13-19 Canberra Avenue
Additional Levels With Affordable Housing

Architectural Design Report

Prepared for
Hyecorp

Issued
15 APRIL 2024

Gadi Country
Level 2, 490 Crown Street
Surry Hills NSW 2010

T 61 2 9380 9911
E sydney@sjb.com.au
W sjb.com.au

SJB acknowledges the Traditional Custodians of the lands, waters, and skies, and their perpetual care and connection to Country where we live and work. We support the Uluru Statement from the Heart and accept its invitation to walk with Aboriginal and Torres Strait Islander people in a movement of the Australian people towards a better future.

We believe that inequity enshrined in our society continues to significantly disadvantage our First Nations colleagues, friends, and community. Following the referendum, we are personally and professionally recommitting our support of Aboriginal and Torres Strait Islander people. We will continue to strive for (re)conciliation by acting with integrity and passion, in an effort to address this imbalance in our country and create lasting generational change.

Issued		
V01	SUBMISSION	05/04/2024

CERTIFICATION #NC423
NO CO2
WWW.NOCO2.COM.AU

Certified Management Systems

ISO 9001:2015 Quality Management System
ISO 45001:2018 Occupational Health & Safety Management System
ISO 14001:2015 Environmental Management System

Version: 01
Ref: 6429
Prepared by: LL
Checked by: AH

Gadi Country
Level 2, 490 Crown Street
Surry Hills NSW 2010

T 61 2 9380 9911
E sydney@sjb.com.au
W sjb.com.au

SJB Architecture (NSW) Pty Ltd
ABN 20 310 373 425
ACN 081 094 724

Nominated Architects
Adam Haddow 7188
Emily Wombwell 10714
John Pradel 7004
Jonathan Tondi 11981
Nick Hatzi 9380

Contents

1 Executive Summary

INTRODUCTION

Background

SJB Architects was commissioned by HYECORP Property Group in March 2021 to prepare a design and DA submission for a site within the St Leonard South precinct, located on Canberra Avenue, opposite Newlands Park.The development is centralised within St Leonards South Precinct, at a prominent gateway site to the St Leonards station, linking various key community aspects of the precinct, including Newlands Park and Green Spine.

The DA application was approved on the 27th of June 2022.

Subsequently the proponent has proposed an additional level to the DA application and is subject to Land and Environment Court appeal.

The project commenced construction in early 2023.

Infill Affordable Housing

With the infill affordable housing policy that was announced at the end of 2023, the proponent wishes to respond to this policy and assist in providing much needed housing and affordable housing for the area.

The proposal seeks to provide infill affordable housing by adding additional typical levels to the tower. The proposed form will sit entirely under the uplifted height plane and well under the uplifted allowable maximum FSR.

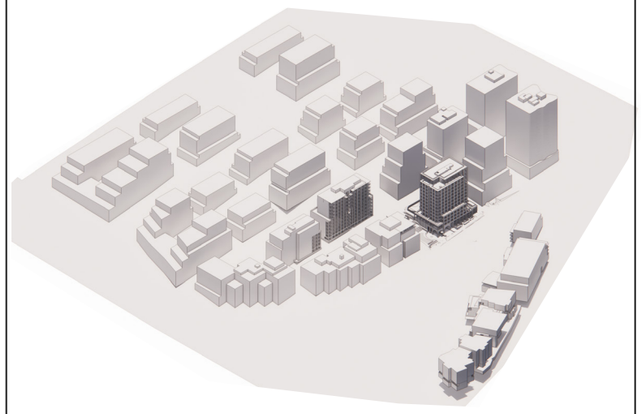
Careful consideration is given to the form, scale, and impact of the proposed massing. The project aspires to achieve a balance between providing more affordable housing while managing the impact on its surroundings. The proposal will not only fulfill the needs for accommodation but also provides important precinct infrastructure for the community, including the future public pedestrian link, public lift, retail facility, council owned community hall and childcare facility.

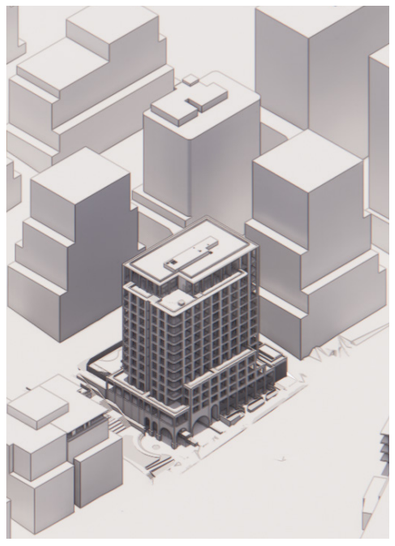
The proposal is outlined in this report and the corresponding documentation.

DA

Submitted on the 10th of November 2021.

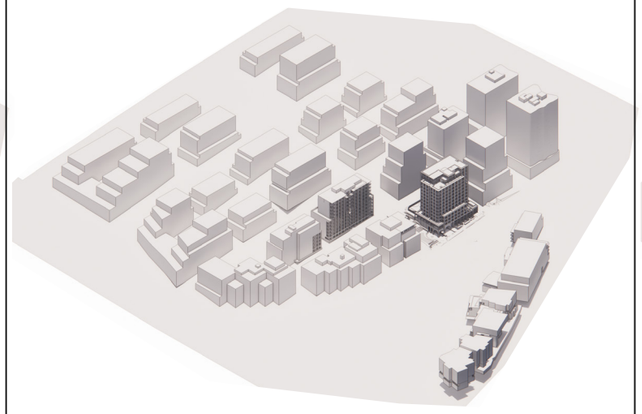
Approved on the 27th of June 2022.

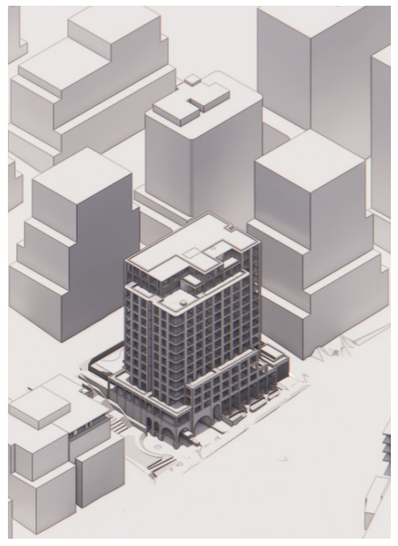




S4.55 MOD + Alterations and Additions DA

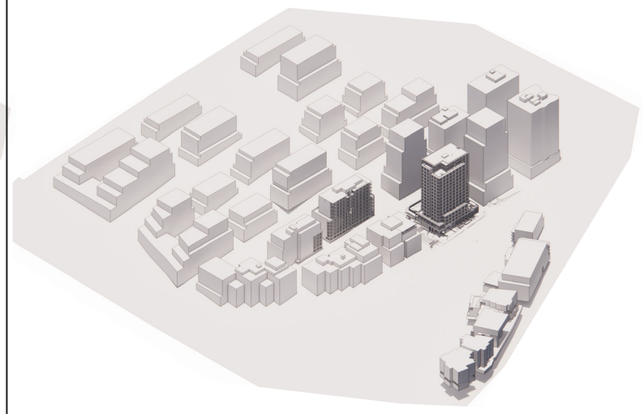
Subject to Land and Environment Court appeal.

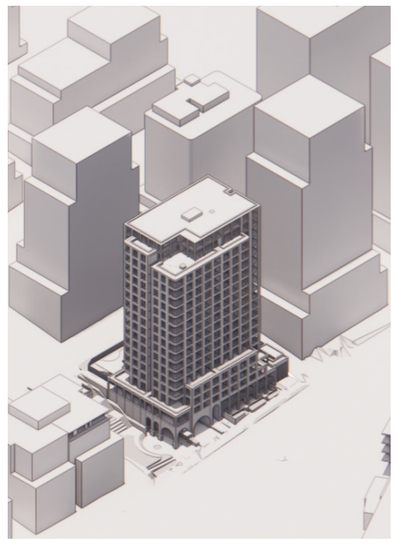




CURRENT

Current proposal to provide additional affordable housing.



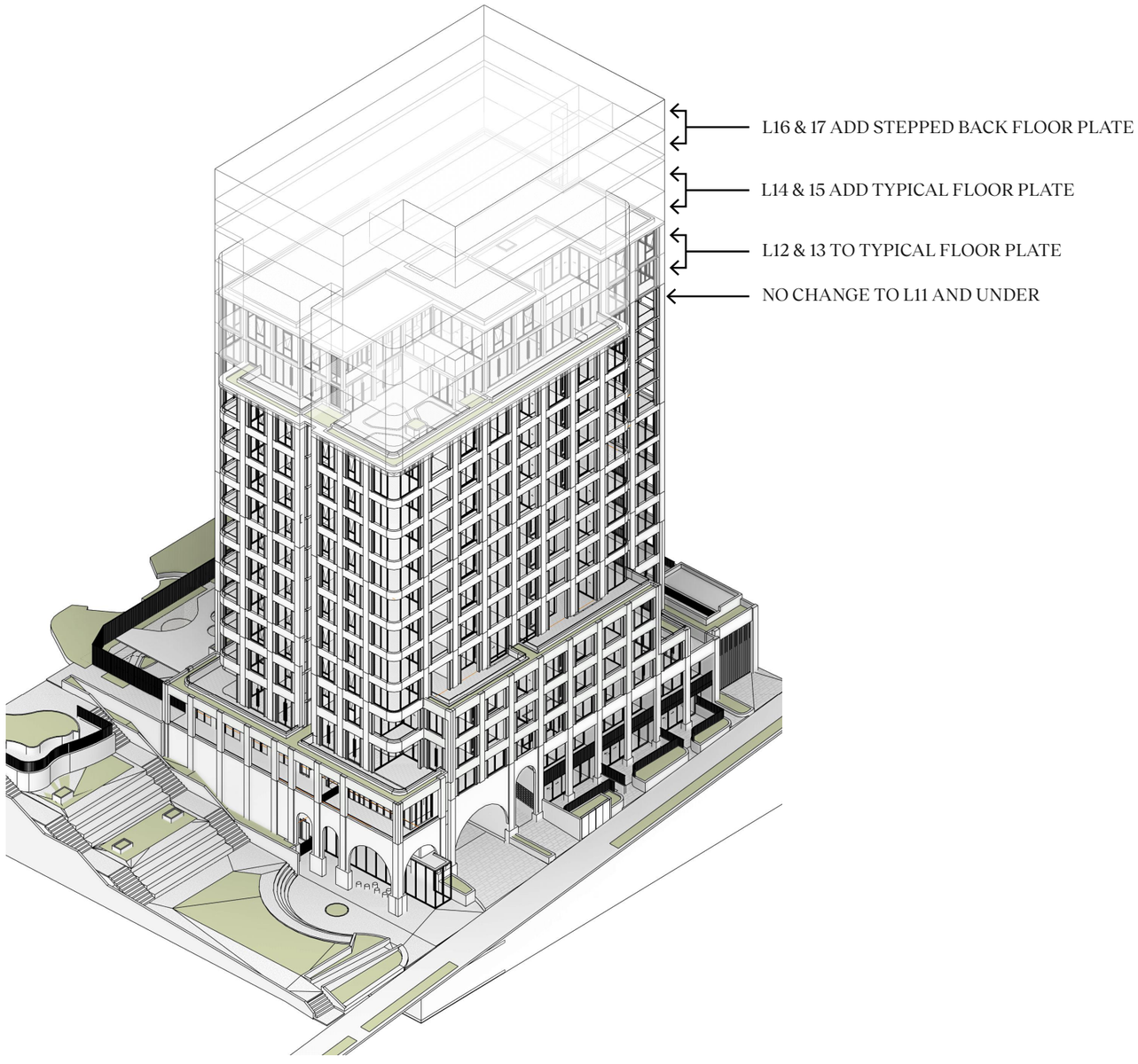


CURRENT APPLICATION

The new infill affordable housing will be accommodated throughout the floorplates, creating an inclusive community with a diverse mix of unit types.

Level 11 and under will be largely consistent with the approved DA, in terms of building footprint, planning and facade fabric. Minor changes occur to basements and ground level to accommodate the increased parking and services requirements to support additional housing.

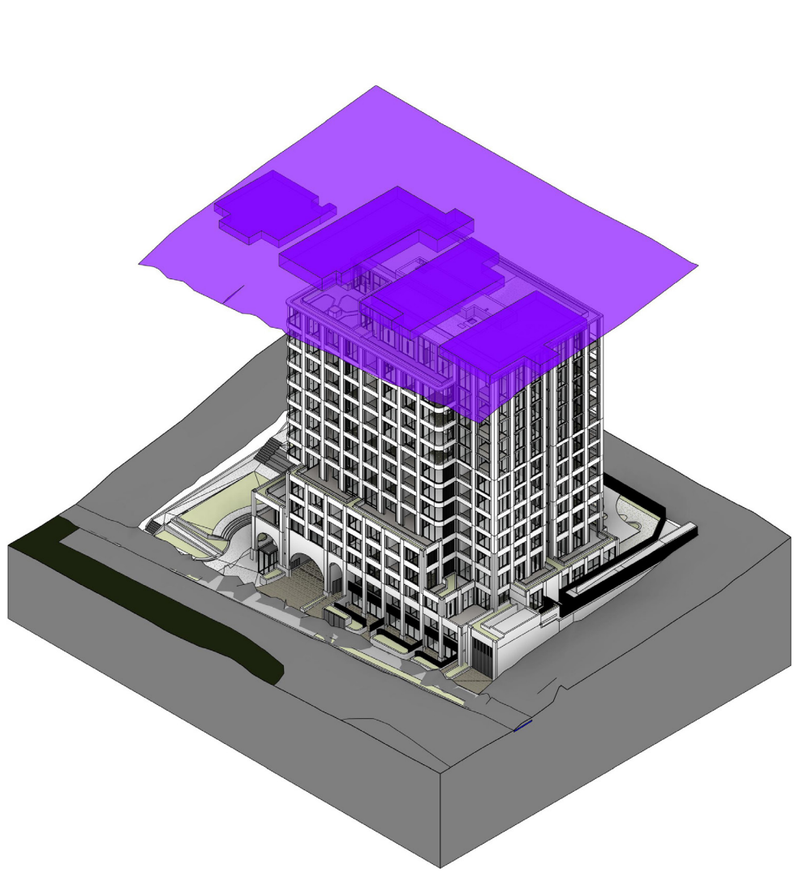
L12 to L15 are four additional levels that have the same facade extent as the tower below, creating a seamless transition from the approved building fabric under. L16 and L17 steps back to establish a cap to the building - breaking down the visual bulk while managing solar impacts to the surrounding buildings.

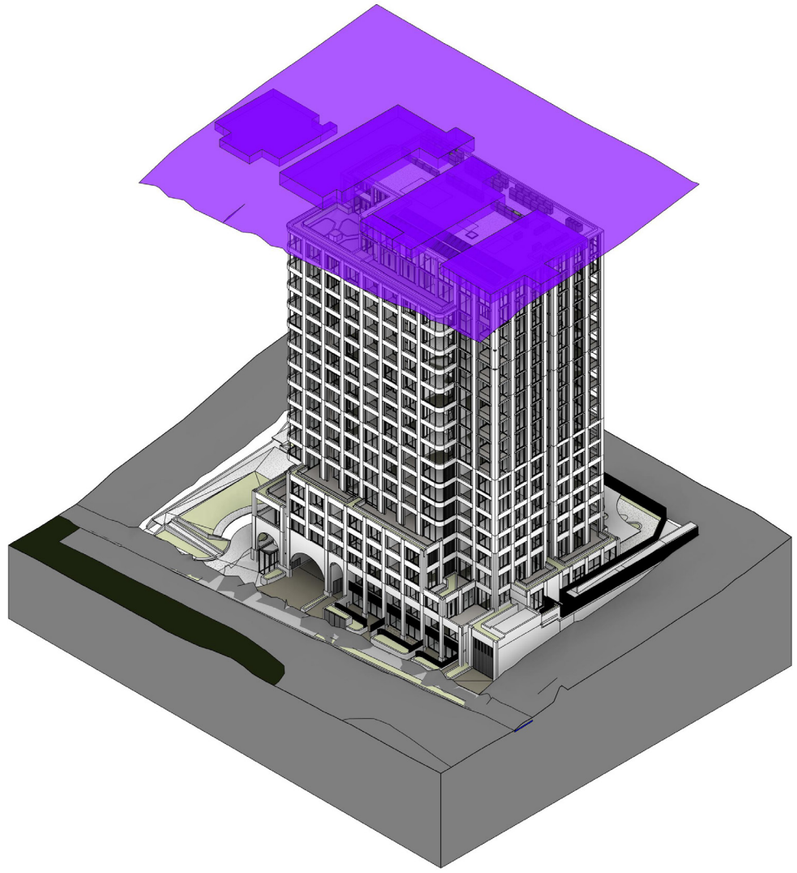


Caption example

CURRENT APPLICATION

The proposal will sit entirely under the uplifted height plane, including all building services and lift overrun.





MAX HEIGHT
44m

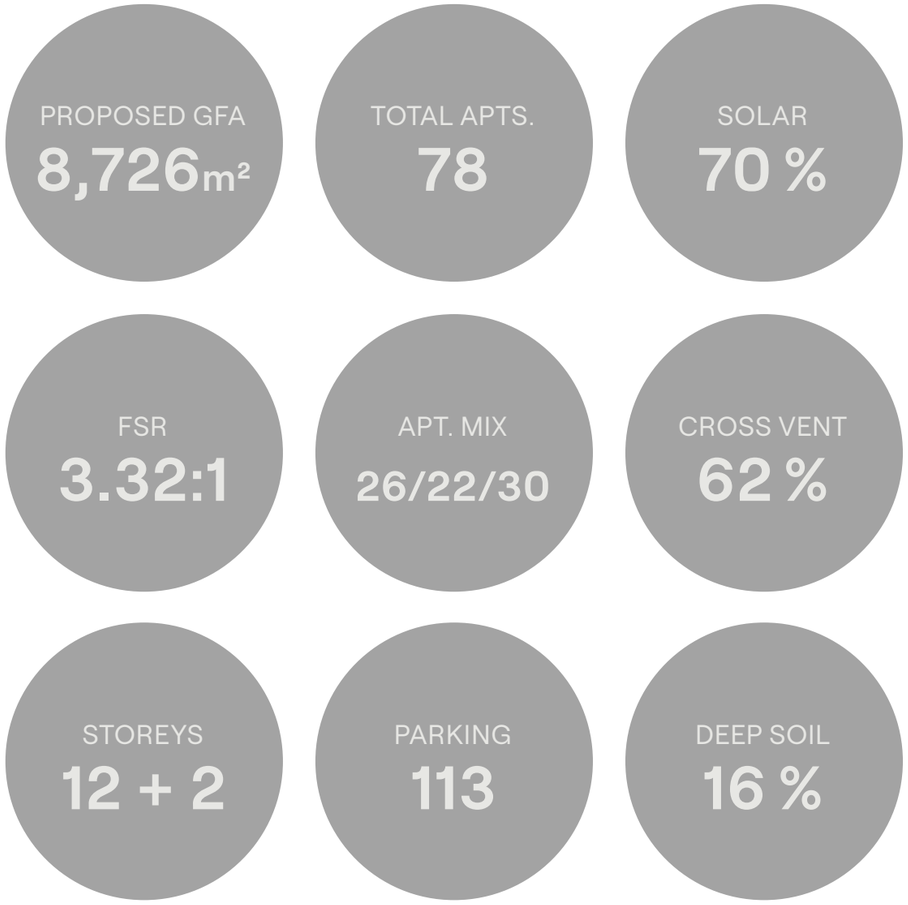
+

SEPP AH BONUS
30%

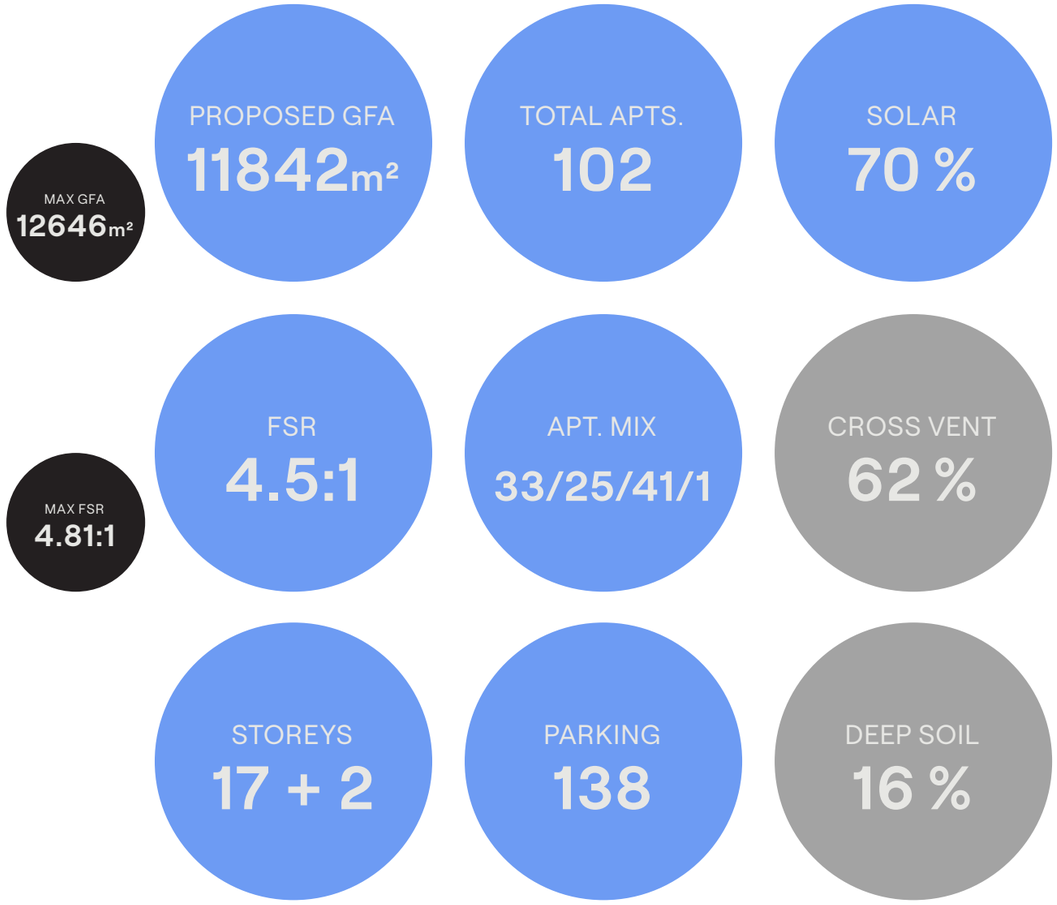
=

MAX HEIGHT W BONUS
57.2m

Approved DA (As Modified)



Current application



2

Context Analysis

St Leonards

St Leonards and Crows Nest will play a significant role in achieving the NSW Government's vision for the 'Harbour City', as identified in A Plan for Growing Sydney. The area will support new jobs in close proximity to public transport, homes and will provide a high level of amenity, whilst being connected to nearby centres at Chatswood, North Sydney, Macquarie Park and the Sydney CBD. St Leonards South as a precinct is the prominent example for Transit Orientated Development.

The plan for St Leonards South illustrates a unified and over-arching plan for the area. It combines and details the actions and directions identified in the St Leonards South DCP and Landscape Masterplan 2020.

The plans focus on improving connectivity across and between the area of St Leonards South through a network of green streets, activity areas and public spaces.

The desired future character of the St Leonards South Precinct is for a liveable, walkable, connected and safe precinct which builds upon the transit and land use opportunities of St Leonards, Metro Stations and commercial centre.

St Leonards South Precinct

The desired future character objectives for the precinct include;

To create a highly liveable transit-orientated residential precinct that integrates with St Leonards Station and proposed over-rail public plaza that encourages community interaction, walking, cycling and use of public transport.

To ensure that all new development will achieve design excellence, as well as providing suitable transition and interfaces to adjoining zones and open space.

To provide a variety of housing (including affordable housing) that is sustainable, provides housing choice and that meet the needs of residents including access to community facilities.

To minimise traffic impacts within the precinct and to and from Pacific Highway and River Road.

To facilitate a new, accessible network for pedestrians, cyclists and families that integrate and connect to functional community infrastructure and open space.

To create an accessible, well-designed public open space network that provides a variety of recreation spaces (active and passive) and communal open space that is functional and shared by residents.

To create a Low Carbon Precinct that delivers sustainable and efficient buildings that provide energy, water and waste efficiency.

Source: St Leonards South DCP FINAL 13/10/2020

Site

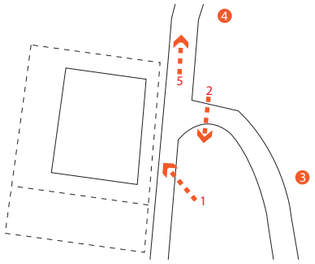
The development is centralised within St Leonards South Precinct, at a prominent gateway site to the St Leonards station, linking various key community aspects of the precinct, including Newlands Park and Green Spine.

The subject site is bound by future development sites to the north and west referred to as Areas 3, 4 and 6. (Areas 3 and 6 do not have DA approval)

A pedestrian link as approved remains unchanged at the southern boundary of the subject site, traversing vertically from Canberra Ave. to the future Green Spine.

Newlands Park (to the southeast) represents a significant opportunity for interaction between the subject site and the broader St Leonards South community.

Apart from fulfilling the needs for accommodation, the project also delivers important precinct infrastructures for the community including, the pedestrian link, public lift, retail facility, community hall and childcare.



