DESIGN VERIFICATION STATEMENT

CONSTRUCTION OF RESIDENTIAL FLAT BUILDING (83 APARTMENTS) & ASSOCIATED WORKS INCLUDING ACCESS DRIVEWAYS, CAR PARKING, STORMWATER DRAINAGE & LANDSCAPING

182 Guntawong Road Riverstone

Proposed Lot 1 in Subdivision DA-19-01518

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Printed September 2021

DESIGN VERIFICATION STATEMENT

I hereby verify, pursuant to State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development, the following:

RE: PROPOSED RESIDENTIAL DEVELOPMENT INVOLVING THE CONSTRUCTION OF A 83 UNIT RESIDENTIAL FLAT BUILDING WITH BASEMENT CAR PARKING, LANDSCAPING AND STORM WATER DRAINAGE AT 182 GUNTAWONG ROAD RIVERSTONE
PROPOSED LOT 1 IN SUBDIVISION DA-19-01518

a) I, Chee Lim, directed the design of the development proposal for the above project incorporating 83 apartments in residential flat buildings with associated car parking and common open space, in accordance with the plans and supporting information lodged with the development application.

b) In my opinion, the design quality principles set out in Schedule 1 of State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development (SEPP 65) and the objectives of Parts 3 (a)-(h) and 4 of the Apartment Design Guide (ADG) are achieved in the proposed development.

Chee Lim

of

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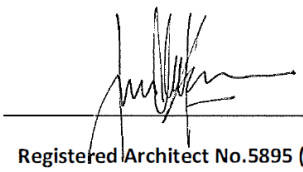

Registered Architect No.5895 (Board of Architects, NSW)

15th September 2021

State Environmental Planning Policy No 65

Design Quality of Residential Apartment Development & Apartment Design Guidelines

The aims of the policy are:

(1) This Policy aims to improve the design quality of residential flat development in New South Wales.

(2) This Policy recognises that the design quality of residential flat development is of significance for environmental planning for the State due to the economic, environmental, cultural and social benefits of high quality design.

(3) Improving the design quality of residential flat development aims:

(a) to ensure that it contributes to the sustainable development of New South Wales:

(i) by providing sustainable housing in social and environmental terms, and
(ii) by being a long-term asset to its neighbourhood, and
(iii) by achieving the urban planning policies for its regional and local contexts,

and

(b) to achieve better built form and aesthetics of buildings and of the streetscapes and the public spaces they define, and

(c) to better satisfy the increasing demand, the changing social and demographic profile of the community, and the needs of the widest range of people from childhood to old age, including those with disabilities, and

(d) to maximise amenity, safety and security for the benefit of its occupants and the wider community, and

(e) to minimise the consumption of energy from non-renewable resources, to conserve the environment and to reduce greenhouse gas emissions.

(f) to contribute to the provision of a variety of dwelling types to meet population growth, and

(g) to support housing affordability, and

(h) to facilitate the timely and efficient assessment of applications for development to which this Policy applies.

(4) This Policy aims to provide:

(a) consistency of policy and mechanisms across the State, and
(b) a framework for local and regional planning to achieve identified outcomes for specific places.

This SEPP applies to the proposed development under Clause 4 in that it involves:

(a) the erection of a new residential flat building

Schedule 1 details the following design principles for consideration and these are addressed below.

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.

The proposal addresses this principle in that it is responding to the underlying zoning objective. In part, the general compliance achieved with the planning controls (both SEPP & DCP) ensures that the development is consistent with the desired future neighbourhood character of the area.

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.

The general compliance achieved with the planning controls demonstrates that the proposal is of a scale and bulk that is compatible with the existing and intended built form for this locality within Riverstone (now Rouse Hill).

The proposed buildings are designed with a contemporary feel yet grounded in cost effective materials - limited lightweight steel framing and applied finished panels. Finishes are proposed as simple, elegant and sophisticated. The use of the punctuating framed window and balcony elements along all facades creates a sophisticated, rhythmic aesthetic, yet creating strong visual interest.

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.

The density proposed as part of this development is representative of the site opportunities and future development in the locality. The opportunity presented by this development relates to creating an "affordable" lifestyle; large 2 bedroom & 3 Bedroom units dominate, ensuring first home buyers households are afforded an opportunity to live within the complex.

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.

Appropriate energy saving and water efficiency measures have been included into the design of the building.

This is confirmed in the accompanying BASIX assessments.

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 useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.

The landscaping proposed on the site is extensive at the ground floor courtyard level. Landscaping is proposed at 47.48% of site area.

Deep soil planting is proposed at the minimum provisions set out in the ADG (15%).

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.

The proposed design facilitates the outcomes sought by this design principle. This is shown on the accompanying plans and site analysis.

