Attachment 8 - Apartment Design Guide Assessment

Note: Separate tables have been prepared for each of the three residential towers.

Tower 1

Standards/controls	*Comment*
Part 3 Siting the development **3A Site analysis** Site analysis uses the following key elements to demonstrate that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context: - Site location plan - Aerial photograph - Local context plan - Site context and survey plan - Streetscape elevations and sections - Analysis A written statement explaining how the design of the proposed development has responded to the site analysis must accompany the development application.	**Satisfactory** A suitable site analysis has been undertaken
3B Orientation *Objective 3B-1* Building types and layouts respond to the streetscape and site while optimising solar access within the development ***Design guidance*** Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1) Where the street frontage is to the east or west, rear buildings should be orientated to the north 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)	**Satisfactory** Direct access provided from street level The longer side of the building is oriented generally north-south to reduce overshadowing to the south.

Standards/controls	*Comment*
Objective 3B-2 Overshadowing of neighbouring properties is minimised during mid winter ***Design guidance*** Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access Solar access to living rooms, balconies and private open spaces of neighbours should be considered 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% If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy Overshadowing should be minimised to the south or down hill by increased upper level setbacks 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 A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	**Satisfactory** Adjoining land does not currently contain residential development. In regard to potential future built form, adjoining land could take the form of commercial or mixed use. The tower is not considered to unreasonably compromise amenity of future built form.

Standards/controls	*Comment*
3C Public domain interface *Objective 3C-1* Transition between private and public domain is achieved without compromising safety and security ***Design guidance*** Terraces, balconies and courtyard apartments should have direct street entry, where appropriate 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) Upper level balconies and windows should overlook the public domain 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 Length of solid walls should be limited along street frontages Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets 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 Opportunities for people to be concealed should be minimised	**Satisfactory** Suitable passive surveillance of the street is provided. The large foyer provides for a point of gathering and activation of the street frontage Building entries are well defined Appropriate CPTED conditions are recommended relating to pedestrian safety.

Standards/controls	*Comment*
Objective 3C-2 Amenity of the public domain is retained and enhanced	**Satisfactory** The tower has a satisfactory landscaped setting involving preservation of street trees and establishment of a landscaped forecourt area along with green walls and podium planting to communal open space. Mail boxes are integrated into the lobby area. Substations are integrated into the built form. Level transition is provided into the lobby from the footpath.
Design guidance	
Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	
The visual prominence of underground car park vents should be minimised and located at a low level where possible	
Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	
Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	
Durable, graffiti resistant and easily cleanable materials should be used	
Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and 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	
On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	
3D Communal and public open space	
Objective 3D-1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 3D-2 Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting ***Design guidance*** 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 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 Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	**Satisfactory** A suitable range of activities are possible within the communal open spaces.
Objective 3D-3 Communal open space is designed to maximise safety ***Design guidance*** Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: • bay windows • corner windows • balconies Communal open space should be well lit Where communal open space/facilities are provided for children and young people they are safe and contained	**Satisfactory** The communal open space on level 4 is not visible from units. Facilities that might be used by children are safe and contained.
Objective 3D-4 Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood	**N/A**

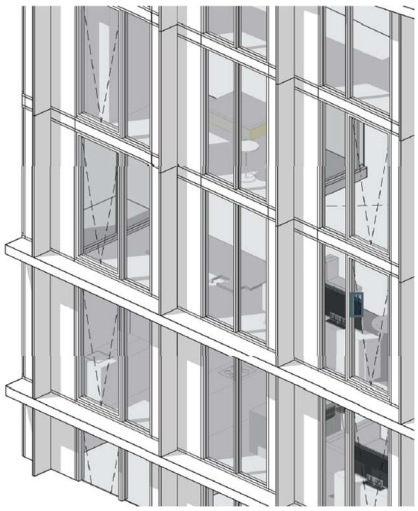
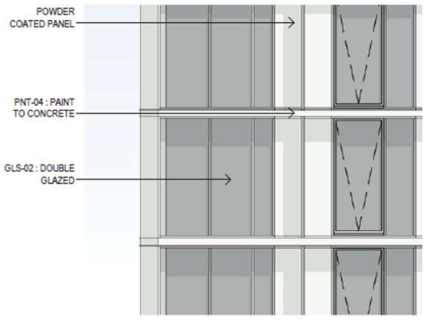
Standards/controls	*Comment*
3E Deep soil zones *Objective 3E-1* Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality	**N/A**
3F Visual privacy *Objective 3F-1* Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy	**Variation sought** See detailed discussion in body of report
Objective 3F-2 Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space	**Satisfactory** Appropriate separation is provided. Units are arranged to position noisy areas away from bedrooms. Balconies generally situated in front of living spaces. Adjacent balconies separated by fin walls.
Design guidance 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	
Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	
Balconies and private terraces should be located in front of living rooms to increase internal privacy	
Windows should be offset from the windows of adjacent buildings	

