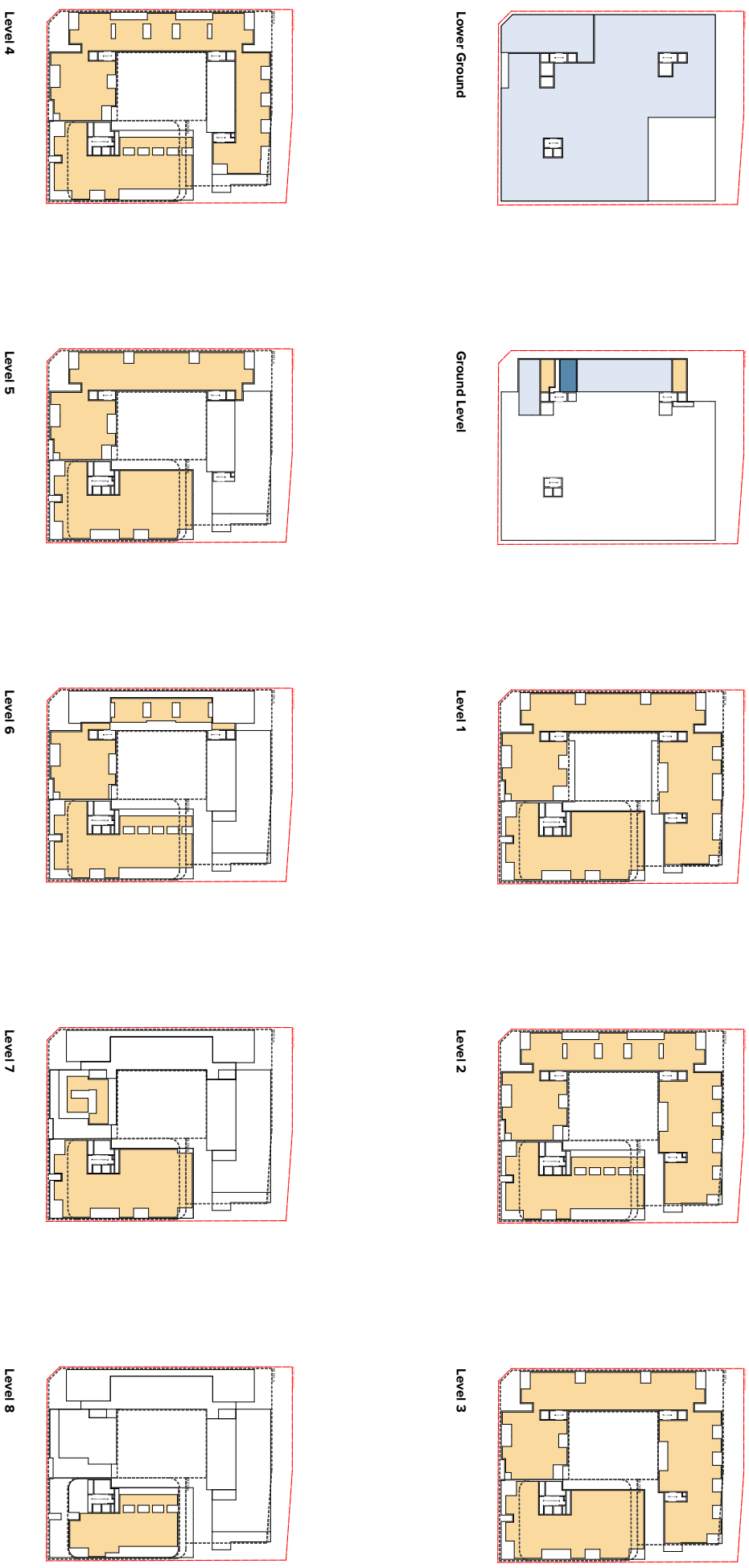
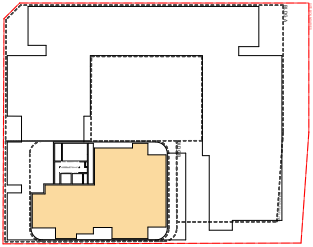
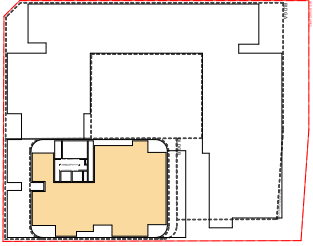


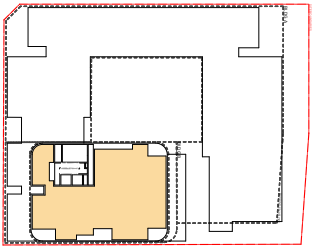
Fig. 75.108
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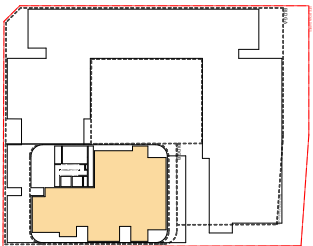
Level 09



