DESIGN REPORT

For Development Application
31-33 Shepherd Street, Liverpool NSW 2170

Monday 3rd July 2023

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PART 1
Project Summary & Site Analysis

31-33 Shepherd Street, Liverpool NSW 2170

Project Summary

Introduction

The SEPP65 Design Verification Statement and response to the Design Quality Principles have been prepared by Mosca Pserras Architects on behalf of Lateral Estate Pty Ltd. This forms part of the Development Application (DA) submission for the high-density residential development at 31-33 Shepherd Street, Liverpool.

This report should be read in conjunction with the accompanying architectural design package prepared by Mosca Pserras Architects, the landscape design package prepared by Site Image, and the Statement of Environment Effects with appendices prepared by SJB Planning.

Figure 1: Perspective view of the proposed development viewed from the West.

Site Description

The site is a total of 7,872 m2, located at 31-33 Shepherd Street, Liverpool. The site is irregular in shape and is located on the Southern end of the Liverpool City Centre in the Shepherd Street precinct, approximately 40km West of Sydney CBD. The site is bounded by a recently completed high-density residential building to the north (32-34 Shepherd Street), Georges River and riparian vegetation to the east, Mill Park to the south and a train line to the western boundary, also shared with a single industrial property at 29 Shepherd Street.

The proposal is located on an existing industrial property, zoned for R4 high-density residential under the LLEP. The site is the last on the Eastern side of the Shepherd Street precinct to be developed, with the existing developments establishing a vibrant residential neighbourhood setting. The Western side of Shepherd Street comprises existing industrial low-rise buildings. A single heritage-listed building referred to as the Paper Mill marks the entry to the precinct northeast of the site.

An existing easement runs through the site along the western boundary, providing a pedestrian and vehicular link between Shepherd Street, Powerhouse Road (of which the Casula Powerhouse Arts Centre is accessed) and Mill Park.

Proposal

The proposal for the site includes two separate high-density residential apartment buildings. Each building has a five-storey podium and a tower atop, with the Building A being 20 storeys in overall height and Building B 24 storeys, respectively. The proposed gross floor area is 28,228 m2, delivering 341 apartments and 66 co-living rooms. The development sees a mix of dwelling types, catering for different family groups and lifestyles, including 39 x studios, 106 x 1-bed apartments, 169 x 2-bed apartments and 27 x 3-bed apartments.

Each building has a separate basement carpark, and 410 car parking spaces are included within the basements across the whole scheme. An additional 20 public car spaces are proposed on the ground level as part of the new public road which is proposed to replace the existing right of way.

Site Analysis

Context & Adjoining Land Uses

The site is located on the Southern end of the Liverpool City Centre in the Shepherd Street precinct. The site is bounded by a recently completed high-density residential building to the north (32-34 Shepherd Street), Georges River and riparian vegetation to the east, Mill Park to the south and a train line to the western boundary, also shared with a single industrial property at 29 Shepherd Street.

The site is the last on the Eastern side of the Shepherd Street precinct to be developed, with the existing developments establishing a vibrant residential neighbourhood setting. The Western side of Shepherd Street comprises existing industrial low-rise buildings. A single heritage-listed building referred to as the Paper Mill marks the entry to the precinct northeast of the site.

An existing easement runs through the site along the western boundary, providing a pedestrian and vehicular link between Shepherd Street, Powerhouse Road (of which the Casula Powerhouse Arts Centre is accessed) and Mill Park.

Figure 2: Locality Plan

Existing Structures

The proposal is located on an existing industrial property, which will be demolished as part of the new works.

Figure 3: Aerial view from the South-West

Figure 4: Aerial view from the South-East

Access Networks & Traffic

Vehicular access to the site is via Speed Street into Shepherd Street, the only vehicular access from the North and the primary road connection to the Casual Powerhouse Arts Centre via Powerhouse Road. An existing right of way runs through the site to connect Shepherd Street and Powerhouse Road. This existing right of way is to be replaced by a new proposed public road to better define access to the site and offer an improved public connection to the Powerhouse Museum and Casula Parklands. Access to the site's basement carpark and loading docks are to be from the new proposed public road.

Further details for the street network, access strategy, and traffic management are provided in the Traffic Report submitted as part of this Development Application.

In addition, pedestrian access from Shepherd Street to Mill Park is also upgraded as part of the proposed works. There are opportunities for pedestrian through-site access to be delivered from Shepherd Street to the Georges River foreshore, as envisaged in the original SJB masterplan, providing access and a visual link to the river, foreshore and future boardwalk.

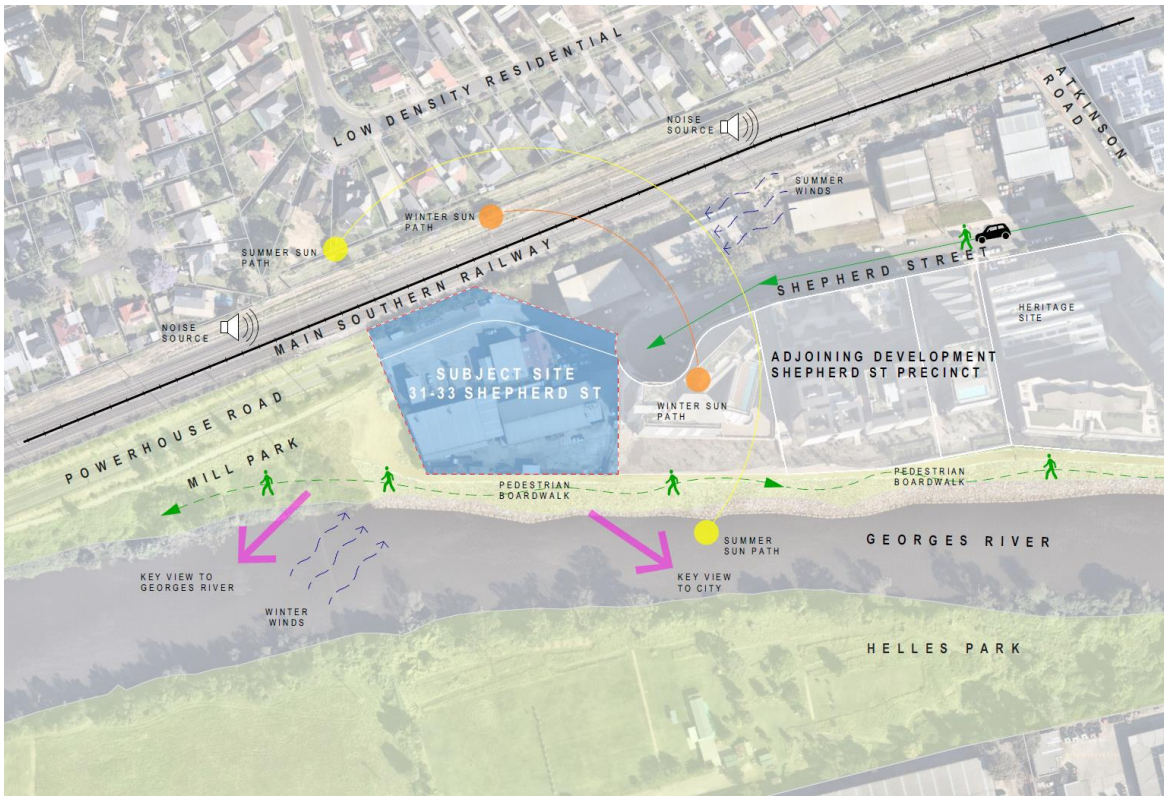

Figure 5: Site Analysis Plan

Public Transport

The nearest train station is Liverpool train station, located approximately 1.5km from the subject site, with the closest bus stops along the Hume Highway.

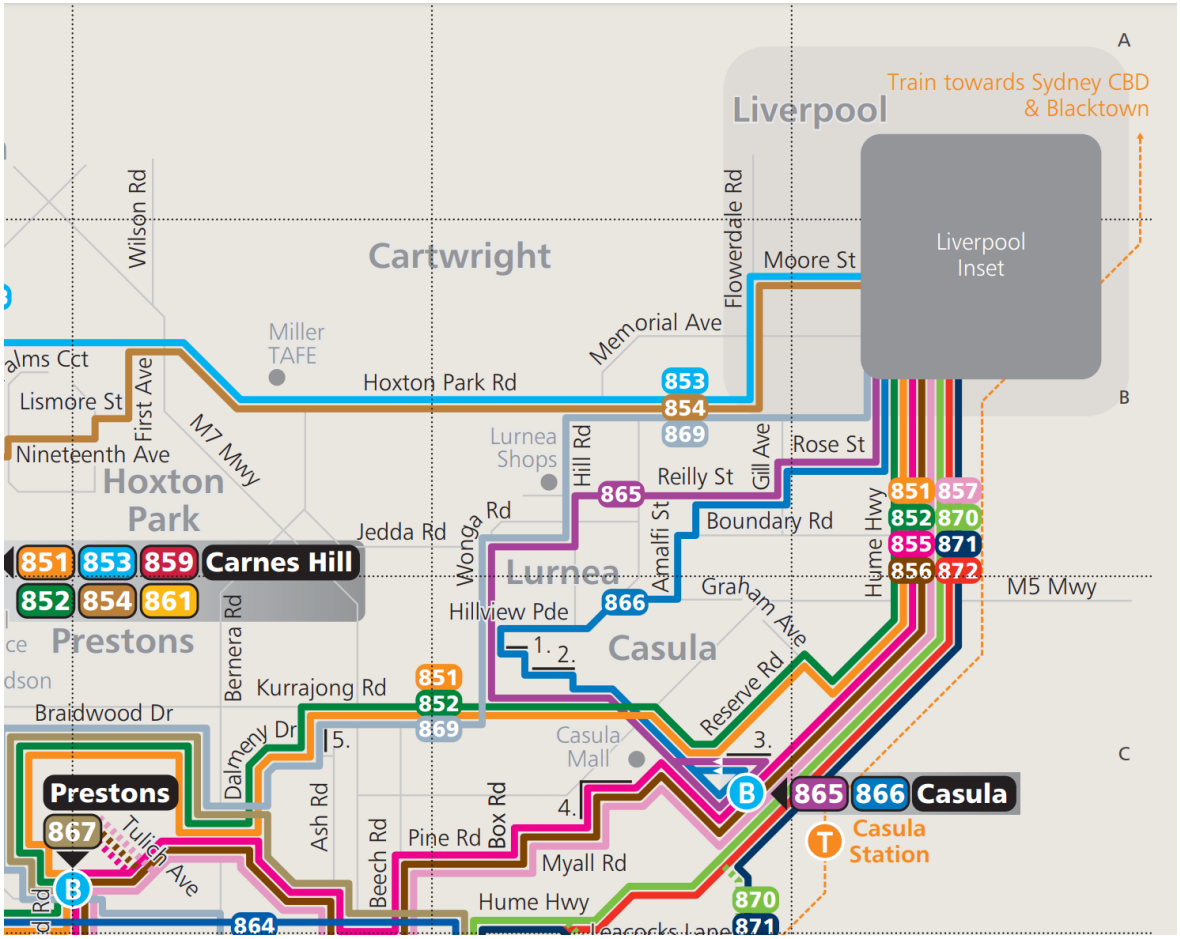

Figure 6: Public Transport Network (excerpt from Campbelltown, Liverpool, Bringelly and Oran Park bus network map)

PART 2
Architectural Design Statement

31-33 Shepherd Street, Liverpool NSW 2170

Architectural Design Statement

The key design concept was to create two high-quality and vibrant residential buildings that complement the existing and natural surroundings and offer good access to the Casula parklands and Georges River for residents and the wider community.

Each building has a five-storey podium and a tower atop, with the Buildings A and B being 20 and 24 storeys in overall height respectively. The five-storey podium of the proposed buildings follows the height and scale of the neighbouring buildings within the Shepherd Street precinct to reinforce the existing urban edge and provide a consistent street wall.

Figure 7: Perspective view of the proposed development viewed from the West.

The primary frontage of the proposed buildings is relative to those of the adjacent neighbouring building at 32-34 Shepherd Street. This alignment is followed until the building turns parallel to the Southern boundary, creating a frontage that considers Mill Park. The 'dog-legged' form of Building B addresses the termination of Shepherd Street by framing a generous and attractive landscaped forecourt. The landscaped forecourt flows into the adjacent public open spaces, including Mill Park and the river foreshore, via a through-site link improving permeability through and around the site.

Figure 8: Shepherd Street Precinct Podium Height Study

The site is at a critical intersection between the Georges River foreshore, Mill Park and the Great Southern Rail line. With green space and parkland stretching for kilometres south of the building, the proposed development is at a unique vantage point, elevated above its natural surroundings. The proposed buildings are the tallest in the Shepherd Street precinct, responding to the rhythm of the existing skyline and the planned 'height curve' established in the SJB masterplan principles, which informed the LEP. As the tallest building within the precinct, Building B serves as an urban marker, with significant visibility from the South, including the M5 motorway and railway corridor.