Site Photos

Figure 01: NEWLANDS PARK

Figure 02: NEWLANDS PARK

Figure 03: SURROUNDING BUILDING CONTEXT

Figure 04: SURROUNDING BUILDING CONTEXT

Figure 05: SURROUNDING BUILDING CONTEXT

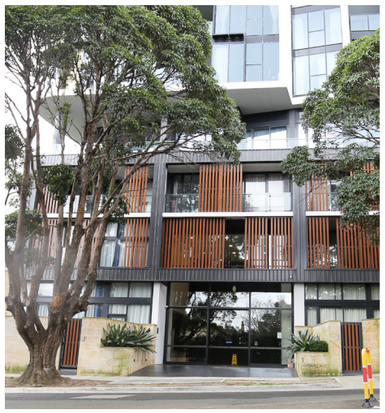


Figure 06: SURROUNDING BUILDING FABRIC

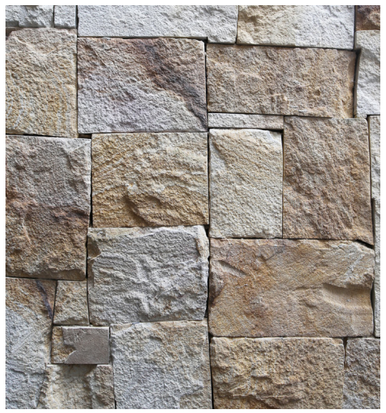
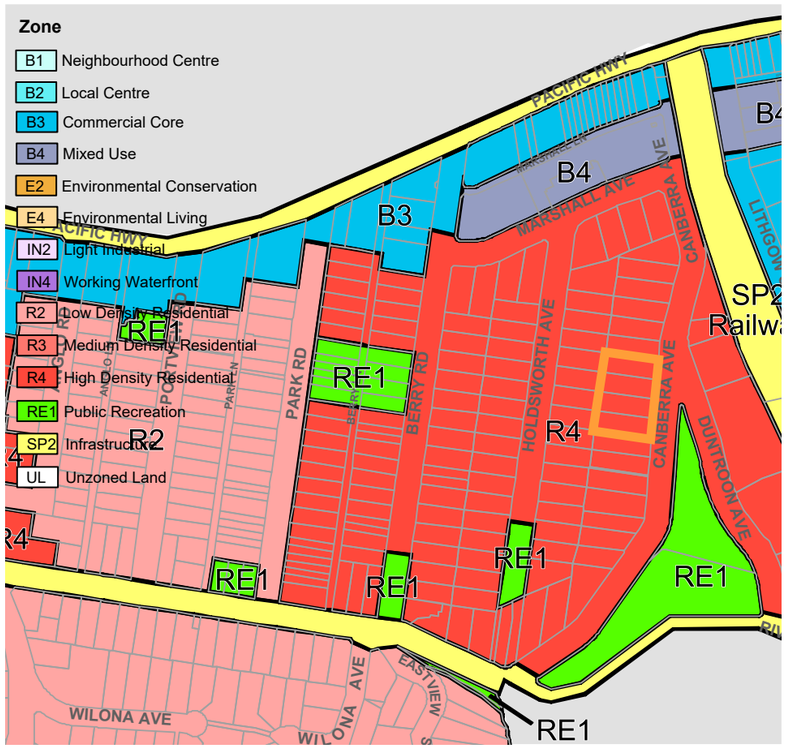
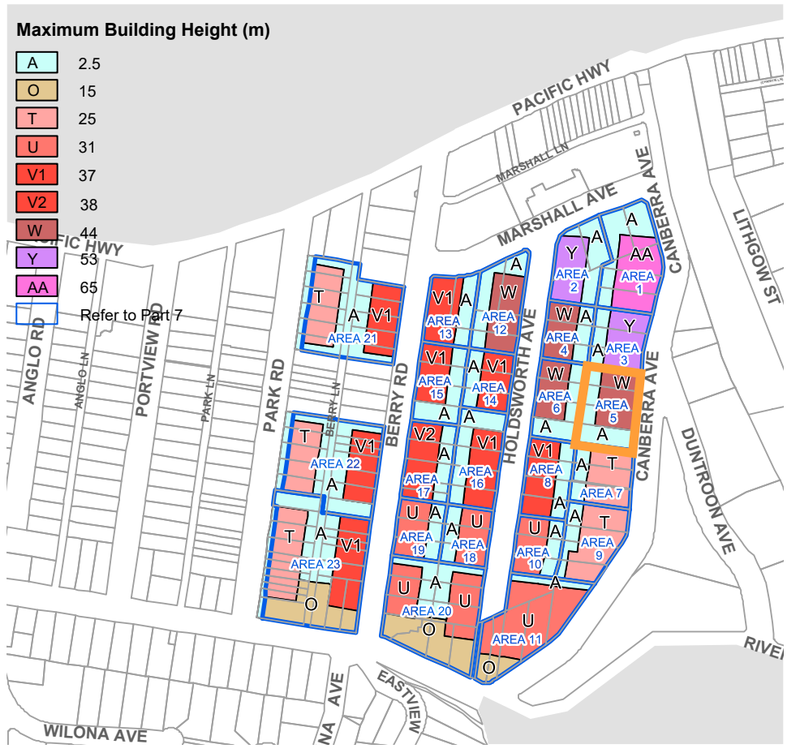
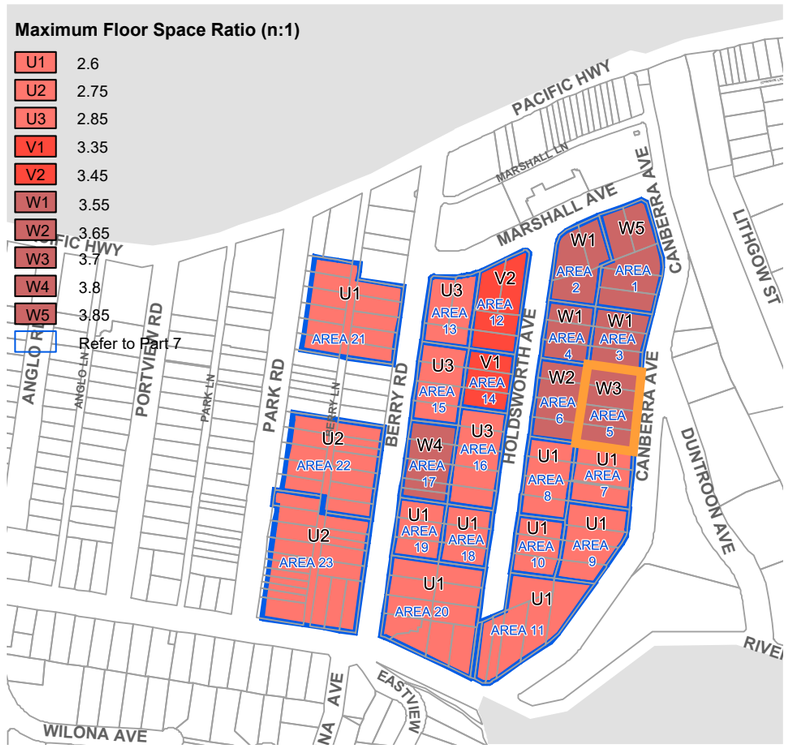


Figure 07: SURROUNDING BUILDING FABRIC

Lane Cove Local Environmental Plan 2009







Land Zoning

The subject site is zoned R4 High density Residential with the proposed use of Residential Flat Building permitted within the zoning.

Height of Buildings

The maximum allowable height permitted is 44m above the existing ground level.

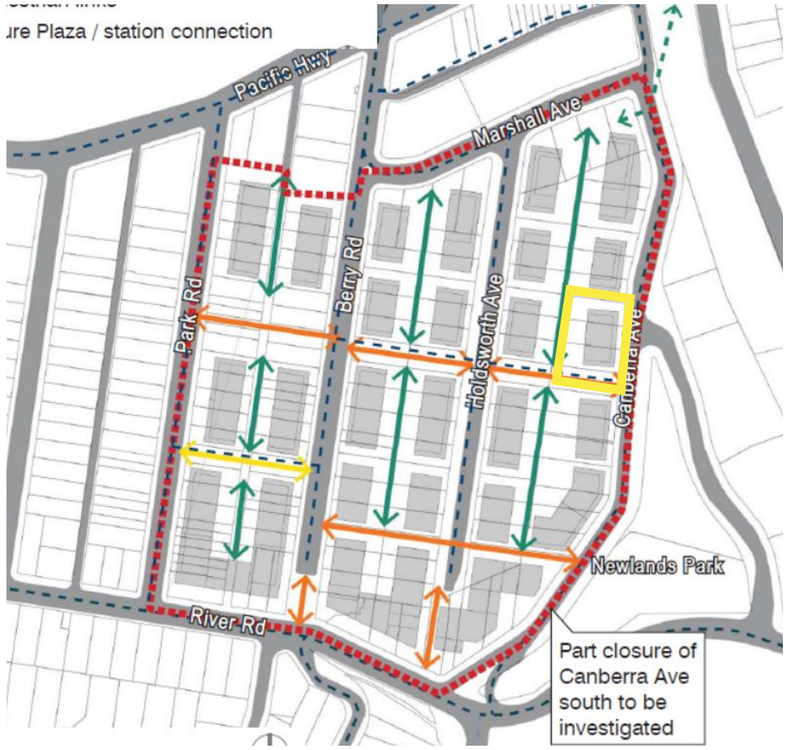
FSR

A maximum FSR of 3.7:1 is permitted.

St Leonards South DCP

St Leonards South Precinct Boundary

The DCP applies to the Area shown in Figure 8.1 which is located immediately south-west of the St Leonards Railway Station. It is bounded by Marshall Avenue, Canberra Avenue, Park Road and River Road.



Access Network

A proposed access network of interconnected cycle routes, green spine connections, new roads and pedestrian links provide improved access and circulation (vehicular, pedestrian and bicycle) within the Precinct, whilst not facilitating through vehicle traffic.

Structure Plan

The Structure Plan sets the broad framework for development within the St Leonards South Precinct in close proximity to the St Leonards Railway Station (the Station) and the St Leonards mixed-use/commercial centre.

Source: St Leonards South DCP FINAL 13/10/2020

St Leonards South DCP

Public Infrastructure

The infrastructure plan provides opportunities for additional public uses in the form of public open space, community facilities, affordable housing and the undergrounding of services.

Community facilities including a multi-purpose facility of 600 sqm, comprising a child care centre (450sqm), community hall (150sqm) and an adjacent Recreation Area of 450sqm are incorporated within the subject site.

Required Amalgamations

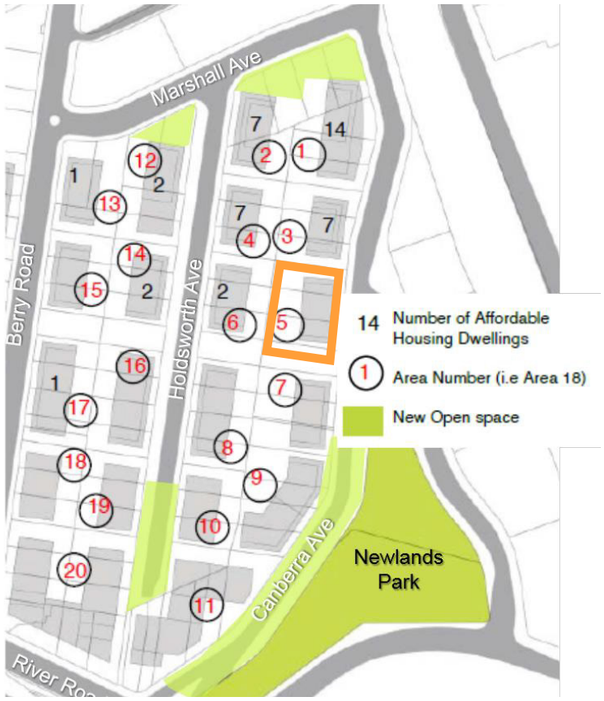
The subject site is consistent with the required amalgamation opportunities that allow for economic and aesthetic redevelopment while preventing land fragmentation or isolation that detracts from the desired future character of the precinct.

Indicative Site Entry Points

All access points within the subject site shall be sited to provide level street access to minimise ramps.

Source: St Leonards South DCP FINAL 13/10/2020

St Leonards South DCP



Affordable Housing

No affordable housing is required on site as per the DCP.

Source: St Leonards South DCP FINAL 13/10/2020

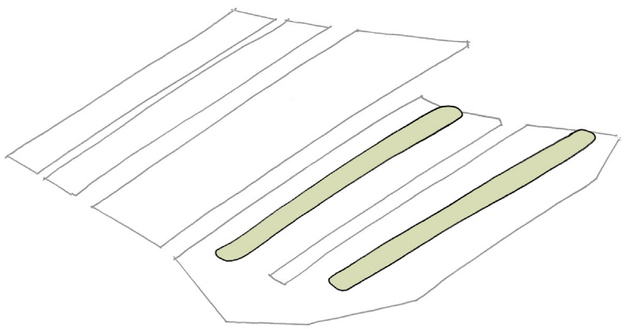
Landscape Masterplan

The Landscape Masterplan, prepared by Oculus, acknowledges the increased demand for parklands, child care centres and other infrastructure to provide services and amenity in response to population growth.

The existing character of the site is largely determined by its topography, vegetation and built form. The significant grade changes both north-south and west-east provide for varied views which are elevated in places.

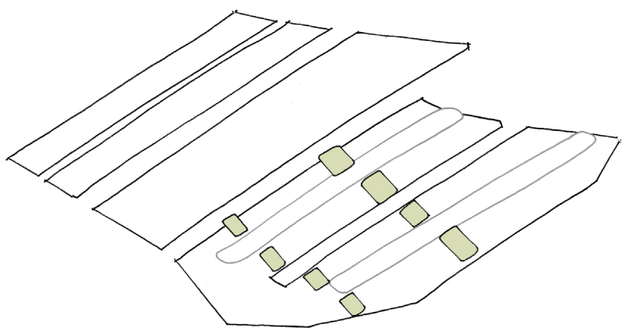
The masterplan envisages a network of interconnected semi-private landscaped zones, for the benefit of residents, with areas of public crossover. The 'green spines' as they are known are an integral piece of the structure underlying a desire for a pedestrianised garden precinct that integrates seamlessly with existing bicycle and public transport infrastructure.

Urban Context



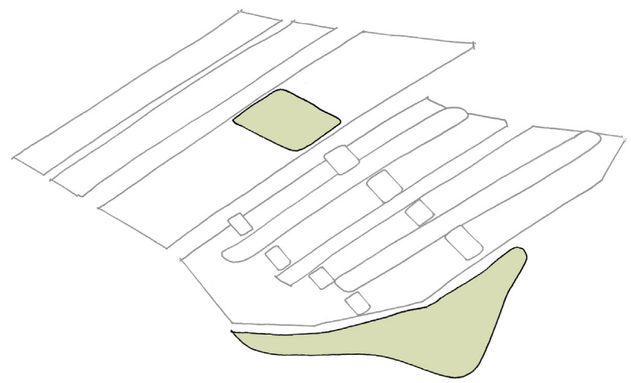
Green Spines

The creation of nine continuous north-south communal open spaces (green spines) located to the rear of the current residential lots (on private land and for residents use only).



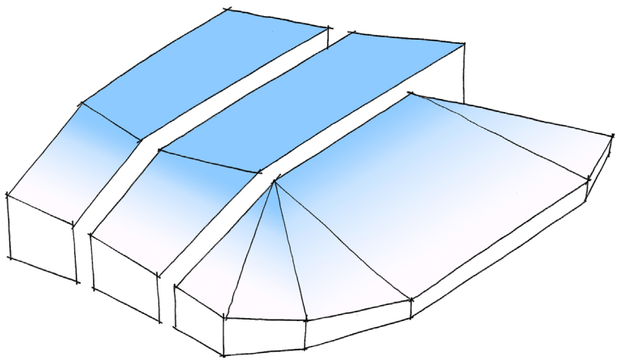
Pedestrian Links

The creation of a continuous east-west publicly accessible pedestrian route from Canberra Ave to Park Road (through the proposed local park) with a secondary publicly accessible east-west link between Canberra Ave and Berry Road.



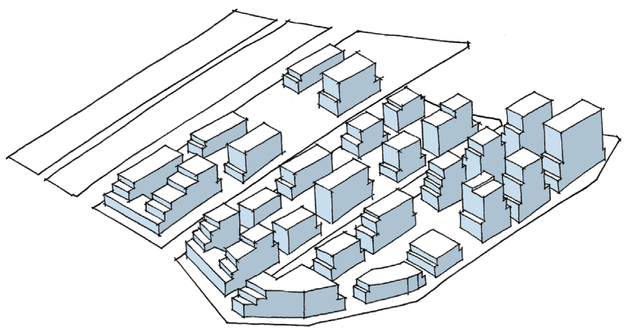
Open Space Network

Upgrade the existing open space area of Newlands Park to provide improved or additional recreational facilities for the precinct.



Topography and Levels

Work with the levels proposed in the Landscape Masterplan to minimise earthworks and difficult interfaces or level transitions and avoid changes in level between apartments and adjacent open space or streets.



Built Form

To encourage a stepped-back building form in order to reduce building bulk and scale to the street. To facilitate street and front setback (deep soil) tree planting to further reduce apparent bulk and scale.

3 Design Strategy

The design strategy is consistent with the approved DA application.

Overall Strategy - Consistent with DA

The DA approved built form results from careful evaluation of the site context and preserving light to key public spaces. The massing is manipulated to achieve feasibility for the site and maximize the benefit for the public domain. The current proposal seeks to continue the form and language and keep consistency with the approved concept to maintain design excellence.

Key approved DA strategies outlined below, all are maintained in the current proposal.

The street wall and stepped back upper levels are an important contribution to the streetscape and urban context of Canberra Avenue. The green spine setback sets a limit to floor plate depth that is consistent with the objectives of the DCP.

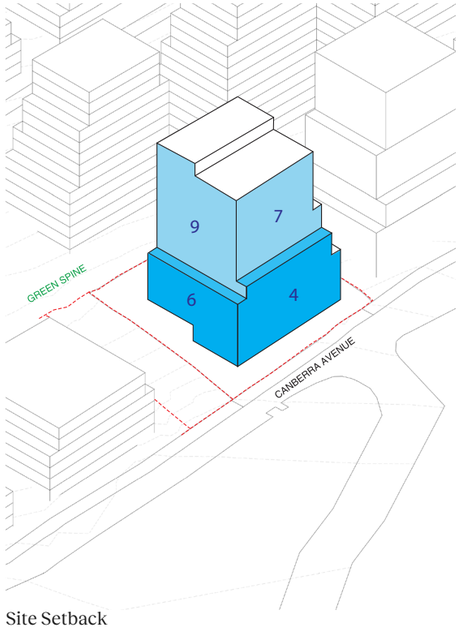
Exploration of setbacks to the north and south have been undertaken in keeping with the objectives of ADG and the St Leonards South DCP with regard to amenity and form articulation.

Using the grid, modules are pushed and pulled to maximise floor plate efficiency without departure from the objectives of the DCP envelope.

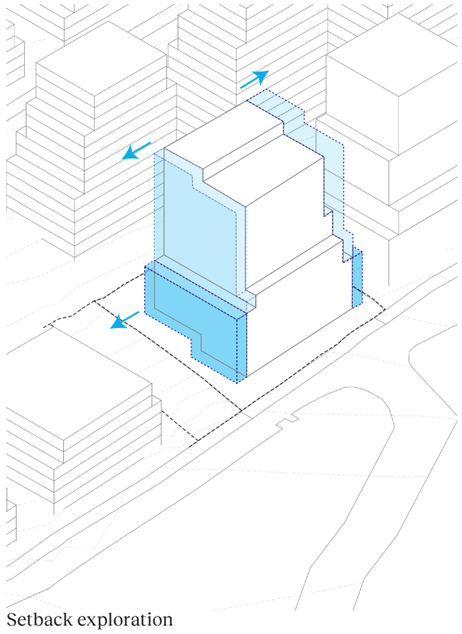
Regrouping the volumes provides simpler geometry to the eye, the front tower volume has been shifted away from the Northern edge, to provide more building separation to the neighboring development. The podium volume to Canberra Avenue has also been reduced to provide better scale to the street.

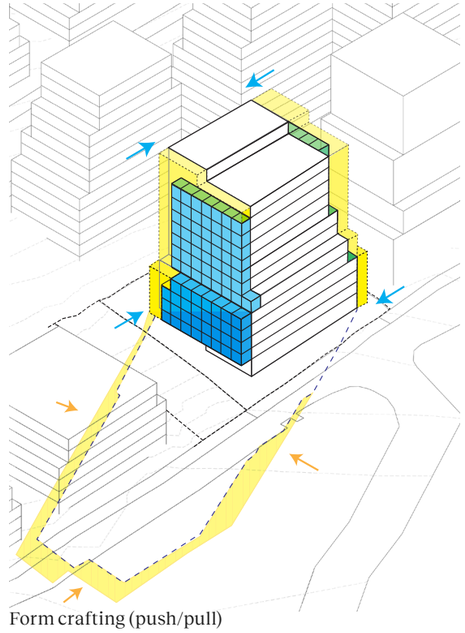
Other important aspects have been instrumental in carving out the building mass, including the residence's community space on roof, the indent on the Northern and Southern facade to provide light and ventilation to the corridors. And also lighten up the podium base adjacent to the pedestrian link to provide visual surveillance from the retail, community hall and corridor. The terrace houses on the street front reduce the visual scale of the building, and relate to the human scale street experience.

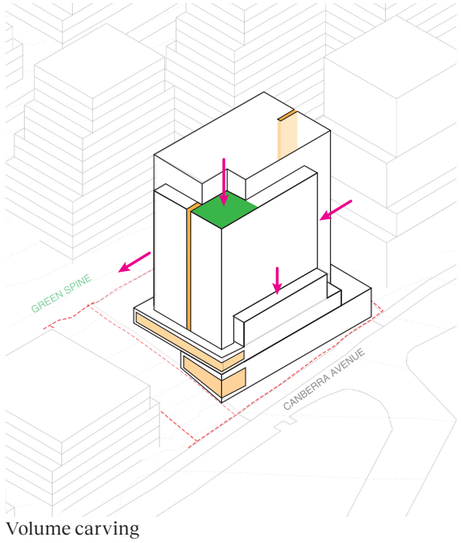
The colour and material of the building is selected carefully to connect with the context, specifically the various public greenery within the precinct. The greenery surrounding the site is "absorbed" into the building fabric and drawn towards the sky. Darker green material firmly anchors the building to the ground and as it progresses up in the tower, it gets lighter and lighter and disappears into the sky.



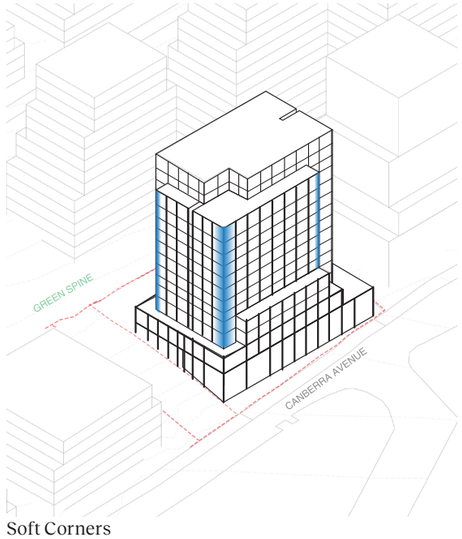
Site Setback


Setback exploration

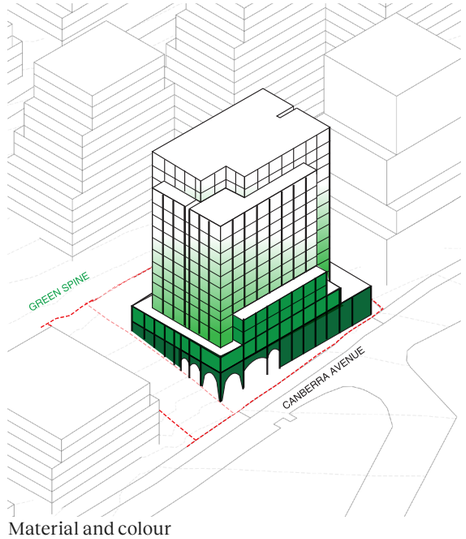

Form crafting (push/pull)



Volume carving



Soft Corners



Material and colour

Current Application

The current application is consistent with the approved DA concept. Maintaining the podium language and the stepped back massing on top, inserting the additional GFA (including 15% for affordable housing) into the body of the tower, stretching it towards the sky. This strategy not only maintains the integrity of the DA concept, it also ensures the buildability of project by continuing the current structure and services stacks.

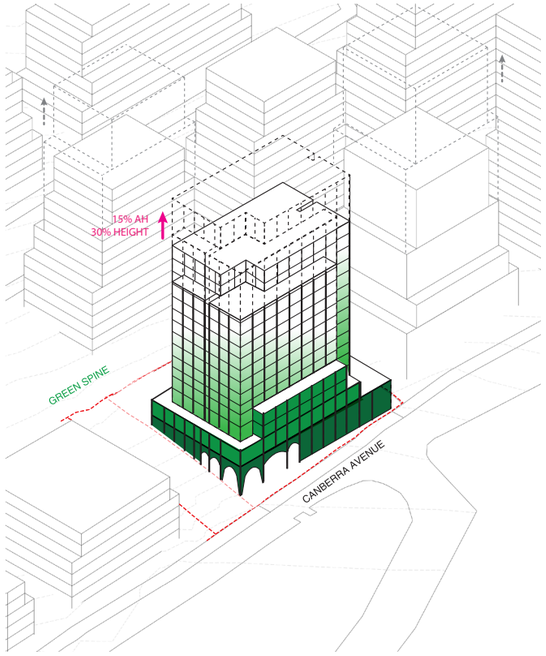
The southern edge is then further split into 2 massing, with a stepped form on top, further reducing the visual bulk.

The top levels are still setback, minimizing the visual impact from the street level.

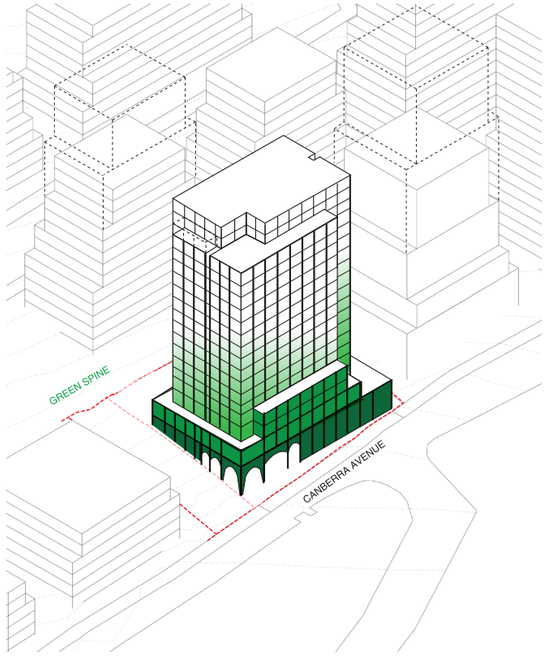
Affordable housing is distributed throughout the tower to allow for a naturally integrated housing mix and foster a unified community.

More community spaces are inserted onto L16, providing not only the outdoor gathering space but also newly proposed additional indoor amenities including lounge, accessible toilet, and flexible sitting areas.