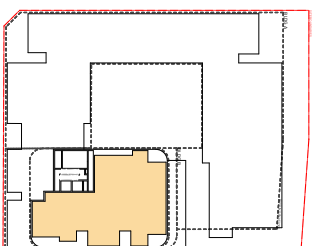
Level 10, 12



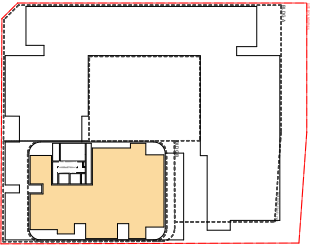
Level 11, 13



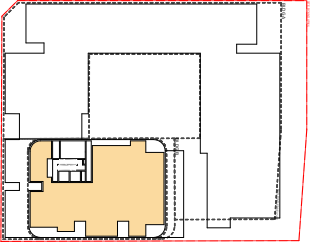
Level 14



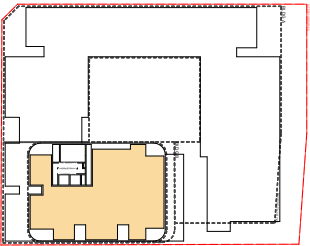
Level 15



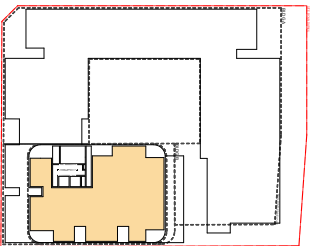
Level 16 & 18



Level 17, 19, 25, 27 & 19



Level 20 - 22



Level 26, 28 & 30

Fig. 7.5.109



LOT S _ SOLAR ACCESS ANALYSIS

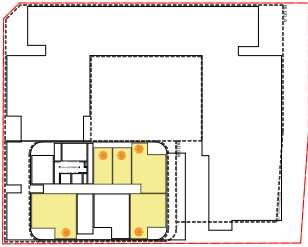
The Lot S Detail Lot Study demonstrates indicative building envelopes support built form with the capacity to achieve solar access consistent with ADG amenity requirements. 70% of dwellings in Building A receive a minimum 2 hours of sunlight between 9am to 3pm at mid-winter. 75% of dwellings in Building B receive a minimum 2 hours of sunlight between 9am to 3pm at mid-winter.



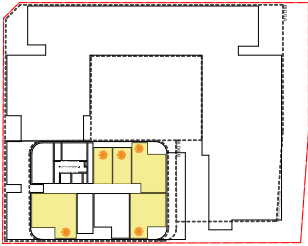
Legend

 Receives min. 2 hours solar access between 9am to 3pm at mid-winter

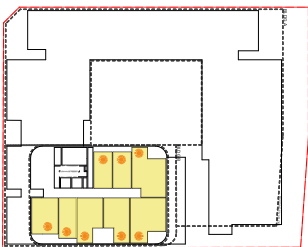
Fig. 7.5.110



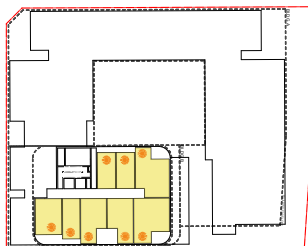
Level 10, 12



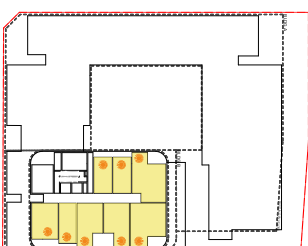
Level 11, 13



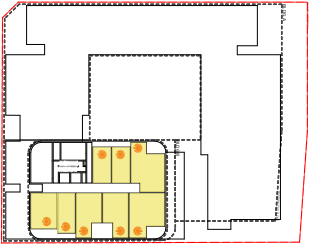
Level 14



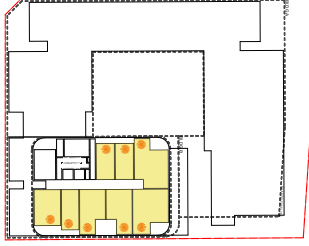
Level 15



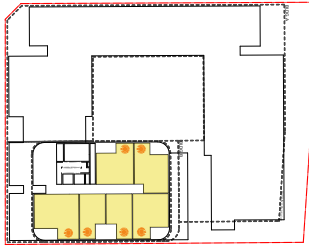
Level 16 & 18



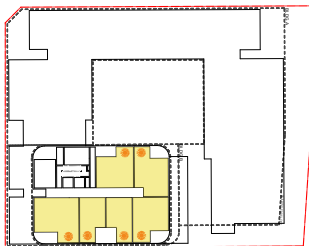
Level 17 & 19



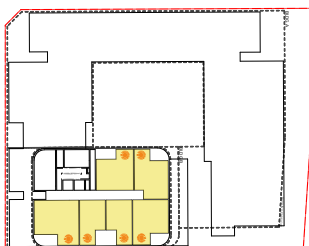
Level 20 - 22



Level 23 & 24

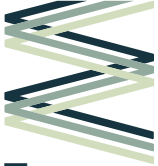


Level 25, 27 & 29



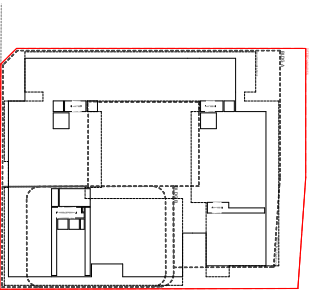
Level 26, 28 & 30

Fig. 7.5.105



LOT S _ CROSS VENTILATION ANALYSIS

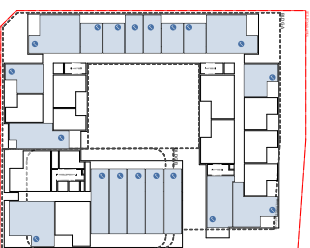
The Lot S Detail Lot Study demonstrates indicative building envelopes support built form with the capacity to achieve cross-ventilation consistent with ADG amenity requirements. 63% of dwellings in Building A and 60% of dwellings in Building B are cross-ventilated.