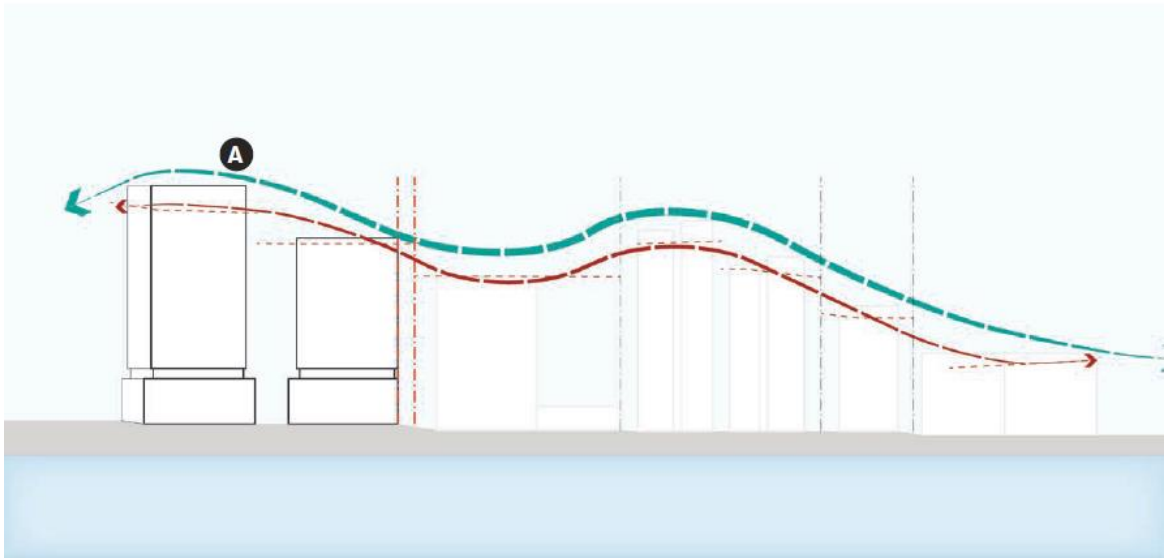

Figure 9: Sectional diagram showing tower height principles and relationship to LEP heights (reference: Urban Design Principles and Visual Impact Analysis by Architectus)

The buildings have been positioned and orientated to achieve optimal outlook and views of the river and park from the site whilst maximising solar access, natural ventilation, acoustic and visual privacy, and spatial functionality of the residential units within the building.

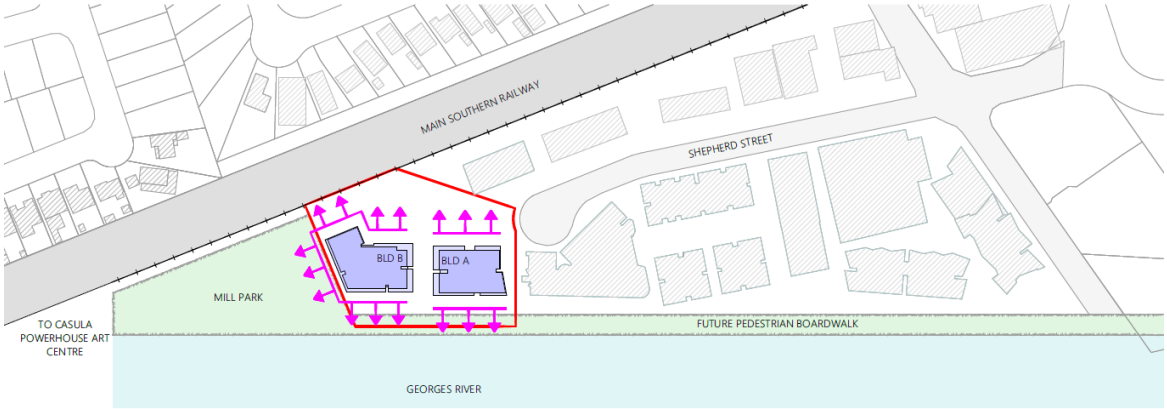

Figure 10: Diagram showing the primary frontage of the proposed buildings interfacing with Shepherd Street, Mill Park, Georges River and the river foreshore.

The building massing is broken down by vertical 'slot' elements through the façade, contributing to the towers appearing slender and providing forms related to the remainder of the Shepherd Street precinct. Relief in the massing in the form of these 'slot' elements is also used to communicate the functions of the building, defining apartments and indicating entry points.

With the site marking the termination of the Shepherd Street residential precinct and the beginning of the journey to the heritage-listed Casula Powerhouse Arts Centre via Powerhouse Road, the design of the proposed buildings draws inspiration from the unique features of this heritage-listed building. This includes the application of face brick on the podium base to offer a tactile finish, elevated by corbeling detail, as well as an expressed grid that is applied to the towers' facades, generally reflecting the internal layout of the structure of the building whilst framing the apertures of the living spaces, bedrooms and balconies.

Figure 11: Heritage-listed Casula Powerhouse Arts Centre, located less than 2km from the subject site, is accessed via Powerhouse Road

The proposed buildings have been designed to allow each to express their identity through variance in form and colour, whilst the podium design language provides a familial base that visually links the two towers. Cognisant of the riverfront location and existing precinct, materials have been selected from a natural palette and tonal range to add warmth.

Building A tower comprises a warm terracotta red complemented by grey glazing. Bronze glazing is applied to Building B, offset by a white expressed grid. Building B's 'dog-legged' form is similarly offset by a black grid to contrast and further break down the building's mass. The striking bronze facade of Building B will offer an attractive addition to the skyline of Liverpool CBD, serving as a key marker.

The selection of materials ensures a low-maintenance and durable finish to maintain the development's quality.

Figure 12: Perspective view of the proposed development viewed from the North-East

Public Realm

The public domain and architecture have been developed through a collaborative design process with Site Image Landscape Architects. The public domain serves as an extension of the building architecture. It is an integral component of the proposal in the context of its urban setting and connectivity with the broader precinct. It includes deep soil zones, and public, publicly accessible communal and private open spaces.

An attractive and landscaped forecourt forms the street frontage and improves the pedestrian links through the site to Mill Park. In addition, public access to the foreshore and future boardwalk is facilitated through a through-site link between the proposed buildings. This new link will benefit residents and the wider community whilst improving site permeability and river views.

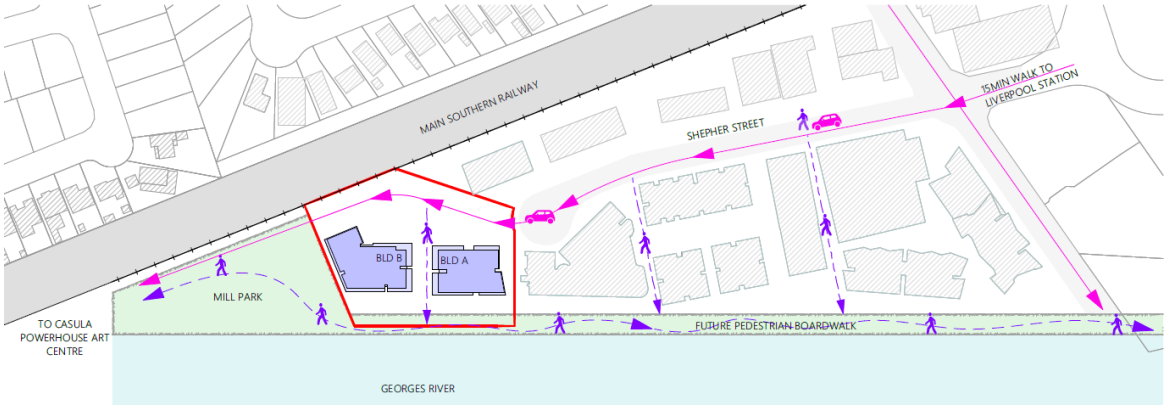

Figure 13: Diagram showing vehicular and pedestrian movement through and around the subject site.

The rear site setbacks follow the foreshore setbacks, achieving deep landscaped zones and a continuation of landscaped elements through and around the site. Landscaped elements, including lawns, gardens and seating edges, incorporate long and sinuous curves in their forms that express the curves and currents of the river.

Extensive planting and large trees can be accommodated within the communal areas, creating functional and visually interesting spaces.

The above design principles have guided the landscape design to facilitate a safe and accessible public realm with good amenities. Further information on the landscape concept design is outlined in the Landscape Package by Site Image which accompanies this application.

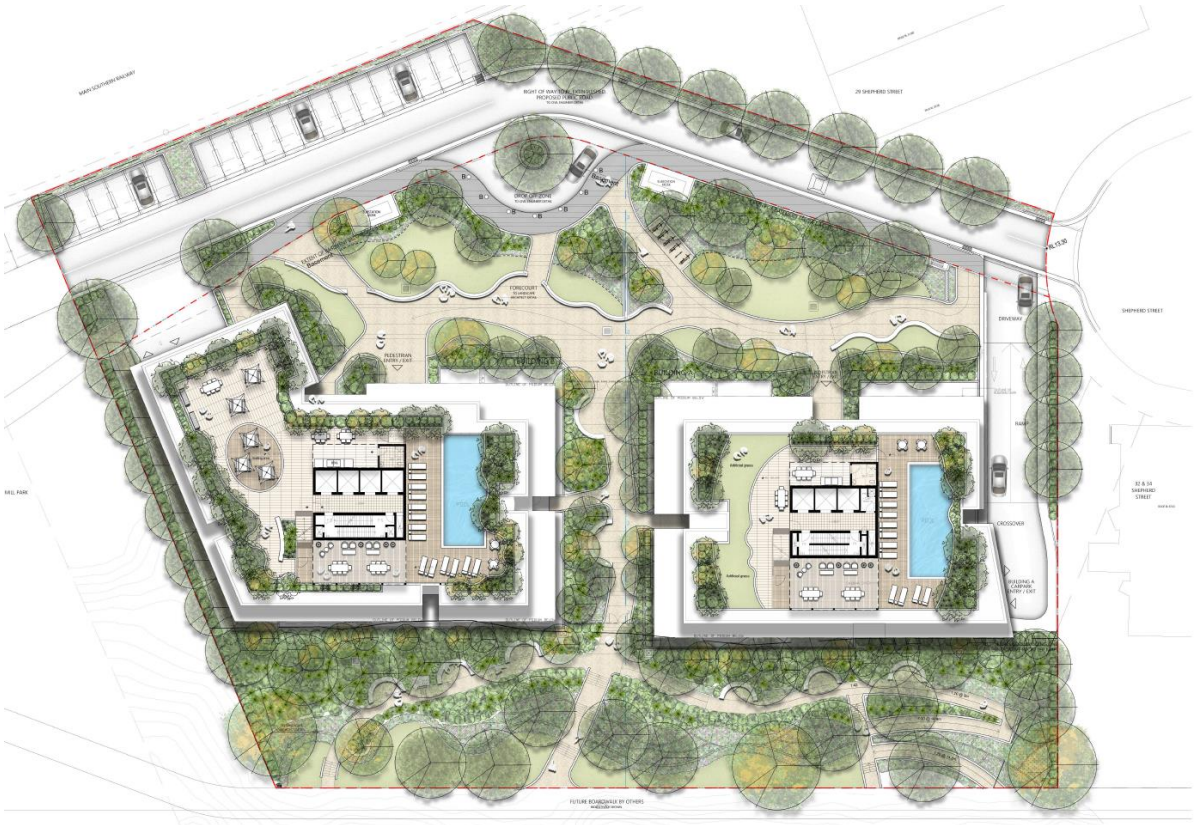

Figure 14: Overall landscaping plan by Site Image Landscape Architects

PART 3
SEPP 65 Design Quality Principles

31 & 33 Shepherd Street, Liverpool NSW 2170

Principle 1: Context and Neighbourhood Character

Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions. Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.

Proposal

The site is approximately 40km West of Sydney CBD in Liverpool, a suburb of Greater Western Sydney identified as a key strategic centre in A Plan for Growing Sydney (2014). The site is in the Southern end of the Liverpool City Centre in the Shepherd Street precinct, an urban renewal area of industrial properties zoned for R4 high-density residential under LLEP. There is an excellent opportunity for the proposed development to assist in fulfilling the revitalisation of the Liverpool City Centre, creating a vibrant, walkable city that offers living and recreation opportunities with good access to the Georges River.

The site is the last on the Eastern side of the Shepherd Street precinct to be developed, with the existing developments establishing a vibrant residential neighbourhood setting. The Western side of Shepherd Street comprises existing industrial low-rise buildings. A single heritage-listed building referred to as the Paper Mill marks the entry to the precinct northeast of the site.

Looking closer at the site's immediate surroundings, a recently completed high-density residential building bounds the site to the north (32-34 Shepherd Street), Georges River and riparian vegetation to the east, Mill Park to the south and a train line to the western boundary, also shared with a single industrial property at 29 Shepherd Street.

The existing public domain includes concrete footpaths and avenue street tree planting on the verge on the eastern side of Shepherd Street. The footpath infrastructure on the western side of Shepherd Street requires extensive maintenance and realignment.

An existing easement runs through the site along the western boundary, providing a pedestrian and vehicular link between Shepherd Street, Powerhouse Road (of which the Casula Powerhouse Arts Centre is accessed) and Mill Park. However, with the poorly defined conditions along this easement, there is an opportunity to establish an improved connection to the arts centre and parklands from Shepherd Street that will benefit the greater community.

A publicly accessible foreshore setback runs along the entirety of the eastern boundary, providing a deep landscaped zone consistent with the frontage of neighbouring developments. This landscaped zone offers a potential location for passive recreational facilities which has not yet been realised in adjacent developments. There are further opportunities for pedestrian through-site access to be delivered from Shepherd Street to the Georges River foreshore, as envisaged in the original SJB master, providing access and a visual link to the river, foreshore and future boardwalk.

The site is at a critical intersection between the Georges River foreshore, Mill Park and the Great Southern Rail line. With green space and parkland stretching for kilometres south of the building, the proposed development is at a unique vantage point, elevated above its natural surroundings. The buildings will be visible from the M5 motorway and railway corridor, serving as key markers that help define and establish the gateway to Liverpool CBD. This aligns with the LLEP and SJB master plan, where the buildings have been planned as the tallest in the precinct.

Principle 2: Built Form and Scale

Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings.

Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements.

Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

Proposal

The built form of the proposed development is comprised of two separate buildings. Each building has a five-storey podium and a tower atop, with the Building A being 20 storeys in overall height and Building B 24 storeys, respectively.

The five-storey podium of the proposed buildings follows the height and scale of the neighbouring buildings within the Shepherd Street precinct to reinforce the existing urban edge and provide a consistent streetwall. Further, the podium defines the extent of the site, allowing the tower to meet the ground at a human scale appropriate to the precinct.