The proposal provides for a range of units that provide appropriate dimensions, access to sunlight, visual and acoustic privacy, a variety of indoor and outdoor space and accessibility.

The proposal includes Adaptable units (11%) and Liveable Units (10%) within the mix.

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.

There are no areas of the design that would pose a safety or security risk. In this regard it is noted that there are no entrapment zones or spaces that have poor sight lines within the development.

Passive surveillance opportunities have been maximised where possible.

The balconies fronting the streets and internal “public domain” add to the activation and liveliness of the area.

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 and providing opportunities for social interaction among residents.

The mix of units proposed responds to the current market demands for this locality. This project provides a good mix of housing product and one that could be regarded as being affordable and will largely “target” the first home buyer market as well as “downsizers”.

There is a variation of floor areas, bedroom numbers and adaptability and the aim are to deliver a highly affordable product to the market.

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 a well-designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.

It is apparent in the plans presented to Council involve a project with a high level of quality in the finishes and materials.

It is submitted that the design outcome has been achieved.

The SEPP also requires the consent authority to take into consideration the *Apartment Design Guide.(ADG)*

The evaluation of the proposed development against the ADG is undertaken in the following Table

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
PART 3B - ORIENTATION		
Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1)	Y	All the buildings have their main entries from the street.
Where the street frontage is to the east or west, rear buildings should be orientated to the north	Y	Building orientation is executed appropriately to respond to solar access or communal open space outlooks.
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)	N/ A	Refer to the shadow diagrams submitted with this application.
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	Y	Living areas, private open space and communal open space receive 2 hours solar access in mid-winter. Refer to shadow Diagram and Solar Access in Architectural drawings submitted with this application.
Solar access to living rooms, balconies and private open spaces of neighbours should be considered	Y	Future residential development has been considered with no adverse impacts due to the site orientation and existing levels.
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%	Y	Future residential development has been considered with no adverse impacts due to the site orientation and existing levels.
If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy	N/ A	Future residential development has been considered with no adverse impacts due to the site orientation and existing levels.
Overshadowing should be minimised to the south or downhill by increased upper-level setbacks	Y	Refer to the shadow diagrams submitted with this application.
It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	Y	Buildings are compliant with setbacks. Future residential development has been considered with no adverse impacts due to the site orientation and existing levels.
A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	N/ A	There are no solar collectors on the neighbouring buildings presently. The proposal will not impact on future surrounding development.
PART 3C - PUBLIC DOMAIN INTERFACE		
Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	Y	Ground level courtyard apartments in have direct access to the street where practical.
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)	Y	Ground floor levels are typically higher than the footpath levels thus providing opportunity for passive surveillance while affording a level of privacy to occupants. The private open spaces are provided privacy by having generous landscaped setbacks and they are also secured with fence.
Upper-level balconies and windows should overlook the public domain	Y	Upper-level balconies internal communal spaces or setbacks with deep soil zone.
Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls should be limited to 1m	Y	Front fences generally consist of 1.6m high batten screen walls with screen planting to provide visual privacy to apartments

Length of solid walls should be limited along street frontages	Y	Façade walls along the street frontage are modulated and landscaped.
Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets	Y	Refer to the Landscaped proposal.
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	Y	Each building has its own building address and lobby entrance which generally provides a visual link between the entry and communal space beyond. High quality landscaped space, changes in materiality and scale form part of the entry design.
Opportunities for people to be concealed should be minimised	Y	High see-through visibility is maintained to lobbies with a high degree of surveillance to entries and COS.
Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	Y	Refer to architectural drawings and landscape plans.
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	Y	
The visual prominence of underground car park vents should be minimised and located at a low level where possible	Y	
Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	Y	All garbage storage and collection facilities are located in basement. All services located in basement where allowed by Authorities.
Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	Y	Accessible paths of travel have been carefully considered for each building. Ramps are designed in accordance with AS1428.1.
Durable, graffiti resistant and easily cleanable materials should be used	Y	
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	Y	Refer to the Landscape Plans submitted with this application.
On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	N/A	

PART 3D - COMMUNAL & PUBLIC OPEN SPACE		
Communal open space has a minimum area equal to 25% of the site.	Y	The project provides more than the minimum requirement of communal open space. Refer to the Compliance Table and COS Calculation submitted in architectural set.
Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)	Y	The Project achieves a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter).
Communal open space should be consolidated into a well-designed, easily identified and usable area	Y	
Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions	Y	Communal open space provided greatly exceeds the minimum 3m dimension.
Communal open space should be co-located with deep soil areas	Y	The site orientation and dimensions together with the setback requirements result in the deep soil being adjoining the communal open spaces.
Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	Y	
Where communal open space cannot be provided at ground level, it should be provided on a podium or roof	N/A	
Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: • provide communal spaces elsewhere such as a landscaped roof top terrace or a common room • provide larger balconies or increased private open space for apartments • demonstrate good proximity to public open space and facilities and/or provide contributions to public open space	N/ A	Design criteria are achieved.
Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: • seating for individuals or groups • barbecue areas • play equipment or play areas • swimming pools, gyms, tennis courts or common rooms	Y	Seating areas, BBQ facilities, and common spaces are proposed for use by residents... Refer to the Landscaped proposal.
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	Y	Refer to the landscape plans submitted with this application.
Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks.	Y	