Ground Level



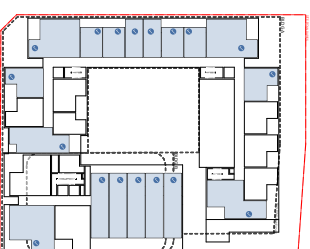
Level 1



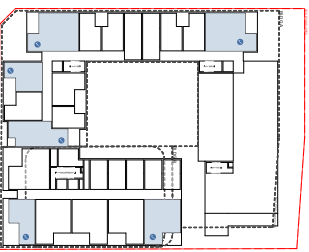
Level 2



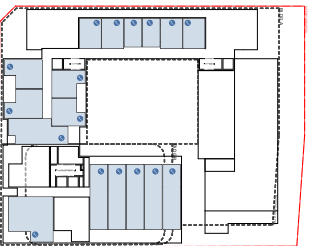
Level 3



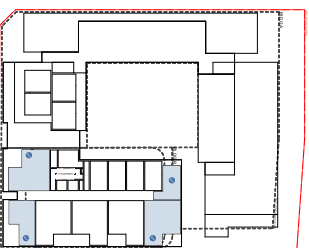
Level 4



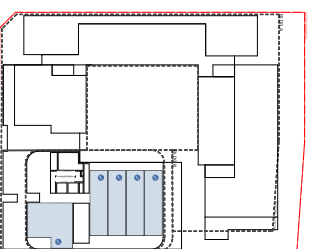
Level 5



Level 6



Level 7



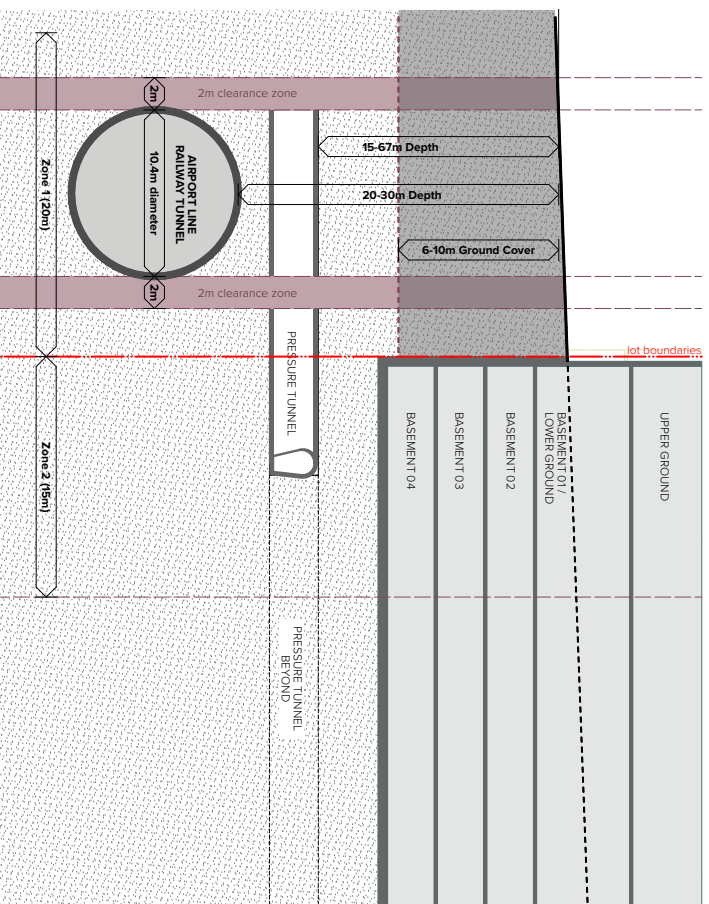
Level 8

- Legend
- Achieves
 - Cross-Ventilation

LOT 5 _ RELATIONSHIP TO RAIL TUNNEL & HERITAGE PRESSURE TUNNEL

The building strategy provides a 'loose-fit' envelope that provides a building articulation zone, supports an active ground plane and design diversity. Taller buildings provide slender forms that reinforce the finer grain at street level.

INDICATIVE SECTION THROUGH SYDNEY TRAINS AIRPORT LINE



INDICATIVE SECTION THROUGH HERITAGE WATER PRESSURE TUNNEL

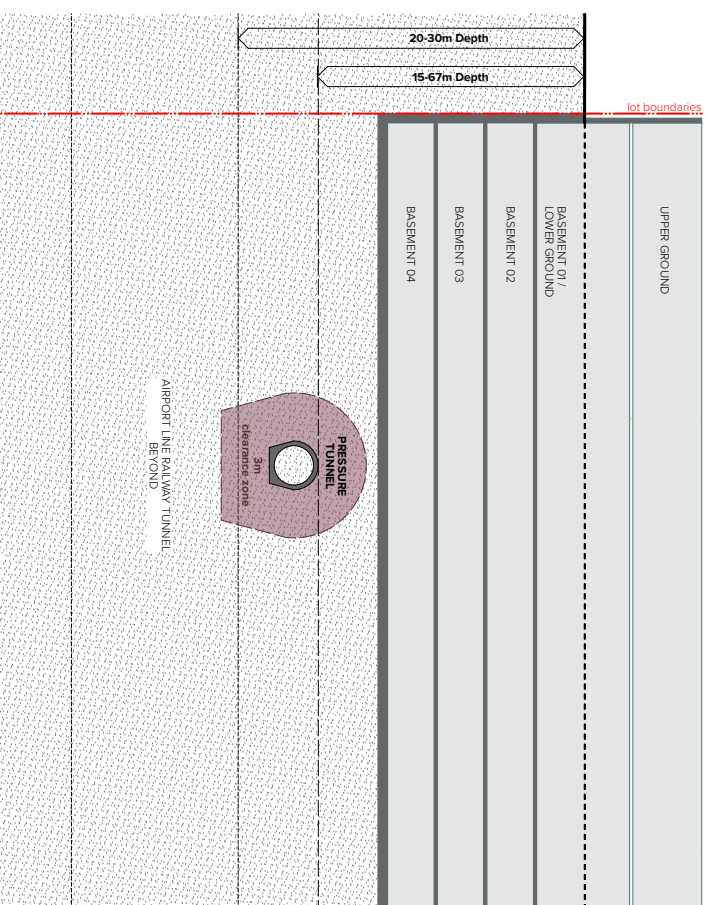
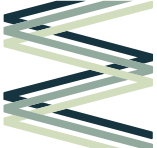


Fig. 7.5.113



7.5.4 APPROACH TO PRIVATE SITES

POTENTIAL FOR FUTURE DEVELOPMENT WITHIN PRIVATE SITES

A number of scenarios were explored as part of the development of the approach to the private sites within Waterloo South

There are a number of sites within Waterloo South under private ownership, containing 125 private dwellings and commercial uses. The private sites are located at:

- ① **221-223 Cope Street** (Verita Blind Building)
Existing commercial uses - Ethnic Communities Council of NSW
- ② **116 Wellington Street**
Existing commercial uses
- ③ **225-227 Cope Street**
Existing residential uses - The former Waterloo Pre-School and an item of Heritage Significance
- ④ **111 Cooper Street**
Existing residential uses
- ⑤ **233-239 Cope Street** (Orbit Waterloo)
123-131 Cooper Street
Existing multi-residential uses
- ⑥ **291 George Street**
Existing multi-residential uses - previously The Duke of Wellington Hotel and an item of Heritage Significance
- ⑦ **110 Wellington Street**
Existing multi-residential uses

A range of options were explored for the private sites within that included:

- Retaining existing buildings
- Investigating the potential future envelopes within existing controls
- Investigating the potential future envelopes targeting an overall FSR of 3.09 : 1 to be equitable within the overall masterplan.