The proposed buildings are the tallest in the Shepherd Street precinct, responding to the rhythm of the existing skyline and the planned 'height curve' established in the LEP and SJB masterplan principles. As the tallest building within the precinct, Building B serves as an urban marker, with significant visibility from the South, including the M5 motorway and railway corridor. Being at the most Southern end of the precinct, its elevated height will not impact the amenity of the surrounding development.

The buildings have been positioned and orientated to achieve optimal outlook and views of the river and park from the site whilst maximising solar access, natural ventilation, acoustic and visual privacy, and spatial functionality of the residential units within the building.

The primary frontage of the proposed buildings is relative to those of the adjacent neighbouring building at 32-34 Shepherd Street. This alignment is followed until the building turns parallel to the Southern boundary, creating a frontage that considers Mill Park. The 'dog-legged' form of Building B addresses the termination of Shepherd Street by framing a generous and attractive landscaped forecourt. The landscaped forecourt flows into the adjacent public open spaces, including Mill Park and the river foreshore, improving permeability through and around the site.

The rear site setbacks follow the foreshore setbacks, achieving deep landscaped zones, passive recreation and a continuation of landscaped elements through and around the site.

The building massing is broken down by vertical 'slot' elements through the façade, which contribute to the towers appearing as slender and provide forms related to the remainder of the Shepherd Street precinct. Relief in the massing in the form of these 'slot' elements is also used to communicate the functions of the building, defining apartments and indicating entry points.

Principle 3: Density

Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context.

Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.

Proposal

The subject site delivers high-density urban housing comprised of 341 apartments and 66 co-living rooms on a site area of 7,872 m2. The proposed gross floor area is 28,228 m2. The proposed development density is appropriate for the site and projected urban context.

The density provides for efficient land use in close proximity to jobs, shops, services and transport. In addition, the development will be supported by the surrounding environment, with infrastructure and services readily available, retail, business and recreational hubs immediately nearby, and high-quality public transport within a short distance.

The development sees a mix of dwelling types, catering for different family groups and lifestyles, including 39 x studios, 106 x 1-bed apartments, 169 x 2-bed apartments and 27 x 3-bed apartments. In addition, the inclusion of 66 co-living rooms in the development is intended to appeal to young professionals and key workers needing convenient access to work, study and recreation opportunities.

The amenity and well-being of residents have been considered in the design of each unit. Careful attention has been given to spatial layouts and arrangements to maximise the outlook and views of the river and park from the site, solar access, natural ventilation, and visual and acoustic privacy. An array of communal residential facilities are also provided on the rooftops of the towers for resident amenities.

The proposed buildings provide access to the Georges River and existing green spaces near the site, including Mill Park. Situated in a unique location, the proposed buildings will provide opportunities for its residents to participate in activities and enhance their well-being.

20% of apartments have been designed to meet the Livable housing design standards, and a further 10% of units are designed to accommodate post-adaption under the Australian Adaptable Housing Standard (AS 4299-1995) to meet the changing needs of residents over time.

Principle 4: Sustainability

Good design combines positive environmental, social and economic outcomes.

Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials, and deep soil zones for groundwater recharge and vegetation.

Proposal

The proposed buildings have been designed to be energy efficient whilst meeting the technical targets set out in the ADG.

Individual apartments are located and orientated to maximise opportunities for controlled solar access and natural ventilation, supporting the efficient use of resources whilst minimising energy use. The living areas of apartments have generally been located along the façade edge to maximise sunlight, daylight and ventilation. All service areas, where practical, have been positioned within the building footprint close to circulation corridors. In addition, the floor plate arrangement sees that all circulation corridors have access to natural light and ventilation.

Overall the development provides for 239 apartments to receive 2 hours or more of direct solar access between 9am and 3pm during mid-winter (equivalent to 70.1% of total apartments).

All apartments have been designed to promote natural ventilation, with 69 of 114 apartments on the first 9 storeys of the proposed buildings achieving natural cross ventilation (equivalent to 60.5% of total apartments). In some instances, natural ventilation plenums enable natural cross-ventilation (refer to Memorandum by RWDI Australia Pty Ltd, dated 21 December 2022).

Some units do not receive any sunlight between 9am and 3pm at mid-winter, with 101 of 341 apartments not receiving direct sunlight during these times (equivalent to 29.6%). For the overwhelming benefit of aspect over orientation, it was decided that connectivity to the river outweighed the numerical standard, although compliance could have been achieved.

The development has been designed in response to all BASIX requirements. The carbon footprint will be further reduced by high-efficiency air conditioning, energy-efficient appliances, fittings and services such as water reduction showerheads, dual flush toilets, gas cooktops, microwave ovens and energy-efficient hot water systems.

Waste minimisation and recycling strategies have also been incorporated into the development, including using recycled brick cladding on the podium façade. The demolition waste will also be reused on site where possible, with existing rubble to be used in the concrete mix and existing bricks to fill behind retaining walls.

Rainwater tanks are provided for stormwater collection to water the landscaped areas.

Principle 5: Landscape

Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood.

Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values, and preserving green networks.

Good landscape design optimises usability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity, provides for practical establishment and long term management.

Proposal

The public domain and architecture have been developed through a collaborative design process with Site Image Landscape Architects. The public domain serves as an extension of the building architecture. It is an integral component of the proposal in the context of its urban setting and connectivity with the broader precinct.

The existing public domain includes concrete footpaths and avenue street tree planting on the verge. This treatment is proposed to extend through the subject site along the new proposed public road, continuing the existent character of Shepherd Street. The new proposed public road upgrades the existing right of way to better define access to the site, offering an improved connection to the Powerhouse Museum and Casula Parklands. A garden bed lines the site's Western boundary to provide a soft visual screening of the adjacent railway and industrial building. In addition, 20 public car spaces are proposed adjacent to the right of way, with bike racks also provided in the forecourt, to improve public access to the nearby parks and promote activity.

An attractive and landscaped forecourt forms the street frontage, which ultimately defines the termination of Shepherd Street and improves the pedestrian links through the site to Mill Park.

Public access to the foreshore and future boardwalk is facilitated through a through-site link between the proposed buildings. This new link will benefit residents and the wider community whilst improving site permeability and river views. The through-site link includes a lush walkway with strong canopy trees and tree ferns that frame the river views. The canopy trees and tree ferns also provide supplementary screening to the Ground level apartment terraces whilst enabling passive surveillance of the public areas from the apartments.

As the site's natural terrain slopes down from the through-site link to the future foreshore boardwalk, pathways are integrated into the foreshore landscaped areas. This subtle treatment complements the existing foreshore landscaping and adjacent park. In addition, on-grade, accessible links are included within these foreshore paths in the form of meandering walkways that ensure equitable access for all residents and the public.

Various spaces and experiences are integrated into the landscaping, allowing relaxation and social interaction. Landscaped elements, including lawns, gardens and seating edges, incorporate long and

sinuous curves in their forms that express the curves and currents of the water. More intimate seating alcoves nestled into the planters also allow for the enjoyment of river views.

In addition, communal open spaces are provided on the roof of each building for residents and their visitors to enjoy and include a pool, BBQ, seating and tables with shading. A flexible, flat area on each rooftop allows various uses, such as yoga and picnicking.

Glass wind screens are located around the perimeter of each roof terrace to ensure user comfort without impacting the exceptional views. Soft landscaping also visually enhances the roof terraces' appearance whilst providing cool shade during summer.

Principle 6: Amenity

Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being. Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, and ease of access for all age groups and degrees of mobility.

Proposal

The development enhances the amenity of residents and neighbours through physical, spatial, and environmental qualities, achieved through the following:

- The buildings are positioned and orientated to address the river and park frontages, achieving optimal outlooks and views while maximising direct solar access opportunities. In addition, numerous corner-oriented apartments are incorporated within the building form to maximise natural cross ventilation.
- The building design responds to the noise sources presented by the adjacent railway line by orientating the units away from the railway where possible. The glazing and external walls of any apartments impacted by noise generated from the railway will have acoustic treatment.
- The proposed development will protect the existing amenity of the neighbouring building at 32-34 Shepherd Street through privacy measures applied to any balconies or windows facing the adjoining building. These measures include offsetting windows/balconies, so they do not align with the neighbouring windows/balconies and installing fixed vertical screens to windows/balconies that direct views away from the adjacent building. By nature of the site's position, at the Southern end of the precinct, the proposed building does not cause any overshadowing of the neighbouring building.
- The privacy of units between the proposed buildings, Building A and B, are treated similarly to the above.
- The design of the building floorplates also bolsters resident amenity. The development comprises 341 apartments with different sizes, layouts and configurations, and 66 co-living rooms, catering for various family groups and lifestyles. Further, 10% of units accommodate post-adaption under the Australian Adaptable Housing Standard (AS 4299-1995) to meet the changing needs of residents over time. All common areas are accessible, and accessible paths of travel are provided from the street boundary to the individual apartment entries to ensure all units are visitable.
- The spatial functionality of the apartments achieves high-quality amenity. Open-planned interiors with generous internal dimensions maximise the useability of each room. Balconies and terraces are a continuation of internal living spaces, with proportions deep enough to be comfortably furnished whilst allowing penetration of the winter sun in living areas.
- The development includes quality and accessible public open spaces that offer improved connectivity of parklands, the foreshore and the future boardwalk for resident and public enjoyment. In addition, the opportunities for social interaction that the public open space creates help neighbours build relationships that reinforce a sense of community in the greater precinct.
- The communal open space has been located on the roof of each building, receiving unobstructed solar access and exceptional views in all directions and facilitating various recreational activities. The communal open space of each building includes a pool, BBQ facilities, raised garden beds, benches for seating, grass for playing, and planted surfaces providing shade and sun, with direct and secure access from the lift lobby.
- The design of the building façade promotes connectivity with the natural environment in conjunction with high thermal performance to provide residents with the ultimate comfort.

Principle 7: Safety

Good design optimises safety and security, within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.

Proposal

The design of the development optimises safety and security, both internal to the development and to the public domain. Safety and security have been considered per the Principles of Crime Prevention through Environmental Design (CPTED) of natural surveillance, access control, territorial reinforcement, and space management.

The buildings address the primary Shepherd Street frontage, with active residential frontages also provided to Mill Park, the foreshore, and the through-site link. Living areas and balconies of apartments have generally been located on the façade edge to maximise natural surveillance on all frontages.

The design provides an attractive link between Shepherd Street and Powerhouse Road to encourage pedestrian use of the street, enhancing and contributing to the vitality and amenity of the public domain. A clear and visible pedestrian flow is prioritised here, maximising the visual aperture to Mill Park from Shepherd Street and visibility through the site along this axis via the through-site link. The through-site link forms an integrated pedestrian network providing a choice of routes at ground level for pedestrians.

Floor levels of private terraces on the ground level are elevated above the street level to provide opportunities for passive surveillance where possible. In addition, courtyard fencing and street walls incorporate solid and visually permeable elements which balance surveillance needs with privacy.

The threshold between public, communal and private spaces is clearly defined with safe access points. The main entrances into the building are visible from the street, identifiable, and well-lit, with generous open space. Lift lobbies within have direct sightlines to the street to encourage passive surveillance of the forecourt. Access to each building and individual apartments will be coordinated with a security key system. Lighting through the public communal space in the evening will facilitate night use of the public domain and improve public safety.

Controlled vehicular access to the development is provided by secure car park access from the laneway, with direct access from the car park to apartment lift lobbies. An audio intercom system at the main entry gates and car park entry allows visitors to communicate with residents to gain access to the car park and appropriate floors within the building. The entrance to the car park ramp is minimised to maximise street activation and surveillance. Clear circulation paths in the basement allow safe pedestrian movement, particularly when waiting at the lift, and access to individual parking spaces and storage areas.

Communal space is located on the rooftop, offering more privacy to residents and safe, accessible paths to and from the units.

Principle 8: Housing Diversity and Social Interaction

Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets. Well-designed apartment developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people, providing opportunities for social interaction amongst residents.

Proposal

The development sees a mix of dwelling types, catering for different family groups and lifestyles, including 39 x studios, 106 x 1-bed apartments, 169 x 2-bed apartments and 27 x 3-bed apartments. Including 66 co-living rooms in the development intends to appeal to young professionals and key workers needing convenient access to work, study and recreation opportunities.

Flexible floorplans, good circulation, and flow are applied to all unit designs to ensure user practicality, with 20% of apartments designed to meet the Livable housing design standards. In addition, 10% of units can also accommodate post-adaption under the Australian Adaptable Housing Standard (AS 4299-1995) to meet the changing needs of residents over time.

Further, all common areas are accessible, and accessible paths of travel are provided from the street boundary to the individual apartment entries to ensure all units are visitable.

Communal open spaces are provided on the roof of each building for residents and their visitors to encourage social interaction, with facilities including a pool, BBQ, seating and tables with shading. A flexible, flat area on each rooftop allows various uses, such as yoga and picnicking.

This arrangement, coupled with the public open spaces provided on the ground level, aims to bolster opportunities for social interaction and reinforce a sense of community in the greater precinct.

Principle 9: Aesthetics

Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures. The visual appearance of well designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.

Proposal

The proposed development presents a high-quality design response that explores a balanced composition of simple building elements, materials and colours to positively contribute to the surrounding neighbourhood's existing and future character.

The site marks the termination of the Shepherd Street residential precinct and the beginning of the journey to the heritage-listed Casula Powerhouse Arts Centre via Powerhouse Road. The design of the proposed buildings draws inspiration from the unique features of this heritage-listed building, celebrating the site's unique location:

- Face brick offers a tactile finish for the podium base, elevated by corbelling details which can be appreciated on all elevations of the podium, delivering the streetwall in an attractive material that is also consistent with the existing character of the street, as well as the heritage listed Paper Mill.
- An industrial-look window assembly is adopted on the ground-level windows to enhance the appearance of the podium base whilst reinforcing its human scale. A similar industrial aesthetic informs the cast-iron-look appearance of the ground-level balustrades.
- An expressed grid is applied to the towers' façades, generally reflecting the internal layout and structure of the building whilst framing the apartment living spaces, bedrooms and balconies.