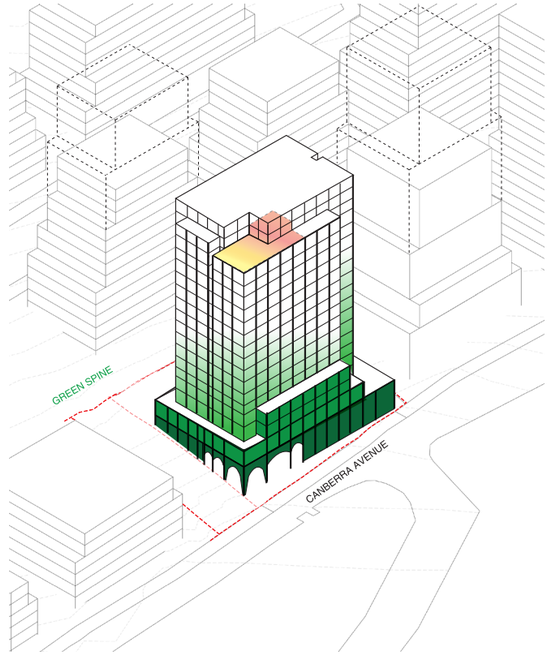
The community spaces on the rooftop (L16), has beautiful views out to the skylines.



In-fill Affordable Housing



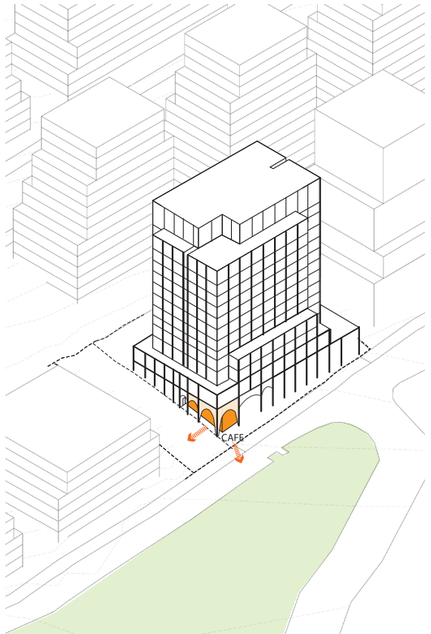
Building Edge Hierarchy



Increased Community Space

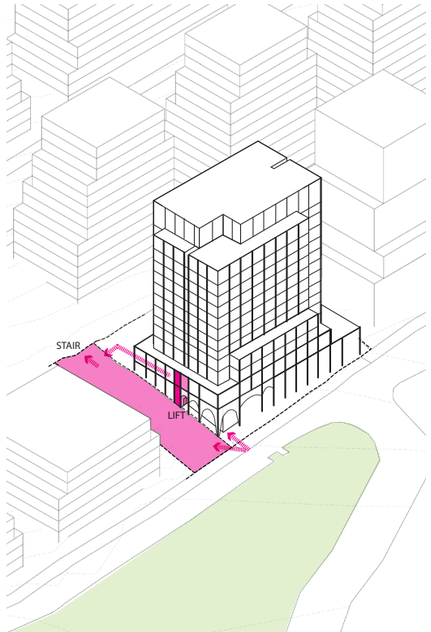
Public Spaces - Consistent with DA

The site is advantaged to bring together a collection of varied public uses incorporating community gathering, retail and childcare. The uses are gathered around the primary precinct pedestrian link which is anchored by Newlands park to the east.



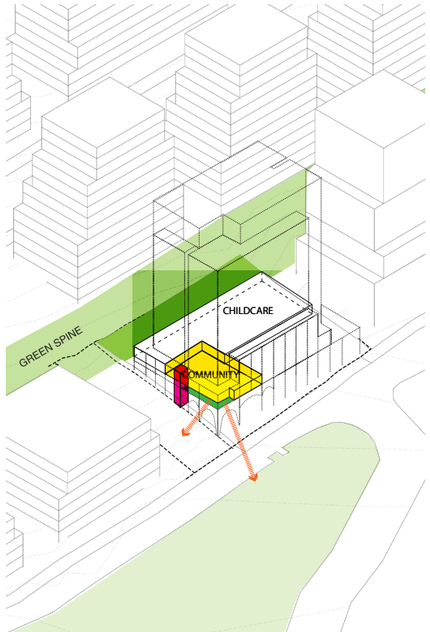
Retail activation

The pedestrian link and interface with Newlands park offer a unique opportunity for retail activation at the ground floor. Which will further define the public corner of the building. The potentially of the space being tenanted by a cafe allows for outdoor dining to take place in the forecourt of the lift area.



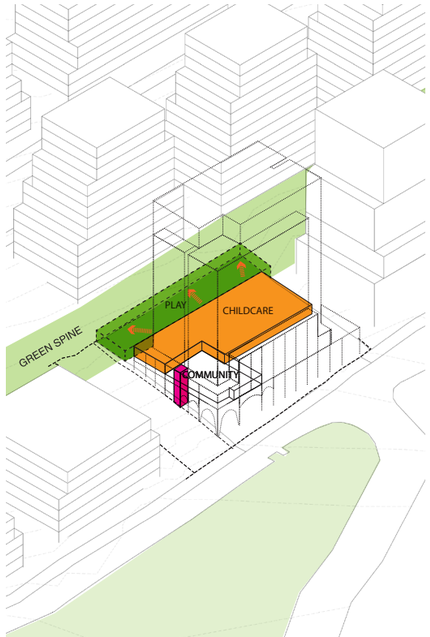
Pedestrian vertical circulation

Due to the verticality of the pedestrian link a lift is provided to facilitate equitable access from Canberra Avenue. The walkway required from the lift provides a landscaping opportunity and relief to the childcare and community space located on level one.



Community interaction

A community space of 151 sqm is provided at the southern boundary of the development site and is accessible from Canberra Avenue via the link stairs and lift. This space located adjacent to the pedestrian link further activates the southern boundary of the site and provides visual interest to the lift and walkway.



Childcare interaction

A childcare space and it's own outdoor play area totalling of 1251sqm is provided to serve the new precinct. The childcare space accommodates approximately 60 children. Outdoor play is integrated into the green spine landscaped zone. The childcare is accessed from Canberra Avenue via the pedestrian link lift with vehicle drop off incorporated into the development site parking area.

The 12m green spine setback zone at the rear of the site makes up the childcare' outdoor play area.

Canberra Avenue Street View - Consistent with DA

Green Spine - Consistent with DA

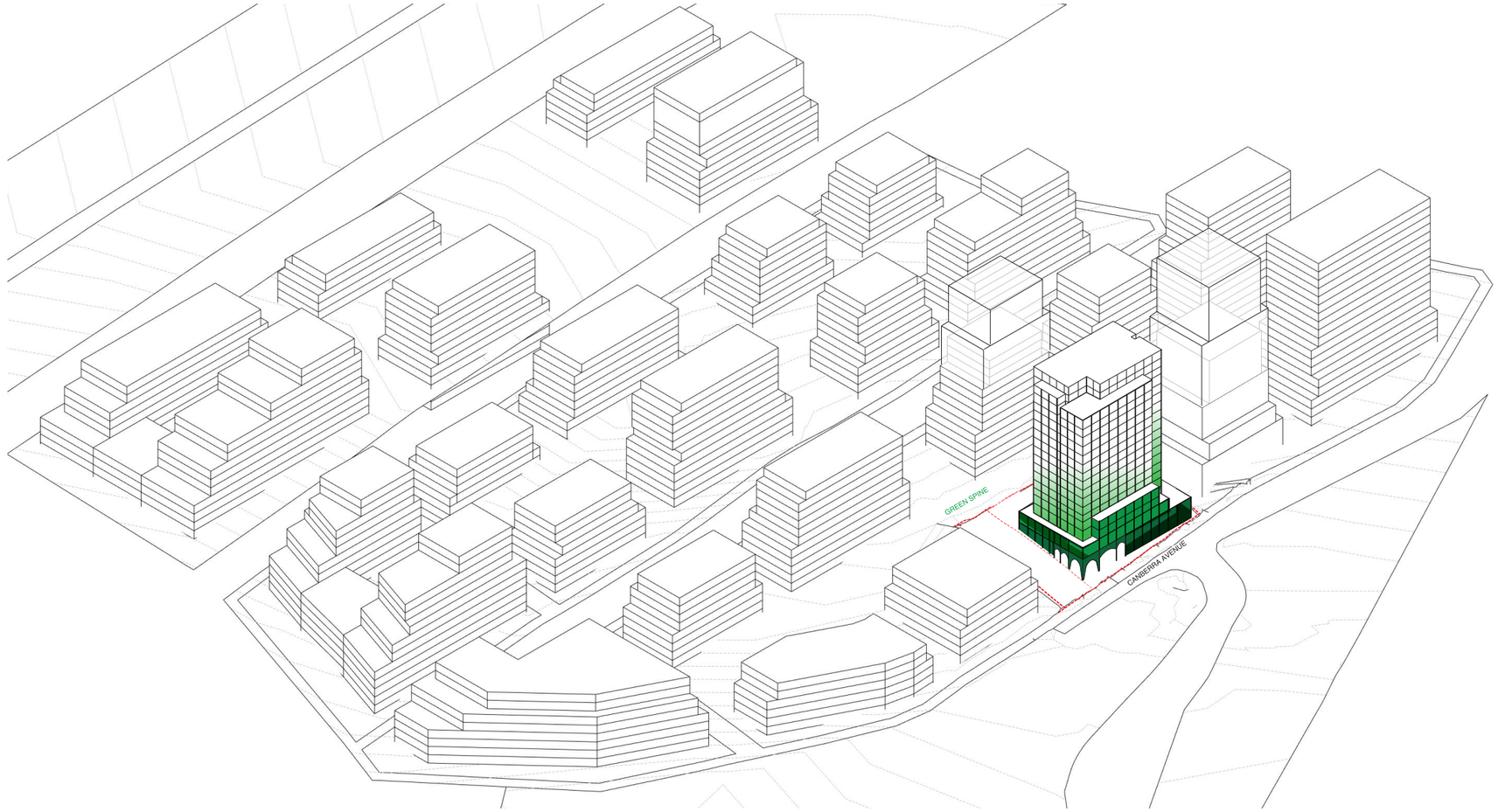
Precinct Context

The proposed development achieves an appropriate density that is consistent with the objectives of the St Leonards South Precinct DCP and the recent Infill Affordable Housing Amendment in the Housing SEPP.

- The proposal has a floor space ratio of 4.5:1, much lower than the maximum allowable FSR 4.81:1in the precinct DCP + infill affordable housing bonus.
- All apartments in the development enjoy a high level of amenity, with both views and generous private open space; Multiple common spaces to enjoy on Ground floor, green spine, within the building and on the rooftop.
- The project will provide 15% of its apartments as affordable housing, the objectives of the St Leonards South Precinct for affordable housing are for key workers in the immediate St Leonards Health and Education Precinct. This also contributes to NSW's aim to deliver 15800 social and affordable homes in the next 5 year.
- The proposal is well supported by infrastructure, public transport and community facilities within St Leonards and St Leonards South Precinct;
- The development is sustained by its close proximity to public transport, parks and facilities of St Leonards and St Leonards South.

The project will contribute in this regard within the wider St Leonards context by providing:

- Housing & Affordable housing within walking distance to public amenities and employment
- Bicycle parking for residents and visitor
- Adaptable housing in accordance with council's controls
- Activation of the building edges facing the pedestrian link



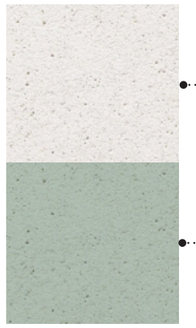
Material & Colour - Consistent with DA

The proposal is carefully considered, with material choices specific and responsive to its location.

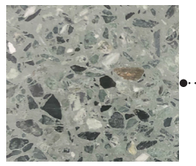
Massing and detailing is designed to respond to both the emerging character of the area and the existing surrounding building fabric. The following principles have been observed in the design process:

- Careful articulation of the building form has been adopted to reduce the perceived bulk of the building, especially along Canberra Avenue
- Proposed colours are those which are found naturally rather than primary colours, ensuring that the building sits comfortably within the urban scape.
- The use of 'natural' materials which do require minimal maintenance
- Robust materials which are long lasting and weather naturally,
- Extensive use of landscaping elements and screening devices

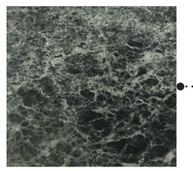
The texture and colour of the GRC/EQUITONE (or similar) cladding will tie the building together, gradients from a darker colour towards the base to a lighter colour as it touches the sky. The material itself provides multiple construction, maintenance and sustainability benefits.



Terrazzo will clad around the podium level around the building, reflecting the different use of the Childcare and Community Hall within and highlighting the front volume facing Canberra Avenue to form a second tier of base for the tower to stand on.



Marble will form the base of the building, where residents can see, touch, and feel the material that's closet to them. It creates a grand civic edge to the building, signalling the public plaza and retail that sits around it.
It also provides a heavy base for the tower to stand on.
The natural aesthetics and green colour will connect the park and the green spine effortlessly.



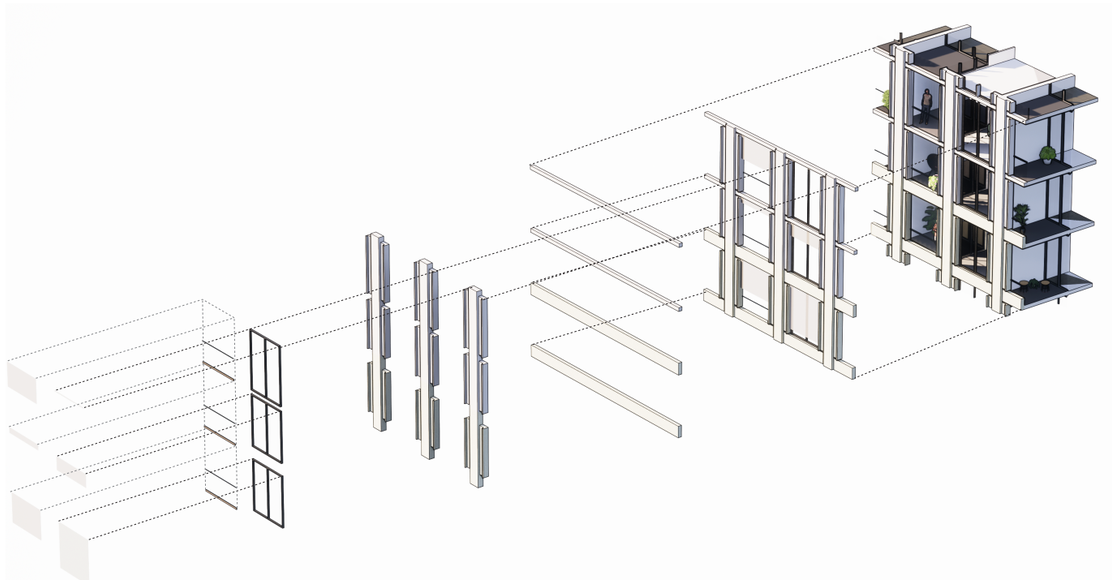
Facade Language - Consistent with DA

The building facade has the following key features:

1. On all levels of the building, consistent, intricate and solid 1400mm wide columns have been applied to the facade.
2. Horizontals bands vary in height from 1300mm at the base to 300mm on penthouse levels. On lower levels, the deep upstand provides privacy and protection from the street. Upper levels do not required the same depth.
3. The verticals and horizontals together provide significant solidity to the building, while the gradiented horizontal bands create another layer of visual interest.
4. The solidity of the building is further emphasised by the use of stone and terrazzo which firmly anchors the tower down to the ground.

The West elevation has been further articulated with the following features:

1. The west facade has been designed with intricate layering approach. Four layers of elements articulating the facade, using three layers of materials in two distinct colours. When assembled these layers provide various beautiful textures and shadows when viewed closely by the residents.
2. The four layers of facade elements include: diminishing horizontal bands, the tower becomes lighter in colour as it touches the sky. Detailed solid verticals articulating the grid. Window and balustrade and retractable awnings.
3. The proposed awnings provide sun-shading and privacy protection. Design for external use with minimum maintenance the awnings are mounted onto vertical guide rails. The operator has the option to tilt the bottom panel at various angles to suit the amount of shading required. There is also opportunity for colour to be added to the awnings to provide added delight for those looking in or at the facade.
4. The three layers of tower materials include a stone base, terrazzo podium and Eqitone or GRC cladding (or similar) for the tower. Together with the aluminium window framing, glass balustrades and soft fabric awnings, they provide a detailed facade suite.
5. The colour of the tower gradients from a darker green base to a lighter white hue towards the sky, connecting the proposed building to it's surrounding context.



Layered Facade

Facade Activation

Landscape

The site provides significant landscape opportunities at different levels of the proposal.

The proposal is surrounded by greenery at its ground plane, wedged between the existing Newlands Park, the newly proposed 15m wide east west link, and the green spine that runs through the precinct.

The east west pedestrian link not only provides connection between Canberra Avenue and the green spine, but is envisaged to be a gathering place for the community. At the foot of the pedestrian link, a circular plaza is designed to link the pedestrian link and the retail/cafe space, blurring the boundary between the building and the greenery and activates the street corner. Right adjacent to it is a landscaped amphitheater that will bring the community together, to provide somewhere to pause and re-connect.

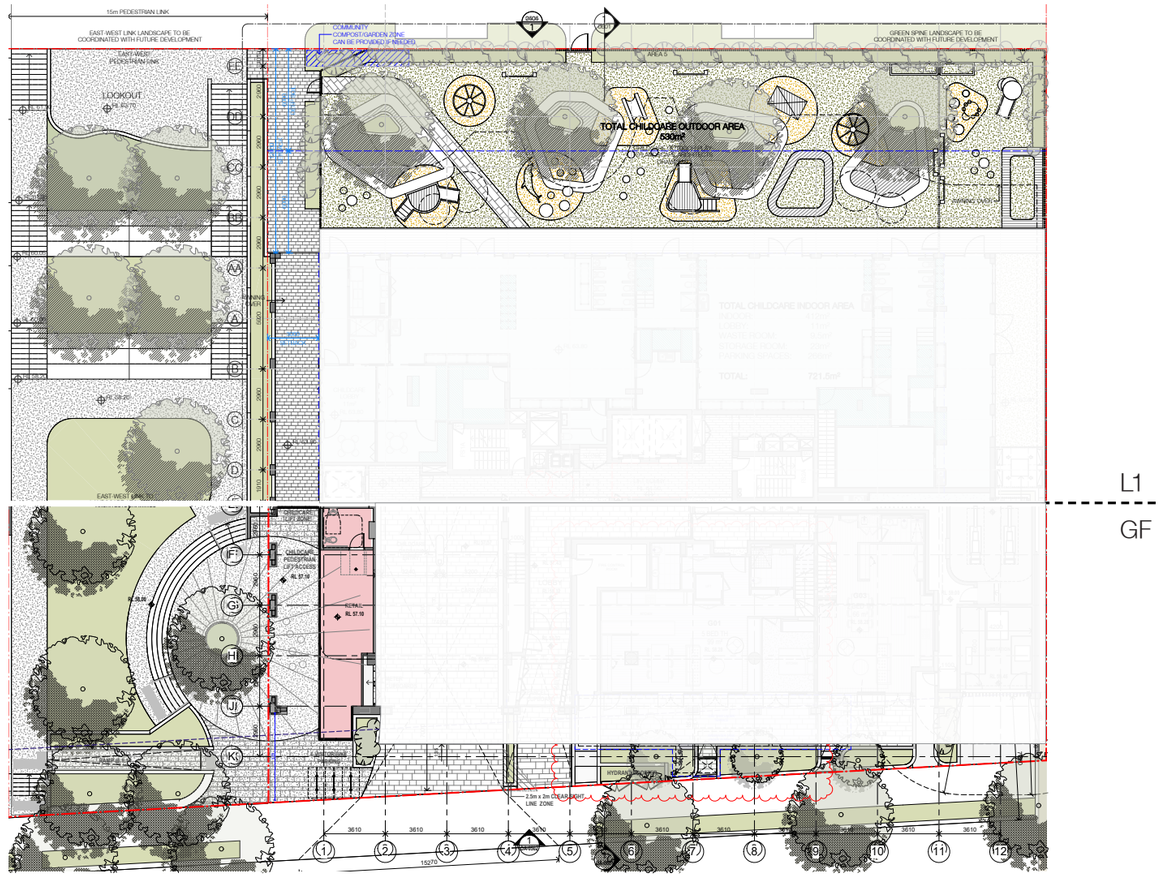
The green spine on top of the pedestrian link runs through the precinct provides various amenities for the residents along with hard and soft landscapes, lawns and playgrounds.

Generous landscaped green edges are present throughout the building, which provides opportunity for the residents to engage with the nature. A rooftop community garden is also provided for the residents with various seating arrangements, amenities and landscaped gardens. The rooftop garden enjoys uninterrupted views out to the city.

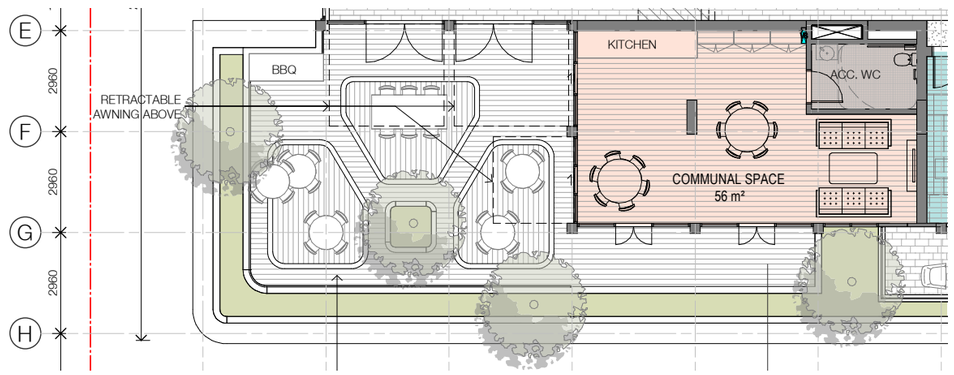
In the current application, a new indoor community room is designed adjacent to the DA approved rooftop garden, extending the community rooftop space into the building.

Please refer to the landscape reports and drawings for further information.

GROUND PLANE LANDSCAPE



ROOFTOP COMMUNITY GARDEN



Amenity

Our objective is to provide superior public and private amenity in the context of the SEPP 65 guiding principles.

The proposed development achieves good quality amenity for residents and neighbours through considerations of the following.

There are 4 distinct opportunities for resident to engage and enjoy community and communal open space. These include; vast communal open spaces at the precinct level; After hour/ weekend use of the expansive childcare outdoor play area; The programmed Upper Ground indoor community facility; and the rooftop communal open space with uninterrupted city views.

PRECINCT LEVEL - The site being situated in the heart of the St Leonards South Precinct, has direct access to a number of shared community amenities. Including council operated childcare, indoor community hall, BBQ areas, landscaped areas, child play zones, small parks, bench and picnic spaces. The site offers two key community spaces to the precinct and its residents being the Childcare and community hall which totalling 1050sqm of indoor and outdoor space as well as large civic pedestrian link through the precinct. Residents of the building have direct access to the greenspine and pedestrian link via level one connection.

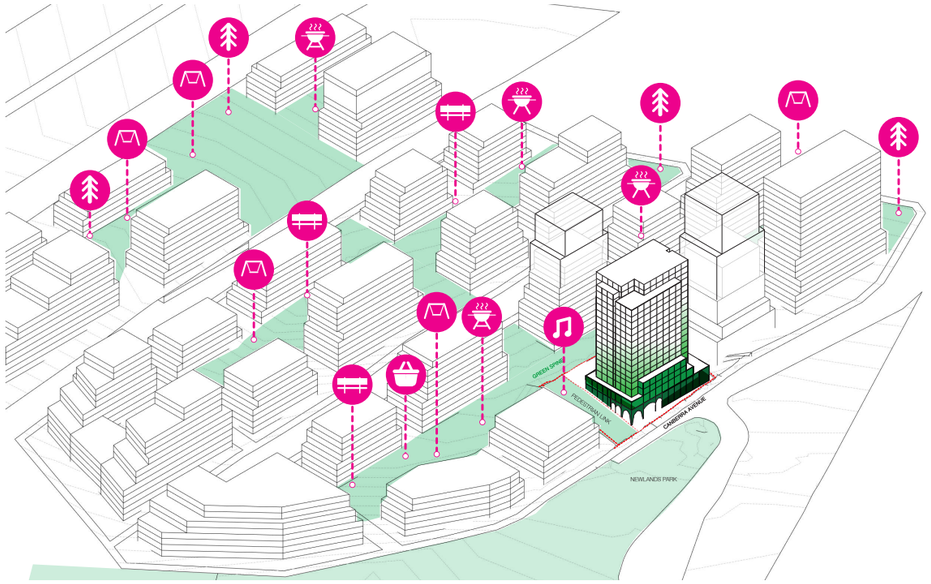
PRECINCT LEVEL - OUTDOOR PLAY - A condition is in place under the original DA approval for the child care outdoor space to be made available to the public outside of its operation hours. This will provide around 530 sqm of engaging outdoor play zone for both the residents and the public.

INDOOR UPPER GROUND - The upper ground floor provides functional and exclusive resident facilities including private wine storage room, music room, fitness studio, cinema, swimming pool and spa.

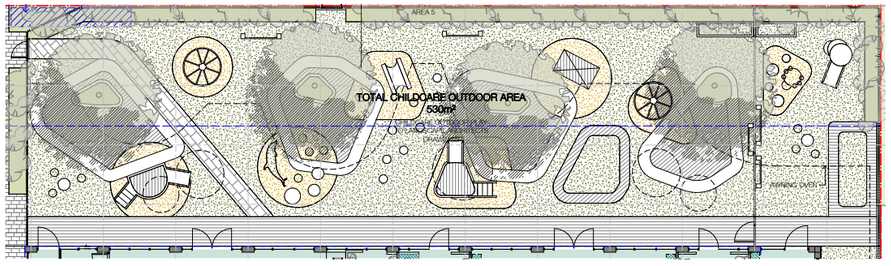
ROOFTOP - The rooftop community space provides kitchen, BBQ and accessible toilet. Plus shaded outdoor seating areas which can accommodate multiple groups at a time. The current application also provides additional indoor space adjacent to the outdoor rooftop garden, further extending the community space into the building envelope.