There are various factors that influence the management of the development capacity of a site.

The Apartment Design Guide, prepared by the NSW Department of Planning & Environment, is a key document in assisting urban designers and planners to manage residential apartment development.

These include:

- Size and orientation of the site
- Interface with the public domain and neighbours
- Response to the existing and future context
- Response to key attributes within the site
- Setbacks
- Communal open space including landscaping
- Building separation and depth
- Building performance and orientation
- Three dimensional building envelope

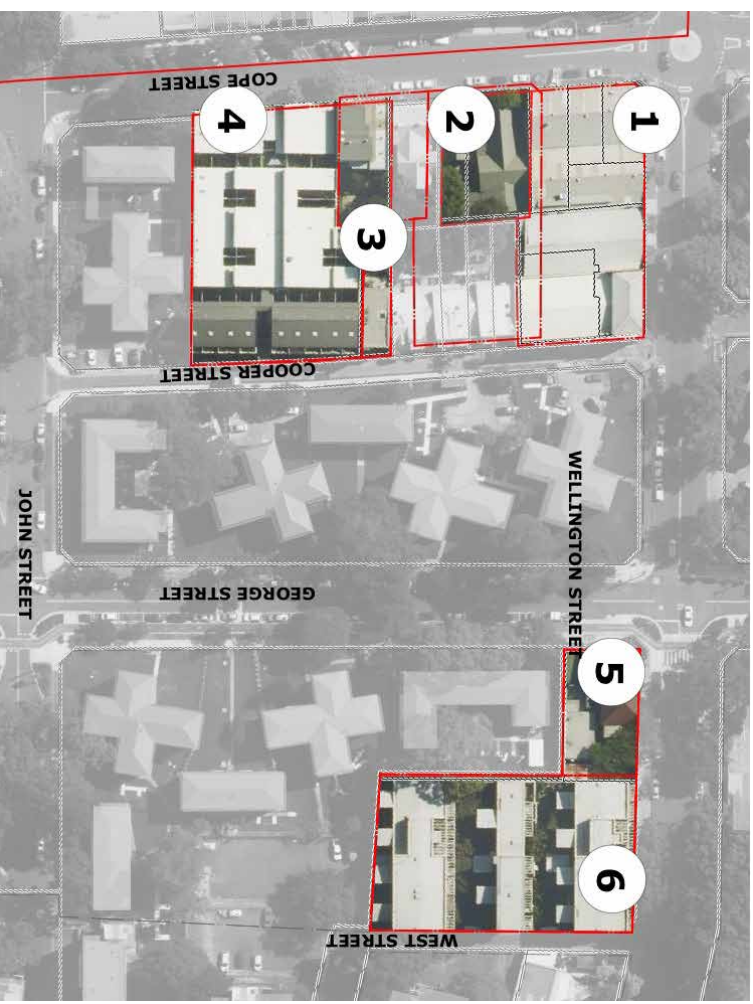


Fig. 7.5.114 Private sites within Waterloo South



Fig. 7.5.115 **221-223 Cope Street & 116 Wellington Street**



Fig. 7.5.116 **225-227 Cope Street**



Fig. 7.5.117 **233-239 Cope Street**



Fig. 7.5.118 **111 Cooper Street**



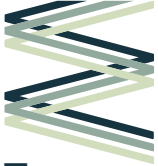
Fig. 7.5.119 **123-131 Cooper Street**



Fig. 7.5.120 **291 George Street**



Fig. 7.5.121 **110 Wellington Street**



POTENTIAL FOR FUTURE DEVELOPMENT WITHIN CURRENT CONTROLS

The majority of the existing private sites achieve the maximum FSR allowable under the current controls.

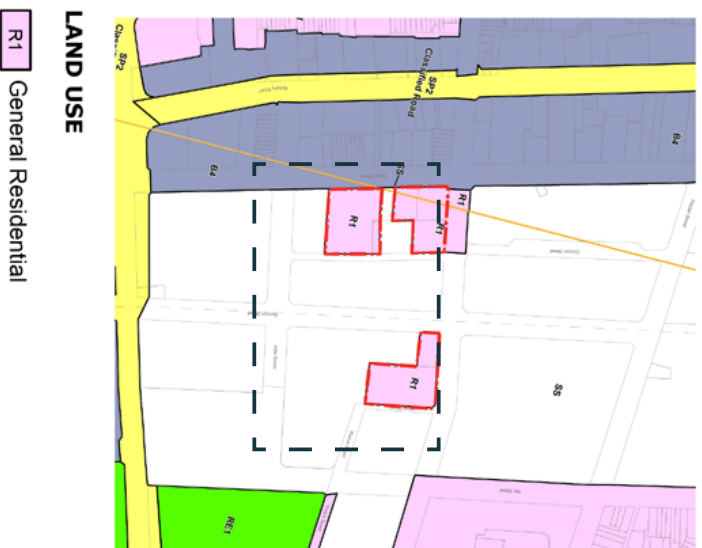


Fig. 7/5.12.2 Current controls for Private Sites
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EXISTING PRIVATE SITES



Fig. 7.5.123 Plan of Existing Private Sites

PRIVATE SITES WITH POTENTIAL FOR INCREASED FSR UNDER CURRENT CONTROLS



Fig. 7.5.125 Plan

Sites with Limited Re-Development Potential

The majority of the existing private sites achieve the maximum FSR allowable under the current controls.