Earthy and neutral tones complement the existing and future character of the precinct, whilst colour is used to provide a unique identity for each of the proposed buildings. Building A tower comprises a warm terracotta red complemented by grey glazing. Bronze glazing is applied to Building B, offset by a white expressed grid. Building B's 'dog-legged' form is similarly offset by a black grid to contrast and further break down the building's mass. The striking bronze facade of Building B will offer an attractive addition to the skyline of Liverpool CBD, serving as a key marker.

Consideration has been given to the details of all elevations to provide a cohesive expression of architectural language throughout the entire building experience.

The internal building elevations are designed to promote visual interest, avoiding blank walls. External screening elements provide protection from the sun, privacy between units and a visual point of difference in the language of the elevations, further complemented by the patterned concrete walls of Building A, which explores the organic and flowing forms of the river.

PART 4
SEPP 65 Compliance Table

31 & 33 Shepherd Street, Liverpool NSW 2170

SEPP65 COMPLIANCE TABLE

Legend

•	Design criteria
•	Design guidance

PART 3	**SITING THE DEVELOPMENT**			
3A	**SITING ANALYSIS**			
3A-1 Objective	Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context			✓
3A-1.1	Each element in the Site Analysis Checklist should be addressed (see Appendix 1 in ADG).	•	Complies.	✓
3B	**ORIENTATION**			
3B-1 Objective	Building types and layouts respond to the streetscape and site while optimising solar access within the development			✓
3B-1.1	Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1 in ADG)	•	The proposed buildings and their respective entry lobbies directly face and address the new proposed public road.	✓
3B-1.2	Where the street frontage is to the east or west, rear buildings are orientated to the north	•	The street frontage of the proposed buildings is to the North-West, with no separate rear buildings.	✓
3B-1.3	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 in ADG)	•	As mentioned above, the street frontage of the proposed buildings is to the North-West, and the proposed buildings are orientated to face the street and achieve optimal solar benefits.	✓
3B-2 Objective	Overshadowing of neighbouring properties is minimised during mid-winter			✓
3B-2.1	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	•	Complies. For further detail, refer to responses in 3D Communal and public open spaces and 4A solar and daylight access.	✓
3B-2.2	Solar access to living rooms, balconies and private open spaces of neighbours should be considered.	•	Neighbouring buildings are located North-East of the proposed buildings. As such, the proposed buildings do not cause any overshadowing to the neighbouring buildings.	✓
3B-2.3	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%.	•	Refer to the response in 3B-2.2.	✓
3B-2.4	If the proposal will reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy	•	Refer to the response in 3B-2.2.	✓
3B-2.5	Overshadowing is minimised to the south or downhill by increased upper-level setback	•	The setback of the proposed buildings increases at Level 5 and above.	✓
3B-2.6	It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimize overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	•	The proposed buildings follow the neighbouring building's existing front and foreshore setbacks to minimise overshadowing and privacy impacts whilst maximising solar benefits.	✓
3B-2.7	A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	•	Not applicable.	N/A
3C	**PUBLIC DOMAIN INTERFACE**			
3C-1 Objective	Transition between private and public domain is achieved without compromising safety and security			✓
3C-1.1	Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	•	Private road access, orientation, and security concerns have dictated the access arrangements for the ground-floor dwellings. The benefits of addressing the riverscape outlook outweigh the objective of ground-floor access to the street frontage in this project.	✓

3C-1.2	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 in ADG)	•	Floor levels of private are elevated above the street level to provide opportunities for passive surveillance.	✓
3C-1.3	Upper-level balconies and windows should overlook the public domain	•	Complies.	✓
3C-1.4	Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls is limited to 1m.	•	Courtyard fencing and street walls incorporate solid and visually permeable elements which balance surveillance needs with privacy.	✓
3C-1.5	Length of solid walls should be limited along street frontages	•	Solid walls are kept to a minimum and are located on secondary facades where required for service zones. Solid walls abutting carpark ramps will be visually permeable.	✓
3C-1.6	Opportunities should be provided for casual interaction between residents & the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets.	•	Seating alcoves within the forecourt and along the foreshore provide opportunities for social interaction and resting.	✓
3C-1.7	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	•	Residential building lobbies are visible from the street. Articulation and varying colours in the facades have been used to differentiate entrances and provide legibility for pedestrians.	✓
3C-1.8	Opportunities for people to be concealed should be minimised	•	Clear sight lines with minimal obstructions, passive surveillance and secure entries minimise concealment.	✓
3C-2 Objective	Amenity of the public domain is retained and enhanced			✓
3C-2.1	Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	•	The perimeter of the buildings is lined with planting, which guides pedestrian movement through the public forecourt and foreshore areas.	✓
3C-2.2	Mailboxes are located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	•	Mailboxes are integrated into the entry lobbies of each building.	✓
3C-2.3	The visual prominence of underground car park vents should be minimised and located at a low level where possible	•	The appearance of car park vents is minimised by incorporating them into landscape features and the building façade.	✓
3C-2.4	Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	•	Services/plant areas are restricted to the basement area where possible, apart from: a) The substations are located away from the building line and adjacent to the new proposed public road, recessed within planter boxes and screened by planting. b) Garbage storage and collection areas are located on ground level facing away from the forecourt, building entries and foreshore areas.	✓
3C-2.5	Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	•	Ramps for accessibility are limited and are included only to address the level changes at existing pedestrians and vehicular interfaces throughout the site.	✓
3C-2.6	Durable, graffiti resistant and easily cleanable materials should be used	•	Can comply. This will be incorporated into the construction documentation.	✓
3C-2.7	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 planting that clearly delineate between communal/private open space and the adjoining public open space. • minimal use of blank walls, fences, and ground level parking	•	Habitable rooms and balconies of the units face all aspects of the public domain and activate the park and street frontages. In addition, pedestrian connections to Mill Park and the foreshore are introduced.	✓
3C-2.8	On sloping sites protrusion of car parking above ground	•	The carpark does not protrude above	✓

	level should be minimized by using split levels to step underground car parking			Ground level.	
3D	**COMMUNAL AND PUBLIC OPEN SPACE**				
3D-1 Objective	An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping				✓
3D-1.1	Communal open space has a minimum area equal to 25% of the site (see figure 3D.3 in ADG)	•		The site area is equal to 7,872 m2. The total communal open space provided amounts to 4,835 m2, which equates to 61.4% of the site, and is made up of: a) Public communal open space: 3,524m2 b) Co-living only communal roof terrace: 135m2 c) Communal roof terraces: 1,176m2 These spaces have a variety of active and passive areas.	✓
3D-1.2	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 9am and 3pm on 21 June (mid-winter)	•		Complies. The principal usable part of the residential communal open space is located on the roof terrace of each building and receives direct sunlight throughout the day.	✓
3D-1.3	Communal open space should be consolidated into a well-designed, easily identified, and usable area		•	Complies. Refer to the landscape architect's concept design.	✓
3D-1.4	Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions		•	Complies.	✓
3D-1.5	Communal open space should be co-located with deep soil areas		•	Gardens and seating areas are provided through the deep soil areas/foreshore. Refer to the landscape architect's concept design.	✓
3D-1.6	Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies		•	Complies. Communal open space is accessed directly from the main entry lobby on the ground-level and lift lobbies on the upper levels.	✓
3D-1.7	Where communal open space cannot be provided at ground level, it should be provided on a podium or roof		•	Not applicable. Communal open space is provided at ground level and on roof levels.	N/A
3D-1.8	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		•	Not applicable. The design criteria is achieved.	N/A
3D-2 Objective	Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting				✓
3D-2.1	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: • eating for individuals or groups • barbecue areas • play equipment or play areas • swimming pools, gyms, tennis courts or common rooms		•	Communal open space is designed to accommodate a variety of active and passive uses. Refer to the landscape architect's concept design.	✓
3D-2.2	The location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts		•	Communal open space locations and facilities respond to various microclimates around the site. Refer to the landscape architect's concept design.	✓
3D-2.3	Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks		•	The visual impact of services is minimised through screening and carefully locating services within basements. Refer to the response in 3C-2.4 for further detail.	✓
3D-3 Objective	Communal open space is designed to maximise safety				✓

3D-3.1	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		•	Balconies overlook communal open space and the public domain on all aspects of the proposed buildings. Habitable rooms and terraces/balconies are positioned on the perimeter of the building to reinforce a visual connection between the public and private domains. A combination of screening, shading, fixed blades, and other techniques ensures that privacy between proposed and neighbouring buildings is balanced with passive surveillance of the public domain.	✓
3D-3.2	Communal open space should be well lit		•	Adequate lighting will be provided throughout all communal open spaces.	✓
3D-3.3	Where communal open space / facilities are provided for children and young people they are safe and contained		•	Clear sightlines are incorporated into the communal open space through the proposed buildings to ensure parents can supervise children. Pool safety measures will also be in place, including pool fences, signage, and safety locks. The pools will also be closed in the evenings.	✓
3D-4 Objective	Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood				✓
3D-4.1	The public open space should be well connected with public streets along at least one edge		•	Public open space is connected to the new proposed public road and the Shepherd Street cul-de-sac.	✓
3D-4.2	The public open space should be connected with nearby parks and other landscape elements		•	The public open space interfaces with the river shore, future boardwalk, and Mill Park.	✓
3D-4.3	Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid		•	The proposal introduces new sightlines from Shepherd St to Mill Park / Powerhouse Road. In addition, the proposed through-site link creates pedestrian permeability down the boardwalk along Georges River from the forecourt and the new proposed public road.	✓
3D-4.4	Solar access should be provided year round along with protection from strong winds		•	Refer to the response in 3D-1.2.	✓
3D-4.5	Opportunities for a range of recreational activities should be provided for people of all age		•	Refer to the response in 3D-2.1.	✓
3D-4.6	A positive address and active frontages should be provided adjacent to public open space		•	Building facades are activated as much as possible on frontages adjacent to public open spaces.	✓
3D-4.7	Boundaries should be clearly defined between public open space and private areas		•	Landscape treatment, including planters and courtyard fences, will define the public open space and ground-level private areas. Communal roof terraces are not located adjacent to any private open spaces.	✓
3E	**DEEP SOIL ZONES**				
3E-1 Objective	Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality				✓
3E-1.1	Deep soil zones are to meet the following minimum requirements: **Site area** / **Minimum dim** / **Deep soil zone (% of site area)** < 650m2 / - / 7% 650m2-1500m2 / 3m / 7% > 1,500m2 / 6m / 7% > 1,500m2 with significant existing tree cover / 6m / 7%	•		The site is greater than 1,500m2 and requires minimum dimension deep soil zones of 6m at 7% of the site area. The site area is 7,872 m2 and achieves 1,579m2 of deep soil area, equivalent to 20% of the site area, with a minimum dimension greater than 6m.	✓
3E-1.2	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 650m2-1,500m2 • 15% of the site as deep soil on sites greater than 1,500m2		•	Refer to the response in 3E-1.1.	✓
3E-1.3	Deep soil zones should be located to retain existing		•	All existing trees on the site will be	N/A

	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			removed as shown in the demolition plan. Refer to the Arboricultural report.	
3E-1.4	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		•	Not applicable - the proposal achieves the design criteria stipulated in 3E-1.1.	N/A
3F	**VISUAL PRIVACY**				
3F-1 Objective	Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy				✓
3F-1.1	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 rooms and balconies** / **Non-habitable rooms** Up to 12m (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		•	All towers, despite numerical non-compliance, comply with the objective because of screening and offsetting of windows and balconies. Separation distances are considered, on balance, to be reasonable having regard to the neighbour's inadequate building separation and accommodating the full extent of the through-site link on the subject site.	✓
3F-1.2	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		•	The proposed buildings are differentiated by varying heights. Building A is 21 storeys in overall height, and Building B is 27 storeys, delivering an appropriate tower scale in response consistent with the existing skyline of the Shepherd Street precinct.	✓
3F-1.3	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		•	Not applicable.	N/A
3F-1.4	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 in ADG)		•	Visual privacy is considered between buildings within the development by orientation and separation distances. Issues of visual privacy are also mitigated through the implementation of privacy strategies, such as offset windows and balconies, fixed screens, and landscaping.	✓

3F-1.5	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 in ADG)	•	Not applicable.	N/A
3F-1.6	Direct lines of sight should be avoided for windows and balconies across corners	•	Windows and balconies between the proposed and neighbouring buildings are generally offset, with fixed screens added on upper levels windows for enhanced visual privacy.	✓
3F-1.7	No separation is required between blank walls	•	Complies.	✓
3F-2 Objective	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			✓
3F-2.1	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	•	Communal open spaces have been carefully considered to minimise the impact on privacy. Various strategies have been used, such as orientation, courtyard fencing, screening devices and landscaping.	✓
3F-2.2	Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	•	Not applicable.	N/A
3F-2.3	Balconies and private terraces should be located in front of living rooms to increase internal privacy	•	Private terraces are located in front of living rooms on lower levels for privacy. Balconies are located in the same alignment as living rooms on upper levels for optimal solar amenity.	✓
3F-2.4	Windows should be offset from the windows of adjacent buildings	•	Windows are offset from the adjacent building where possible, with fixed screens provided to all windows facing the adjoining building.	✓
3F-2.5	Recessed balconies and / or vertical fins should be used between adjacent balconies	•	Fixed screens provided to proposed balconies facing adjacent buildings for privacy.	✓
3G	**PEDESTRIAN ACCESS AND ENTRIES**			
3G-1 Objective	Building entries and pedestrian access connects to and addresses the public domain			✓
3G-1.1	Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	•	A main entry point is provided for each building on the street facing frontage.	✓
3G-1.2	Entry locations relate to the street and subdivision pattern and the existing pedestrian network	•	Complies.	✓
3G-1.3	Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries	•	Communal entries are highlighted by articulation in the building and landscaping treatment.	✓
3G-1.4	Where street frontage is limited and multiple buildings are located on the site, a primary street address should be provided with clear sight lines and pathways to secondary building entries	•	Each building will have its own street address.	✓
3G-2 Objective	Access, entries and pathways are accessible and easy to identify			✓