The development contributes to the general public amenity at ground floor level through the activation of frontages via inviting pedestrian link, visible retail corner, public lift, lobby spaces, access and balcony orientation

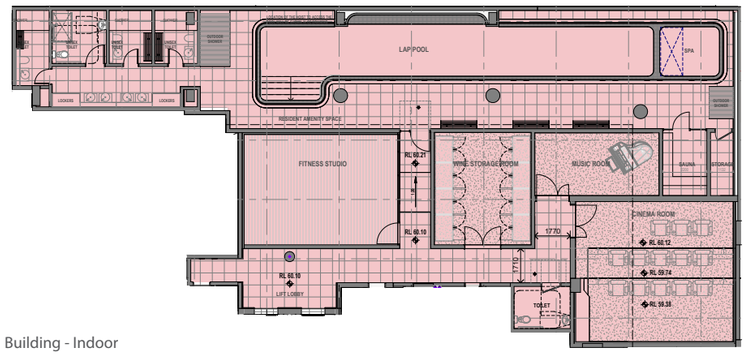
Generous two storey entry lobby containing a parcel room.



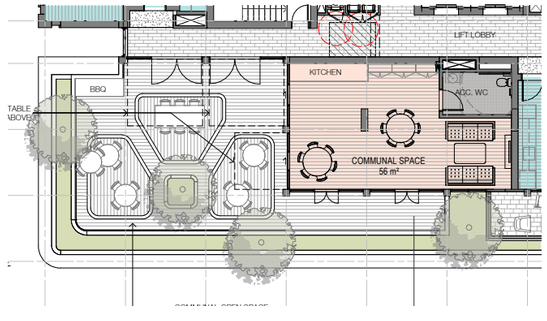
Precinct



Precinct - Community



Building - Indoor

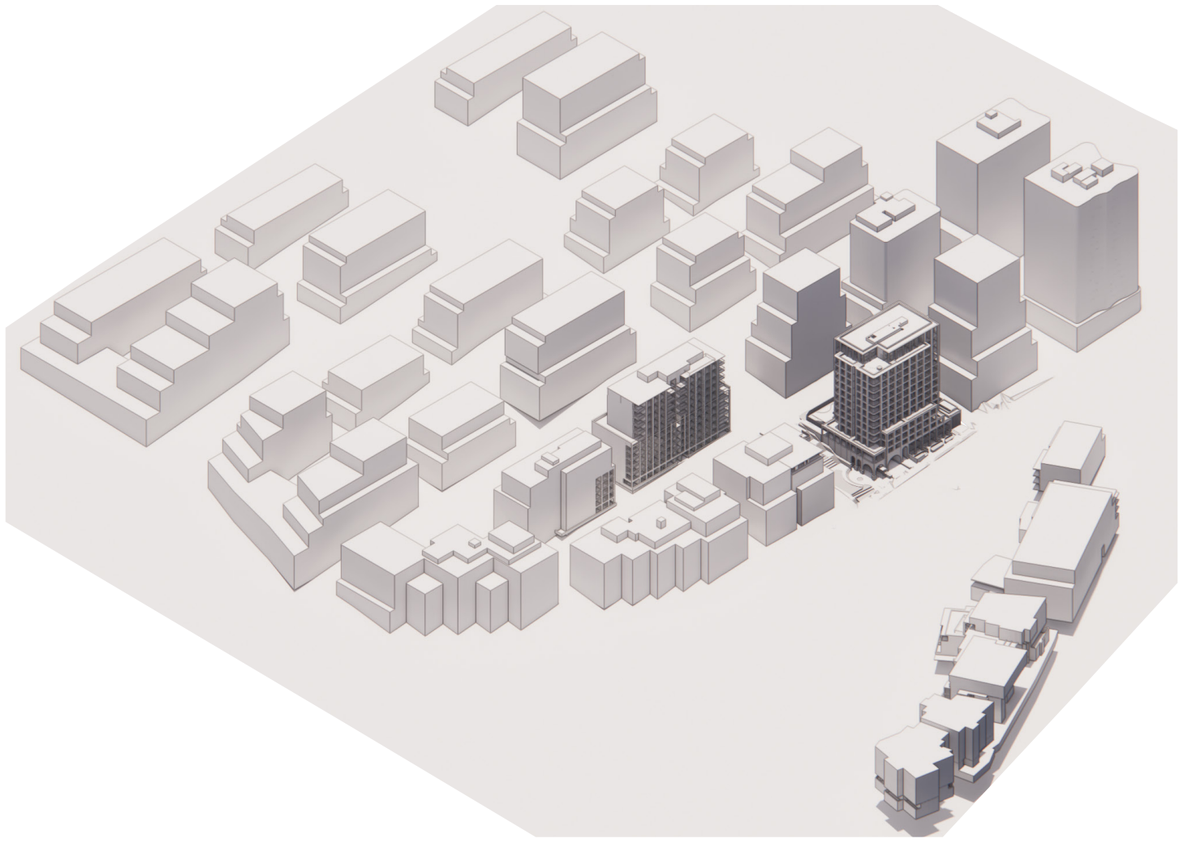


Building - Outdoor & Indoor

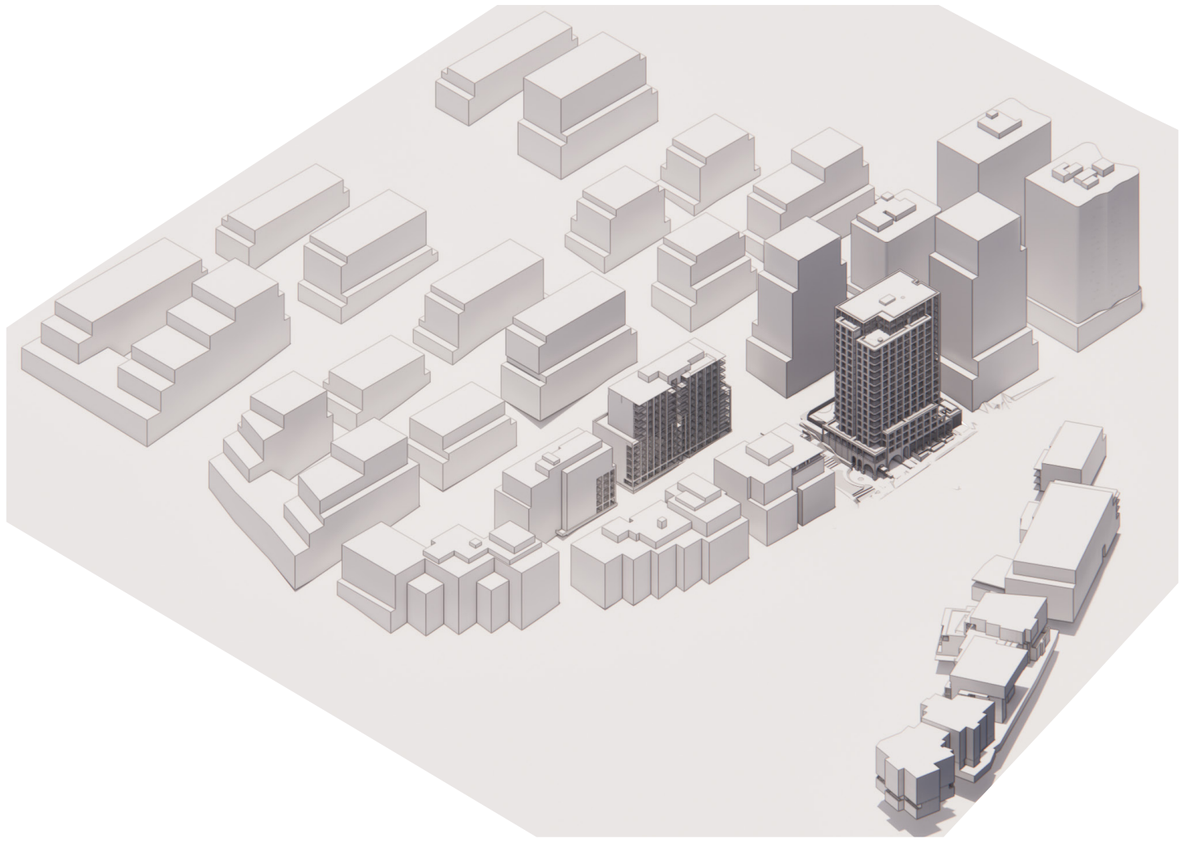
2 Analysis

Further Analysis comparing DA with Current Application

APPROVED DA



PROPOSED



Key aspects of the project compared to the DA submission, changes are highlighted with pink backing.

APPROVED DA (AS MODIFIED)

PROPOSED GFA
8720m²

APARTMENT TOTAL
75

SOLAR
70%

FSR
3.32 : 1

APARTMENT MIX
26/22/30

CROSS VENT
62%

STOREY
12+2

PARKING
113

DEEP SOIL
16%

CURRENT APPLICATION

PROPOSED GFA
11842m²

APARTMENT TOTAL
102

SOLAR
70%

FSR
4.5 : 1

APARTMENT MIX
33/25/41/1

CROSS VENT
62%

STOREY
17+2

PARKING
138

DEEP SOIL
16%

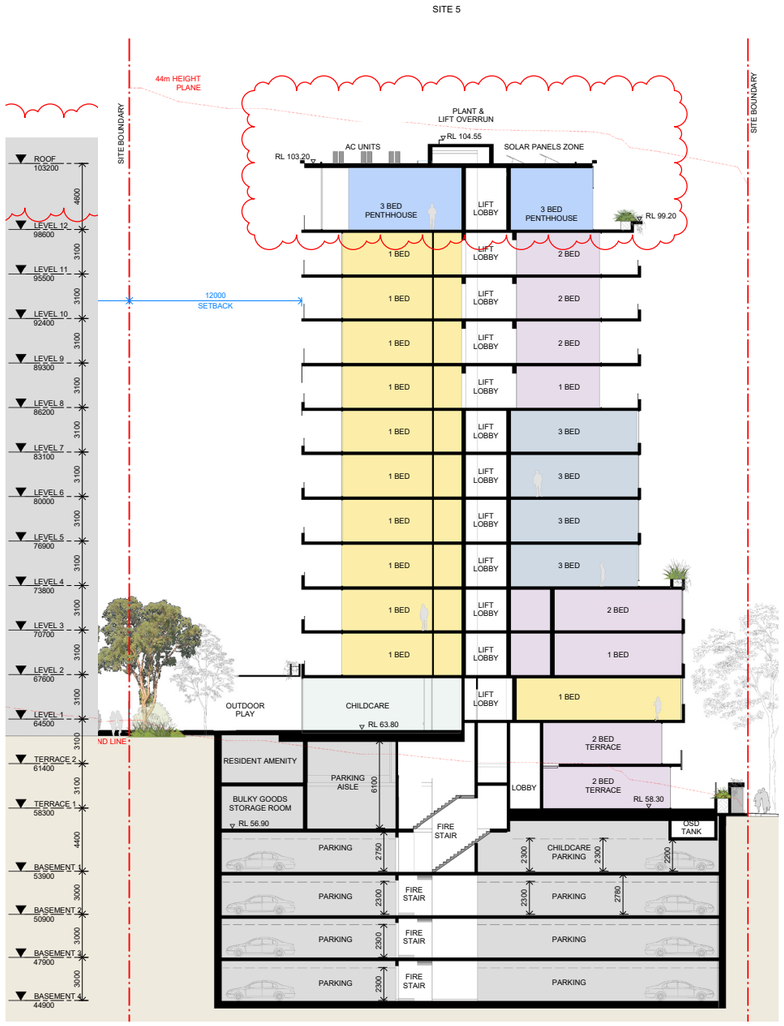
Key section of the project compared to the DA submission,

L12 is reduced from 4.6m to 3.1m. L13 to L15 are added as per typical floorplate, L16 and L17 are setback on top.

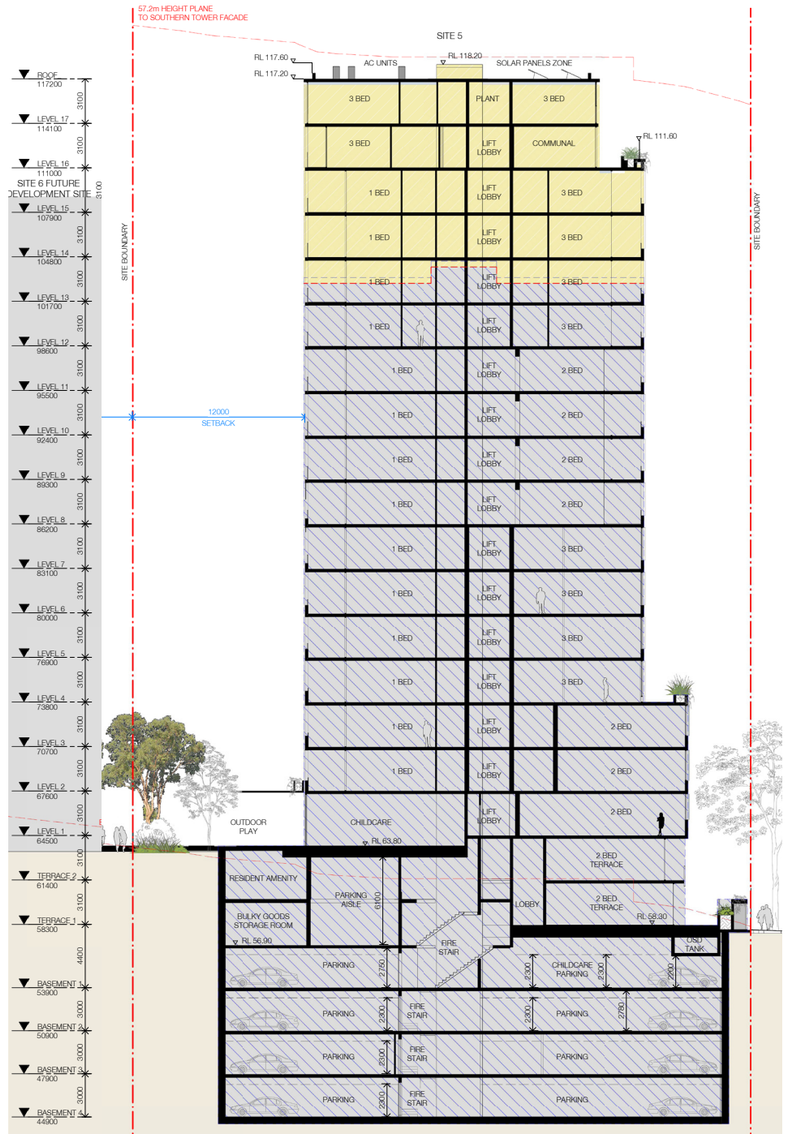
No change from basements to L11, including all community spaces.

Additional indoor community space is added on L16.

APPROVED DA



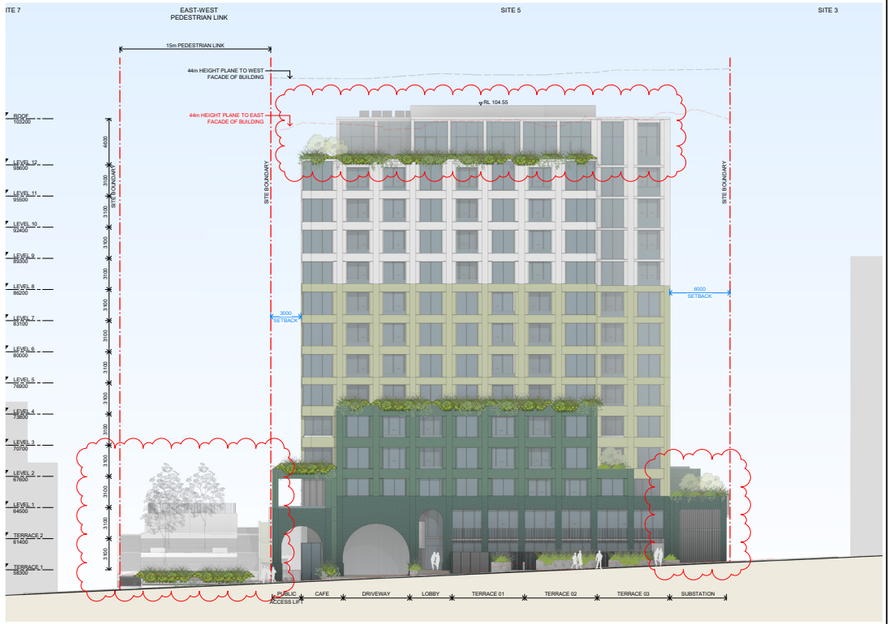
CURRENT APPLICATION



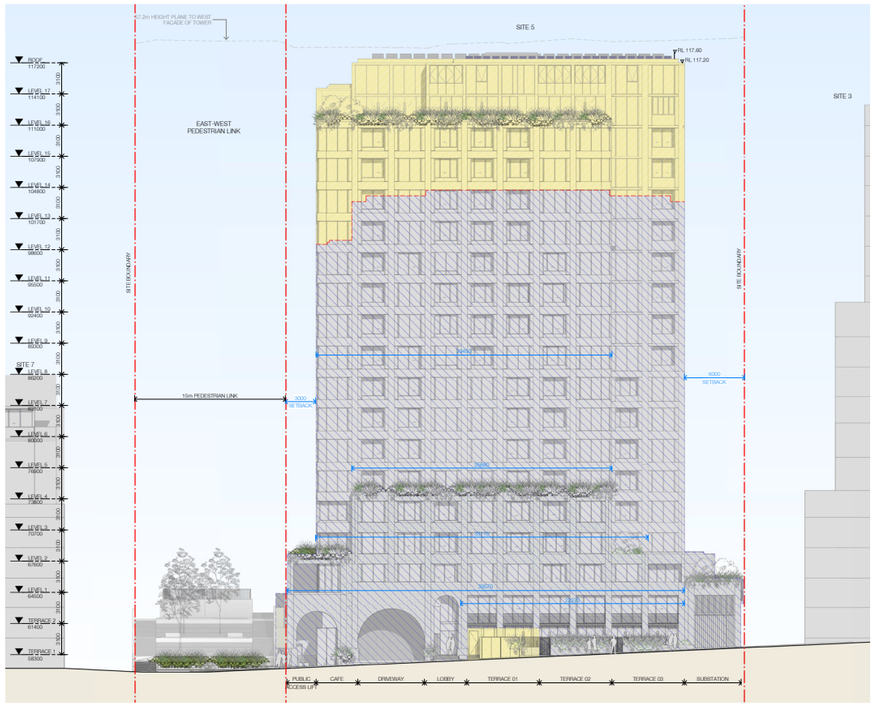
East elevation, Canberra Avenue, compared to the DA submission.

No change from basements to L11, including materials and colour.

APPROVED DA



CURRENT APPLICATION

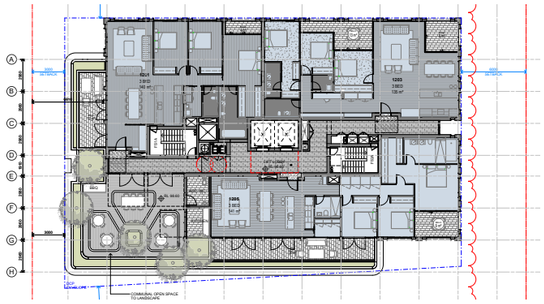


Updated plans compared to the DA submission.

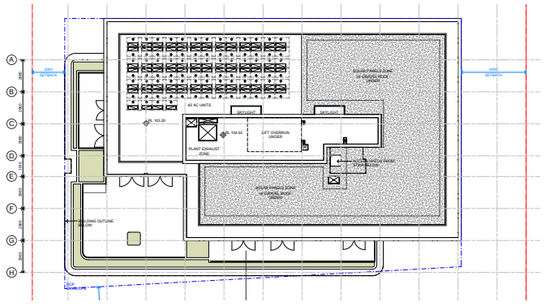
No changes from Basements to L11.

L16 and L17 are setback from the South East corner, to reduce visual impact from street level. Additional indoor communal area is added on L16 to connect with the outdoor rooftop garden.

APPROVED DA

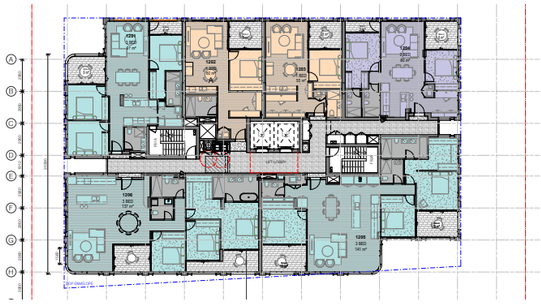


Level 12

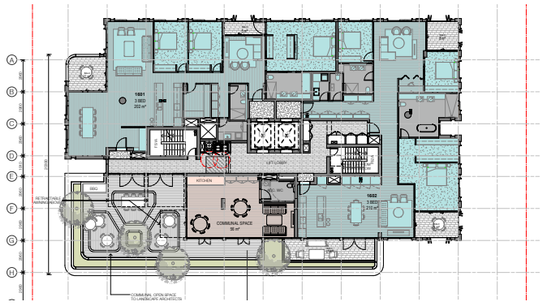


ROOF

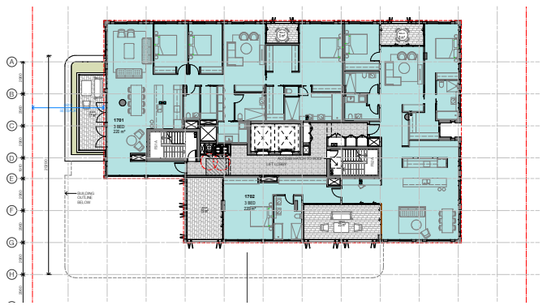
CURRENT APPLICATION



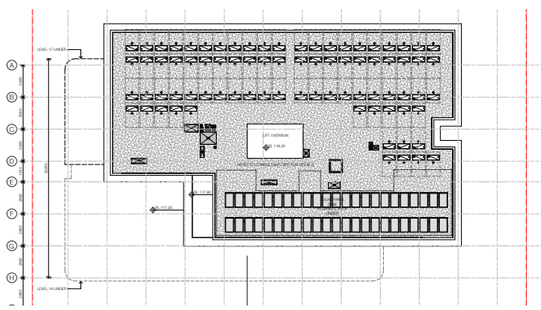
Level 12 - 15



Level 16



Level 17

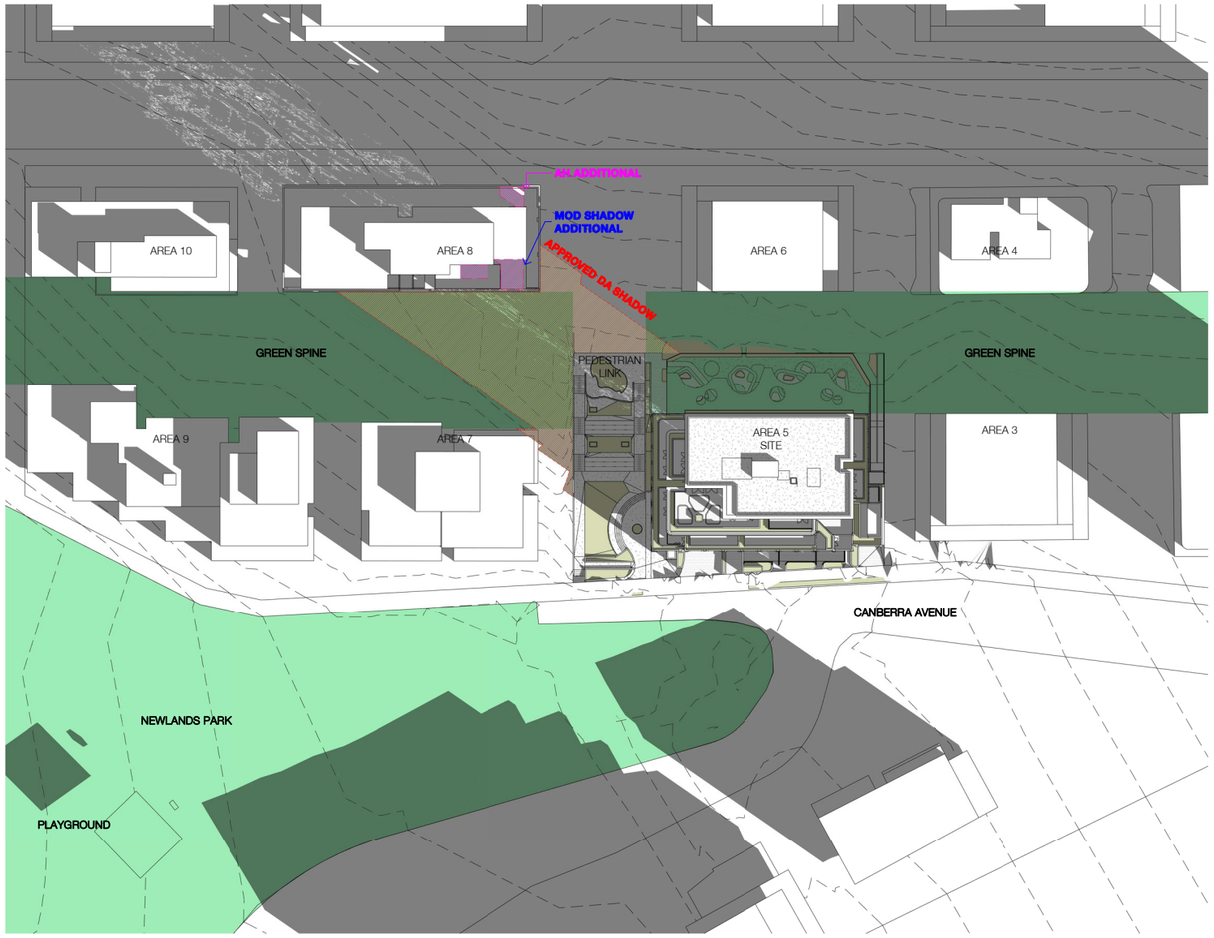


ROOF

4 SHADOW & SOLAR ANALYSIS

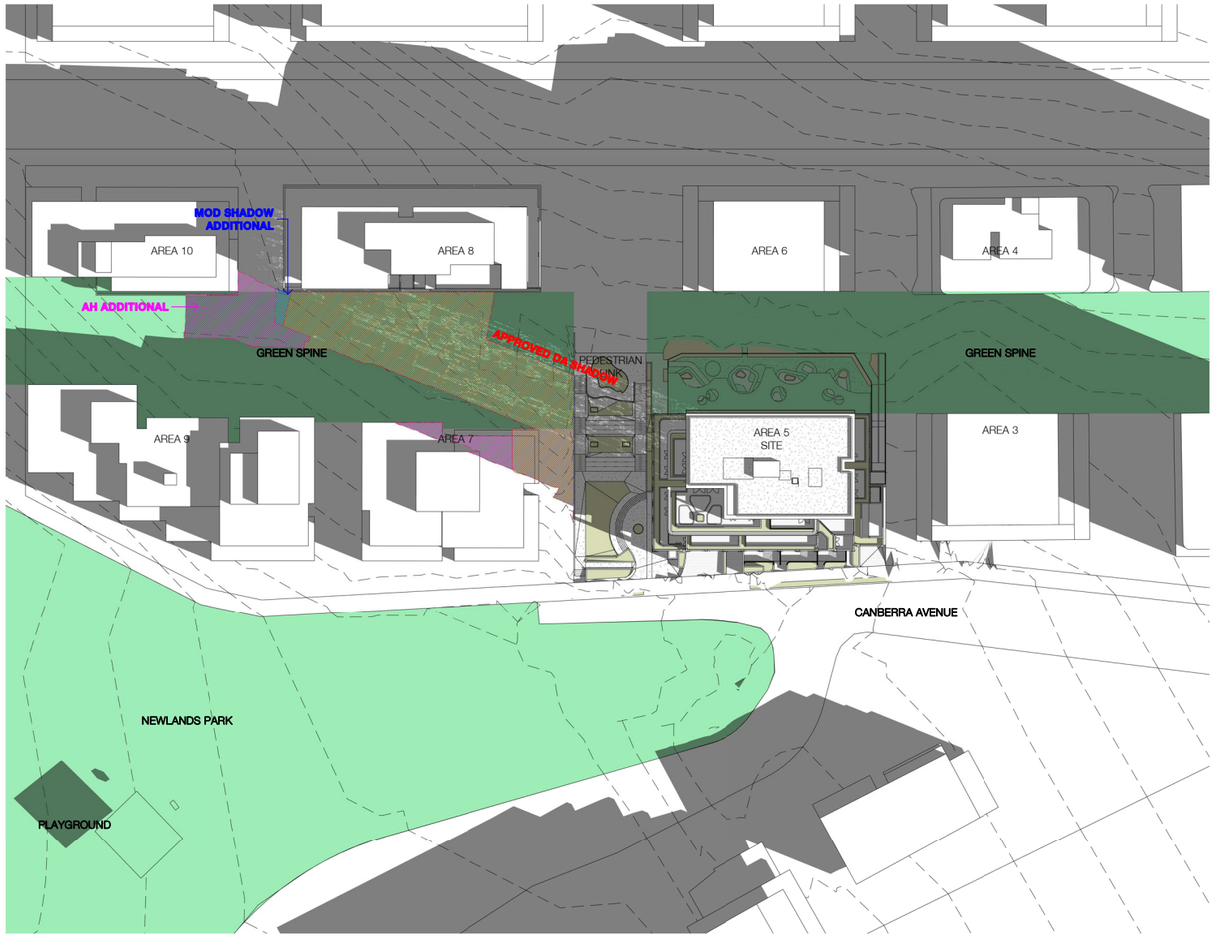
SHADOW & SOLAR ANALYSIS

AREA 7-10 JUNE 21 - 9 & 10 AM



WinterSolstice_9am_ALTS

THE ADDITIONAL SHADOW TO THE ROOF OF AREA 8 DOES NOT OVERSHADOW ANY COMMUNAL OPEN SPACE.
(AS PER THE AREA 8 APPROVED DA)