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	Y	Balconies are used as an extension of the living spaces whilst functioning as a privacy mediator between apartments and communal or public open spaces.
Communal open space should be well lit	Y	
Where communal open space/facilities are provided for children and young people they are safe and contained	Y	
The public open space should be well connected with public streets along at least one edge	Y	
The public open space should be connected with nearby parks and other landscape elements	N/A	
Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid	Y	
Solar access should be provided year-round along with protection from strong winds	N/A	The public open space are mostly north facing therefore solar access in mid-winter is excellent.
Opportunities for a range of recreational activities should be provided for people of all ages	Y	Refer to the concept landscape plans submitted with this application for details.
A positive address and active frontages should be provided adjacent to public open space	Y	Apartment living spaces and balconies open in to public open space.
Boundaries should be clearly defined between public open space and private areas	Y	Ground floor communal spaces and apartments are clearly separated and defined by landscape planters and security gates or screens.

PART 3E - DEEP SOIL ZONES		
Deep soil zones are to meet the following minimum requirements: Minimum dimension: 6m Percentage of site area: 7%	Y	The total deep soil area exceeds the minimum requirement of 7%. Refer to Compliance table and the diagram for area calculation of deep soil in architectural set.
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	Y	The deep soil minimum requirements are exceeded

Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include: • basement and sub-basement car park design that is consolidated beneath building footprints • use of increased front and side setbacks • adequate clearance around trees to ensure long term health • co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil	Y	Refer to the Landscaped proposal.
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 storm water management should be achieved and alternative forms of planting provided such as on structure	N/A	

PART 3F - VISUAL PRIVACY		
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: o 4 storeys: 6m for habitable rooms and balconies; 3m for non-habitable rooms. o 5-8 storeys: 9m for habitable rooms and balconies; 4.5m for non-habitable rooms. o 9+storeys: 12m for habitable rooms and balconies; 6m for non-habitable rooms.	Y	The visual privacy and amenity of the development and to its neighbours has been achieved through setbacks that are compliant with Councils controls and are in accordance with the ADG guidelines. Refer to architectural plans for setback and building separation dimensions.
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.	Y	The shaping of the built form including varying heights, proportions and setbacks has been designed in order to present an appropriate articulated and modulated urban form with a fine-grained podium element at the lower levels and the levels above set back.
For residential buildings next to commercial buildings, separation distances should be measured as follows: • for retail, office spaces and commercial balconies use the habitable room distances • for service and plant areas use the non-habitable room distances	N/A	
New development should be located and oriented to maximise visual privacy between buildings on site and for neighbouring buildings. Design solutions include: • site layout and building orientation to minimise privacy impacts (see also section 3B Orientation) • on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4)	Y	Building layouts and orientation have been carefully considered taking into account the relationships between apartments within the site and also to its external neighbours. Careful placement of windows, screening and blade walls provides visual separation between apartments and potential neighbouring developments is used to ensure appropriate levels of visual privacy.
Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping (figure 3F.5)	N/A	Separation and amenity impacts have been addressed as no buildings have been located directly adjacent to the lower density development.
Direct lines of sight should be avoided for windows and balconies across corners	Y	Operable screens and directional blank blade screening has been incorporated to internal corners to maintain a good level of privacy and residential amenity.
No separation is required between blank walls	Y	Noted

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
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	Y	Separation between the spaces is achieved. Design Solutions include: • landscaped setbacks • solid or partially solid balustrades to balconies at lower levels • fencing and/or trees and vegetation to separate spaces • screening devices • raising apartments/private open space above the public domain or communal open space
Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	Y	
Balconies and private terraces should be located in front of living rooms to increase internal privacy.	Y	
Windows should be offset from the windows of adjacent buildings	Y	
Recessed balconies and/or vertical fins should be used between adjacent balconies	Y	Balconies are generally recessed with solid blade walls for visual and acoustic separation.
PART 3G - PEDESTRIAN ACCESS AND ENTRIES		
Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	Y	Individual buildings each have their own clear building entry accessed. Ground floor apartments have individual entries where practicable.
Entry locations relate to the street and subdivision pattern and the existing pedestrian network	Y	Entries are located on publicly accessible vehicular and pedestrian shared zones .
Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries.	Y	Building entries are distinguished by a generous width entry pathway, clear signage, appropriate lighting, landscaping, and attractive mailbox areas.
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.	N/A	There is a wide street frontage and all buildings are afforded their own building entries.
Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	Y	There is a clear line of site between the street through the building entry of Buildings and communal spaces.
The design of ground floors and underground car parks minimise level changes along pathways and entries.	Y	