Sites that currently achieve maximum FSR 1.75 : 1

1. **221-223 Cope Street** (Ventral Blind Building) and **116 Wellington Street**
Current FSR approx 1.75 : 1
4. **233-239 Cope Street** (Orbit Waterloo)
123-131 Cooper Street
Current FSR approx 1.75 : 1
5. **291 George Street**
Current FSR approx 1.75 : 1
6. **110 Wellington Street**
Current FSR approx 1.71 : 1

Sites with Re-Development Potential

Sites that have opportunities for further re-development under the current controls are:

2. **225-227 Cope Street**
Current FSR approx 0.64 : 1
Potential FSR approx 0.91 : 1
This site is constrained by its heritage item listing
3. **111 Cooper Street**
Current FSR approx 0.77 : 1
Potential FSR approx 1.75 : 1



Fig. 7.5.124 Indicative missing of Existing Private Sites

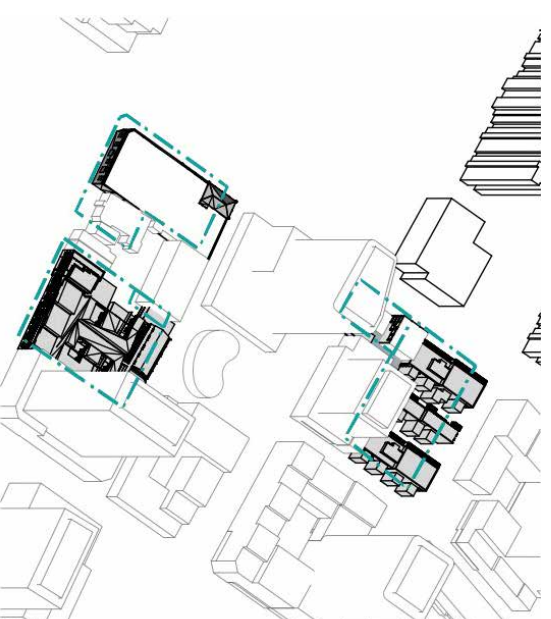
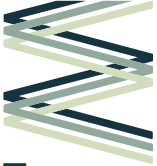


Fig. 7.5.126 Indicative missing



BEST AND HIGHEST USE _ EXISTING CONTEXT

Analysis of the re-development potential for the Private Sites under a best and highest use approach provides a range from FSR 1.79 : 1 to FSR 2.34 : 1 when the existing context is considered

PRIVATE SITES BEST & HIGHEST USE RESPONDING TO CURRENT CONTEXT



Fig. 7.5.127 Plan



Fig. 7.5.128 Indicative massing Option 1
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Fig. 7.5.129 Indicative massing Option2



Fig. 7.5.130 Indicative massing Option 3

BEST AND HIGHEST USE _ FUTURE CONTEXT

Analysis of the re-development potential for the Private Sites under a best and highest use approach provides a range from FSR 2.03 : 1 to FSR 3.09 : 1 under a future scenario for surrounding sites

PRIVATE SITES BEST & HIGHEST USE RESPONDING TO FUTURE CONTEXT



Fig. 7.5.131 Plan



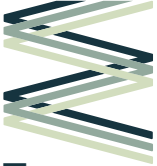
Fig. 7.5.132 Indicative massing Option 4



Fig. 7.5.133 Indicative massing Option 5



Fig. 7.5.134 Indicative massing Option 6



POTENTIAL FOR FUTURE DEVELOPMENT _ APPLYING A MAXIMUM FSR CONTROL

RE-DEVELOPMENT POTENTIAL AS INDIVIDUAL LOTS

This scenario considers the possible development potential if the private sites are re-developed as individual lots with a maximum target FSR 3.09 : 1.

Each individual lot will be influenced by different factors that will impact the achievable GFA.

1. **221-223 Cope Street** (Vental Blind Building) and **116 Wellington Street** (Retain & re-develop)
Current FSR approx 1.75 : 1
Potential FSR approx 3.09 : 1
2. **225-227 Cope Street** (Retain & re-develop)
Current FSR approx 0.64 : 1
Potential FSR approx 0.91 : 1
This site is constrained by its heritage item listing
3. **111 Cooper Street** (Demolish & re-develop)
Current FSR approx 0.77 : 1
Potential FSR approx 1.64 : 1
4. **233-239 Cope Street** (Orbit Waterloo)
123-131 Cooper Street (Demolish & re-develop)
Current FSR approx 1.75 : 1
Potential FSR approx 3.0 : 1
5. **291 George Street** (Retain & re-develop)
Current FSR approx 1.75 : 1
Potential FSR approx 2.00 : 1
This site is constrained by its heritage item listing
6. **110 Wellington Street** (Demolish & re-develop)
Current FSR approx 1.71 : 1
Potential FSR approx 3.0 : 1



Fig. 7.5.135 Plan



Fig. 7.5.136 Indicative missing Option 7

RE-DEVELOPMENT POTENTIAL AS AMALGAMATED LOTS

This scenario considers the possible development potential if the private sites are amalgamated and re-developed with a maximum target FSR 3.09 : 1.

Each individual lot will be influenced by different factors that will impact the achievable GFA.

1. **221-223 Cope Street** (Vental Blind Building)
116 Wellington Street
225-227 Cope Street (Retain & re-develop)
This site is constrained by its heritage item listing
Potential FSR approx 3.09 : 1
2. **111 Cooper Street**
233-239 Cope Street (Orbit Waterloo)
123-131 Cooper Street (Demolish & re-develop)
Potential FSR approx 3.09 : 1
3. **291 George Street** (Retain & re-develop)
This site is constrained by its heritage item listing
110 Wellington Street (Demolish & Re-develop)
Potential FSR approx 3.09 : 1



Fig. 7.5.137 Plan

RE-DEVELOPMENT POTENTIAL AS AMALGAMATED LOTS WITH TALL BUILDINGS

This scenario considers the possible development potential if the private sites are re-developed as individual lots with a maximum target FSR 3.09 : 1.