3G-2.1	Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	•	Lift lobbies face the street and are visible from the public domain.	✓
3G-2.2	The design of ground floors and underground car parks minimise level changes along pathways and entries	•	Underground car park levels are determined by the existing site levels at proposed street interfaces. The ground-level public domain is designed to be accessible and equitable.	✓
3G-2.3	Steps and ramps should be integrated into the overall building and landscape design	•	Refer to the response in 3G-2.2.	
3G-2.4	For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3 in ADG)	•	Visitors and residents can easily identify the buildings from the publicly accessible forecourt.	N/A
3G-3 Objective	Large sites provide pedestrian links for access to streets and connection to destinations			✓
3G-3.1	Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport	•	A through-site link connects the publicly accessible forecourt to the foreshore. Existing pedestrian access to Mill Park is upgraded, with improved sightlines from the Shepherd Street cul-de-sac.	✓
3G-3.2	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	•	Building massing and landscaping have been designed in careful consideration of pedestrian sightlines. Pedestrian links are also overlooked by balconies/terraces and habitable rooms for passive surveillance.	✓
3H	**VEHICLE ACCESS**			
3H-1 Objective	Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes			✓
3H-1.1	Car park access should be integrated with the building's overall facade. Design solutions may include: • the materials and colour palette to minimise visibility from the street • security doors or gates at entries that minimise voids in the façade • where doors are not provided, the visible interior reflects the façade design and the building services, pipes and ducts are concealed	•	Vehicle access points are integrated into the design of and recessed into the podium façade to minimise visibility from the street.	✓
3H-1.2	Car park entries should be located behind the building line	•	Carpark entries are recessed in the podium façade.	✓
3H-1.3	Vehicle entries should be located at the lowest point of the site minimizing ramp lengths, excavation and impacts on the building form and layout	•	Underground car park levels are determined by the existing site levels at proposed street interfaces.	✓
3H-1.4	Car park entry and access should be located on secondary streets or lanes where available	•	Carpark entries are located on secondary facades, facing away from building entry points and communal open space.	✓
3H-1.5	Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided	•	Vehicle standing areas are not provided.	✓
3H-1.6	Access point locations should avoid headlight glare to habitable rooms	•	Can comply. To be addressed in the construction documentation phase.	✓
3H-1.7	Adequate separation distances should be provided between vehicle entries and street intersections	•	Complies.	✓
3H-1.8	The width and number of vehicle access points should be limited to the minimum.	•	Complies.	✓
3H-1.9	Visual impact of long driveways should be minimised through changing alignments and screen planting	•	Complies.	✓
3H-1.10	The need for large vehicles to enter or turn around within the site should be avoided	•	Each building has a loading dock on the ground-level for waste and service MRV vehicles.	✓
3H-1.11	Garbage collection, loading and servicing areas are screened	•	Refer to the response in 3H-1.1	✓
3H-1.12	Clear sight lines should be provided at pedestrian and vehicle crossings	•	Complies. Refer to the Traffic Engineer's report.	✓

3H-1.13	Traffic calming devices such as changes in paving material or textures should be used where appropriate		•	Complies. Refer to the Traffic Engineer's report.	✓
3H-1.14	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		•	Complies. Refer to the Traffic Engineer's report.	✓
3J	**BICYCLE AND CAR PARKING**				
3J-1 Objective	Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas				✓
3J-1.1	For developments 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	•		The site is located in a different area than described in the criteria.	N/A
3J-1.2	Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site		•	Can be provided as part of the new public road if desired.	✓
3J-1.3	Where less car parking is provided in a development, council should not provide on street resident parking permit		•	Not applicable. The proposal meets the required car parking numbers stipulated in the Council DCP.	N/A
3J-2 Objective	Parking and facilities are provided for other modes of transport				✓
3J-2.1	Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters		•	The proposal meets the required motorbike parking numbers as stipulated in the Council DCP and Housing SEPP.	✓
3J-2.2	Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas		•	Storage cages in the basement car park are generally large enough to store a bicycle. Bike racks are also provided in the public domain.	✓
3J-2.3	Conveniently located charging stations are provided for electric vehicles, where desirable		•	Capable of complying.	✓
3J-3 Objective	Car park design and access is safe and secure				✓
3J-3.1	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		•	Complies.	✓
3J-3.2	Direct, clearly visible and well lit access should be provided into common circulation areas		•	Complies.	✓
3J-3.3	A clearly defined and visible lobby or waiting area should be provided to lifts and stairs		•	Complies.	✓
3J-3.4	For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards		•	Complies.	✓
3J-4 Objective	Visual and environmental impacts of underground car parking are minimised				✓
3J-4.1	Excavation should be minimized through efficient car park layouts and ramp design		•	Complies.	✓
3J-4.2	Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles		•	Complies.	✓
3J-4.3	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		•	Refer to the response in 3C-2.8.	✓
3J-4.4	Natural ventilation should be provided to basement and sub basement car parking areas		•	Mechanical ventilation has been minimised where possible to supplement the proportion of natural ventilation	✓

			achieved.	
3J-4.5	Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	•	Complies.	✓
3J-5 Objective	Visual and environmental impacts of on-grade car parking are minimised			✓
3J-5.1	On-grade car parking should be avoided	•	All resident and visitor car spaces are provided in the basement car park.	✓
3J-5.2	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	•	Not applicable.	N/A
3J-6 Objective	Visual and environmental impacts of on-grade car parking are minimised			✓
3J-6.1	Exposed parking should not be located along primary street frontages	•	Not applicable.	N/A
3J-6.2	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 façade 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 in ADG)	•	Not applicable.	N/A
3J-6.3	Positive street address and active frontages should be provided at ground level	•	Units provide active frontages at ground level.	✓
PART 4	**DESIGNING THE BUILDING**			
4A	**SOLAR AND DAYLIGHT**			
4A-1 Objective	To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space			✓
4A-1.1	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas	•	Solar access has been optimised. 265 out of 378 apartments receive 2 or more hours of direct sunlight in mid-winter between 9am and 3pm (equivalent to 70.1%).	✓
4A-1.2	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	•	Not applicable.	N/A
4A-1.3	A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter	•	112 out of 378 apartments receive no direct sunlight in mid-winter between 9am and 3pm (equivalent to 29.6%). For the overwhelming benefit of aspect over orientation, it was decided that the connectivity of the river and separation	✓

				from the railway line outweighed the numerical standard, although it could have been achieved.	
4A-1.4	The design maximises north aspect and the number of single aspect south facing apartments is minimised		•	The proposal maximises north-facing units where possible; however, the inclusion of some single-aspect south-facing units is considered appropriate to maximise views of the river and park.	✓
4A-1.5	Single aspect, single storey apartments should have a northerly or easterly aspect		•	Refer to the response in 4A-1.4.	✓
4A-1.6	Living areas are best located to the north and service areas to the south and west of apartments		•	Outlook and views from apartments are maximised by locating living areas to the perimeter of the building, whilst service areas are located centrally within the building floorplate, close to the communal corridor.	✓
4A-1.7	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		•	Habitable rooms and balconies are located on the perimeter of the building where possible for optimal access to direct sunlight. Shallow apartment layouts are also adopted.	✓
4A-1.8	To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m2 of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes		•	This has been considered in the calculations noted for 4A-1.1 and 4A-1.3.	✓
4A-1.9	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		•	Refer to the responses above.	✓
4A-2 Objective	Daylight access is maximised where sunlight is limited				✓
4A-2.1	Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms		•	The proposal does not include courtyards, skylights and high-level windows.	N/A
4A-2.2	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		•	The proposal does not include courtyards.	N/A
4A-2.3	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		•	Where possible, the reflected light has been optimised through the provision of light-coloured internal finishes as well as maximising glazing.	✓
4A-3 Objective	Design incorporates shading and glare control, particularly for warmer months				✓

4A-3.1	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)		•	All balconies have strategically been recessed to provide summer shade and allow winter sun to penetrate living and bedroom areas. In addition, a slab extension is typically provided around the perimeter of the glazing, acting as a shading device. The glazing performance will comply with any BASIX requirements.	✓
4B	**NATURAL VENTILATION**				
4B-1 Objective	All habitable rooms are naturally ventilated				✓
4B-1.1	The building's orientation maximizes capture and use of prevailing breezes for natural ventilation in habitable rooms		•	Corner apartments have been provided to maximise natural cross ventilation.	✓
4B-1.2	Depths of habitable rooms support natural ventilation		•	Depths of habitable rooms have been limited.	✓
4B-1.3	The area of unobstructed window openings should be equal to at least 5% of the floor area served		•	The proposal complies with this objective.	✓
4B-1.4	Light wells are not the primary air source for habitable rooms		•	The proposal does not include lightwells.	N/A
4B-1.5	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		•	Strategies have been implemented, including the use of adjustable windows with large openable areas and various window types that provide safety and flexibility.	✓
4B-2 Objective	The layout and design of single aspect apartments maximises natural ventilation				✓
4B-2.1	Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3 in ADG)		•	Refer to response in 4D-2.	✓
4B-2.2	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		•	In some instances, natural ventilation to single-aspect apartments is facilitated by plenums in the ceiling space. Refer to the wind engineer documentation for further detail.	✓
4B-3 Objective	The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents				✓
4B-3.1	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	•		The number of apartments with natural cross ventilation has been maximised. 69 out of 114 apartments are naturally cross-ventilated in the first nine storeys of the buildings. The remaining 264 apartments at ten-storeys or greater are deemed to be cross ventilated.	✓
4B-3.2	Overall depth of a cross-over or cross through apartment does not exceed 18m, measured glass line to glass line	•		The proposal does not include cross-over or cross-through apartments.	N/A
4B-3.3	The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths		•	Apartment depths have been minimised, and dual-aspect apartments have been used to maximise opportunities for natural ventilation.	✓

4B-3.4	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 in ADG).		•	Not applicable. The proposal does not include cross-through apartments.	N/A
4B-3.5	Apartments are designed to minimize the number of corners, doors and rooms that might obstruct airflow		•	Airflow has been maximised with sensible internal planning wherever practicable.	✓
4B-3.6	Apartment depths, combined with appropriate ceiling heights, maximize cross ventilation and airflow		•	Appropriate ceiling heights are used in combination with reduced apartment depths.	✓
4C	**CEILING HEIGHTS**				
4C-1 Objective	Ceiling height achieves sufficient natural ventilation and daylight access				✓
4C-1.1	Measured from finished floor level to finished ceiling level, minimum ceiling heights are: **Min. ceiling height for apartment and mixed use buildings:** Habitable rooms 2.7m Non-habitable 2.4m 2 storey apartments 2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces 1.8m at edge of room with a 30 degree minimum 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 heights are designed to achieve sufficient natural ventilation and daylight access.	✓
4C-1.2	Ceiling height can accommodate use of ceiling fans for cooling and heat distribution		•	N/A	N/A
4C-2 Objective	Ceiling height increases the sense of space in apartments and provides for well proportioned rooms				✓
4C-1.1	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		•	Ceiling heights have been maximised. Floor-to-floor heights have been increased where the floorplate changes to allow for services to transfer without bulkheads where possible.	✓
4C-3 Objective	Ceiling heights contribute to the flexibility of building use over the life of the building				✓
4C-3.1	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 in ADG)		•	Not applicable – the site is zoned in an R4 high density residential area.	N/A
4D	**APARTMENT SIZE AND LAYOUT**				
4D-1 Objective	The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity				✓
4D-1.1	Apartments are required to have the following minimum internal areas: **Apartment type** **Min. internal area** Studio 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	•		All apartment types comply with the minimum internal areas in the design criteria.	✓

4D-1.2	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	•		The proposal complies with this objective.	✓
4D-1.3	Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)		•	Complies	✓
4D-1.4	A window should be visible from any point in a habitable room		•	Complies	✓
4D-1.5	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		•	Not applicable. Minimum areas and room dimensions are achieved as required in the design criteria.	N/A
4D-2 Objective	Environmental performance of the apartment is maximised				✓
4D-2.1	Habitable room depths are limited to a maximum of 2.5 x the ceiling height	•		The proposal complies with this objective.	✓
4D-2.2	In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window	•		The proposal complies with this objective.	✓
4D-2.3	Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths		•	Not applicable.	N/A
4D-2.4	All living areas and bedrooms should be located on the external face of the building		•	Complies.	✓
4D-2.5	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		•	As most bathrooms and laundries are typically located within the middle of the floor plate next to access corridors, it is not possible to provide an operable window. Assisted ventilation is provided. All habitable living spaces are on the external façade enjoying their respective aspect.	✓
4D-3 Objective	Apartment layouts are designed to accommodate a variety of household activities and needs				✓
4D-3.1	Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space)	•		Complies.	✓
4D-3.2	Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	•		Complies.	✓
4D-3.3	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	•		Complies.	✓
4D-3.4	The width of cross-over or cross through apartments are at least 4m internally to avoid deep narrow apartment layouts	•		Not applicable. The proposal does not include cross-over or cross-through apartments.	N/A
4D-3.5	Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas		•	Generally complies; direct access from living areas has been minimised within apartments. Where this does occur, it has been done to improve solar and ventilation amenity.	✓
4D-3.6	All bedrooms allow a minimum length of 1.5m for robes		•	Complies	✓
4D-3.7	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		•	Complies	✓
4D-3.8	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		•	Efficient planning principles have been implemented, particularly concerning consolidating circulation space in apartments to maximise usable space.	✓