Steps and ramps should be integrated into the overall building and landscape design.	Y	Refer to the architectural drawings and landscape plans submitted with this application.
For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)	Y	Way finding signage will be incorporated into the design as required.
For large developments electronic access and audio/video intercom should be provided to manage access.	Y	Audio/ video security intercom is proposed for the development.
Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport	Y	A hierarchy of open space is provided with accessible areas allowing clear pedestrian links/pathways to building, communal open space and to the local street.
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	Y	All publicly accessible space is overlooked and activated by apartment habitable rooms or private open space for passive surveillance.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
PART 3H - VEHICLE ACCESS		
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 facade • where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed	Y	
Car park entries should be located behind the building line	Y	
Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	Y	Basement entry points are located at the lowest point in accordance with the proposed project staging.
Car park entry and access should be located on secondary streets or lanes where available	N/A	Secondary streets or laneways are not available.
Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided	Y	The driveway width is kept to minimum dimensions whilst being compliant with council codes and Australian Standards.
Access point locations should avoid headlight glare to habitable rooms	Y	The driveway ramps protected by a pergola screen to prevent glare to habitable rooms or balconies above.
Adequate separation distances should be provided between vehicle entries and street intersections	Y	Refer to the traffic report submitted with this application.
The width and number of vehicle access points should be limited to the minimum	Y	Refer to Basement and Ground Floor plans submitted in Architectural set.

Visual impact of long driveways should be minimised through changing alignments and screen planting	Y	Driveway length is minimised.
The need for large vehicles to enter or turn around within the site should be avoided	Y	Proposal will accommodate garbage truck and delivery vehicles turning maneuvers in the basement level in accordance with Council guidelines.
Garbage collection, loading and servicing areas are screened	Y	Garbage collection is not visible from the street - occurring in the basement level .
Clear sight lines should be provided at pedestrian and vehicle crossings	Y	
Traffic calming devices such as changes in paving material or textures should be used where appropriate	Y	
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	Y	Clear separation and visibility for both pedestrians and vehicles is provided
PART 3J - BICYCLE & CAR PARKING		
For development in the following locations: • on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or • on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less the car parking needs for a development must be provided off street	Y	Parking provisions provided in accordance with Growth Centres DCP
Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site	NA	
Where less car parking is provided in a development, council should not provide on street resident parking permits	N/A	
Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters	Y	For the purpose of strata subdivision, it is proposed that residents' motorbikes or scooters can be parked in standard residential car spaces.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas	Y	Secure bicycle parking for residents is provided in basement. Additionally, visitor bicycle parking is provided also provided.
Conveniently located charging stations are provided for electric vehicles, where desirable	N/A	
PART 4A - SOLAR AND DAYLIGHT ACCESS		
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.	Y	More than 70% of apartments in the development receive at least 2 hours direct sunlight into the living areas and private open space between 9am and 3pm in mid-winter. Refer to Solar Accesses drawing submitted in Architectural set.
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.	N/A	
A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter.	Y	Less than 15% of apartments receive no sunlight between 9am and 3pm in mid-winter. This is due to the site orientation and boundary dimensions.
The design maximises north aspect and the number of single aspect south facing apartments is minimised.	Y	The buildings have been designed to maximise the number of apartments with a north-east or north-west frontage.
Single aspect, single storey apartments should have a northerly or easterly aspect.	Y	Single aspect northerly or easterly apartments within the development have been maximised,
Living areas are best located to the north and service areas to the south and west of apartments.	Y	The building design maximises the number of living areas with a northerly aspect ensuring a high level of amenity is achieved. Services areas are generally provided to the rear or in central locations minimising their impact on the most desirable areas of the apartments.
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	Y	The proposal uses a number of these features within the design including, dual aspect and through apartments and shallow depth plan layouts - all of which optimise direct sunlight to habitable areas and provide good levels of amenity to the residents.
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.	Y	

Achieving the design criteria may not be possible on some sites. This includes: • where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source • on south facing sloping sites • where significant views are oriented away from the desired aspect for direct sunlight Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria and how the development meets the objective	N/A	The design criteria is achieved.
Courtyards, skylights and high-level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms.	Y	The proposed development does not rely on these features as a primary light source.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Where courtyards are used : • use is restricted to kitchens, bathrooms and service areas • building services are concealed with appropriate detailing and materials to visible walls • courtyards are fully open to the sky • access is provided to the light well from a communal area for cleaning and maintenance • acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved.	N/A	
Opportunities for reflected light into apartments are optimised through: • reflective exterior surfaces on buildings opposite south facing windows • positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light • integrating light shelves into the design • light coloured internal finishes	Y	
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).	Y	Balconies and slab overhangs are employed as a primary means of passive solar control.