WinterSolstice_10am_ALTS

THE ADDITIONAL SHADOW TO GREEN SPINE DOES NOT OVERSHADOW ANY PLAY/PICNIC/COMMUNAL EQUIPMENTS.
(AS PER THE AREA 8 APPROVED DA)

SHADOW CAST FROM ADJACENT SITES
SHADOW CAST FROM APPROVED DA ENVELOPE
SHADOW CAST FROM MOD DEVELOPMENT
SHADOW CAST FROM AH MASSING

NOTES

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

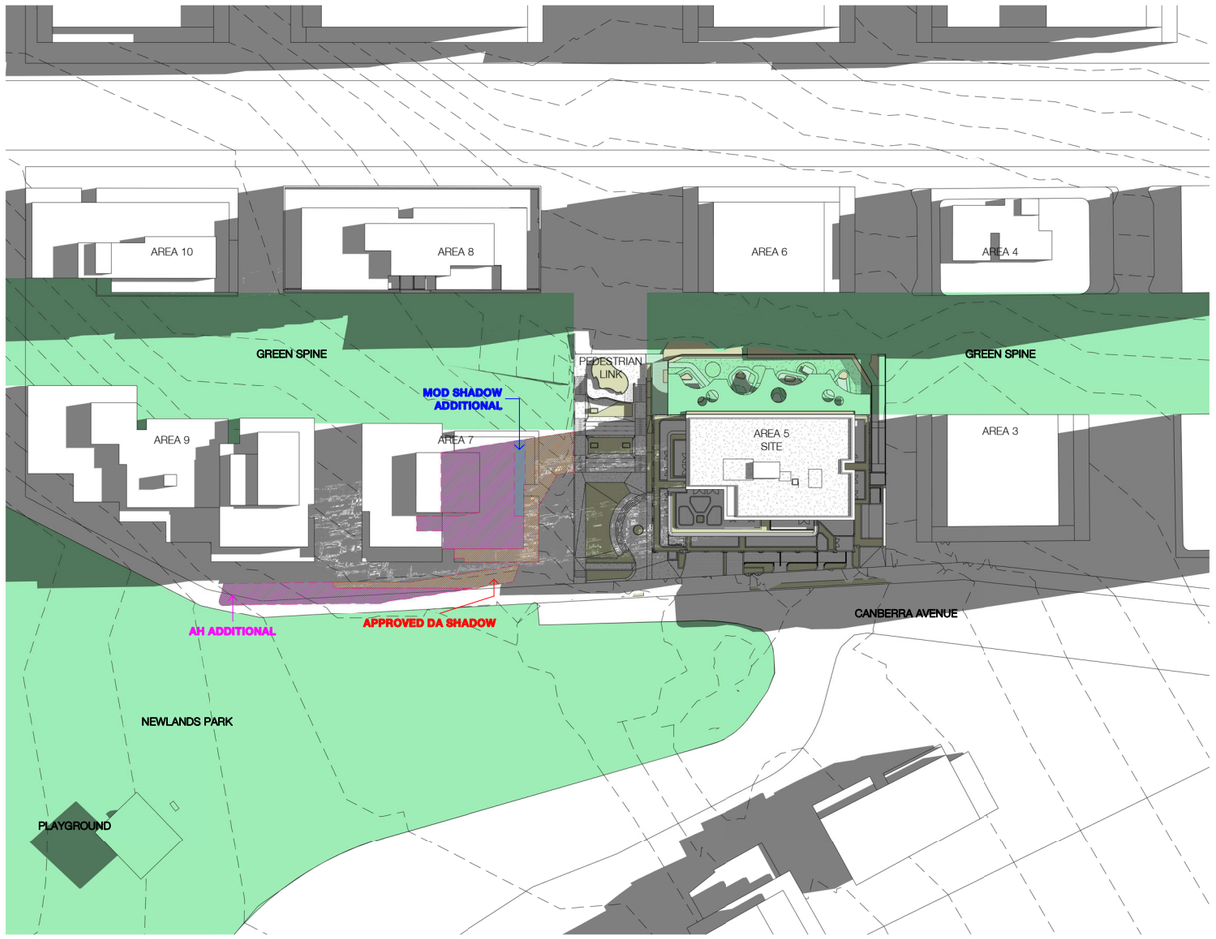
- Newslands park extent and play area location is modelled as per google maps, camera views and site visits observations.

* DWG 2001-2004 TO BE READ IN CONJUNCTION WITH 2005 DIAGRAM

AREA 7-10 JUNE 21 - 11 & 12

WinterSolstice_11am_ALTS

THE ADDITIONAL SHADOW TO THE ROOF OF AREA 7 DOES NOT OVERSHADOW
ANY COMMUNAL OPEN SPACE
(AS PER THE AREA 7 APPROVED DA)



WinterSolstice_12pm_ALTS

THE ADDITIONAL SHADOW TO THE ROOF OF AREA 7 DOES NOT OVERSHADOW
ANY COMMUNAL OPEN SPACE
(AS PER THE AREA 7 APPROVED DA)

SHADOW CAST FROM ADJACENT SITES
SHADOW CAST FROM APPROVED DA ENVELOPE
SHADOW CAST FROM MOD DEVELOPMENT
SHADOW CAST FROM AH MASSING

NOTES

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

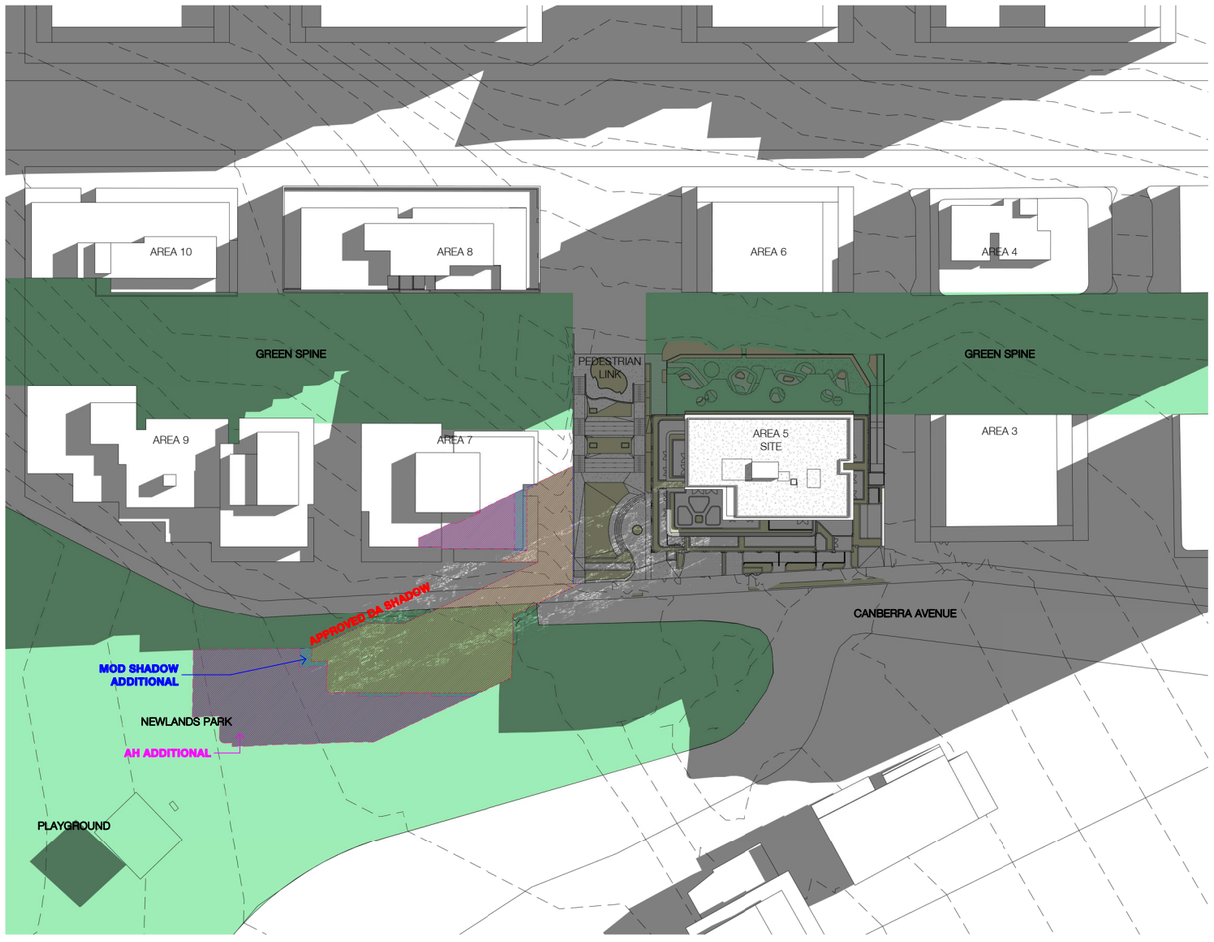
- Other area massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newslands park extent and play area location is modelled as per google maps, camera views and site visits observations.

* DWG 2001-2004 TO BE READ IN CONJUNCTION WITH 2005 DIAGRAM

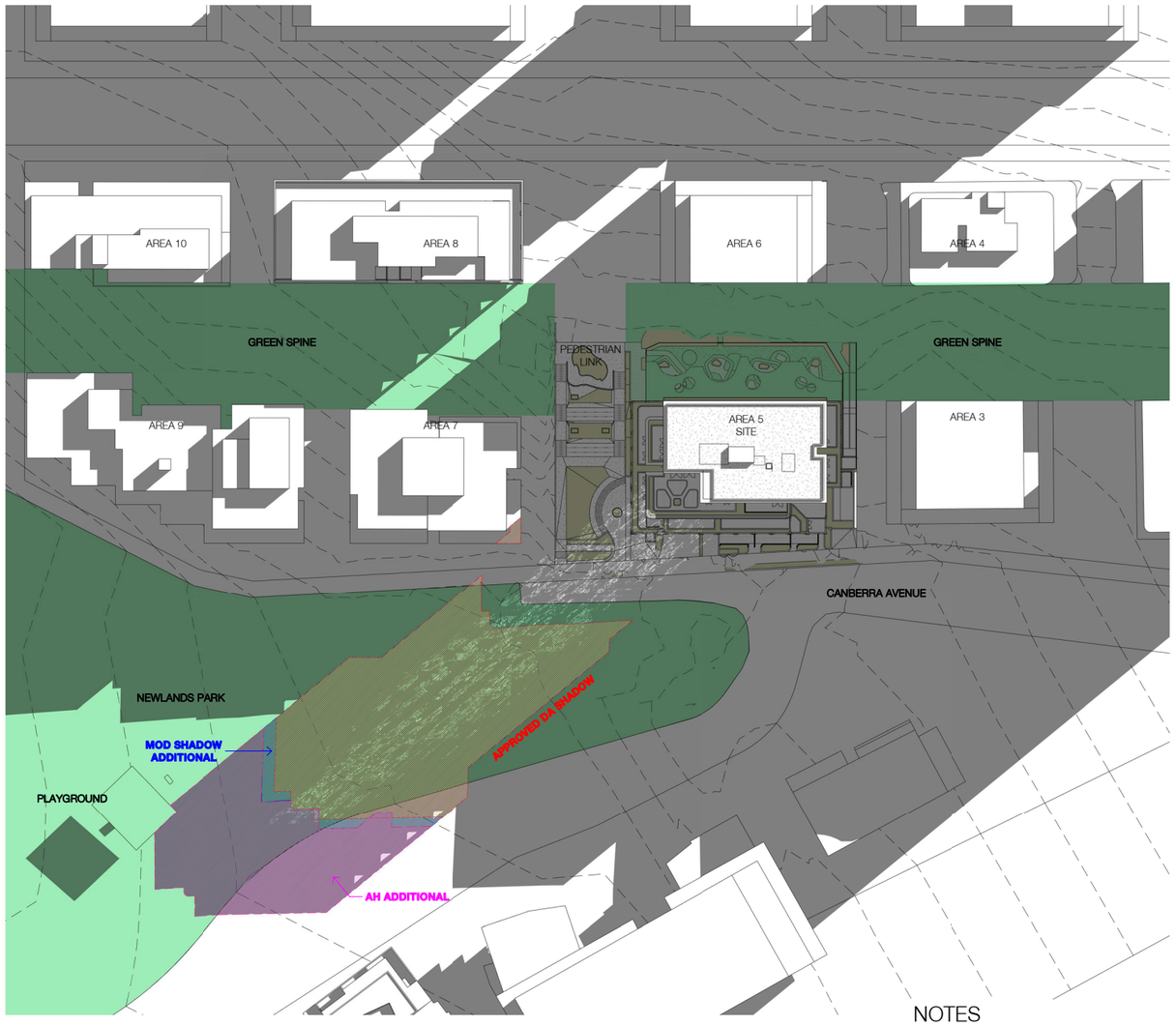
SHADOW & SOLAR ANALYSIS

AREA 7-10 JUNE 21 - 1 & 2 PM



Winter Solstice_1pm_ALTS

THE ADDITIONAL SHADOW TO THE ROOF OF AREA 7 DOES NOT OVERSHADOW ANY COMMUNAL OPEN SPACE (AS PER THE AREA 7 APPROVED DA)



SHADOW CAST FROM ADJACENT SITES
SHADOW CAST FROM APPROVED DA ENVELOPE
SHADOW CAST FROM MOD DEVELOPMENT
SHADOW CAST FROM AH MASSING

NOTES

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

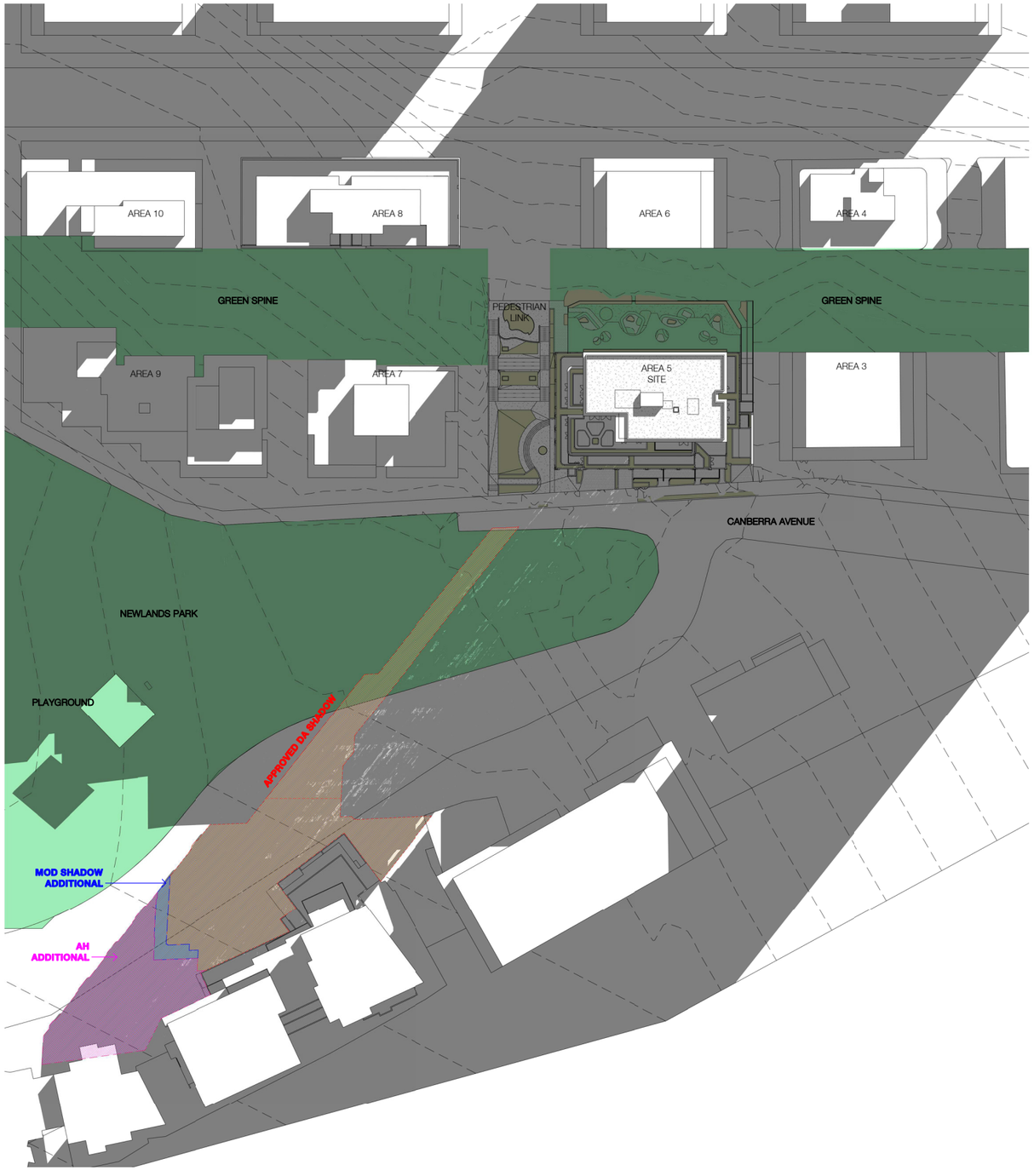
- Other area massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newslands park extent and play area location is modelled as per google maps, camera views and site visits observations.

* DWG 2001-2004 TO BE READ IN CONJUNCTION WITH 2005 DIAGRAM

SHADOW & SOLAR ANALYSIS

AREA 7-10 JUNE 21 - 3 PM



SHADOW CAST FROM ADJACENT SITES

SHADOW CAST FROM APPROVED DA ENVELOPE

SHADOW CAST FROM MOD DEVELOPMENT

SHADOW CAST FROM AH MASSING

NOTES

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newslands park extent and play area location is modelled as per google maps, camera views and site visits observations.

* DWG 2001-2004 TO BE READ IN CONJUNCTION WITH 2005 DIAGRAM

Solar eye view - Area 7-11

Detailed solar studies have been undertaken to evaluate additional solar impact to area 7-11 (unbuilt future buildings).

All impacted apartments are modelled to their approved application in terms of its floor levels, glazing extent , location and living space position.

Each apartment is then evaluated hour by hour between 9am to 3pm on June 21st, with both the current scheme and DA approved scheme to compare solar access impact.

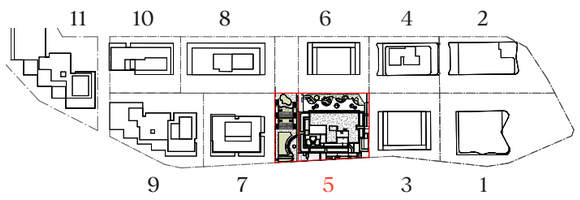
The additional impact is mostly around 9am and 10am and very slightly at 11am, from 12-3pm the sun orients away and the application massing does not impact any of the apartments in area 7-11. (Refer to the solar eye view to the right.)

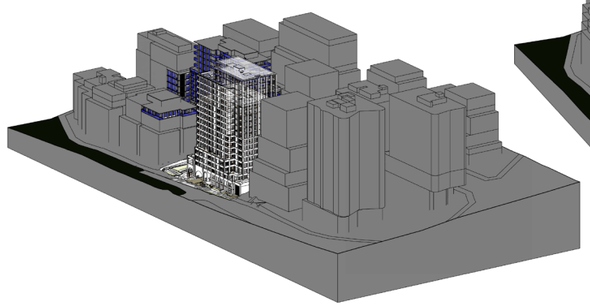
Our investigation concludes that area 7, 8 and 10 can still achieve the 70% solar requirement with the proposed massing, please refer to the table below. (No additional impact to area 9 & 11.)

	Building 7		Building 8		Building 10	
	Approved	Proposal	Approved	Proposal	Approved	Proposal
Solar	43/43	43/43	60/70	53/70	43/46	42/46
Percentage	100%	100%	85.7%	76%	93%	91%

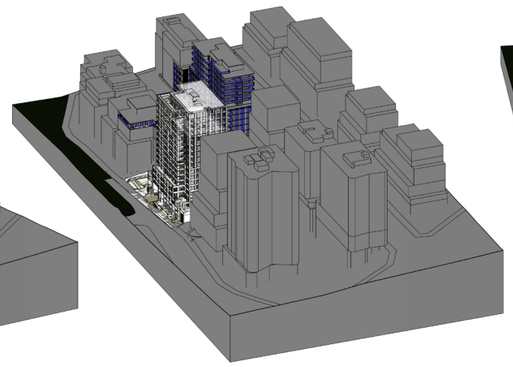
* SOLAR - NUMBER OF APARTMENTS WITH 2+HR SOLAR/ TOTAL NUMBER OF APARTMENTS

*PERCENTAGE - PERCENTAGE OF APARTMENTS WITH 2+HR SOLAR

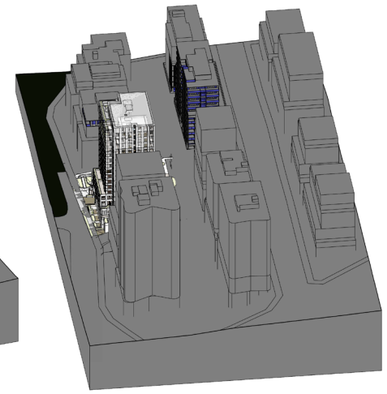




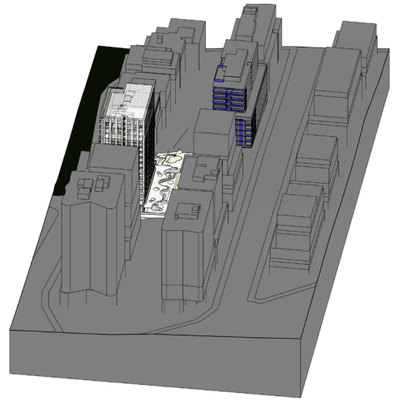
SOLAR ACCESS - 21-Jun-18-9.00 -



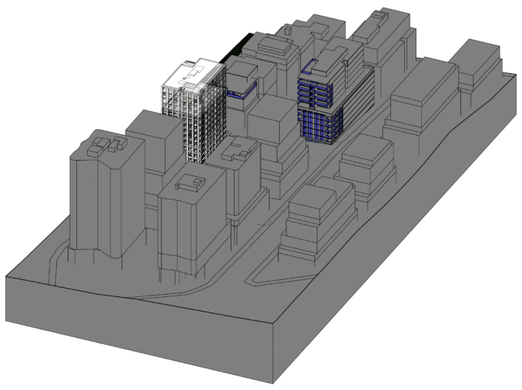
SOLAR ACCESS - 21-Jun-18-10.00 -



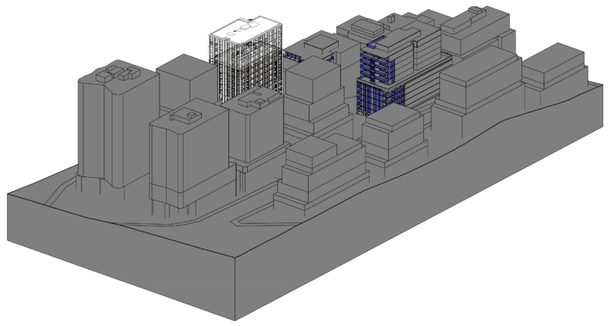
SOLAR ACCESS - 21-Jun-18-11.00 -



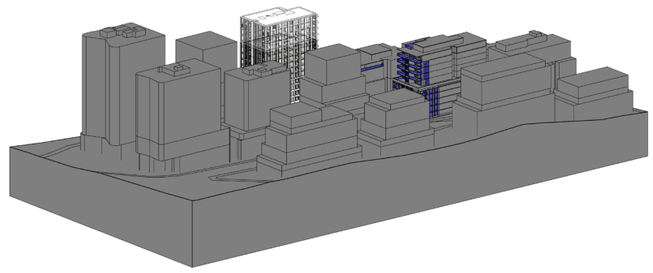
SOLAR ACCESS - 21-Jun-18-12.00 -



SOLAR ACCESS - 21-Jun-18-13.00 -



SOLAR ACCESS - 21-Jun-18-14.00 -



SOLAR ACCESS - 21-Jun-18-15.00 -

Solar eye view - Duntroon Avenue

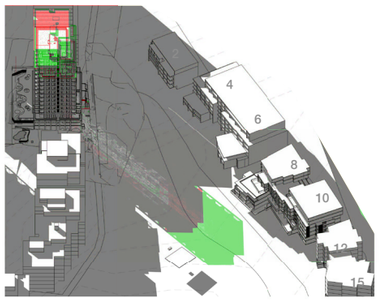
Detailed solar studies have been undertaken to evaluate additional solar impact to Duntroon Avenue apartments. (existing apartments).