	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 Objective	Apartments provide appropriately sized private open space and balconies to enhance residential amenity				✓
4E-1.1	All apartments are required to have primary balcony 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 as follows:	•		All apartment types achieve the minimum balcony areas and depths in the design criteria.	✓
4E-1.2	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	•		Complies.	✓
4E-1.3	Increased communal open space should be provided where the number or size of balconies are reduced		•	Not applicable.	N/A
4E-1.4	Storage areas on balconies is additional to the minimum balcony size		•	Not applicable. Storage areas are not provided on balconies.	N/A
4E-1.5	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		•	Not applicable. Refer to the wind engineer's documentation.	N/A
4E-2 Objective	Primary private open space and balconies are appropriately located to enhance liveability for residents				✓
4E-2.1	Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space		•	Complies	✓
4E-2.2	Private open spaces and balconies predominantly face north, east or west		•	Complies	✓
4E-2.3	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		•	Generally complies.	✓
4E-3 Objective	Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building				✓
4E-3.1	Solid, partially solid or transparent fences and balustrades are selected to respond to the location. They are designed 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		•	Balcony and facade design has been carefully considered to balance protection from noise sources, passive surveillance, privacy requirements and opportunities for desirable district views.	✓
4E-3.2	Full width full height glass balustrades alone are generally not desirable		•	A variety of balustrade types and materials are used throughout the proposed buildings.	✓
4E-3.3	Projecting balconies should be integrated into the building design and the design of soffits considered		•	Balconies are integrated into the building design.	✓

4E-3.4	Operable screens, shutters, hoods and pergolas are used to control sunlight and wind		•	Fixed screens are positioned to optimise solar access to units and balconies where provided.	✓
4E-3.5	Balustrades are set back from the building or balcony edge where overlooking or safety is an issue		•	Complies.	✓
4E-3.6	Downpipes and balcony drainage are integrated with the overall facade and building design		•	Complies.	✓
4E-3.7	Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design		•	Air-conditioning units are all integrated into the design to avoid any visual impact.	✓
4E-3.8	Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design		•	Refer to the response in 4E-3.7.	✓
4E-3.9	Ceilings of apartments below terraces should be insulated to avoid heat loss		•	Complies. Refer to efficient living document.	✓
4E-3.10	Water and gas outlets should be provided for primary balconies and private open space		•	Provided to standard and market demand.	✓
4E-4 Objective	Private open space and balcony design maximises safety				✓
4E-4.1	Changes in ground levels or landscaping are minimised		•	Transitions between levels have been considered and kept to a minimum.	✓
4E-4.2	Design and detailing of balconies avoids opportunities for climbing and falls		•	Complies.	✓
4F	**COMMON CIRCULATION AND SPACES**				
4F-1 Objective	Common circulation spaces achieve good amenity and properly service the number of apartments				✓
4F-1.1	The maximum number of apartments off a circulation core on a single level is eight	•		Varies between 5 to 10 apartments off a circulation core. Refer to clause 4F-1.8 and 4F-1.9.	✓
4F-1.2	For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	•		Lift specification and performance have been increased to meet the objective of this requirement.	✓
4F-1.3	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		•	Complies	✓
4F-1.4	Daylight and natural ventilation should be provided to all common circulation spaces that are above ground		•	Complies	✓
4F-1.5	Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors		•	Complies	✓
4F-1.6	Longer corridors greater than 12m in length from the lift core should be articulated. Design solutions may include: • a series of foyer areas with windows and spaces for seating • wider areas at apartment entry doors and varied ceiling heights		•	Complies	✓
4F-1.7	Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments		•	Complies	✓
4F-1.8	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		•	All circulation corridors are naturally ventilated and have access to daylight. From each lift core per level, there are 2 differing directions of travel. Between 3 and 5 apartments are accessed per direction, thus distributing apartments evenly across each floor plate.	✓

4F-1.9	Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level	•	Complies. The proposal does not provide more than 10 apartments off a single circulation core.	✓
4F-1.10	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	•	Complies.	✓
4F-2 Objective	Common circulation spaces promote safety and provide for social interaction between residents			✓
4F-2.1	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	•	Complies	✓
4E-2.2	Tight corners and spaces are avoided	•	Complies	✓
4E-2.3	Circulation spaces should be well lit at night	•	Complies. To be addressed in subsequent documentation prepared for construction purposes.	✓
4E-2.4	Legible signage should be provided for apartment numbers, common areas and general way finding	•	Complies. To be addressed in subsequent documentation prepared for construction purposes.	✓
4E-2.5	Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	•	Incidental spaces are provided in the Ground level entry lobbies and through communal open space areas.	✓
4E-2.6	In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally collocated with communal open space	•	The use of outdoor open space and connectivity to communal open space exceeds the objective of this requirement.	✓
4E-2.7	Where external galleries are provided, they are more open than closed above the balustrade along their length	•	Not applicable. External galleries are not provided.	✓
4G	**STORAGE**			
4G-1 Objective	Adequate, well designed storage is provided in each apartment			✓
4G-1.1	In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: **Dwelling type** — **Storage size volume** Studio apartments — 4m2 1 bedroom apartments — 6m2 2 bedrooms — 8m2 3+bedroom apartments — 12m2 At least 50% of the required storage is to be located within the apartment	•	All apartment types achieve the minimum storage volumes in the design criteria. Where the total storage volume cannot be accommodated within the apartment, 50% has been located within dedicated basement storage areas. Refer to the Storage Schedule prepared by Mosca Pserras Architects submitted as part of this development application.	✓
4G-1.2	Storage is accessible from either circulation or living areas	•	Complies	✓
4G-1.3	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	•	Not applicable. Storage is not provided on balconies.	N/A
4G-1.4	Left over space such as under stairs is used for storage	•	Not applicable. Apartments do not require internal stairs.	✓
4G-2 Objective	Additional storage is conveniently located, accessible and nominated for individual apartments			✓
4G-2.1	Storage not located in apartments is secure and clearly allocated to specific apartments	•	Complies.	✓
4G-2.2	Storage is provided for larger and less frequently accessed items	•	Complies.	✓
4G-2.3	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	•	Complies.	✓
4G-2.4	If communal storage rooms are provided they should be accessible from common circulation areas of the building	•	Not applicable. Communal storage areas are not provided.	N/A

4G-2.5	Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	•	Complies. Storage not located in an apartment is in the basement car park and is not visible from the public domain.	✓
4H	**ACOUSTIC PRIVACY**			
4H-1 Objective	Noise transfer is minimised through the siting of buildings and building layout			✓
4H-1.1	Adequate building separation is provided within the development and from neighbouring buildings/adjacent uses (see also section 2F Building separation and section 3F Visual privacy)	•	Complies.	✓
4H-1.2	Window and door openings are generally orientated away from noise sources	•	Units are generally orientated away from the main southern railway. However, where this has not been possible, high-performance glazing will be applied to units facing the railway to the requirements specified by the acoustic engineer.	✓
4H-1.3	Noisy areas within buildings including building entries and corridors should be located next to or above each other and quieter areas next to or above quieter areas	•	Complies	✓
4H-1.4	Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources	•	Complies	✓
4H-1.5	The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	•	Complies	✓
4H-1.6	Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms	•	Service zones have been grouped together and separated from bedrooms where possible, and landscape buffers are introduced between ground-level courtyards and the public open space for acoustic privacy.	✓
4H-2 Objective	Noise impacts are mitigated within apartments through layout and acoustic treatments			✓
4H-2.1	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 collocated to act as sound buffers	•	Complies	✓
4H-2.2	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	•	Complies. Refer to the acoustic engineer report for detail.	✓
4J	**NOISE AND POLLUTION**			
4J-1 Objective	In noisy or hostile environments the impacts of external noise and pollution are minimized through the careful siting and layout of buildings			✓
4J-1.1	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	•	Refer to the response in 4H-1.2	✓

	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, non-habitable 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 in ADG) • landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry			
4J-1.2	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	•	The proposal meets the objectives.	✓
4J-2 Objective	Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission			✓
4J-2.1	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	•	To meet the requirements specified in the acoustic report.	✓
4K	**APARTMENT MIX**			
4K-1 Objective	A range of apartment types and sizes is provided to cater for different household types now and into the future			✓
4K-1.1	A variety of apartment types is provided	•	A mix of studio, 1 bedroom, 2 bedroom and 3 bedroom apartments are provided within each building, as well as co-living housing in Building B.	✓
4K-1.2	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 groups	•	Complies	✓
4K-1.3	Flexible apartment configurations are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households	•	All units are designed with open-plan layouts catering to various individuals and families. In addition, a variety of units have been designed to meet post-adaptability standards.	✓
4K-2 Objective	The apartment mix is distributed to suitable locations within the building			✓
4K-2.1	Different apartment types are located to achieve successful façade composition and to optimise solar access (see figure 4K.3 in ADG)	•	Complies	✓
4K-2.2	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	•	Complies	✓
4L	**GROUND FLOOR APARTMENTS**			
4L-1 Objective	Street frontage activity is maximised where ground floor apartments are located			✓
4L-1.1	Direct street access should be provided to ground floor apartments	•	Refer to response in 3C-1.1.	✓

4L-1.2	Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: • both street, foyer and other common internal circulation entrances to ground floor apartments • private open space is next to the street • doors and windows face the street	•	Complies	✓
4L-1.3	Retail or home office spaces should be located along street frontages	•	Not applicable.	N/A
4L-1.4	Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion	•	Complies	✓
4L-2 Objective	Design of ground floor apartments delivers amenity and safety for residents			✓
4L-2.1	Privacy and safety should be provided without obstructing casual surveillance. Design solutions may include: • elevation of private gardens and terraces above the street level by 1-1.5m (see figure 4L.4 in ADG) • landscaping and private courtyards • window sill heights that minimize sight lines into apartments • integrating balustrades, safety bars or screens with the exterior design	•	Ground floor courtyards are screened for the amenity and safety of residents.	✓
4L-2.2	Solar access should be maximized through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer	•	Complies	✓
4M	**FACADES**			
4M-1 Objective	Building facades provide visual interest along the street while respecting the character of the local area			✓
4M-1.1	Design solutions for front building facades may include: • a composition of varied building elements • a defined base, middle and top of buildings • revealing and concealing certain elements • changes in texture, material, detail and colour to modify the prominence of elements	•	Facades reflect contemporary building methods, which include various techniques to create visual interest: play with textures between articulated solid mass elements and smooth, transparent planes, subtle changes in façade detail orientation to create interesting shadow effects & increase the appearance of depth.	✓
4M-1.2	Building services should be integrated within the overall facade	•	Complies.	✓
4M-1.3	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	•	Facades are conceived to create visual interest when viewed from various distances. Materials and colour palettes are used appropriately to reflect the desired character of the surrounding area and precinct.	✓
4M-1.4	Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	•	Complies.	✓
4M-1.5	Shadow is created on the façade throughout the day with building articulation, balconies and deeper window reveals	•	Complies.	✓
4M-2 Objective	Building functions are expressed by the facade			✓
4M-2.1	Building entries should be clearly defined	•	Refer to the response in 3C-1.7.	✓
4M-2.2	Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	•	The respective architecture building treatment expresses and highlights important corners of the building.	✓
4M-2.3	The apartment layout should be expressed externally through façade features such as party walls and floor slabs	•	The architectural façade is structured by the proposed building functions to ensure maximum outlooks for the units and opportunities for natural ventilation.	✓

4N	ROOF DESIGN			
4N-1 Objective	Roof treatments are integrated into the building design and positively respond to the street			✓
4N-1.1	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	•	Communal open space is located on the roof terraces for resident amenity and integrated into the overall building form and roof design.	✓
4N-1.2	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	•	Refer to the response in 4N-1.1.	✓
4N-2 Objective	Opportunities to use roof space for residential accommodation and open space are maximised			✓
4N-2.1	Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights	•	Communal open space will receive adequate sunlight and wind screens will be provided around the communal open space for resident amenity to meet the requirements specified by the wind engineer.	✓
4N-2.2	Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	•	Landscape treatment to rooftop terraces will provide visual privacy.	✓
4N-3 Objective	Roof design incorporates sustainability features			✓
4N-3.1	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	•	Expressed slab edges provide shading to windows and balconies.	✓
4N-3.2	Skylights and ventilation systems should be integrated into the roof design	•	The full extent of the building's rooftop is dedicated to communal open space. Therefore, skylights and ventilation systems have not been located on the roof to maintain useable communal open space.	✓
4O	LANDSCAPE DESIGN			
4O-1 Objective	Landscape design is viable and sustainable			✓
4O-1.1	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 the Landscape Architect's plans for extensive landscaping.	✓
4O-1.2	Ongoing maintenance plans should be prepared	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4O-1.3	Microclimate is 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 the Landscape Architect's plans for extensive landscaping.	✓
4O-1.4	Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4 in ADG)	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4O-2 Objective	Landscape design contributes to the streetscape and amenity			✓