PART 4B - NATURAL VENTILATION		
The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms.	Y	The sites particular orientation allows for the long faces of each façade to take advantage of prevailing breezes.
Depths of habitable rooms support natural ventilation.	Y	All apartments have been designed to maximise natural ventilation effects.
The area of unobstructed window openings should be equal to at least 5% of the floor area served.	Y	
Light wells are not the primary air source for habitable rooms.	Y	No light wells are used or required.
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.	Y	Doors and openable windows are placed to allow the inhabitant to optimise natural ventilation conditions.
Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3).	Y	All apartments achieve the depth ratios indicated with the majority in the 'good' to 'very good' range
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.	Y	The single aspect apartments have been designed with a modulated glazed façade with operable elements to create opportunities for natural ventilation. The apartment depth is also limited to improve daylighting and ventilation.
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.	Y	More than 60%of apartments are naturally cross ventilated in accordance with standard design principles. Refer to Cross Ventilation drawing submitted in Architectural set.
Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.	Y	

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths.	Y	The proposal includes all of these types.
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.3).	Y	
Apartments are designed to minimise the number of corners, doors and rooms that might obstruct airflow	Y	
Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow	Y	
Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow	Y	

PART 4C - CEILING HEIGHTS		
Minimum ceiling heights are: Habitable rooms: 2.7m Non-Habitable: 2.4m 2 Storey apartments: 2.7m for min living room floor, 2.4m for second floor (where its areas does not exceed 50% of the apartment area) Attic spaces: 1.8m at the edge of the room with 30 degree minimum ceiling slope If located in mixed use areas: 3.3m for ground and first floors.	Y	The design is fully compliant with minimum ceiling heights.
Ceiling height can accommodate use of ceiling fans for cooling and heat distribution.	Y	
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.	Y	
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).	N/A	
PART 4D - APARTMENT SIZE AND LAYOUT		
Apartments are required to have the following minimum internal areas: 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.	Y	All apartments meet the minimum requirements and are generally in excess of these minimums.
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.	Y	As required to comply with the NCC.
Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space).	Y	Kitchens have been designed to avoid this situation.
A window should be visible from any point in a habitable room.	Y	
Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits.	N/A	The proposed apartments comply with the minimum areas and room dimensions and are generally in excess of those minimums. Furniture layouts are indicated at a realistic scale.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Habitable room depths are limited to a maximum of 2.5 x the ceiling height.	Y	
In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window.	Y	
Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths.	Noted	
All living areas and bedrooms should be located on the external face of the building.	Y	
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	Y	
Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space).	Y	
Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	Y	
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	Y	
The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts.	Y	
Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas.	Y	
All bedrooms allow a minimum length of 1.5m for robes.	Y	
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.	Y	
Apartment layouts allow flexibility over time, design solutions may include: • dimensions that facilitate a variety of furniture arrangements and removal • spaces for a range of activities and privacy levels between different spaces within the apartment • dual master apartments • dual key apartments Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments • room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) • efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms.	Y	Apartment layouts incorporate open plan style living and dining areas providing good functional and efficient spaces with a level of flexibility in potential furniture configurations. A number of apartments have also been designed to accommodate potential future adaptable requirements.
PART 4E - PRIVATE OPEN SPACE AND BALCONIES		
All apartments are required to have primary balconies as follows: Studio: 4m2 1 Bedroom: 8m2, 2m minimum depth 2 Bedroom: 10m2, 2m minimum depth 3 Bedroom: 12m2, 2.4m minimum depth The minimum balcony depth to be counted as contributing to the balcony area is 1m	Y	
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.	Y	
Increased communal open space should be provided where the number or size of balconies are reduced.	N/A	
Storage areas on balconies is additional to the minimum balcony size.	Noted	Dedicated storage for the apartments is provided within apartments or the basement carpark areas only. Refer storage schedule

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
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.	Noted	Note- Balcony usage is not limited by any of these factors in the proposed design.
Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space.	Y	Refer to architectural plans for apartment layouts.
Private open spaces and balconies predominantly face north, east or west.	Y	The number of north-east or north-west balconies has been maximised.
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.	Y	Refer to architectural plans for apartment layouts.
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.	Y	A mix of solid and glazed balustrades are used on the apartment balconies providing adequate levels of privacy while still allowing for good levels of passive surveillance and a sense of space.
Full width full height glass balustrades alone are generally not desirable.	Y	The proposal incorporates both glazed and solid elements to balconies.
Projecting balconies should be integrated into the building design and the design of soffits considered.	Y	
Operable screens, shutters, hoods and pergolas are used to control sunlight and wind.	Y	
Balustrades are set back from the building or balcony edge where overlooking or safety is an issue	Y	
Downpipes and balcony drainage are integrated with the overall facade and building design.	Y	Downpipes will be concealed within blade walls or columns.
Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design.	Y	AC units are to be located on balconies behind solid balustrades and screened
Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design.	Y	
Ceilings of apartments below terraces should be insulated to avoid heat loss.	Y	Refer to BASIX Certificate requirements.
Water and gas outlets should be provided for primary balconies and private open space.	N	To client's requirements