Each individual lot will be influenced by different factors that will impact the achievable GFA.

- 1. **221-223 Cope Street** (Vental Blind Building)
116 Wellington Street
225-227 Cope Street (Retain & re-develop)
This site is constrained by its heritage item listing
Potential FSR approx 3.09 : 1
- 2. **111 Cooper Street**
233-239 Cope Street (Orbit Waterloo)
123-131 Cooper Street (Demolish & re-develop)
Potential FSR approx 3.09 : 1
- 3. **291 George Street** (Retain & re-develop)
This site is constrained by its heritage item listing
110 Wellington Street (Demolish & re-develop)
Potential FSR approx 3.09 : 1



Fig. 7.5.138

Indicative massing Option 8



Fig. 7.5.139 Plan



Fig. 7.5.140 Indicative massing Option 9



7.5.5 APPROACH TO ADJACENT CONTEXT

POTENTIAL FOR FUTURE DEVELOPMENT ALONG BOTANY ROAD CORRIDOR

Two scenarios were explored for the Botany Road Corridor as part of the development of the built form for Waterloo South

Botany Road Corridor was analysed to gain an understanding for each site's potential re-development to residential uses. This determined the sites to be analysed based on the existing condition and the sites to be analysed based on the future potential for solar access.

Sites identified with low re-development potential were assessed through the following criteria:

- Recently re-developed
- Currently under construction
- Sites with approved Development Approval
- Within a heritage conservation area (HCA) or a heritage item
- Non-residential uses

Sites identified with high re-development potential were assessed through the following criteria:

- Zoning
- Age of the buildings on the site
- Potential for amalgamation of smaller sites

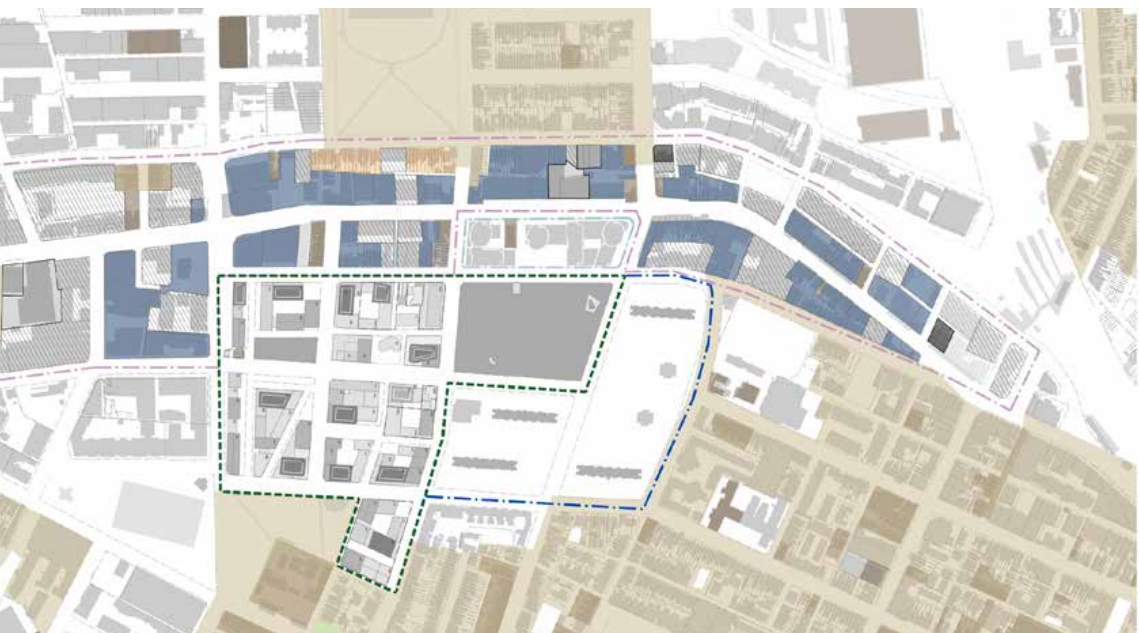
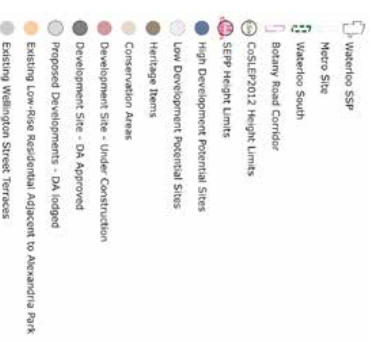


Fig. 7.5.141 Botany Road re-development potential

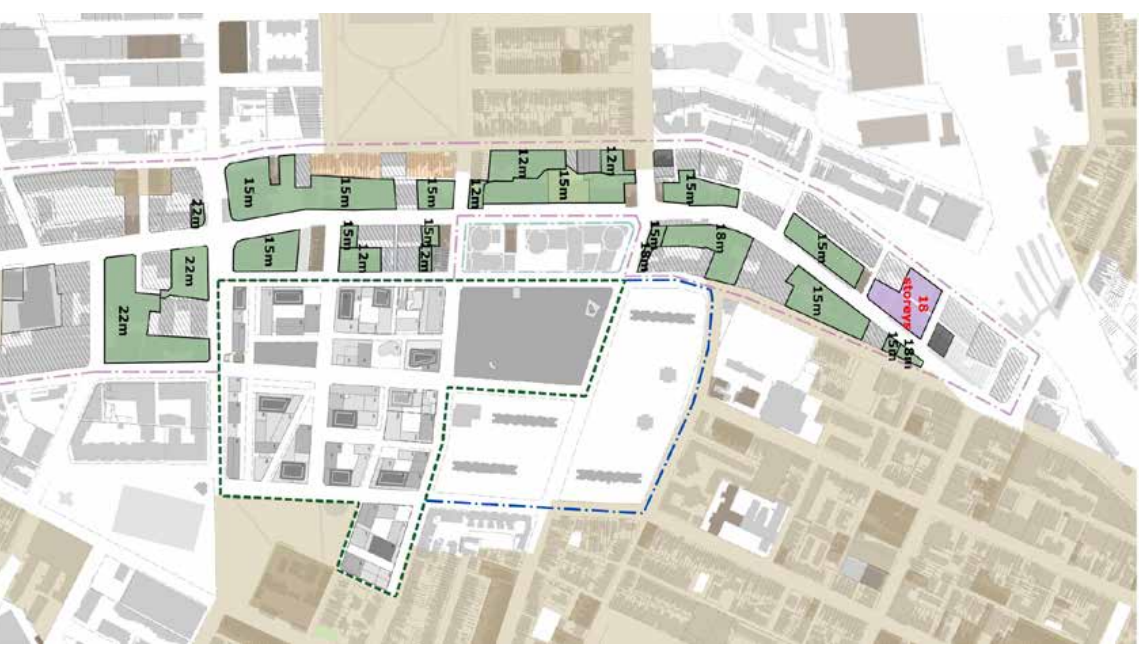
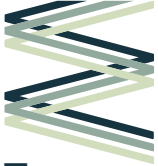