Standards/controls	*Comment*
3G Pedestrian access and entries	
Objective 3G-1 Building entries and pedestrian access connects to and addresses the public domain	**Satisfactory** Clear entry points to the residential towers are provided both from the ground level foyer areas to Burelli Street and also from the internal plaza.
Design guidance	
Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	
Entry locations relate to the street and subdivision pattern and the existing pedestrian network	
Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries	
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	
Objective 3G-2 Access, entries and pathways are accessible and easy to identify	**Satisfactory** Entries are clearly visible and accessible. Car parking areas are designed to provide equitable paths of travel. Condition is recommended to ensure direct access to the building is possible from the basement parking. Level changes are well integrated into the design. Intercom access is considered to be a matter that will be resolved at CC stage.
Design guidance	
Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	
The design of ground floors and underground car parks minimise level changes along pathways and entries	
Steps and ramps should be integrated into the overall building and landscape design	
For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)	
For large developments electronic access and audio/video intercom should be provided to manage access	

Standards/controls	*Comment*
Objective 3G-3 Large sites provide pedestrian links for access to streets and connection to destinations ***Design guidance*** Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport 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	**Satisfactory** The development incorporates a number of pedestrian through links that are accessible 24/7. Site lines are considered acceptable and publicly accessible areas are overlooked (are they with all the screening to side elevations) by residents. Conditions are recommended with regard to CCTV and lighting.
3H Vehicle access *Objective 3H-1* Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes ***Design guidance*** 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 Car park entries should be located behind the building line Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout Car park entry and access should be located on secondary streets or lanes where available Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided Access point locations should avoid headlight glare to habitable rooms Adequate separation distances should be provided between vehicle entries and street intersections	**Satisfactory** Two access points for vehicles are provided from Burelli Street. One at the traffic lights at the intersection with Kenny Street, the other a service dock entry further to the east. Burelli Street is the low point of the site. The vehicle entry points are integrated into the façade.

Standards/controls	*Comment*
The width and number of vehicle access points should be limited to the minimum	
Visual impact of long driveways should be minimised through changing alignments and screen planting	
The need for large vehicles to enter or turn around within the site should be avoided	
Garbage collection, loading and servicing areas are screened	
Clear sight lines should be provided at pedestrian and vehicle crossings	
Traffic calming devices such as changes in paving material or textures should be used where appropriate	
Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation	
3J Bicycle and car parking	
Objective 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	**Does not comply** Conditions recommended. See detailed discussion in body of report
Objective 3J-2 Parking and facilities are provided for other modes of transport	
Objective 3J-3 Car park design and access is safe and secure	

Standards/controls	*Comment*
Objective 3J-4 Visual and environmental impacts of underground car parking are minimised ***Design guidance*** Excavation should be minimised through efficient car park layouts and ramp design Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites Natural ventilation should be provided to basement and sub basement car parking areas Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	**Satisfactory** Access to parking is suitably located on the site and integrated into the design. Appropriate conditions relating to excavation and geotechnical requirements are recommended.
Objective 3J-5 Visual and environmental impacts of on-grade car parking are minimised	**NA**
Objective 3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised	**NA**
4A Solar and daylight access	
Objective 4A-1 To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	**Satisfactory** See detailed discussion in body of report
Objective 4A-2 Daylight access is maximised where sunlight is limited	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 4A-3 **Design incorporates shading and glare control, particularly for warmer months** ***Design guidance*** 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)	Tower 1 facades incorporate small fin wall projections, setting back the glazing slightly to provide some shade when the sun is high.  The windows are identified as double glazed.  The Environmental Sustainability Report identifies the relevant U-value (heat transfer or insulation) and Solar Heat Gain Coefficient or SHGC (solar radiation passing through the glazing) values

Standards/controls	*Comment*
4B Natural ventilation ***Objective 4B-1*** **All habitable rooms are naturally ventilated** ***Design guidance*** The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms Depths of habitable rooms support natural ventilation The area of unobstructed window openings should be equal to at least 5% of the floor area served Light wells are not the primary air source for habitable rooms Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: • adjustable windows with large effective openable areas • a variety of window types that provide safety and flexibility such as awnings and louvres • windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors	**Satisfactory** See discussion in body of report