Changes in ground levels or landscaping are minimised.	Y	
Design and detailing of balconies avoids opportunities for climbing and falls.	Y	In accordance with NCC requirements
PART 4F - COMMON CIRCULATION AND SPACES		
The maximum number of apartments off a circulation core on a single level is eight	Y	
For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	Y	
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.	Y	Corridors and entry lobbies have been designed for comfortable movement and feature wider spaces at lift entries and natural light at appropriate locations.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Daylight and natural ventilation should be provided to all common circulation spaces that are above ground.	Y	
Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors.	Y	
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	Y	Corridors longer than 12m include openings for natural light and views to communal spaces, and changes in direction.
Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments.	Y	The proposed design is serviced by multiple cores. Dual aspect apartments to either end of corridors have been developed as part of the design providing high levels of amenity.
Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: • sunlight and natural cross ventilation in apartments • access to ample daylight and natural ventilation in common circulation spaces • common areas for seating and gathering • generous corridors with greater than minimum ceiling heights • other innovative design solutions that provide high levels of amenity	N/ A	The design meets the criteria.

Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level	N/A	The design meets the criteria.
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.	Y	
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.	Y	
Tight corners and spaces are avoided.	Y	
Circulation spaces should be well lit at night.	Y	
Legible signage should be provided for apartment numbers, common areas and general wayfinding.	Y	
Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided.	N	Refer to Enhanced Amenity Sheet submitted in Architectural Set.
In larger developments, community rooms for activities such as owner's corporation meetings or resident use should be provided and are ideally co-located with communal open space.	N	
Where external galleries are provided, they are more open than closed above the balustrade along their length.	N/A	
PART 4G - STORAGE		
In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Studio: 4m3 1 Bedroom: 6m3 2 Bedroom: 8m3 3 Bedroom: 10m3 At least 50% of the required storage is to be located within the apartment.	Y	A minimum of 50% of the storage requirements has been provided in apartments. Note: Basement storage has been provided where required.
Storage is accessible from either circulation or living areas.	Y	

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street.	N/A	There is potential for additional storage located on some balconies to be located adjacent to the AC unit behind a 1.1m high screened enclosure behind a solid balustrade.
Left over space such as under stairs is used for storage.	N/A	
Storage not located in apartments is secure and clearly allocated to specific apartments.	Y	At least one basement storage cage is provided for each apartment.
Storage is provided for larger and less frequently accessed items.	Y	At least one basement storage cage is provided for each apartment.
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.	Y	Storage cages are provided at the rear of car spaces.
If communal storage rooms are provided, they should be accessible from common circulation areas of the building.	N/A	No communal storage rooms are provided.
Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain.	Y	Additional storage areas not located in apartments are contained within the basement areas.
PART 4H - ACOUSTIC PRIVACY		
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).	Y	Adequate building separation has been provided within the development and from neighbouring buildings. Habitable spaces are orientated or screened to maintain visual privacy and separation both from within the development and to adjacent buildings.
Window and door openings are generally orientated away from noise sources.	Y	Window and door opening to private open spaces are generally located a sufficient distance away from noise sources.
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	Y	The building layouts locate areas such as corridors and wet areas above each other to assist in maintaining acoustic privacy and to simplify detailing of these spaces.
Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources.	Y	
The number of party walls (walls shared with other apartments) are limited and are appropriately insulated.	Y	
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.	Y	
Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers	Y	

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	Y	All acoustic constructions to be in accordance with the NCC and Australian. Details to be provided by a qualified acoustic engineer at documentation stage.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
PART 4J - NOISE AND POLLUTION		
To minimise impacts the following design solutions may be used: • physical separation between buildings and the noise or pollution source. • residential uses are located perpendicular to the noise source and where possible buffered by other uses. • non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces. • non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources. • buildings should respond to both solar access and noise. Where solar access is away from the noise source, nonhabitable rooms can provide a buffer • where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable (see figure 4J.4) • landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry	Y	
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	N/A	
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.	Y	Glazing performance will be designed to mitigate external noise source to comply with the acoustic requirements of the NCC and Australian Standards. Solid facade elements and insulation will be provided to assist in external noise reduction where applicable.