Fig. 7.5.142 Botany Road existing height controls



POTENTIAL FOR FUTURE DEVELOPMENT _ CURRENT CONTROLS

A possible future built form outcome for the Botany Road Corridor under current controls was assessed for solar access as part of the development of the Waterloo South Indicative Concept Proposal. Waterloo South does not reduce the capacity of future development within the Botany Road Corridor to meet or exceed the ADG objectives and design criteria for solar access.

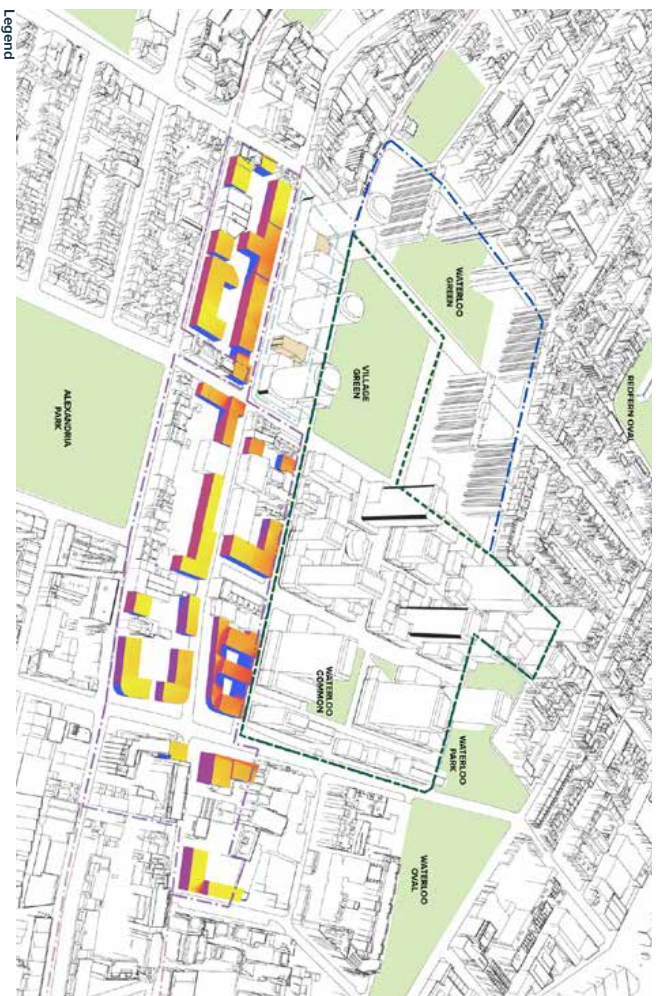


Fig. 75.143 Solar access to future potential context between 9am - 3pm mid winter, south west view
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BOTANY ROAD CORRIDOR RE-DEVELOPMENT POTENTIAL UNDER CURRENT CONTROLS

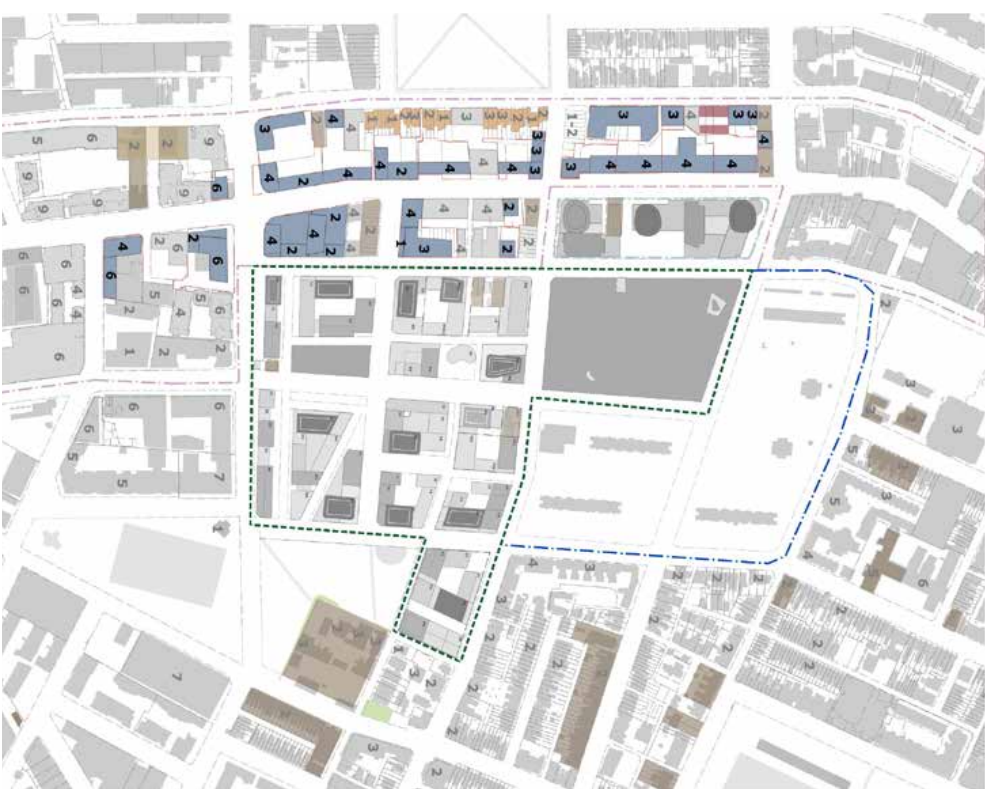


Fig. 75.144 Botany Road Corridor potential built form under existing height controls



POTENTIAL FOR FUTURE DEVELOPMENT _ 'UPLIFT' POTENTIAL

A possible future built form outcome for the Botany Road Corridor with 'uplift' potential was assessed for solar access as part of the development of the Waterloo South Indicative Concept Proposal. Waterloo South does not reduce the capacity of future development within the Botany Road Corridor to meet or exceed the ADG objectives and design criteria for solar access.