4O-2.1	Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4O-2.2	Significant landscape features should be protected by: • tree protection zones (see figure 4O.5 in ADG) • appropriate signage and fencing during construction	•	Not applicable. The site does not include significant landscape features.	N/A
4O-2.3	Plants selected should be endemic to the region and reflect the local ecology	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4P	**PLANTING ON STRUCTURES**			
4P-1 Objective	Appropriate soil profiles are provided			✓
4P-1.1	Structures are reinforced for additional saturated soil weight.	•	Complies. To be addressed in detailed design documentation.	✓
4P-1.2	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	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4P-1.3	Minimum soil standards for plant sizes should be provided in accordance with Table 5 (in ADG)	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4P-2 Objective	Plant growth is optimised with appropriate selection and maintenance			✓
4P-2.1	Plants are suited to site conditions, considerations include: • drought and wind tolerance • seasonal changes in solar access • modified substrate depths for a diverse range of plants • plant longevity	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4P-2.2	A landscape maintenance plan is prepared	•	Capable of complying.	✓
4P-2.3	Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4P-3 Objective	Planting on structures contributes to the quality and amenity of communal and public open spaces			✓
4P-3.1	Building design incorporates opportunities for planting on structures. Design solutions may include: • green walls with specialized lighting for indoor green walls • wall design that incorporates planting • green roofs, particularly where roofs are visible from the public domain • planter boxes Note: structures designed to accommodate green walls should be integrated into the building facade and consider the ability of the facade to change over time	•	Refer to the Landscape Architect's plans for extensive landscaping.	✓
4Q	**UNIVERSAL DESIGN**			
4Q-1 Objective	Universal design features are included in apartment design to promote flexible housing for all community members			✓
4Q-1.1	Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	•	20% of apartments incorporate the Livable Housing Guidelines silver-level universal design features.	✓
4Q-2 Objective	A variety of apartments with adaptable designs are provided			✓
4Q-2.1	Adaptable housing should be provided in accordance with the relevant council policy	•	Complies.	✓
4Q-2.2	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	•	Complies.	✓

	• larger car parking spaces for accessibility • parking titled separately from apartments or shared car parking arrangements			
4Q-3 Objective	Apartment layouts are flexible and accommodate a range of lifestyle needs			✓
4Q-3.1	Apartment 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	•	Incorporated open-plan living/dining/kitchen spaces with large bedrooms.	✓
4R	**ADAPTIVE REUSE**			
4R-1 Objective	New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place			N/A
4R-1.1	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	•	Not applicable.	N/A
4R-1.2	Additions to heritage items should be clearly identifiable from the original building	•	Not applicable.	N/A
4R-1.3	New additions allow for the interpretation and future evolution of the building	•	Not applicable.	N/A
4R-2 Objective	Adapted buildings provide residential amenity while not precluding future adaptive reuse			N/A
4R-2.1	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	•	Not applicable.	N/A
4R-2.2	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 and 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	•	Not applicable.	N/A
4S	**MIXED USE**			
4S-1 Objective	Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement			N/A
4S-1.1	Mixed use development should be concentrated around public transport and centres	•	Not applicable.	N/A
4S-1.2	Mixed use developments positively contribute to the public domain. Design solutions may include: • development addresses the street • active frontages are provided • diverse activities and uses	•	Not applicable.	N/A

	• avoiding blank walls at the ground level • live/work apartments on the ground floor level, rather than commercial			
4S-2 Objective	Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents			✓
4S-2.1	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 • security at entries and safe pedestrian routes are provided • concealment opportunities are avoided	•	Not applicable.	N/A
4S-2.2	Landscaped communal open space should be provided at podium or roof levels	•	Complies.	✓
4T	**AWNINGS AND SIGNAGE**			
4T-1 Objective	Awnings are well located and complement and integrate with the building design			✓
4T-1.1	Awnings should be located along streets with high pedestrian activity and active frontages	•	To meet this requirement, the brick colonnade concept creates a covered walkway/awning at the main building entry points.	✓
4T-1.2	A number of the following design solutions are used: • continuous awnings are maintained and provided in areas with an 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	•	Refer to the response in 4T-1.2.	✓
4T-1.3	Awnings should be located over building entries for building address and public domain amenity	•	Refer to the response in 4T-1.2.	✓
4T-1.4	Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	•	Refer to the response in 4T-1.2.	✓
4T-1.5	Gutters and down pipes should be integrated and concealed	•	Gutter and downpipes will be integrated into the building form and concealed where possible.	✓
4T-1.6	Lighting under awnings should be provided for pedestrian safety	•	Entries will be adequately lit during evenings and nights to highlight building entrances and provide safety.	✓
4T-2 Objective	Signage responds to the context and desired streetscape character			✓
4T-2.1	Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development	•	Complies. To be addressed in the detailed documentation phase.	✓
4T-2.2	Legible and discrete way finding should be provided for larger developments	•	Complies. To be addressed in the detailed documentation phase.	✓
4T-2.3	Signage is limited to being on and below awnings and a single façade sign on the primary street frontage	•		N/A
4U	**ENERGY EFFICIENCY**			
4U-1 Objective	Development incorporates passive environmental design			✓
4U-1.1	Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	•	Complies. Refer to the response in section 4U.	✓
4U-1.2	Well located, screened outdoor areas should be provided for clothes drying	•	Laundries have provisions to accommodate dryers.	N/A
4U-2 Objective	Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer			✓
4U-2.1	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 is maximised • polished concrete floors, tiles or timber rather than carpet	•	Performance glazing and floor and wall insulation are applied to some units to achieve energy efficiency targets. Horizontal projections are provided above glazing to assist with shading.	✓

	• insulated roofs, walls and floors and seals on window and door openings • overhangs and shading devices such as awnings, blinds and screens			
4U-2.2	Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	•	Central cold water, hot water & gas plant rooms are provided in the basements of each building.	✓
4U-3 Objective	Adequate natural ventilation minimises the need for mechanical ventilation			✓
4U-3.1	A number of the following design solutions are used: • rooms with similar usage are grouped together • natural cross ventilation for apartments is optimised • natural ventilation is provided to all habitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible	•	Refer to the responses in 4B.	✓
4V	**WATER MANAGEMENT AND CONSERVATION**			
4V-1 Objective	Potable water use is minimised			✓
4V-1.1	Water efficient fittings, appliances and wastewater reuse should be incorporated	•	Can comply.	✓
4V-1.2	Apartments should be individually metered	•	Provided to standard.	✓
4V-1.3	Rainwater should be collected, stored and reused on site	•	A rainwater tank is provided for each building.	✓
4V-1.4	Drought tolerant, low water use plants should be used within landscaped areas	•	Refer to Landscape Architects' concept and plant schedule.	✓
4V-2 Objective	Urban stormwater is treated on site before being discharged to receiving waters			✓
4V-2.1	Water sensitive urban design systems are designed by a suitably qualified professional	•	No on-site detention system is required by Council given the direct discharge of stormwater to the Georges River.	✓
4V-2.2	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.	•	Rainwater is collected for reuse in irrigation and garden maintenance.	✓
4W	**WATER MANAGEMENT AND CONSERVATION**			
4W-1 Objective	Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents			✓
4W-1.1	Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement carpark	•	Storage areas for rubbish bins are predominantly on secondary facades, away from building entrances and the primary streetscape.	✓
4W-1.2	Waste and recycling storage areas should be well ventilated.	•	Can comply. To be addressed in the construction documentation phase.	✓
4W-1.3	Circulation design allows bins to be easily manoeuvred between storage and collection points	•	Garbage holding rooms open directly to the loading docks where waste is collected from.	✓
4W-1.4	Temporary storage should be provided for large bulk items such as mattresses	•	Bulky household waste storage areas are provided on Ground Level and in the basement.	✓
4W-1.5	A waste management plan should be prepared	•	To be prepared as required.	✓
4W-2 Objective	Domestic waste is minimised by providing safe and convenient source separation and recycling			✓
4W-2.1	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	•	Can comply. To be addressed in the construction documentation phase.	✓
4W-2.2	Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core	•	Complies.	✓
4W-2.3	For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses	•	Not applicable.	N/A
4W-2.4	Alternative waste disposal methods such as composting should be provided	•	Can Comply.	✓
4X	**BUILDING MAINTENANCE**			
4X-1	Building design detail provides protection from weathering			✓

Objective				
4X-1.1	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	•	Expressed slabs protect walls and window heads. Horizontal edges are protected by drip lines.	✓
4X-2 Objective	Systems and access enable ease of maintenance			✓
4X-2.1	Window design enables cleaning from the inside of the building	•	Glazing within balcony alcoves can be cleaned by residents. Due to the scale of the development, perimeter windows will be cleaned externally and safety systems will be incorporated into the building's construction to comply with requirements for fall protection.3f	✓
4X-2.2	Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade	•	Can Comply. To be incorporated in the construction documentation phase.	✓
4X-2.3	Design solutions do not require external scaffolding for maintenance access.	•	Can Comply.	✓
4X-2.4	Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems	•	Can Comply.	✓
4X-2.5	Centralised maintenance, services and storage should be provided for communal open space areas within the building	•	Can Comply.	✓
4X-3 Objective	Material selection reduces ongoing maintenance costs			✓
4X-3.1	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 finishes are used in locations which receive heavy wear and tear, such as common circulation • areas and lift interiors	•	Can Comply.	✓

LEVEL	UNIT NO.	UNIT TYPE	MIN ADG STORAGE REQUIRED (m3)	INTERNAL STORAGE PROVIDED (m3)	EXTERNAL STORAGE REQUIRED (m3)	STORAGE CAGE IN CARPARK?
GROUND	AG.01	1B	6	6	0	-
	AG.02	ST	4	4	0	-
	AG.03	3B	10	10	0	-
	AG.04	1B	6	6	0	-
	AG.05	1B	6	6	0	-
	BG.01	ST	4	3.12	0.88	Y
	BG.02	2B	8	6.45	1.55	Y
	BG.03	3B	10	10	0	-
	BG.04	3B	10	10	0	-
LEVEL 1	A1.01	1B	6	3.4	2.6	Y
	A1.02	2B	8	8	0	-
	A1.03	3B	10	6.79	3.21	Y
	A1.04	2B	8	6.08	1.92	Y
	A1.05	3B	10	10	0	-
	A1.06	1B	6	6	0	-
	A1.07	1B	6	6	0	-
	A1.08	1B	6	4.39	1.61	Y
	B1.01	1B	6	6	0	-
	B1.02	ST	4	3.12	0.88	Y
	B1.03	2B	8	6.45	1.55	Y
	B1.04	3B	10	10	0	-
	B1.05	2B	8	5.81	2.19	Y
	B1.06	2B	8	8	0	-
	B1.07	2B	8	5.68	2.32	Y
	B1.08	2B	8	7.73	0.27	Y
	B1.09	1B	6	6	0	-
	B1.10	1B	6	6	0	-
LEVEL 2	A2.01	1B	6	3.4	2.6	Y
	A2.02	2B	8	8	0	-
	A2.03	3B	10	6.79	3.21	Y
	A2.04	2B	8	6.08	1.92	Y
	A2.05	3B	10	10	0	-
	A2.06	1B	6	6	0	-
	A2.07	1B	6	6	0	-
	A2.08	1B	6	4.39	1.61	Y
LEVEL 3	A3.01	1B	6	3.4	2.6	Y
	A3.02	2B	8	8	0	-
	A3.03	3B	10	6.79	3.21	Y
	A3.04	2B	8	6.08	1.92	Y
	A3.05	3B	10	10	0	-
	A3.06	1B	6	6	0	-
	A3.07	1B	6	6	0	-
	A3.08	1B	6	4.39	1.61	Y
LEVEL 4	A4.01	1B	6	3.4	2.6	Y
	A4.02	2B	8	8	0	-
	A4.03	3B	10	6.79	3.21	Y
	A4.04	2B	8	6.08	1.92	Y
	A4.05	3B	10	10	0	-
	A4.06	1B	6	6	0	-
	A4.07	1B	6	6	0	-
	A4.08	1B	6	4.39	1.61	Y
LEVEL 5	A5.01	1B	6	3.26	2.74	Y
	A5.02	2B	8	6.22	1.78	Y
	A5.03	2B	8	7.13	0.87	Y
	A5.04	2B	8	8	0	-
	A5.05	2B	8	8	0	-
	A5.06	2B	8	8	0	-
	A5.07	1B	6	3.58	2.42	Y
	B5.01	2B	8	4.08	3.92	Y
	B5.02	2B	8	8	0	-
	B5.03	2B	8	5.43	2.57	Y
	B5.04	2B	8	4.38	3.62	Y
	B5.05	3B	10	10	0	-
LEVEL 6	A6.01	1B	6	3.9	2.1	Y
	A6.02	2B	8	4.11	3.89	Y
	A6.03	3B	10	5.33	4.67	Y
	A6.04	2B	8	8	0	-
	A6.05	2B	8	4.25	3.75	Y
	A6.06	2B	8	4.09	3.91	Y
	A6.07	1B	6	6	0	-
	B6.01	1B	6	3.11	2.89	Y
	B6.02	ST	4	4	0	-
	B6.03	ST	4	4	0	-
	B6.04	2B	8	4.08	3.92	Y
	B6.05	2B	8	8	0	-
	B6.06	2B	8	5.42	2.58	Y
	B6.07	2B	8	4.96	3.04	Y
	B6.08	2B	8	6.34	1.66	Y
	B6.09	1B	6	6	0	-
	B6.10	1B	6	6	0	-
LEVEL 7	A7.01	1B	6	3.9	2.1	Y
	A7.02	2B	8	4.11	3.89	Y
	A7.03	3B	10	5.33	4.67	Y
	A7.04	2B	8	8	0	-
	A7.05	2B	8	4.25	3.75	Y
	A7.06	2B	8	4.09	3.91	Y
	A7.07	1B	6	6	0	-
	B7.01	1B	6	3.11	2.89	Y
	B7.02	ST	4	4	0	-
	B7.03	ST	4	4	0	-
	B7.04	2B	8	4.08	3.92	Y
	B7.05	2B	8	8	0	-
	B7.06	2B	8	5.42	2.58	Y
	B7.07	2B	8	4.96	3.04	Y
	B7.08	2B	8	6.34	1.66	Y
	B7.09	1B	6	6	0	-
	B7.10	1B	6	6	0	-
LEVEL 8	A8.01	1B	6	3.9	2.1	Y
	A8.02	2B	8	4.11	3.89	Y
	A8.03	3B	10	5.33	4.67	Y
	A8.04	2B	8	8	0	-
	A8.05	2B	8	4.25	3.75	Y
	A8.06	2B	8	4.09	3.91	Y
	A8.07	1B	6	6	0	-
	B8.01	1B	6	3.11	2.89	Y
	B8.02	ST	4	4	0	-
	B8.03	ST	4	4	0	-
	B8.04	2B	8	4.08	3.92	Y
	B8.05	2B	8	8	0	-
	B8.06	2B	8	5.42	2.58	Y
	B8.07	2B	8	4.96	3.04	Y
	B8.08	2B	8	6.34	1.66	Y
	B8.09	1B	6	6	0	-
	B8.10	1B	6	6	0	-