PART 4K - APARTMENT MIX		
A variety of apartment types is provided.	Y	
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.	Y	The apartment mix achieves a mix of unit types
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.	Y	The apartment mix and types provided in the proposed development cater for a wide range of users, ranging from single occupiers to families. A number of apartments have also been designed to be LHD Silver Level, or capable of adaption providing further flexibility.
Different apartment types are located to achieve successful facade composition and to optimise solar access (see figure 4K.3).	Y	Apartment types and locations have been used to articulate the built form both horizontally and vertically.
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.	Y	Larger apartments have been located at building corners and fronting landscaped spaces at ground floor.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
PART 4L - GROUND FLOOR APARTMENTS		
Direct street access should be provided to ground floor apartments.	Y	Ground floor apartments are provided with direct street access where practicable.
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.	Y	
Retail or home office spaces should be located along street frontages.	N/A	
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.	N/A	No SOHO apartments are proposed as they are neither appropriate nor required in this particular instance.

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) • landscaping and private courtyards • window sill heights that minimise sight lines into apartments • integrating balustrades, safety bars or screens with the exterior design	Y	A high degree of casual surveillance is provided to all publicly accessible spaces with ground floor apartments and their private terraces separated by planters and screen fences as appropriate.
Solar access should be maximised through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer.	Y	Floor to ceiling windows have been introduced to main living areas and many bedrooms to provide good levels of solar access.
PART 4M - FACADES		
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.	Y	The building massing arrangement with defined podium, upper levels , as well as articulated recesses, have been combined with the use of colours and different materials to create highly articulated facades that address each particular orientation.
Building services should be integrated within the overall façade.	Y	
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.	Y	The proposed design provides well resolved facades having appropriate levels of detail, and variance in articulation. The building lengths are appropriately moderated through use of deep recesses and are articulated in both the horizontal and vertical to provide a balanced composition.
Building facades relate to key datum lines of adjacent buildings through upper-level setbacks, parapets, cornices, awnings or colonnade heights.	N/A	There are no adjacent buildings of comparable typology or density. The building heights step down towards the public pocket park and lower density zoned area. The building heights and setbacks are consistent with the objectives of the planning controls for the site and result in a visually pleasing balanced building composition for individual buildings.
Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals.	Y	
Building entries should be clearly defined.	Y	

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
The apartment layout should be expressed externally through facade features such as party walls and floor slabs.	Y	The façade has been articulated and is an outward expression of its internal planning.
PART 4N - ROOF DESIGN		
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.	N/A	Non-Trafficable roof.
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 compliment the building • service elements are integrated.	Y	Roof elements such as floating roofs and pergolas are sized proportionately to the overall scale of the buildings. Feature soffit materials are used to enhance the terminating feature of the building.
Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights.	N/A	No habitable roof spaces are provided.
Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations.	N/A	Non-Trafficable roof.
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.	Y	
Skylights and ventilation systems should be integrated into the roof design.	Y	Skylight window has been included in roof level to provide solar access to apartment.
PART 4O - LANDSCAPE DESIGN		
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.	Y	The landscape has been designed to generally meet these criteria (refer to landscape proposal).

Ongoing maintenance plans should be prepared.	Y	To be prepared for OC stage.
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.	Y	Refer to landscape proposal
Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4).	Y	Refer to landscape proposal

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops.	Y	Refer to landscape proposal
Significant landscape features should be protected by: • tree protection zones (see figure 4O.5) • appropriate signage and fencing during construction.	Y	Refer to landscape proposal
Plants selected should be endemic to the region and reflect the local ecology.	Y	Refer to landscape proposal

PART 4P - PLANTING ON STRUCTURES		
Structures are reinforced for additional saturated soil weight.	Y	
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.	Y	Refer to landscape proposal
Minimum soil standards for plant sizes should be provided in accordance with Table 5.	Y	Refer to landscape proposal
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.	Y	Refer to landscape proposal

A landscape maintenance plan is prepared.	Y	To be prepared at CC stage.
Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used.	Y	Refer to landscape proposal and storm water design.
Building design incorporates opportunities for planting on structures. Design solutions may include: • green walls with specialised 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.	Y	Refer to landscape proposal
PART 4Q - UNIVERSAL DESIGN		
Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features.	Y	20% of apartments will meet this requirement.
Adaptable housing should be provided in accordance with the relevant council policy.	Y	11% of apartment are capable of adaption to AS4299 in accordance with council policy.
Design solutions for adaptable apartments include: • convenient access to communal and public areas • high level of solar access • minimal structural change and residential amenity loss when adapted • larger car parking spaces for accessibility • parking titled separately from apartments or shared car parking arrangements.	Y	All adaptable apartments have easy access to common areas (via common corridors and lift), and have appropriate parking as required by the relevant standards. Apartment layouts have been designed to ensure that minimal work is required to convert into adaption mode. Refer to Access report.
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.	Y	