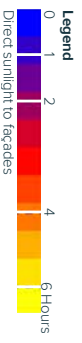
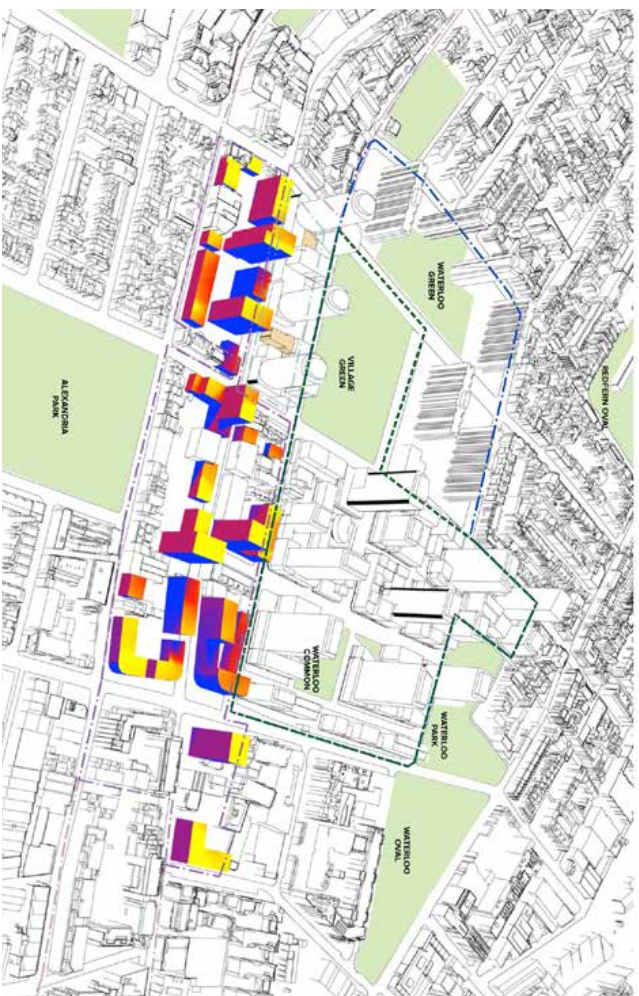


Fig. 75.145 Solar access to future potential context between 9am - 3pm mid winter, south west view

BOTANY ROAD CORRIDOR RE-DEVELOPMENT POTENTIAL UNDER FUTURE 'UPLIFT' CONTROLS

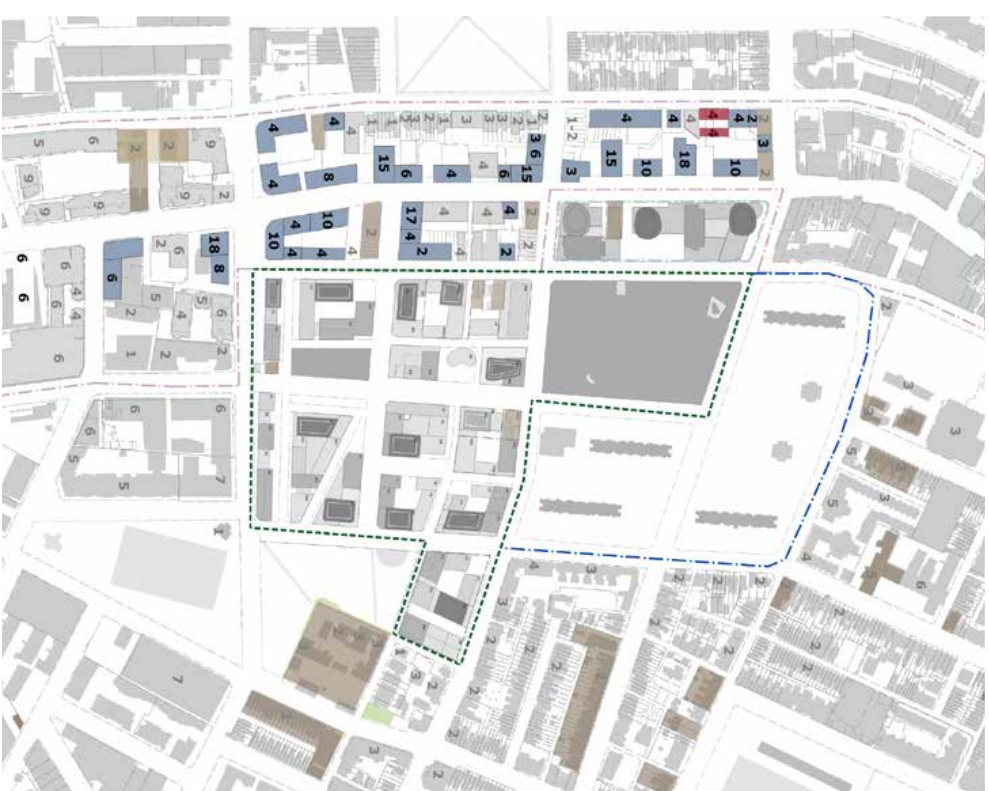


Fig. 75.146 Botany Road Corridor potential built form under future 'uplift' controls