Standards/controls	*Comment*
Objective 4B-2 **The layout and design of single aspect apartments maximises natural ventilation** ***Design guidance*** Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3) Natural ventilation to single aspect apartments is achieved with the following design solutions: • primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) • stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries • courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells	**Satisfactory** Units with windows on a single aspect only are limited to one per standard floor (1 of 7). Those units have shallow depths.
Objective 4B-3 **The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents**	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
4C Ceiling heights ***Objective 4C-1*** Ceiling height achieves sufficient natural ventilation and daylight access ***Design criteria*** 1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are: **Minimum ceiling height for apartment and mixed use buildings** Habitable rooms: 2.7m Non-habitable: 2.4m For 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 ceiling slope If located in mixed used areas: 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired ***Design guidance*** Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	**Satisfactory** Floor to ceiling heights are 2.7m.
Objective 4C-2 Ceiling height increases the sense of space in apartments and provides for well proportioned rooms	**N/A**
Objective 4C-3 Ceiling heights contribute to the flexibility of building use over the life of the building	**N/A**

Standards/controls	*Comment*

4D Apartment size and layout

Objective 4D-1

The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity

Design criteria

1. Apartments are required to have the following minimum internal areas:

Apartment type	Minimum 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

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

Design guidance

Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)

A window should be visible from any point in a habitable room

Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits

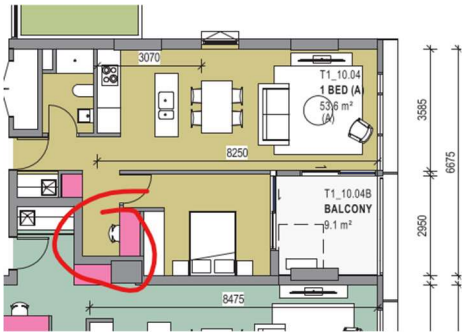
Complies

Unit sizes comply.

All habitable rooms have windows.

Kitchens are not part of the primary circulation space.

Windows are visible from all parts of habitable rooms with the exception of small storage/study nook areas. Those areas are not considered to be habitable under the definitions in the glossary to the ADG (see below) as they are not areas that would be expected to occupied frequently or for extended periods.



Habitable room: *a room used for normal domestic activities, and includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room and sunroom; but excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods, as defined by the BCA.*

Standards/controls	*Comment*
Objective 4D-2 Environmental performance of the apartment is maximised ***Design criteria*** 1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height 2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window ***Design guidance*** Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths All living areas and bedrooms should be located on the external face of the building	**Complies** Depths comply. Living areas and bedrooms are on the external face of the building. Habitable room depths do not exceed 8m.
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	**Satisfactory** On the typical floor plan, no bathrooms or laundries have external operable windows. 

Standards/controls	*Comment*
Objective 4D-3 **Apartment layouts are designed to accommodate a variety of household activities and needs**	**Complies**
Design criteria	
1. Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space)	Room sizes comply.
2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	Room widths comply.
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	Access to bedrooms in a number of units is directly from living areas as shown below. 
4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts	Robe sizes comply. Apartment layouts are considered to be acceptable with regard to furniture layout. Penthouse units have dual master rooms. No dual key apartments are provided. Floor areas are efficient.
Design guidance	
Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	
All bedrooms allow a minimum length of 1.5m for robes	
The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high	
Apartment layouts allow flexibility over time, design solutions may include: • dimensions that facilitate a variety of furniture arrangements and removal • spaces for a range of activities and privacy levels between different spaces within the apartment • dual master apartments • dual key apartments *Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments* • room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) • efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	

Standards/controls	*Comment*
4E Private open space and balconies *Objective 4E-1* **Apartments provide appropriately sized private open space and balconies to enhance residential amenity** ***Design criteria*** 1. All apartments are required to have primary balconies as follows: 	Dwelling type	Minimum area	Minimum depth
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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 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 ***Design guidance*** Increased communal open space should be provided where the number or size of balconies are reduced Storage areas on balconies is additional to the minimum balcony size Balcony use may be limited in some proposals by: • consistently high wind speeds at 10 storeys and above • close proximity to road, rail or other noise sources • exposure to significant levels of aircraft noise • heritage and adaptive reuse of existing buildings In these situations, juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated	**Satisfactory** Complies