PART 4R - ADAPTIVE REUSE		
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.	N/A	Note- no existing buildings to be retained as part of this proposal.
Additions to heritage items should be clearly identifiable from the original building.	N/A	

New additions allow for the interpretation and future evolution of the building	N/A	
Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: • generously sized voids in deeper buildings • alternative apartment types when orientation is poor • using additions to expand the existing building envelope.	N/A	
Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where developments are unable to achieve the design criteria, alternatives could be considered in the following areas: • where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar 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.	N/A	
PART 4S - MIXED USE		
Mixed use development should be concentrated around public transport and centres.	N/A	No mixed-use proposed
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 • avoiding blank walls at the ground level • live/work apartments on the ground floor level, rather than commercial.	N/A	

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	N/A	

PART 4T - AWNINGS AND SIGNAGE		
Awnings should be located along streets with high pedestrian activity and active frontages.	Y	Awnings and weather protection have been provided at building entries
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.	N/A	
Awnings should be located over building entries for building address and public domain amenity.	Y	Undercover entries are provided to lobbies.
Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure.	Y	
Gutters and down pipes should be integrated and concealed.	Y	
Lighting under awnings should be provided for pedestrian safety.	Y	Noted and to be integrated in final design.
Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development.	Y	Noted and to be integrated in final design.
Legible and discrete way finding should be provided for larger developments.	Y	Noted and to be integrated in final design.
Signage is limited to being on and below awnings and a single facade sign on the primary street frontage.	Y	Noted and to be integrated in final design.
PART 4U - ENERGY EFFICIENCY		
Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access).	Y	
Well located, screened outdoor areas should be provided for clothes drying.	NA	Refer to BASIX certificate
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 • insulated roofs, walls and floors and seals on window and door openings • overhangs and shading devices such as awnings, blinds and screens	Y	Refer to architectural drawings and BASIX certificate submitted with this application.
Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g., the basement)	Y	

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
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.	Y	
PART 4V - WATER MANAGEMENT AND CONSERVATION		
Water efficient fittings, appliances and wastewater reuse should be incorporated.	Y	Refer to Basix Certificate
Apartments should be individually metered.	Y	As required by local authorities
Rainwater should be collected, stored and reused on site.	Y	Refer to Basix Certificate and stormwater design.
Drought tolerant, low water use plants should be used within landscaped areas.	Y	Refer to landscape proposal
Water sensitive urban design systems are designed by a suitably qualified professional.	Y	
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.	Y	Provision is made to collect and detain all stormwater in accordance with Authority requirements.
Detention tanks should be located under paved areas, driveways or in basement car parks.	Y	Refer stormwater drawings
On large sites parks or open spaces are designed to provide temporary on-site detention basins.	N/A	Refer to landscape proposal and stormwater design.
PART 4W - WASTE MANAGEMENT		
Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park.	Y	Waste storage and collection areas are located in the basement.
Waste and recycling storage areas should be well ventilated.	Y	Waste storage rooms in the building will be mechanically ventilated.
Circulation design allows bins to be easily maneuvered between storage and collection points.	Y	Refer Waste Management Report submitted with this application.
Temporary storage should be provided for large bulk items such as mattresses.	Y	Bulky waste room provided.
A waste management plan should be prepared.	Y	Refer Waste Management Report submitted with this application.
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.	N/A	Refer Waste Management Report submitted with this application.

DESIGN CRITERIA OR GUIDANCE	COMPLIANCE	ADDITIONAL COMMENTS
PART 4X - BUILDING MAINTENANCE		
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	Y	A number of features such as roof overhangs, drip groves / lines and flashings and cappings have been incorporated into the design to provide protection to areas of the building façade prolonging the need for building maintenance.
Window design enables cleaning from the inside of the building.	N/A	Awning windows with opening restrictors are used for safety, in accordance with BCA requirements. Window cleaning is envisaged to be performed from balcony areas, accessible ground floor levels or via safety harness system from the building's roof deck areas.
Building maintenance systems should be incorporated and integrated into the design of the building form, roof and façade.	Y	The building will include safety harness points from the roof deck levels allowing for building maintenance while being unobtrusive. Plant and equipment is generally located within basement areas ensuring that these elements do not detract from the building design.
Design solutions do not require external scaffolding for maintenance access.	Y	As above.
Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems.	Y	Provision will be made for owners to provide blinds/curtains. Sun shading provided by balcony recesses and overhangs.
Centralised maintenance, services and storage should be provided for communal open space areas within the building.	Y	
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	Y	Sensors will be installed to control artificial lighting in common circulation spaces. A number of robust elements have been incorporated into the building to provide longevity including the use of natural material such as masonry / concrete and pre-finished metal claddings.