All impacted apartments are modelled to known floorplans in terms of its floor levels, glazing extent , location and living space position.

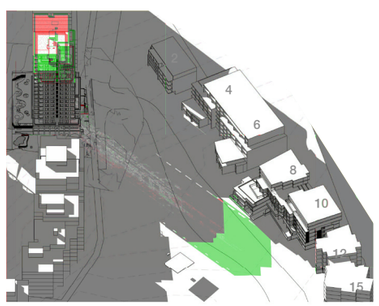
June 21st, 9am - 3pm is then analysis hour by hour, comparing solar access with our approved DA massing and the current proposal.

The additional impact is minimal and limited to 2.45pm to 3pm.

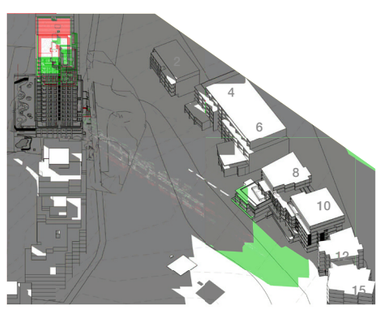
From 9am to 2.45pm, the application massing does not impact any of the apartments.



SHADOW_AH_2.15PM

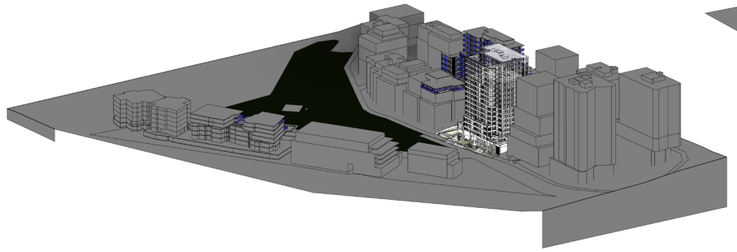


SHADOW_AH_2.30PM

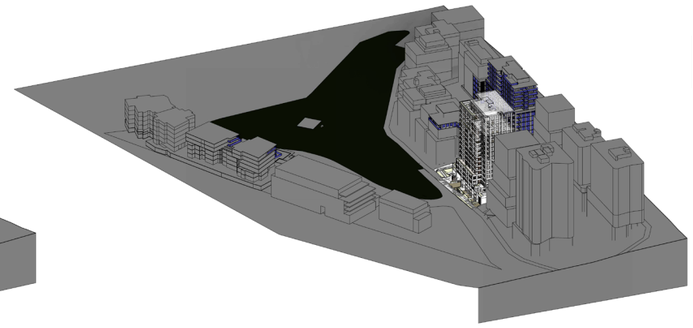


SHADOW_AH_2.45PM

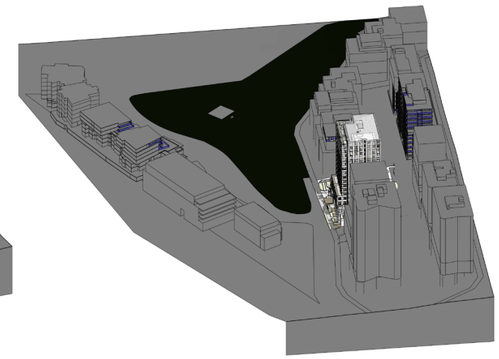
* Green - additional shadow impact by current application comparing to the DA approved application. Impact to living space glazing only from 2.45pm.



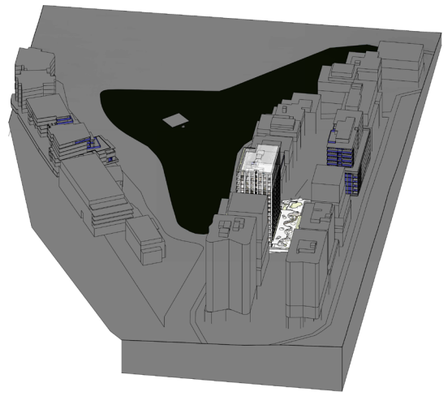
SOLAR ACCESS - 21-Jun-18-9.00 -DUNTROON



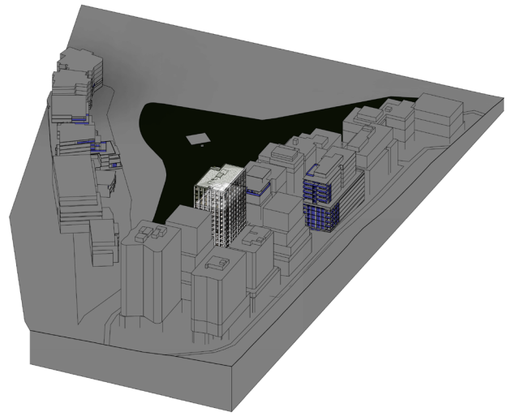
SOLAR ACCESS - 21-Jun-18-10.00 -DUNTROON



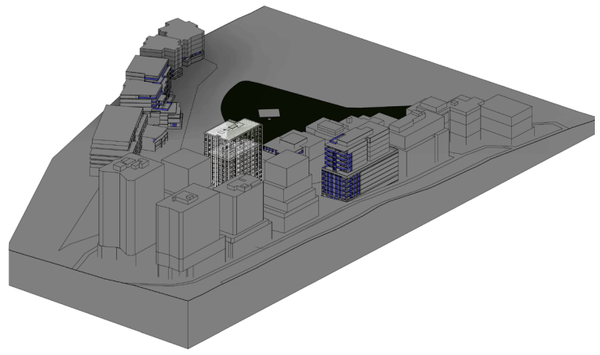
SOLAR ACCESS - 21-Jun-18-11.00 -DUNTROON



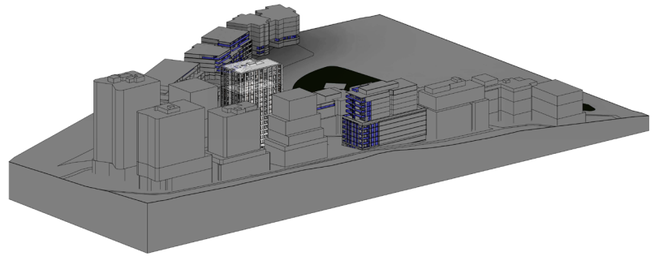
SOLAR ACCESS - 21-Jun-18-12.00 -DUNTROON



SOLAR ACCESS - 21-Jun-18-13.00 -DUNTROON



SOLAR ACCESS - 21-Jun-18-14.00 -DUNTROON



SOLAR ACCESS - 21-Jun-18-15.00 -DUNTROON

2

VIEW ANALYSIS

VIEW ANALYSIS - COMMUNAL ROOFTOP FROM ADJACENT BUILDINGS

AREA 1 - DA APPROVED LEVEL 17

CAMERA VIEW NOTES:

Camera view is setup 1500mm from the future Area 1 level 17, at RL 120.400.

Area 1 level 17's RL is driven from the approved DA application at RL 118.900.

Area 3 is located between Area 1 and subject site. For the clarity of this view analysis, Area 3's massing is grayed and shown as translucent in the analysis to the right.

VO1: Area 3's massing is driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. Top of Area 3 RL is assumed at RL 110.050 based on the prescribed 53m incentive height limit.

VO2: Area 3's massing in VO2 is based on VO1 + potential 30% infill affordable housing height bonus.

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

MASSING NOTES:

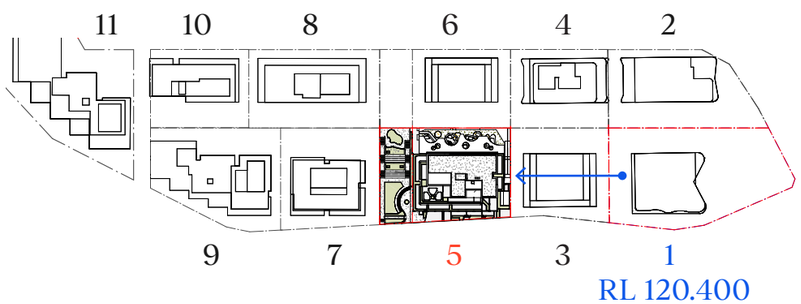
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



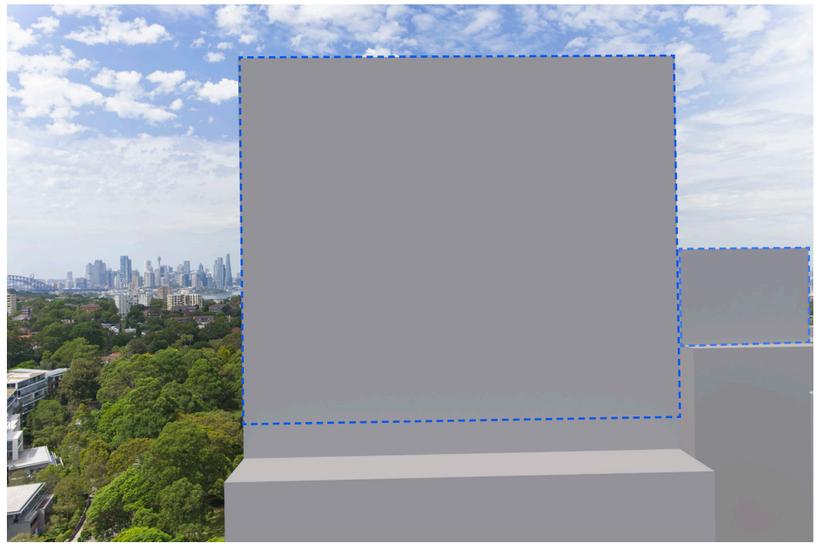
* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.

APPROVED DA SCHEME

PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT



PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

AREA 2 - DA APPROVED ROOFTOP COMMUNAL SPACE

CAMERA VIEW NOTES:

Camera view is setup 1500mm from the future Area 2 rooftop communal space, at RL 121.300.

Area 2 rooftop communal space level RL is driven from the approved DA application at RL 119.700.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

MASSING NOTES:

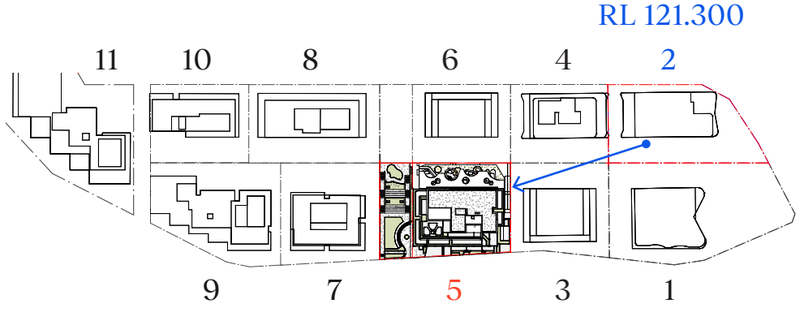
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



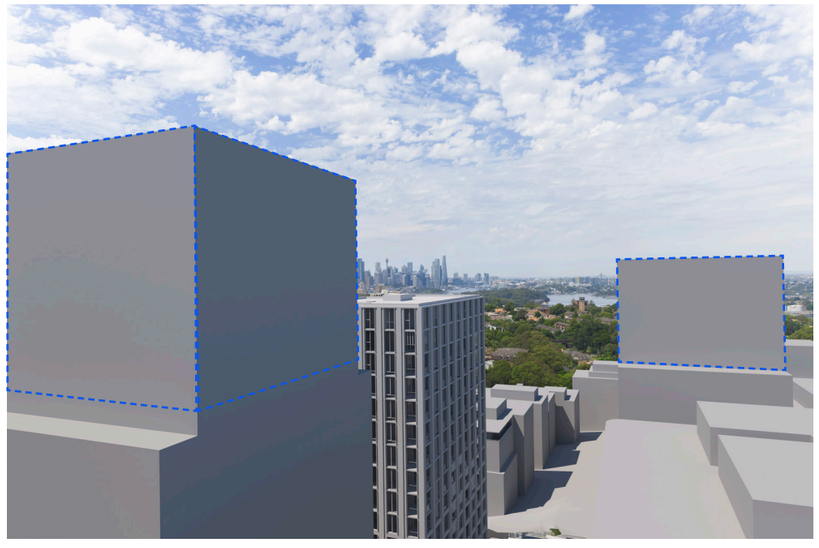
* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.

APPROVED DA SCHEME

PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT



PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

AREA 3 - ASSUMED COMMUNAL ROOFTOP

CAMERA VIEW NOTES:

Camera view is setup 1500mm from top of the future Area 3 rooftop communal level, at RL 111.550.

Top communal level RL is driven from known ground survey level adjacent to the subject site with the LEP height plane control, estimated at RL 110.050 based on the prescribed 53m incentive height limit. (Potential 30% infill affordable housing height bonus not included in this view)

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

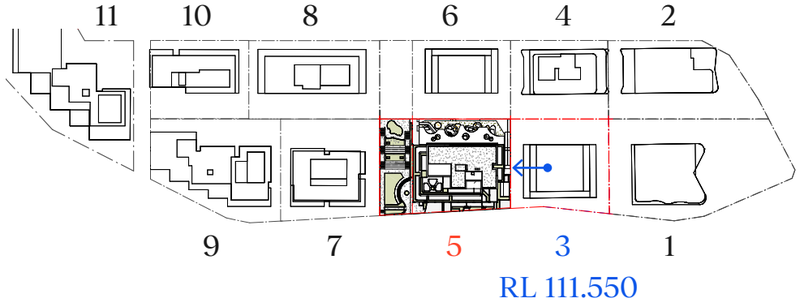
MASSING NOTES:

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.

APPROVED DA SCHEME

PROPOSED SCHEME

AREA 4 - DA APPROVED COMMUNAL ROOFTOP

CAMERA VIEW NOTES:

Camera view is setup 1500mm from top of the future Area 4 communal rooftop garden level at RL 110.300.

Area 4 communal rooftop garden level RL is driven from the approved DA application at RL 108.800.

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

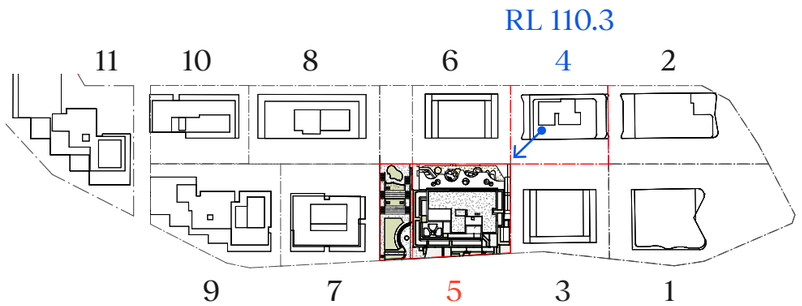
MASSING NOTES:

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.

APPROVED DA SCHEME

PROPOSED SCHEME

AREA 6 - ASSUMED COMMUNAL ROOFTOP

CAMERA VIEW NOTES:

Camera view is setup 1500mm from top of assumed Area 6 communal rooftop garden level, at RL 107.500, based on the prescribed 44m incentive height limit.

Top communal level RL is driven from known ground survey level adjacent to the subject site with the LEP height plane control, estimated at RL 106.000. (Potential 30% infill affordable housing height bonus not included in this view)

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

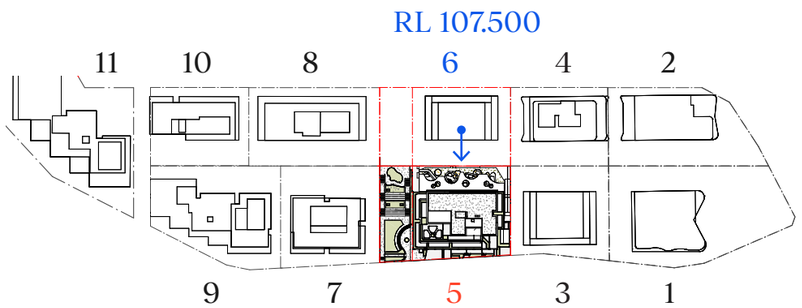
MASSING NOTES:

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.

APPROVED DA SCHEME

PROPOSED SCHEME

AREA 12 - DA APPROVED LEVEL 11 COMMUNAL ROOFTOP

CAMERA VIEW NOTES:

Camera view is setup 1500mm from future Area 12 level 11 communal rooftop garden, at RL 109.550.

Area 12 level 11's RL is driven from the approved DA application at RL 108.050

Please note that the approved design has private apartments up to Level 12 at RL 111.2 and rooftop services of RL 117.5 which sits above the proposed building height.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

Drone photo background provided by: Flying Robot Australia

Photomontage provided by: Rock Hunter Australia

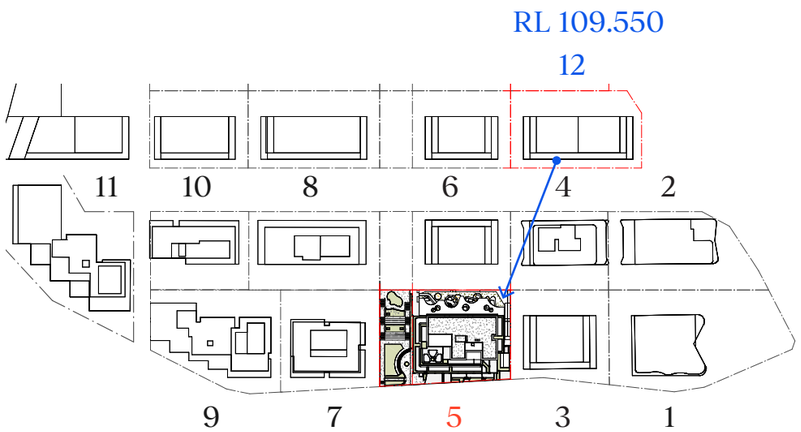
MASSING NOTES:

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

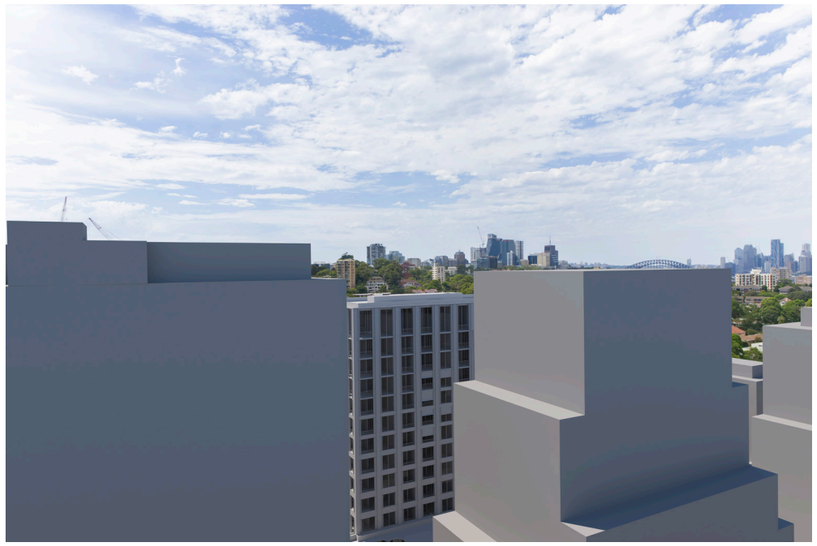
- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

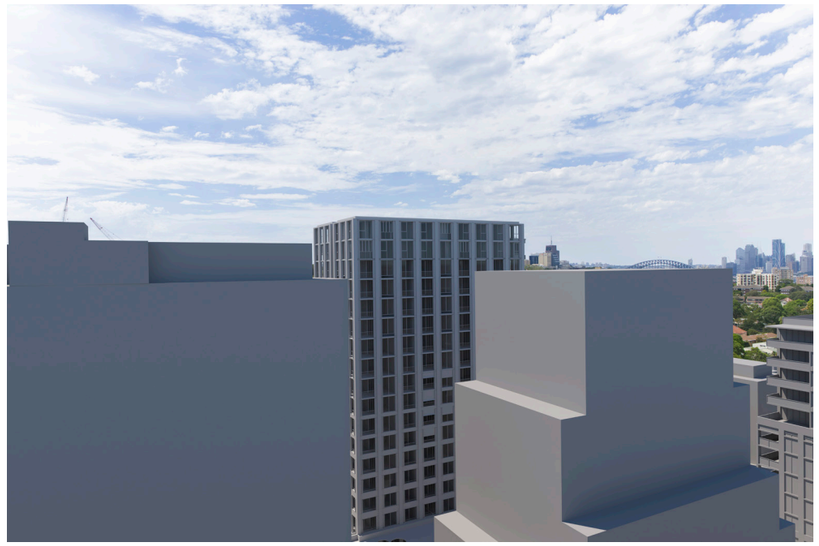
- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.



* Location diagram only. For exact drone location and RL, please refer to Flying Robot and Rock Hunter's documentation.



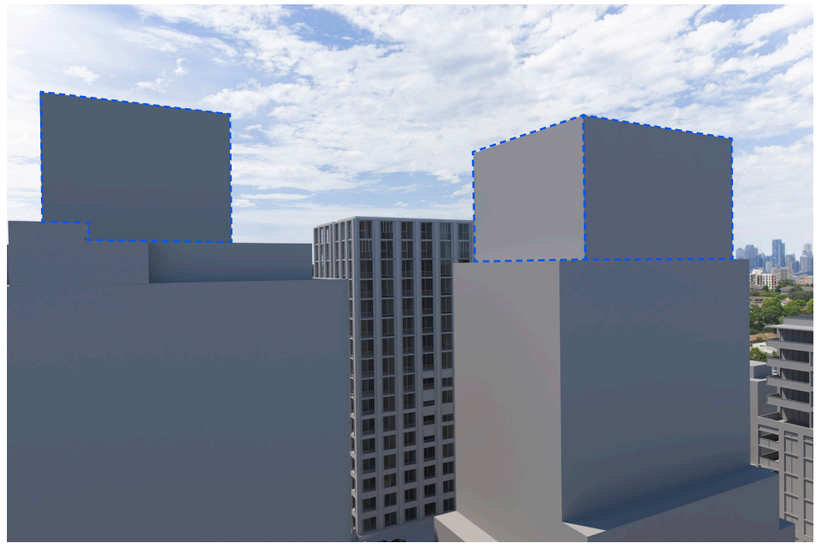
APPROVED DA SCHEME



PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT



PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

GREEN SPINE - NORTH

CAMERA VIEW NOTES:

Camera view is setup 1500mm from green spine North ground RL, level taken from approved area 1,2,4 DA, camera RL at 68.192.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

MASSING NOTES:

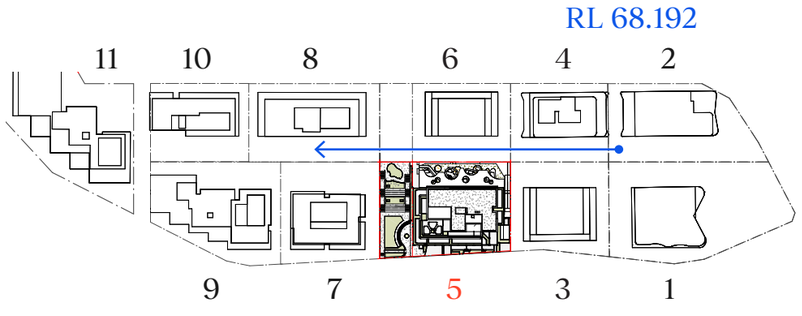
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

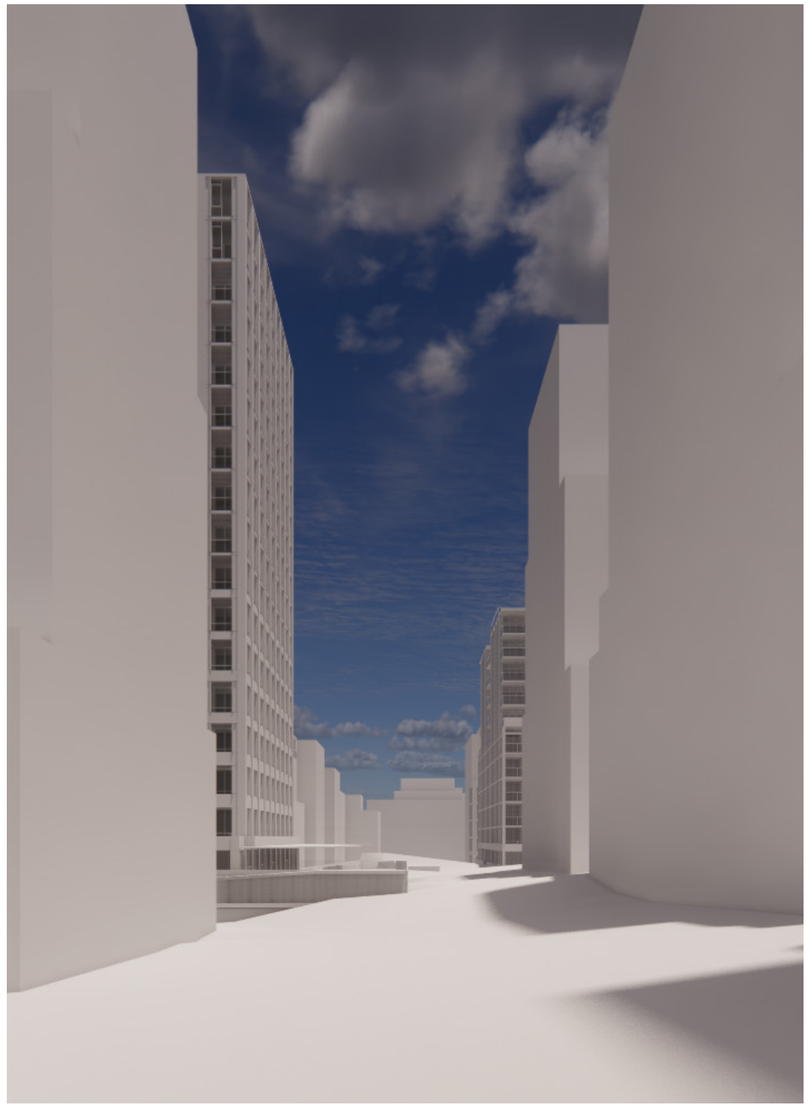
- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