LEVEL	UNIT NO.	UNIT TYPE	MIN ADG STORAGE REQUIRED (m3)	INTERNAL STORAGE PROVIDED (m3)	EXTERNAL STORAGE REQUIRED (m3)	STORAGE CAGE IN CARPARK?
LEVEL 9	A9.01	1B	6	3.9	2.1	Y
	A9.02	2B	8	4.11	3.89	Y
	A9.03	3B	10	5.33	4.67	Y
	A9.04	2B	8	8	0	-
	A9.05	2B	8	4.25	3.75	Y
	A9.06	2B	8	4.09	3.91	Y
	A9.07	1B	6	6	0	-
	B9.01	1B	6	3.11	2.89	Y
	B9.02	ST	4	4	0	-
	B9.03	ST	4	4	0	-
	B9.04	2B	8	4.08	3.92	Y
	B9.05	2B	8	8	0	-
	B9.06	2B	8	5.42	2.58	Y
	B9.07	2B	8	4.96	3.04	Y
	B9.08	2B	8	6.34	1.66	Y
	B9.09	1B	6	6	0	-
	B9.10	1B	6	6	0	-
LEVEL 10	A10.01	1B	6	3.9	2.1	Y
	A10.02	2B	8	4.11	3.89	Y
	A10.03	3B	10	5.33	4.67	Y
	A10.04	2B	8	8	0	-
	A10.05	2B	8	4.25	3.75	Y
	A10.06	2B	8	4.09	3.91	Y
	A10.07	1B	6	6	0	-
	B10.01	1B	6	3.11	2.89	Y
	B10.02	ST	4	4	0	-
	B10.03	ST	4	4	0	-
	B10.04	2B	8	4.08	3.92	Y
	B10.05	2B	8	8	0	-
	B10.06	2B	8	5.42	2.58	Y
	B10.07	2B	8	4.96	3.04	Y
	B10.08	2B	8	6.34	1.66	Y
	B10.09	1B	6	6	0	-
	B10.10	1B	6	6	0	-
LEVEL 11	A11.01	1B	6	3.9	2.1	Y
	A11.02	2B	8	4.11	3.89	Y
	A11.03	3B	10	5.33	4.67	Y
	A11.04	2B	8	8	0	-
	A11.05	2B	8	4.25	3.75	Y
	A11.06	2B	8	4.09	3.91	Y
	A11.07	1B	6	6	0	-
	B11.01	1B	6	3.11	2.89	Y
	B11.02	ST	4	4	0	-
	B11.03	ST	4	4	0	-
	B11.04	2B	8	4.08	3.92	Y
	B11.05	2B	8	8	0	-
	B11.06	2B	8	5.42	2.58	Y
	B11.07	2B	8	4.96	3.04	Y
	B11.08	2B	8	6.34	1.66	Y
	B11.09	1B	6	6	0	-
	B11.10	1B	6	6	0	-
LEVEL 12	A12.01	1B	6	3.9	2.1	Y
	A12.02	2B	8	4.11	3.89	Y
	A12.03	3B	10	5.33	4.67	Y
	A12.04	2B	8	8	0	-
	A12.05	2B	8	4.25	3.75	Y
	A12.06	2B	8	4.09	3.91	Y
	A12.07	1B	6	6	0	-
	B12.01	1B	6	3.11	2.89	Y
	B12.02	ST	4	4	0	-
	B12.03	ST	4	4	0	-
	B12.04	2B	8	4.08	3.92	Y
	B12.05	2B	8	8	0	-
	B12.06	2B	8	5.42	2.58	Y
	B12.07	2B	8	4.96	3.04	Y
	B12.08	2B	8	6.34	1.66	Y
	B12.09	1B	6	6	0	-
	B12.10	1B	6	6	0	-
LEVEL 13	A13.01	1B	6	3.9	2.1	Y
	A13.02	2B	8	4.11	3.89	Y
	A13.03	3B	10	5.33	4.67	Y
	A13.04	2B	8	8	0	-
	A13.05	2B	8	4.25	3.75	Y
	A13.06	2B	8	4.09	3.91	Y
	A13.07	1B	6	6	0	-
	B13.01	1B	6	3.11	2.89	Y
	B13.02	ST	4	4	0	-
	B13.03	ST	4	4	0	-
	B13.04	2B	8	4.08	3.92	Y
	B13.05	2B	8	8	0	-
	B13.06	2B	8	5.42	2.58	Y
	B13.07	2B	8	4.96	3.04	Y
	B13.08	2B	8	6.34	1.66	Y
	B13.09	1B	6	6	0	-
	B13.10	1B	6	6	0	-
LEVEL 14	A14.01	1B	6	3.9	2.1	Y
	A14.02	2B	8	4.11	3.89	Y
	A14.03	3B	10	5.33	4.67	Y
	A14.04	2B	8	8	0	-
	A14.05	2B	8	4.25	3.75	Y
	A14.06	2B	8	4.09	3.91	Y
	A14.07	1B	6	6	0	-
	B14.01	1B	6	3.11	2.89	Y
	B14.02	ST	4	4	0	-
	B14.03	ST	4	4	0	-
	B14.04	2B	8	4.08	3.92	Y
	B14.05	2B	8	8	0	-
	B14.06	2B	8	5.42	2.58	Y
	B14.07	2B	8	4.96	3.04	Y
	B14.08	2B	8	6.34	1.66	Y
	B14.09	1B	6	6	0	-
	B14.10	1B	6	6	0	-

LEVEL	UNIT NO.	UNIT TYPE	MIN ADG STORAGE REQUIRED (m3)	INTERNAL STORAGE PROVIDED (m3)	EXTERNAL STORAGE REQUIRED (m3)	STORAGE CAGE IN CARPARK?
LEVEL 15	A15.01	1B	6	3.9	2.1	Y
	A15.02	2B	8	4.11	3.89	Y
	A15.03	3B	10	5.33	4.67	Y
	A15.04	2B	8	8	0	-
	A15.05	2B	8	4.25	3.75	Y
	A15.06	2B	8	4.09	3.91	Y
	A15.07	1B	6	6	0	-
	B15.01	1B	6	3.11	2.89	Y
	B15.02	ST	4	4	0	-
	B15.03	ST	4	4	0	-
	B15.04	2B	8	4.08	3.92	Y
	B15.05	2B	8	8	0	-
	B15.06	2B	8	5.42	2.58	Y
	B15.07	2B	8	4.96	3.04	Y
	B15.08	2B	8	6.34	1.66	Y
	B15.09	1B	6	6	0	-
	B15.10	1B	6	6	0	-
LEVEL 16	A16.01	1B	6	3.9	2.1	Y
	A16.02	2B	8	4.11	3.89	Y
	A16.03	3B	10	5.33	4.67	Y
	A16.04	2B	8	8	0	-
	A16.05	2B	8	4.25	3.75	Y
	A16.06	2B	8	4.09	3.91	Y
	A16.07	1B	6	6	0	-
	B16.01	1B	6	3.11	2.89	Y
	B16.02	ST	4	4	0	-
	B16.03	ST	4	4	0	-
	B16.04	2B	8	4.08	3.92	Y
	B16.05	2B	8	8	0	-
	B16.06	2B	8	5.42	2.58	Y
	B16.07	2B	8	4.96	3.04	Y
	B16.08	2B	8	6.34	1.66	Y
	B16.09	1B	6	6	0	-
	B16.10	1B	6	6	0	-
LEVEL 17	A17.01	1B	6	3.9	2.1	Y
	A17.02	2B	8	4.11	3.89	Y
	A17.03	3B	10	5.33	4.67	Y
	A17.04	2B	8	8	0	-
	A17.05	2B	8	4.25	3.75	Y
	A17.06	2B	8	4.09	3.91	Y
	A17.07	1B	6	6	0	-
	B17.01	1B	6	3.11	2.89	Y
	B17.02	ST	4	4	0	-
	B17.03	ST	4	4	0	-
	B17.04	2B	8	4.08	3.92	Y
	B17.05	2B	8	8	0	-
	B17.06	2B	8	5.42	2.58	Y
	B17.07	2B	8	4.96	3.04	Y
	B17.08	2B	8	6.34	1.66	Y
	B17.09	1B	6	6	0	-
	B17.10	1B	6	6	0	-
LEVEL 18	A18.01	1B	6	3.9	2.1	Y
	A18.02	2B	8	4.11	3.89	Y
	A18.03	3B	10	5.33	4.67	Y
	A18.04	2B	8	8	0	-
	A18.05	2B	8	4.25	3.75	Y
	A18.06	2B	8	4.09	3.91	Y
	A18.07	1B	6	6	0	-
	B18.01	1B	6	3.11	2.89	Y
	B18.02	ST	4	4	0	-
	B18.03	ST	4	4	0	-
	B18.04	2B	8	4.08	3.92	Y
	B18.05	2B	8	8	0	-
	B18.06	2B	8	5.42	2.58	Y
	B18.07	2B	8	4.96	3.04	Y
	B18.08	2B	8	6.34	1.66	Y
	B18.09	1B	6	6	0	-
	B18.10	1B	6	6	0	-
LEVEL 19	A19.01	1B	6	3.9	2.1	Y
	A19.02	2B	8	4.11	3.89	Y
	A19.03	3B	10	5.33	4.67	Y
	A19.04	2B	8	8	0	-
	A19.05	2B	8	4.25	3.75	Y
	A19.06	2B	8	4.09	3.91	Y
	A19.07	1B	6	6	0	-
	B19.01	1B	6	3.11	2.89	Y
	B19.02	ST	4	4	0	-
	B19.03	ST	4	4	0	-
	B19.04	2B	8	4.08	3.92	Y
	B19.05	2B	8	8	0	-
	B19.06	2B	8	5.42	2.58	Y
	B19.07	2B	8	4.96	3.04	Y
	B19.08	2B	8	6.34	1.66	Y
	B19.09	1B	6	6	0	-
	B19.10	1B	6	6	0	-
LEVEL 20	B20.01	1B	6	3.11	2.89	Y
	B20.02	ST	4	4	0	-
	B20.03	ST	4	4	0	-
	B20.04	2B	8	4.08	3.92	Y
	B20.05	2B	8	8	0	-
	B20.06	2B	8	5.42	2.58	Y
	B20.07	2B	8	4.96	3.04	Y
	B20.08	2B	8	6.34	1.66	Y
	B20.09	1B	6	6	0	-
	B20.10	1B	6	6	0	-
LEVEL 21	B21.01	1B	6	3.11	2.89	Y
	B21.02	ST	4	4	0	-
	B21.03	ST	4	4	0	-
	B21.04	2B	8	4.08	3.92	Y
	B21.05	2B	8	8	0	-
	B21.06	2B	8	5.42	2.58	Y
	B21.07	2B	8	4.96	3.04	Y
	B21.08	2B	8	6.34	1.66	Y
	B21.09	1B	6	6	0	-
	B21.10	1B	6	6	0	-

LEVEL	UNIT NO.	UNIT TYPE	MIN ADG STORAGE REQUIRED (m3)	INTERNAL STORAGE PROVIDED (m3)	EXTERNAL STORAGE REQUIRED (m3)	STORAGE CAGE IN CARPARK?
LEVEL 22	B22.01	1B	6	3.11	2.89	Y
	B22.02	ST	4	4	0	-
	B22.03	ST	4	4	0	-
	B22.04	2B	8	4.08	3.92	Y
	B22.05	2B	8	8	0	-
	B22.06	2B	8	5.42	2.58	Y
	B22.07	2B	8	4.96	3.04	Y
	B22.08	2B	8	6.34	1.66	Y
	B22.09	1B	6	6	0	-
	B22.10	1B	6	6	0	-
LEVEL 23	B23.01	1B	6	3.11	2.89	Y
	B23.02	ST	4	4	0	-
	B23.03	ST	4	4	0	-
	B23.04	2B	8	4.08	3.92	Y
	B23.05	2B	8	8	0	-
	B23.06	2B	8	5.42	2.58	Y
	B23.07	2B	8	4.96	3.04	Y
	B23.08	2B	8	6.34	1.66	Y
	B23.09	1B	6	6	0	-
	B23.10	1B	6	6	0	-
TOTAL NO. OF UNITS REQUIRED STORAGE CAGE IN CARPARK						190

Storage Summary

Total number of units, excluding co-living rooms: 341

Total number of units requiring external storage: 190

Nominated Architects: Frank Mosca - 5000 / Steve Pserras - 5001
e reception@moscapserras.com.au
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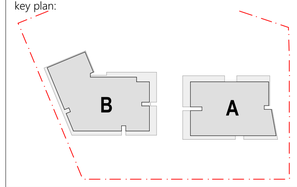
north point:

amendments

Revision	Description	By	Date
A	Development Application Submission	DB	5.6.23

key plan:



notes:

Storage cages provided within the carpark that achieve minimum clear dimensions of 700mm width and 1800mm depth can be used by residents to store bicycles.

Lateral™

mpa.
mosca pserras architects

project
Shepherd Street
location
31 - 33 Shepherd Street, LIVERPOOL
client
Lateral Estate
drawing title
Supplementary Drawings
Storage Schedule

scale	@ A1	project architect	FM
job no.	21023	drawing no.	SP09
drawn	DB / EP	revision	A