GREEN SPINE - NORTH

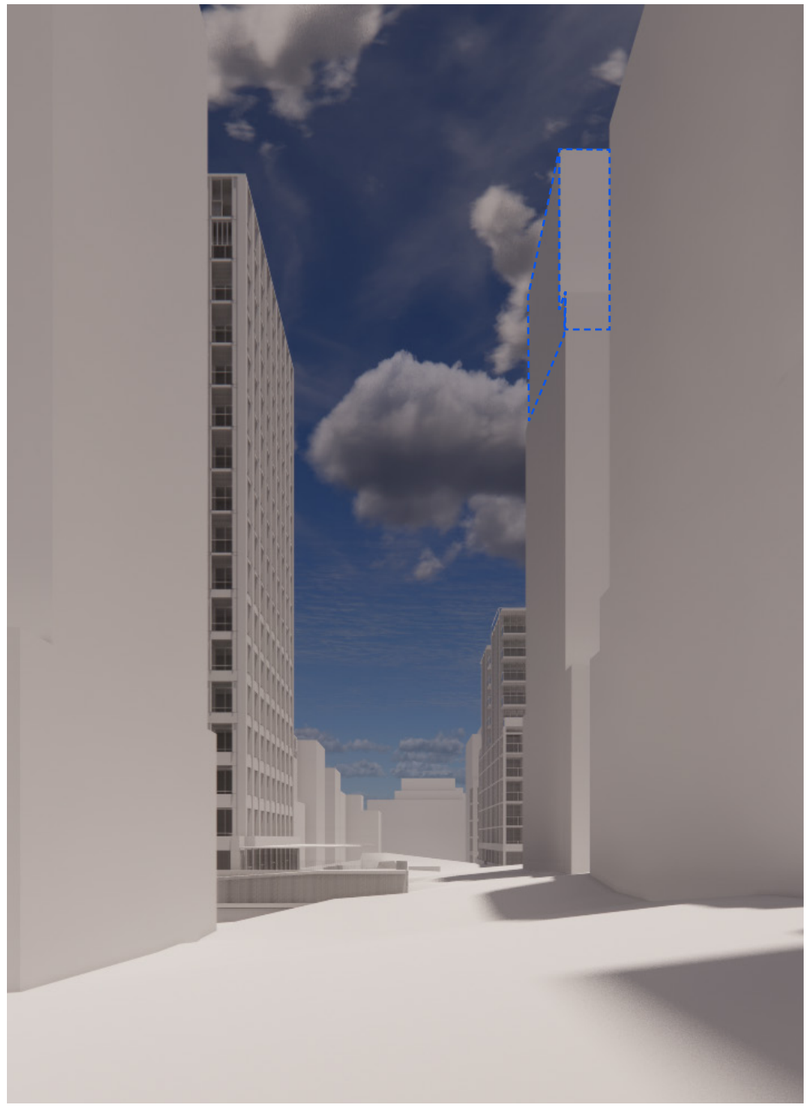
APPROVED DA SCHEME



PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT



PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

GREEN SPINE - SOUTH

CAMERA VIEW NOTES:

Camera view is setup 1500mm from green spine South ground RL, level taken from approved area 7-11 DA, camera RL at 61.00.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

MASSING NOTES:

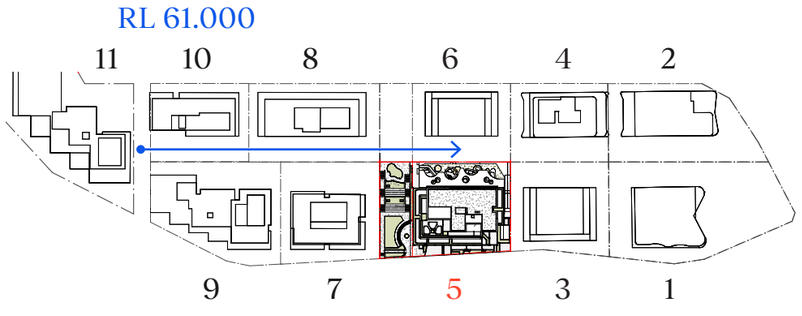
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



GREEN SPINE - SOUTH

APPROVED DA SCHEME

PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT

PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

PEDESTRIAN LINK

CAMERA VIEW NOTES:

Camera view is setup 1500mm from pedestrian link ground RL as per approved DA, camera RL at 59.700.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

MASSING NOTES:

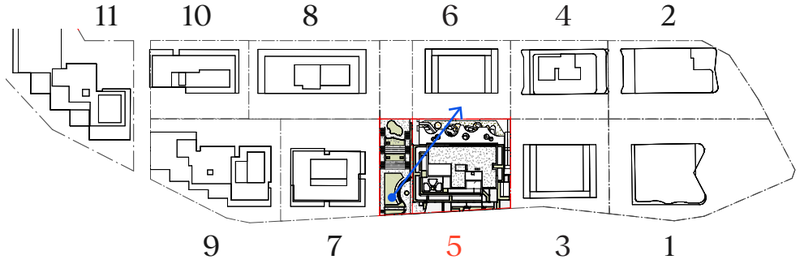
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



RL 59.700

PEDESTRIAN LINK

APPROVED DA SCHEME

PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT

PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

CANBERRA AVENUE - SOUTH

CAMERA VIEW NOTES:

Camera view is setup 1500mm from ground RL as per survey by DSP Surveyors, received on the 7th of December 2021, camera RL at 57.830.

VO1: Area 3 & 6's massings are driven by St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control.

VO2: Area 3 & 6's massings in VO2 are based on VO1 + potential 30% infill affordable housing height bonus.

MASSING NOTES:

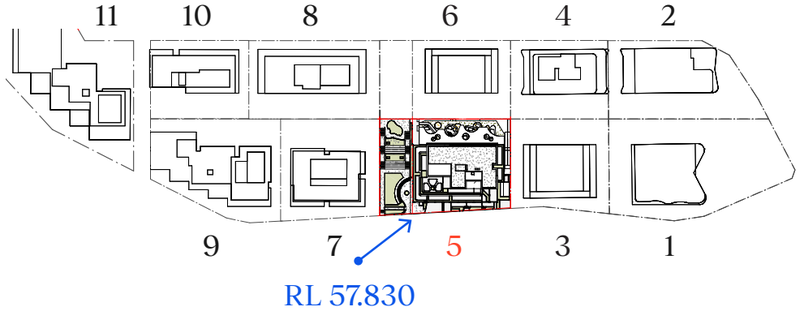
- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- AREA 3&6, massings are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control (LEP FSR is not calculated as it can not be estimated at massing stage)in VO1. VO2 is driven from VO1 + potential 30% in-fill affordable housing height bonus.

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



CANBERRA AVENUE - SOUTH

APPROVED DA SCHEME

PROPOSED SCHEME - VO1

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - MASTERPLAN HEIGHT

PROPOSED SCHEME - VO2

SITE - AFFORDABLE HOUSING SCHEME

AREA 3 AND 6 - POTENTIAL 30% INFILL AFFORDABLE HOUSING HEIGHT BONUS

VIEW ANALYSIS - CANBERRA AVENUE

CANBERRA AVENUE - NORTH

CAMERA VIEW NOTES:

Camera view is setup 1500mm from ground RL as per survey by DSP Surveyors, received on the 7th of December 2021, camera RL at 61.680.

The horizon shown is an illustration only, driven from the rendering software ENSCAPE and does not represent the true horizon level.

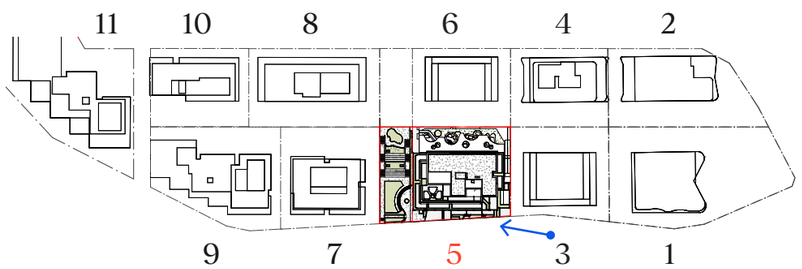
MASSING NOTES:

- AREA 1,2,4, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-240276

- AREA 7-11, MASSING, STEPPING AND RLs MODELLED AS PER DA APPROVAL, DA NUMBER: PAN-108292

- Other area massing are as per St Leonards South DCP Building Envelope Control (massing stepping and setback) and LEP Height Plane Control. (LEP FSR is not calculated as it can not be estimated at massing stage) The topography outside of the site is generated using Cadastre.

- Newlands park extent and play area location is modelled as per google maps, camera views and site visits observations.



APPROVED DA SCHEME

PROPOSED SCHEME

5

Schedule

Project Schedule

Project	2024-04-15	Job No.	By
13-19 CANBERRA AVENUE HYECORP		6429	LL

13-19 CANBERRA AVENUE (TOTAL) - PROPOSED

Location	Height (M)	AHD	Apartment Numbers									GFA
			Studio	1 Bed	1 Bed+Media	2 Bed	2 Bed+Media	2 Bed+TH	3 Bed	5 Bed+TH	Totals	
Basement 4	3	44.9										
Basement 3	3	47.9										
Basement 2	3	50.9										
Basement 1	4.4	53.9										
Ground Floor	3.1	58.3						1		1	2	270
Upper Ground	3.1	61.4									0	476
Level 01	3.1	64.5	1			1			1		3	887
Level 02	3.1	67.6		2	1	3			2		8	726
Level 03	3.1	70.7		2	1	3			2		8	718
Level 04	3.1	73.8		2	1	1			3		7	650
Level 05	3.1	76.9		2	1	1			3		7	650
Level 06	3.1	80		2	1	1			3		7	650
Level 07	3.1	83.1		2	1	1			3		7	650
Level 08	3.1	86.2		2		3			2		7	650
Level 09	3.1	89.3		2		2			2		6	650
Level 10	3.1	92.4		2		3			2		7	650
Level 11	3.1	95.5		1		1			3		5	650
Level 12	3.1	98.6		2		1			3		6	643
Level 13	3.1	101.7		2		1			3		6	643
Level 14	3.1	104.8		2		1			3		6	643
Level 15	3.1	107.9		2		1			3		6	643
Level 16	3.1	111							2		2	557
Level 17	3.1	114.1							2		2	540
Roof		117.2										
Total Height	58.9											
Sub Total			1	27	6	24	0	1	42	1	102	11946
Total			102									
Mix			1%	26%	6%	24%	0%	1%	41%	1%		
			33%			25%			42%			

Floor Space Ratio Calculations	
Riser Provision	104
Total GFA	11842
Site Area (sqm)	2629.2
FSR	4.50

6

ADG Response Table

ADG table greys out the approved DA items, and only highlights the responses relating to the current application

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
3	SITING THE DEVELOPMENT				
3A	Site Analysis				
	3A–1	Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context	•		
		Each element in the Site Analysis Checklist should be addressed (see ADG Appendix 1)			
3B	Orientation				
	3B – 1	Building types and layouts respond to the streetscape and site while optimising solar access within the development			
		Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1)	•		
		Where the street frontage is to the east or west, rear buildings should be orientated to the north		•	East facing Apartments have Canberra Avenue Street frontage, while on the west, they have the secondary Green Spine frontage. Because of the dual frontage, and the neighbouring boundary being the short boundary to the North, it's not appropriate to have the building orientated to the north.
		Where the street frontage is to the north or south, overshadowing to the south should be minimised and buildings behind the street frontage should be orientated to the east and west (see figure 3B.2)	•		
	3B–2	Overshadowing of neighbouring properties is minimised during midwinter			
		Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access	•		
		Solar access to living rooms, balconies and private open spaces of neighbours should be considered	•		Well considered, detailed investigation taken to evaluate the solar impact. Please refer to the solar and shadow studies.
		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%			N/A
		If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy			N/A
		Overshadowing should be minimised to the south or downhill by increased upper level setbacks	•		Massing has been carefully considered and crafted to manage the overshadowing. Top levels setback as per the approved DA strategy.
		It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	•		No privacy and overshadowing to the West, South and East due to the significant setback at green spine, pedestrian link and Canberra Avenue. The massing on top is further stepped back on South and East.
		A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings			New precinct with no development on site at the time of the application.
3C	Public Domain Interface				
	3C–1	Transition between private and public domain is achieved without compromising safety and security			
		Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	•		Direct access to the street is available to all ground floor terraces.
		Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings (see figure 3C.1)	•		Levels have been carefully considered and a landscape buffer zone is implemented to provide a level of privacy.
		Upper level balconies and windows should overlook the public domain	•		Apartments are overlooking the pedestrian link, green spine and Newlands park to provide a level of surveillance.

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Length of solid walls should be limited along street frontages	●		
		Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets	●		There is a strong focus on the civic corner of the building, a retail space and integrated amphitheatre within the pedestrian link will be provided to facilitate the interaction.
		In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries should be differentiated to improve legibility for residents, using a number of the following design solutions: · architectural detailing · changes in materials · plant species · colours	●		Architectural detailing of the Canberra avenue frontage differentiates the private entrances and the public lift/ pedestrian site link.
		Opportunities for people to be concealed should be minimised	●		
	3C–2	**Amenity of public domain is retained and enhanced**			
		Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	●		
		Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	●		Mail boxes and parcel room has been provided at the main entrance of the lobby located on Canberra Ave.
		The visual prominence of underground car park vents should be minimised and located at a low level where possible	●		
		Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	●		Due to the restricted GF frontage and specific substation requirements, the substation is located on the Northern Eastern corner of the site, the facade treatment is carefully considered and together with landscaped planters, the visual disruption is minimized.
		Ramping for accessibility should be minimised by building entry locations and setting ground floor levels in relation to footpath levels	●		
		Durable, graffiti resistant and easily cleanable materials should be used	●		
		Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: · Street access, pedestrian paths and building entries which are clearly defined · Paths, low fences and plating that clearly delineate between communal/private open space and the adjoining public open space · Minimal use of blank walls, fences and ground level parking	●		The development contributes greatly to the surrounding environment and precinct by providing all of the mentioned treatments.
		On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	●		
3D		Communal and public open space			
	3D–1	**An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping.**			
		Communal open space has a minimum area equal to 25% of the site	●		
		Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)	●		
		Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Communal open space should be co-located with deep soil areas		●	Multiple communal open spaces exist on site, the open space within green spine to be shared with the precinct residents is adjacent to the deep soil. However, the majority of the deep soil on site is allocated within the childcare outdoor play area, which cannot be shared with the resident community area.
		Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	●		All communal open space can be access from the main circulation areas.
		Where communal open space cannot be provided at ground level, it should be provided on a podium or roof	●		Communal open space has been provided on level 16. Residents also have access to the St Leonard precinct communal spaces. In additional to the DA approved rooftop garden, additional internal community area is provided on L16 adjacent to the rooftop garden.
		Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: · provide communal spaces elsewhere such as a landscaped roof top terrace or a common room · provide larger balconies or increased private open space for apartments · demonstrate good proximity to public open space and facilities and/or provide contributions to public open space			N/A
	3D–2	**Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting**			
		Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: · seating for individuals or groups · barbecue areas · play equipment or play areas · swimming pools, gyms, tennis courts or common rooms	●		Large amenity areas for fitness and common rooms have been provided in addition to the communal open space with the BBQ and seating facilities. In additional to the DA approved rooftop garden, additional internal community area is provided on L16 adjacent to the rooftop garden.
		The location of facilities responds to micro-climate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts	●		
		Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	●		
	3C–3	**Communal open space is designed to maximise safety**			
		Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: · bay windows · corner windows · balconies	●		
		Communal open space should be well lit	●		
		Where communal open space/facilities are provided for children and young people they are safe and contained	●		
	3D–4	**Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood**			
		The public open space should be well connected with public streets along at least one edge	●		Strong presence at the corner of the main street and pedestrian link.
		The public open space should be connected with nearby parks and other landscape elements	●		Public open space is the heart of the public domain, linking the pedestrian link, Newlands park, retail and green spine.
		Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid	●		
		Solar access should be provided year round along with protection from strong winds	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Opportunities for a range of recreational activities should be provided for people of all ages	●		
		A positive address and active frontages should be provided adjacent to public open space	●		
		Boundaries should be clearly defined between public open space and private areas	●		
3E	Deep soil zones				
	3E–1	Deep soil zones provide areas on the site that allow for and support healthy plant tree growth. They improve residential amenity and promote management of water and air quality			
		Deep soil zones are to meet the following minimum requirements.	●		Deep soil zone provided mainly in the green spine childcare area and pedestrian link zone, strategically places to provide soil for healthy tree growth within the landscaped green spine area.

Site area	Minimum dimensions	Deep soil zone (% of site area)
Less than 650m^2	–	7%
650m^2 – 1,500m^2	3m	
Greater than 1,500m^2	6m	
Greater than 1,500m^2 with significant existing cover	6m	

		On some sites it may be possible to provide larger deep soil zones, depending on the site area and context: · 10% of the site as deep soil on sites with an area of 650m^2 – 1,500m^2 · 15% of the site as deep soil on sites greater than 1,500m^2	●		
		Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include: · basement and sub-basement car park design that is consolidated beneath building footprints · use of increased front and side setbacks · adequate clearance around trees to ensure long term health · co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil	●		Large deep soil zones have been provided by restraining the basement footprint to the 6m rear setback from green spine.
		Achieving the design criteria may not be possible on some sites including where: · The location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres) · There is 100% site coverage or non-residential uses at ground floor level · Where a proposal does not achieve deep soil requirements, acceptable stormwater management should be achieved and alternative forms of planting provided such as on structure			N/A
	3F–1	**Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to the side and rear boundaries are as follows: Building Height / Habitable Room and Balconies / Non Habitable Up to 12 (4 storeys) / 6m / 3m Up to 25m (5-8 storeys) / 9m / 4.5m Over 25m (9+ storeys) / 12m / 6m Note: Separation distances between buildings on the same site should combine required building separations depending on the type of room (see figure 3F.2) Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighbouring properties	●		No adjacent development at the time of the application. Full 12m setback to the rear boundary is achieved. Various setbacks to the North to ensure a minimum of 6m (6 to 13m) to the boundary is achieved.
		Generally one step in the built form as the height increases due to building separations is desirable. Additional steps should be careful not to cause a 'ziggurat' appearance	●		A step back in form has been achieved by carving out the North East corner throughout, which provides greater separation to the Northern boundary. (13m) The additional massing in this application has been further carved to step back on the South East and Eastern Elevation to further reduce the shadow to the park.
		For residential buildings next to commercial buildings, separation distances should be measured as follows: · for retail, office spaces and commercial balconies use the habitable room distances · for service and plant areas use the non-habitable room distances			N/A
		New development should be located and oriented to maximise visual privacy between buildings on site and for neighbouring buildings. Design solutions include: · site layout and building orientation to minimise privacy impacts (see also section 3B Orientation) · on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4)	●		Building has been situated on the site with adequate setbacks. A 'defensive' approach to apartment layout where primary orientation for main living spaces are orientated to the east/west. Privacy screen will also be implemented where necessary.
		Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping (figure 3F.5)			N/A
		Direct lines of sight should be avoided for windows and balconies across corners	●		Privacy screens will be implemented.
		No separation is required between blank walls	●		
	3F–2	**Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space**			
		Communal open space, common areas and access paths should be separated from private open space and windows to apartments, particularly habitable room windows. Design solutions may include: · setbacks · solid or partially solid balustrades to balconies at lower levels · fencing and/or trees and vegetation to separate spaces · screening devices · bay windows or pop out windows to provide privacy in one direction and outlook in another · raising apartments/private open space above the public domain or communal open space · planter boxes incorporated into walls and balustrades to increase visual separation · pergolas or shading devices to limit overlooking of lower apartments or private open space · on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres or screen panels to windows and/or balconies	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Balconies and private terraces should be located in front of living rooms to increase internal privacy		●	Living spaces have been brought forward to allow for greater solar access
		Windows should be offset from the windows of adjacent buildings	●		
		Recessed balconies and/or vertical fins should be used between adjacent balconies	●		
3G	Pedestrian Access and Entries				
	3G–1	**Building entries and pedestrian access connects to and address the public domain**			
		Multiple entries (including communal building entries and individual ground floor entries) are provided to activate the street edge	●		
		Entry locations relate to the street and subdivision pattern and the existing pedestrian network	●		
		Building entries are clearly identifiable. Communal entries are clearly distinguishable from private entries	●		
		Where street frontage is limited and multiple buildings are located on the site, a primary street address is provided with clear sight lines and pathways to secondary building entries			N/A
	3G–2	**Access, entries and pathways are equitable and easy to identify**			
		Building access areas including lift lobbies, stairwells and hallways are clearly visible from the public domain and communal spaces	●		
		The design of ground floors and underground car parks minimise level changes along pathways and entries	●		
		Steps and ramps are integrated into the overall building and landscape design	●		
		For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)			As required, subject to future design development
		For large developments electronic access and audio/video intercom should be provided to manage access			As required, subject to future design development
	3G–3	**Pedestrian links through developments provide access to streets and connect destinations**			
		Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport	●		A pedestrian site through link will be designed by the landscape architect.
		Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate	●		The pedestrian site through link is over looked by the habitable rooms of the Southern apartment and will be well lit. It's directly connected with the piazza at the base where a retail zone is present.
3H	Vehicle Access				
	3H–1	**Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes**			
		Car park access is integrated with the building's overall facade, design solutions may include: · the materials and colour palette minimise visibility from the street · security doors or gates at entries that minimise voids in the facade · where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed	●		The car park entry is integrated into overall facade of Canberra avenue frontage.
		Car park entries are located behind the building line	●		
		Vehicle entries are located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	●		The vehicle entry is at the lowest entry point possible/appropriate along Canberra Avenue.
		Car park entry and access is located on secondary streets or lanes where available			N/A

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Access point locations avoid headlight glare to habitable rooms	●		
		Adequate separation distances are provided between vehicular entries and street intersections	●		
		The width and number of vehicle access points is limited to the minimum	●		One vehicle access point.
		Visual impact of long driveways is minimised through changing alignments and screen planting	●		
		The requirement for large vehicles to enter or turnaround within the site is avoided		●	Designated truck turnaround zone is included with sufficient head height. Park and narrow street at the building entrance, it is to the benefit of the site to have the vehicles enter into the parking and turnaround within.
		Garbage collection, loading and servicing areas are screened	●		Garbage collection happens within the BOH area on ground floor. Well setback from the street.
		Clear sight lines should be provided at pedestrian and vehicle crossings	●		
		Traffic calming devices such as changes in paving material or textures should be used where appropriate	●		
		Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: · changes in surface materials · level changes · the use of landscaping for separation	●		Landscape is used to separate the pedestrian paths and the vehicle entry points
3J	Bicycle and Car Parking				
	3J–1	Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas			
		For development in the following locations: – on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or – on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less The car parking needs for a development must be provided off street	●		
		Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site	●		Two car share spaces have been allocated within the proposed development.
		Where less car parking is provided in a development, council should not provide on street resident parking permits			Noted
	3J–2	Parking and facilities are provided for other modes of transport			
		Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters	●		
		Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas	●		Secure undercover bicycle parking has been provided.
		Conveniently located charging stations are provided for electric vehicles, where desirable	●		Charging stations have been provided in the basement.
	3J–3	Car park design and access is safe and secure			
		Supporting facilities within car parks, including garbage, plant and switch rooms, storage areas and car wash bays can be accessed without crossing car parking spaces	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		A clearly defined and visible lobby or waiting area should be provided to lifts and stairs	●		
		For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards	●		
	3J–4	**Visual and environmental impacts of underground car parking are minimised**			
		Excavation should be minimised through efficient car park layouts and ramp design	●		
		Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles	●		
		Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites	●		
		Natural ventilation should be provided to basement and sub-basement car parking areas		●	Mechanical ventilation will be required for basement carpark levels
		Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	●		
	3J–5	**Visual and environmental impacts of on-grade car parking are minimised**			
		On-grade car parking should be avoided	●		
		Where on-grade car parking is unavoidable, the following design solutions are used: · parking is located on the side or rear of the lot away from the primary street frontage · cars are screened from view of streets, buildings, communal and private open space areas · safe and direct access to building entry points is provided · parking is incorporated into the landscape design of the site, by extending planting and materials into the car park space · stormwater run-off is managed appropriately from car parking surfaces · bio-swales, rain gardens or on site detention tanks are provided, where appropriate · light coloured paving materials or permeable paving systems are used and shade trees are planted between every 4-5 parking spaces to reduce increased surface temperatures from large areas of paving			N/A
	3J–6	**Visual and environmental impacts of above ground enclosed car parking are minimised**			
		Exposed parking should not be located along primary street frontages			N/A
		Screening, landscaping and other design elements including public art should be used to integrate the above ground car parking with the facade. Design solutions may include: · car parking that is concealed behind the facade, with windows integrated into the overall facade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels) · car parking that is 'wrapped' with other uses, such as retail, commercial or two storey Small Office/Home Office (SOHO) units along the street frontage (see figure 3J.9)			N/A
		Positive street address and active frontages should be provided at ground level	●		
4		**DESIGNING THE BUILDING**			
4A		Solar and daylight access			
	4A–1	**To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		2. In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid-winter	●		Detailed analysis was updated with the current proposal.
		3. A maximum of 15% of apartments in a building receive no direct sunlight between 9am and 3pm at mid winter			N/A
		The design maximises north aspect and the number of single aspect south facing apartments is minimised	●		
		Single aspect, single storey apartments should have a northerly or easterly aspect	●		
		Living areas are best located to the north and service areas to the south and west of apartment		●	Living spaces have been orientated to ensure that solar access is maximised. Apartment 'services' have been located to the rear of the apartment.
		To optimise the direct sunlight to habitable rooms and balconies a number of the following design features are used: · dual aspect apartments · shallow apartment layouts · two storey and mezzanine level apartments · bay windows	●		
		To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of $1m^2$ of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes	●		This is achieved to the majority of apartments.
		Achieving the design criteria may not be possible on some sites. This includes: · where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source · on south facing sloping sites · where significant views are oriented away from the desired aspect for direct sunlight Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria and how the development meets the objective			N/A
	4A–2	**Daylight access is maximised where sunlight is limited**			
		Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms			
		Where courtyards are used: · use is restricted to kitchens, bathrooms and service areas · building services are concealed with appropriate detailing and materials to visible walls · courtyards are fully open to the sky · access is provided to the light well from a communal area for cleaning and maintenance · acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved			N/A
		Opportunities for reflected light into apartments are optimised through: · reflective exterior surfaces on buildings opposite south facing windows · positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light · integrating light shelves into the design · light coloured internal finishes	●		Internal finishes on balconies are a lighter colouring
	4A–3	**Design incorporates shading and glare control, particularly for warmer months**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		A number of the following design features are used: · balconies or sun shading that extend far enough to shade summer sun, but allow winter sun to penetrate living areas · shading devices such as eaves, awnings, balconies, pergolas, external louvres and planting · horizontal shading to north facing windows · vertical shading to east and particularly west facing windows · operable shading to allow adjustment and choice · high performance glass that minimises external glare off windows, with consideration given to reduced tint glass or glass with a reflectance level below 20% (reflective films are avoided)	●		Operable shading device will be implemented on the west facade.
4B	Natural Ventilation				
	4B–1	**All habitable rooms are naturally ventilated**			
		The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms	●		
		Depths of habitable rooms support natural ventilation	●		
		The area of unobstructed window openings should be equal to at least 5% of the floor area served	●		
		Light wells are not the primary air source for habitable rooms	●		
		Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: · adjustable windows with large effective openable areas · a variety of window types that provide safety and flexibility such as awnings and louvres · windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors	●		
	4B–2	**The layout and design of single aspect apartments maximises natural ventilation**			
		Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3)	●		
		Natural ventilation to single aspect apartments is achieved with the following design solutions: · primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) · stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries · courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells	●		
	4B–3	**The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents**			
		1. At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed	●		
		2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line			NA
		The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		In cross-through apartments external window and door opening sizes/areas on one side of an apartment (inlet side) are approximately equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side) (see figure 4B.4)			N/A
		Apartments are designed to minimise the number of corners, doors and rooms that might obstruct airflow	●		
		Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow	●		
4C	Ceiling heights				
	4C–1	**Ceiling height achieves sufficient natural ventilation and daylight access**			
		Measured from finished floor level to finished ceiling level, minimum ceiling heights are:	●		Habitable rooms are 2.7m ceiling height and non-habitable are 2.4m

Minimum ceiling height for apartment and mixed use buildings	
Habitable rooms	2.7m
Non-habitable rooms	2.4m
For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its apartment area does not exceed 50% of the apartment area
Attic spaces	1.8m at edge of room with a 30 people degree minimum ceiling slope
If located in mixed use areas	3.3m for ground and first floor to promote future flexibility of use

		These minimums do not preclude higher ceilings if desired			
		Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	●		
	4C–2	Ceiling height increases the sense of space in apartments and provides for well-proportioned rooms			
		A number of the following design solutions can be used: · The hierarchy of rooms in an apartment is defined using changes in ceiling heights and alternatives such as raked or curved ceilings, or double height spaces · Well-proportioned rooms are provided, for example, smaller rooms feel larger and more spacious with higher ceilings · Ceiling heights are maximised in habitable rooms by ensuring that bulkheads do not intrude. The stacking of service rooms from floor to floor and coordination of bulkhead location above non-habitable areas, such as robes or storage, can assist	●		
	4C–3	Ceiling heights contribute to the flexibility of building use over the life of the building			
		Ceiling heights of lower level apartments in centres should be greater than the minimum required by the design criteria allowing flexibility and conversion to non-residential uses (see figure 4C.1)		●	The bottom 2 levels are double height terrace houses which offers flexibility for the future program.
4D	Apartment size and layout				
	4D–1	**The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		1. Apartments are required to have the following minimum internal areas: Apartment Type: Studio — Minimum Internal Area: 35m²; 1 bedroom — 50m²; 2 bedroom — 70m²; 3 bedroom — 90m² The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each	●		The apartments have been designed with generous internal areas:
		2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms	●		
		Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)	●		
		A window should be visible from any point in a habitable room	●		
		Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits			N/A
	4D–2	Environmental performance of the apartment is maximised			
		1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height	●		
		2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window		●	Flexible multi-use rooms have been provided in additional space behind kitchen/living/dining.
		Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths		●	NA
		All living areas and bedrooms should be located on the external face of the building	●		
		Where possible: · bathrooms and laundries should have an external openable window · main living spaces should be oriented toward the primary outlook and aspect and away from noise sources	●		
	4D–3	Apartment layouts are designed to accommodate a variety of household activities and needs			
		1. Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space)	●		
		2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	●		
		3. Living rooms or combined living/dining rooms have a minimum width of: 3.6m for studio and 1 bedroom apartments 4m for 2 and 3 bedroom apartments	●		
		4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas		●	Where achievable this approach has been adopted
		All bedrooms allow a minimum length of 1.5m for robes	●		
		The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high	●		
		Apartment layouts allow flexibility over time, design solutions may include: · dimensions that facilitate a variety of furniture arrangements and removal · spaces for a range of activities and privacy levels between different spaces within the apartment · dual master apartments · dual key apartments · Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments · room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) · efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	●		
4E		Private Open Space and Balconies			
	4E–1	**Apartments provide appropriately sized private open space and balconies to enhance residential amenity**			
		All apartments are required to have primary balconies as follows: Dwelling Type / Minimum Area / Minimum Depth Studio Apartments / 4m² / - 1 bedroom apartments / 8m² / 2m 2 bedroom apartments / 10m² / 2m 3+ bedroom apartments / 12m² / 2.4m **The minimum balcony depth to be counted as contributing to the balcony area is 1m**	●		
		For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m² and a minimum depth of 3m	●		
		Increased communal open space should be provided where the number or size of balconies are reduced			N/A
		Storage areas on balconies is additional to the minimum balcony size	●		
		Balcony use may be limited in some proposals by: · consistently high wind speeds at 10 storeys and above · close proximity to road, rail or other noise sources · exposure to significant levels of aircraft noise · heritage and adaptive reuse of existing buildings In these situations, Juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated			N/A
	4E–2	**Primary private open space and balconies are appropriately located to enhance liveability for residents**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space	●		
		Private open spaces and balconies predominantly face north, east or west	●		
		Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	●		
	4E–3	**Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building**			
		Solid, partially solid or transparent fences and balustrades are selected to respond to the location. They are de-signed to allow views and passive surveillance of the street while maintaining visual privacy and allowing for a range of uses on the balcony. Solid and partially solid balustrades are preferred	●		
		Full width full height glass balustrades alone are generally not desirable	●		Combination of solid and glass balustrades have been proposed
		Projecting balconies should be integrated into the building design and the design of soffits considered	●		The balconies are completely integrated and form part of the façade design
		Operable screens, shutters, hoods and pergolas are used to control sunlight and wind	●		
		Balustrades are set back from the building or balcony edge where overlooking or safety is an issue	●		
		Downpipes and balcony drainage are integrated with the overall facade and building design	●		
		Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design	●		
		Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design			N/A
		Ceilings of apartments below terraces should be insulated to avoid heat loss	●		
		Water and gas outlets should be provided for primary balconies and private open space	●		Noted
	4E–4	**Private open space and balcony design maximises safety**			
		Changes in ground levels or landscaping are minimised	●		
		Design and detailing of balconies avoids opportunities for climbing and falls	●		
4F	Common Circulation and Spaces				
	4F–1	**Common circulation spaces achieve good amenity and properly service the number of apartments**			
		1. The maximum number of apartments off a circulation core on a single level is eight	●		
		2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	●		
		Greater than minimum requirements for corridor widths and/ or ceiling heights allow comfortable movement and access particularly in entry lobbies, outside lifts and at apartment entry doors	●		
		Daylight and natural ventilation should be provided to all common circulation spaces that are above ground	●		Corridor spaces are naturally cross ventilated to provide access to daylight and ventilation
		Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors	●		Glass louvres are provided for light and ventilation.

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments	●		
		Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: · sunlight and natural cross ventilation in apartments · access to ample daylight and natural ventilation in common circulation spaces · common areas for seating and gathering · generous corridors with greater than minimum ceiling heights · other innovative design solutions that provide high levels of amenity			N/A
		Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level			N/A
		Primary living room or bedroom windows should not open directly onto common circulation spaces, whether open or enclosed. Visual and acoustic privacy from common circulation spaces to any other rooms should be carefully controlled	●		
	4F–2	**Common circulation spaces promote safety and provide for social interaction between residents**			
		Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines	●		
		Tight corners and spaces are avoided	●		
		Circulation spaces should be well lit at night	●		Noted
		Legible signage should be provided for apartment numbers, common areas and general wayfinding	●		Noted
		Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	●		
		In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally co-located with communal open space	●		Community hall has been provided on level 1.
		Where external galleries are provided, they are more open than closed above the balustrade along their length	●		
4G	Storage				
	4G–1	**Adequate, well designed storage is provided in each apartment**			
		In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size Studio apartments: 4m3 1 bedroom apartments: 6m3 2 bedroom apartments: 8m3 3 bedroom apartments: 10m3 **At least 50% of the required storage is to be located within the apartment**	●		
		Storage is accessible from either circulation or living areas	●		
		Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street			N/A

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
	4G–2	**Additional storage is conveniently located, accessible and nominated for individual apartments**			
		Storage not located in apartments is secure and clearly allocated	●		
		Storage is provided for larger and less frequently accessed items, where practical	●		Storage rooms are located in the basement for larger storage items
		Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible	●		Storage will not be designed to impede the car parking spaces.
		If communal storage rooms are provided they should be accessible from common circulation areas of the building			N/A
		Storage not located in an apartment is integrated into the overall building design and not visible from the public domain	●		Additional storage is located in the basement
4H	Acoustic Privacy				
	4H–1	**Noise transfer is minimised through the siting of buildings and building layout**			
		Adequate building separation is provided within the development and from neighbouring buildings / adjacent uses (also see section 2F Building separation and section 3F Visual Privacy)	●		
		Window and door openings are generally orientated away from noise sources	●		
		Noisy areas within buildings including building entries and corridors are located next to or above each other and quieter areas next to or above quieter areas	●		
		Storage, circulation areas and non-habitable rooms are located to buffer noise from external sources	●		Service cupboards and circulation areas are centrally located, with bedrooms sitting on the outside of the apartments and non- habitable spaces on the inside of the apartments.
		The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	●		
		Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas are located at least 3m away from bedrooms	●		
	4H–2	**Noise impacts are mitigated through internal apartment layout and acoustic treatments**			
		Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: · rooms with similar noise requirements are grouped together · doors separate different use zones · wardrobes in bedrooms are co-located to act as sound buffers	●		
		Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: · double or acoustic glazing · acoustic seals · use of materials with low noise penetration properties · continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	●		
4J	Noise and Pollution				
	4J–1	**In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		To minimise impacts the following design solutions may be used: · physical separation between buildings and the noise or pollution source · residential uses are located perpendicular to the noise source and where possible buffered by other uses · non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces · Non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources · Buildings should respond to both solar access and noise. Where solar access is away from the noise source, nonhabitable rooms can provide a buffer · Where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable (see figure 4J.4) · Landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry	●		
		Achieving the design criteria in this Apartment Design Guide may not be possible in some situations due to noise and pollution. Where developments are unable to achieve the design criteria, alternatives may be considered in the following areas: · solar and daylight access · private open space and balconies · natural cross ventilation	●		
	4J–2	**Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission**			
		Design solutions to mitigate noise include: · limiting the number and size of openings facing noise sources · providing seals to prevent noise transfer through gaps · using double or acoustic glazing, acoustic louvres or enclosed balconies (wintergardens) · using materials with mass and/or sound insulation or absorption properties e.g. solid balcony balustrades, external screens and soffits	●		
4K	Apartment Mix				
	4K–1	**A range of apartment types and sizes is provided to cater for different household types now and into the future**			
		A variety of apartment types is provided	●		Terrace House /Studio / 1Bed + Study / 2 Bed + Study / 3 Bed + Study
		The apartment mix is appropriate, taking into consideration: · the distance to public transport, employment and education centres · the current market demands and projected future demographic trends · the demand for social and affordable housing · different cultural and socioeconomic group	●		
		Flexible apartment configurations, such as dual key apartments, are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households	●		
	4K–2	**The apartment mix is distributed to suitable locations within the building**			
		Different apartment types are located to achieve successful facade composition and to optimise solar access. See figure 4A.3	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Larger apartment types are located on the ground or roof level where there is potential for more open space and on corners where more building frontage is available	●		
4L	Ground Floor Apartments				
	4L–1	**Street frontage activity is maximised where ground floor apartments are located**			
		Direct street access should be provided to ground floor apartments	●		
		Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: · both street and foyer entrances to ground floor apartments · private open space is next to the street · doors and windows face the street	●		Terraces face the street and provide a element of activity around the streets.
		Retail or home office spaces are located along street frontages	●		Retail space is located along the main street and pedestrian link.
		Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for con-version into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor ameni-ties for easy conversion	●		
	4L–2	**Design of ground floor apartments delivers amenity and safety for residents**			
		Privacy and safety is provided without obstructing causal surveillance. Design solutions may include: · elevation of private gardens and terraces above the street level by 1m – 1.5m (see Figure 4L.4) · landscaping and private courtyards · window sill heights that minimise sight lines into apartments · integrating balustrades, safety bars or screens with the exterior design	●		Ground floor terraces are generally elevated above street level with landscaping provided to help screen the private terraces. The landscaping is integrated with the balustrading
		Solar access is maximised through: · high ceilings and tall windows · trees and shrubs that allow solar access in winter and shade in summer	●		
4M	Facades				
	4M–1	**Building facades provide visual interest along the street respecting the character of the local area**			
		Design solutions for front building facades may include: · A composition of varied building elements · A defined base, middle and top of the buildings · Revealing and concealing certain elements · Changes in texture, material, detail and colour to modify the prominence of elements	●		
		Building services should be integrated within the overall façade	●		
		Building facades should be well resolved with an appropriate scale and proportion to the streetscape and human scale. Design solutions may include: · Well composed horizontal and vertical elements · Variation in floor heights to enhance the human scale · Elements that are proportional and arranged in patterns · Public artwork or treatments to exterior blank walls · Grouping of floors or elements such as balconies and windows on taller buildings	●		The building has a rigid and heavy vertical grid composition with horizontal “fading” towards the sky. Massing are stepped to create visual interest and minimise visual bulk from the street.
		Building façades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	●		No existing development around the building at the time of the application. However we have carefully considered possible future development datums.

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Shadow is created on the façade throughout the day with building articulation, balconies and deeper window reveals	●		A play of shadows can be seen through the highly articulated vertical elements. and "fading" horizontal bands.
	4M–2	**Building functions are expressed by the façade**			
		Building entries should be clearly defined	●		Breaks in the façade highlight where the building entries exist
		Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	●		The Civic corner on ground floor has a distinct facade geometry to indicate the prominence of the corner. For upper levels of the tower, the corners are curved to provide panorama view out.
		The apartment layout should be expressed externally through façade features as party walls and floor slabs	●		
4N	Roof Design				
	4N–1	**Roof treatments are integrated into the building design and positively respond to the street**			
		Roof design relates to the street. Design solutions may include: · Special roof features and strong corners · Use of skillion or very low pitch hipped roofs · Breaking down the massing of the roof by using smaller elements to avoid bulk · Using materials or a pitched form complementary to adjacent buildings	●		Stepped massing to minimise roof appearance from the street.
		Roof treatments should be integrated with the building design. Design solutions may include: · Roof design proportionate to the overall building size, scale and form · Roof materials complement the building · Service elements are integrated	●		
	4N–2	**Opportunities to use roof space for residential accommodation and open space are maximised**			
		Habitable roof space should be provided with good levels of amenity. Design solutions may include: · Penthouse apartments · Dormer or clerestory windows · Openable skylights	●		
		Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	●		Communal open space at level 16 has planted edge and awnings to help with visual and acoustic privacy.
	4N–3	**Roof design incorporates sustainability features**			
		Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: · The roof lifts to the north · Eaves and overhangs shade walls and windows from summer sun	●		
		Skylights and ventilation systems should be integrated into the roof design	●		
4O	Landscape Design				
	4O–1	Landscape design is viable and sustainable			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Landscape design should be environmentally sustainable and can enhance environmental performance by incorporating: · Diverse and appropriate planting · Bio-filtration gardens · Appropriately planted shading trees · Areas for residents to plant vegetables and herbs · Composting · Green roofs or walls	●		Refer to Landscape Architect's documentations.
		Ongoing maintenance plans should be prepared	●		Noted.
		Microclimate in enhanced by: · Appropriately scaled trees near the eastern and western elevations for shade · A balance of evergreen and deciduous trees to provide shading in summer and sunlight access in winter · Shade structures such as pergolas for balconies and courtyards	●		Refer to Landscape Architect's documentations.
		Tree and shrub selection considers size at maturity and the potential for roots to complete (see table 4)	●		Refer to Landscape Architect's documentations.
	4O–2	**Landscape design contributes to the streetscape and amenity**			
		Landscape design responds to the existing site conditions including: · Changes of levels · Views · Significant landscape features including trees and rock outcrops	●		
		Significant landscape features should be protected by: · Tree protection zones (see figure 40.5) · Appropriate signage and fencing during construction	●		Noted.
		Plants selected should be endemic to the region and reflect the local ecology	●		
4P	Planting on Structures				
	4P–1	**Appropriate soil profiles are provided**			
		Structures are reinforced for additional saturated soil weight	●		
		Soil volume is appropriate for plant growth, considerations include: · Modifying depths and widths according to the planting mix and irrigation frequency · Free draining and long soil life span · Tree anchorage	●		
		Minimum soil standards for plant sizes should be provided in accordance with Table 5	●		
	4P–2	**Plant growth is optimised with appropriate selection and maintenance**			
		Plants are suited to site conditions, considerations include: · Drought and wind tolerance · Seasonal changes in solar access · Modified substrate depths for diverse range of plants · Plant longevity	●		
		A landscape maintenance plan is prepared	●		

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Irrigation and drainage systems respond to : · Changing site conditions · Soil profile and the planting regime · Whether rainwater, stormwater r recycled grey water is used	●		
	4P–3	**Planting on structure contributes to the quality and amenity of communal and public open spaces**			
		Building design incorporates opportunities for planting on structures. Design solutions may include: · Green walls with specialised lighting for indoor green walls · All design that incorporates planting · Green roofs, particularly where roofs are visible form public domain · Planter boxes Note: structures designed to accommodate green walls should be integrated into the building façade and consider the ability of the façade to change over time	●		
4Q	Universal Design				
	4Q–1	**Universal design features are included in apartment design to promote flexible housing for all community members**			
		Developments achieve a benchmark of 20% of the total apartment incorporating the Liveable Housing Guideline's silver level universal design features	●		All apartments incorporate the Liveable Housing Guideline's silver level universal design features
	4Q–2	**A variety of apartments with adaptable designs are provided**			
		Adaptable housing should be provided in accordance with the relevant council policy	●		
		Design solutions for adaptable apartments include: · Convenient access to communal and public areas · High level of solar access · Minimal structural change and residential amenity loss when adapted · Larger car parking spaces for accessibility · Parking titled separately from apartments or shared car parking arrangements	●		
	4Q–3	**Apartment layouts are flexible and accommodate a range of lifestyle needs**			
		Apartments design incorporates flexible design solutions which may include: · Rooms with multiple functions · Dual master bedroom apartments with separate bathrooms · Larger apartments with various living space options · Open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom	●		
4R	Adaptive Reuse				
	4R–1	**New additional to existing buildings are contemporary and complementary and enhance an area's identity and sense of place**			
		Design solutions may include: · New elements to align with the existing building · Additions that complement the existing character, siting, scale, proportion, pattern form and detailing · Use of contemporary and complementary materials, finishes, textures and colours	●		New addition to the approved DA massing adapts the same design strategy, continuing the facade language, material and colour.
	4R–2	**Adapted buildings provide residential amenity while not precluding future adaptive reuse**			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: · Generously sized voids in deeper buildings · Alternative apartment types when orientation is poor · Using additions to expand the existing building envelope			N/A
		Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where developments are unable to achieve the design criteria, alternatives could be considered in the following areas: · Where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar an daylight access (see also sections 4A Solar and daylight access and 4B Natural ventilation) · Alternatives to providing deep soil where less than the minimum requirement is currently available on the site · Building and visual separation – subject to demonstrating alternative design approaches to achieving privacy · Common circulation · Car parking · Alternative approaches to private open space and balconies			N/A
4S	Mixed Use				
	4S–1	**Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement**			
		Mixed use development should be concentrated around public transport and centres			N/A
	4S–2	**Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents**			
		Residential circulation areas should be clearly defined. Design solutions may include: · Residential entries are separated from commercial entries and directly accessible from the street · Commercial service areas are separated from residential components · Residential car parking and communal facilities are separated or secured · Concealment opportunities are avoided			N/A
		Landscape communal open space should be provided at podium or roof levels	●		In addition to the approved DA community spaces, a new internal community room is provided on L 16
4T	Awnings and Signage				
	4T–1	**Awnings are well located and complement and integrate with the building design**			
		Awnings should be located along streets with high pedestrian activity and active frontages			N/A (Pedestrian activity will be low in this development)
		A number of the following design solutions are used: · Continuous awnings are maintained and provided in areas with existing pattern · Height, depth, material and form complements the existing street character · Protection from the sun and rain is provided · Awnings are wrapped around the secondary frontages of corner sites · Awnings are retractable in areas without an established pattern			N/A
		Awnings should be located over building entries for building address and public domain amenity		●	Instead of projections for a sense of address, the building offers scoops between the forms where the lobby entries are located
		Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure			N/A

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Lighting under awnings should be provided for pedestrian safety			N/A
	4T–2	**Signage responds to the context and desired streetscape character**			
		Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development	●		Noted
		Legible and discrete way finding should be provided for larger developments	●		Noted
		Signage is limited to being on and below awnings and in single façade sign on the primary street frontage	●		Noted
4U	Energy Efficiency				
	4U–1	**Development incorporates passive environmental design**			
		Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	●		
		Well located, screened outdoor areas should be provided for clothes drying	●		Where possible. Solid balcony up stands have been provided to allow balcony drying facilities to be screened from the public domain
	4U–2	**Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer**			
		A number of the following design solutions are used: · The use of smart glass or other technologies on north and west elevations · Thermal mass in the floors and walls of north facing rooms in maximised · Polished concrete floor, tiles, or timber rather than carpet · Insulated roofs, walls and floors and seals on window and door openings · Overhangs and shading devices such as awnings, blinds and screens	●		Retractable awning are used particularly on western windows. Deep balconies maximise shading to sliding doors.
		Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	●		
	4U–3	**Adequate natural ventilation minimises the need for mechanical ventilation**			
		A number of the following design solution are used: · Rooms with similar usage are grouped together · Natural cross ventilation for apartments is optimised · Natural ventilation is provided to all inhabitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible	●		
4V	Water Management and Conservation				
	4V–1	**Potable water use is minimised**			
		Water efficient fittings, appliances and wastewater reuse should be incorporated	●		Refer BASIX certificate
		Apartments should be individually metered	●		
		Rainwater should be collected, stored and reused on site	●		Refer BASIX certificate
		Drought tolerant, low water use plants should be used within landscaped areas	●		Refer landscape design
	4V–2	**Urban stormwater is treated on site before being discharged to receiving waters**			
		Water sensitive urban design systems are designed by a suitably qualified professional			

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		A number of the following design solutions are used: · Runoff is collected from roofs and balconies in water tanks and plumbed into toilets, laundry and irrigation · Porous and open paving materials is maximised · On site stormwater and infiltration, including bio-retention systems such as rain gardens or street tree pits			
	4V–3	**Flood management systems are integrated into site design**			
		Detention tanks should be located under paved areas, driveways or in basement car parks	●		Detention tank is located under paved area.
		On large sites parks or open spaces are designed to provide temporary on site detention basins			N/A
4W	Waste Management				
	4W–1	**Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents**			
		Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park	●		Storage of rubbish bins is set far behind the parking entrance and not visible from the street.
		Waste and recycling storage areas should be well ventilated	●		
		Circulation design allows bins to be easily manoeuvred between storage and collection points	●		
		Temporary storage should be provided for large bulk items such as mattresses	●		A bulky items storage room, that is separate from the waste rooms, has been provided.
		A waste management plan should be prepared	●		
	4W–2	**Domestic waste is minimised by providing safe and convenient source separation and recycling**			
		All dwellings should have a waste and recycling cupboard or temporary storage area of sufficient size to hold two days' worth of waste and recycling	●		Kitchens will incorporate waste storage in the layout which will then be taken to the waste chutes in the shared lobbies.
		Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core	●		One chute and two bins are provided on each level next to the lift.
		For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses			N/A
		Alternative waste disposal methods such as composting should be provided	●		
4X	Building Maintenance				
	4X–1	**Building design detail provides protection from weathering**			
		A number of the following design solutions are used: · Roof overhangs to protect walls · Hoods over windows and doors to protect openings · Detailing horizontal edges with drip lines to avoid staining of surfaces · Methods to eliminate or reduce planter box leaching · Appropriate design and material selection for hostile locations	●		Noted.
	4X–2	**Systems and access enable ease of maintenance**			
		Window design enables cleaning from the inside of the building	●		
		Building maintenance systems should in incorporated and integrated into the design of the building form, roof and façade	●		A roof hatch has been allowed for in order to gain access to the roof where condensers are located.

Part No.	Objective No.	Objective Design criteria Design guidance	Complies Yes	Complies No	Notes
		Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems	●		
		Centralised maintenance, services and storage should be provided for communal open space areas within the building	●		
	4X–3	**Material selection reduces ongoing maintenance costs**			
		A number of the following design solutions are used: · Sensors to control artificial lighting in common circulation and spaces · Natural materials that weather well and improve with time such as face brickwork · Easily cleaned surfaces that are graffiti resistant · Robust and durable materials and finished are used in locations which receive heavy wear and tear, such as common circulation areas and lift interiors	●		Natural, robust, durable and low maintenance materials are used for the facade of the building.

SJB is passionate about the possibilities of architecture, interiors, urban design and planning. Let’s collaborate.

Gadi Country
Level 2, 490 Crown Street
Surry Hills NSW 2010

T 61 2 9380 9911
E sydney@sjb.com.au
W sjb.com.au