Standards/controls	*Comment*
Objective 4E-2 **Primary private open space and balconies are appropriately located to enhance liveability for residents** ***Design guidance*** Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space Private open spaces and balconies predominantly face north, east or west Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	**Satisfactory** Private open space areas are well connected to internal areas and oriented to take advantage of sun and outlook.
Objective 4E-3 **Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building** ***Design guidance*** 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 Full width full height glass balustrades alone are generally not desirable Projecting balconies should be integrated into the building design and the design of soffits considered Operable screens, shutters, hoods and pergolas are used to control sunlight and wind Balustrades are set back from the building or balcony edge where overlooking or safety is an issue Downpipes and balcony drainage are integrated with the overall facade and building design Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design	**Satisfactory**

Standards/controls	*Comment*
Ceilings of apartments below terraces should be insulated to avoid heat loss	
Water and gas outlets should be provided for primary balconies and private open space	
Objective 4E-4 Private open space and balcony design maximises safety	**Satisfactory**
Design guidance	
Changes in ground levels or landscaping are minimised	
Design and detailing of balconies avoids opportunities for climbing and falls	
4F Common circulation and spaces	
Objective 4F-1 Common circulation spaces achieve good amenity and properly service the number of apartments	**Satisfactory** See detailed discussion in body of report
Objective 4F-2 Common circulation spaces promote safety and provide for social interaction between residents	**Satisfactory**
Design guidance	
Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines	
Tight corners and spaces are avoided	
Circulation spaces should be well lit at night	
Legible signage should be provided for apartment numbers, common areas and general wayfinding	
Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	
In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally co-located with communal open space	
Where external galleries are provided, they are more open than closed above the balustrade along their length	

Standards/controls	*Comment*
4G Storage	
Objective 4G-1 Adequate, well designed storage is provided in each apartment ***Design criteria*** 1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size volume Studio apartments / 4m³ 1 bedroom apartments / 6m³ 2 bedroom apartments / 8m³ 3+ bedroom apartments / 10m³ At least 50% of the required storage is to be located within the apartment ***Design guidance*** Storage is accessible from either circulation or living areas Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street Left over space such as under stairs is used for storage	**Satisfactory** Units are provided with appropriate storage areas.
Objective 4G-2 Additional storage is conveniently located, accessible and nominated for individual apartments ***Design guidance*** Storage not located in apartments is secure and clearly allocated to specific apartments Storage is provided for larger and less frequently accessed items Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible If communal storage rooms are provided they should be accessible from common circulation areas of the building Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	**Satisfactory** Additional storage for each unit is provided within the basement with suitable areas to ensure storage is conveniently located on each car park level. Condition is recommended to ensure basement storage is located within proximity of relevant car space.

Standards/controls	*Comment*
4H Acoustic privacy	
Objective 4H-1 Noise transfer is minimised through the siting of buildings and building layout ***Design guidance*** 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) Window and door openings are generally orientated 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 Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources The number of party walls (walls shared with other apartments) are limited and are appropriately insulated Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms	**Satisfactory** The layout provides separation from noisy or common areas where possible.
Objective 4H-2 Noise impacts are mitigated within apartments through layout and acoustic treatments ***Design guidance*** Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: • double or acoustic glazing • acoustic seals • use of materials with low noise penetration properties • continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	**Satisfactory**

Standards/controls	*Comment*
4J Noise and pollution ***Objective 4J-1*** **In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings**	**Satisfactory** See detailed discussion in body of report
Objective 4J-2 **Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission** ***Design guidance*** 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	**Satisfactory**
4K Apartment mix ***Objective 4K-1*** **A range of apartment types and sizes is provided to cater for different household types now and into the future** ***Design guidance*** A variety of apartment types is provided 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 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	**Satisfactory** The proposal provides a mixture of 3 (12%), 2 (60%) and 1 (28%) bedroom units.

Standards/controls	*Comment*
Objective 4K-2 The apartment mix is distributed to suitable locations within the building ***Design guidance*** Different apartment types are located to achieve successful facade composition and to optimise solar access (see figure 4K.3) 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	**Satisfactory**
4L Ground floor apartments	
Objective 4L-1 Street frontage activity is maximised where ground floor apartments are located	**N/A**
Objective 4L-2 Design of ground floor apartments delivers amenity and safety for residents	**N/A**
4M Facades	
Objective 4M-1 Building facades provide visual interest along the street while respecting the character of the local area ***Design guidance*** 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 Building services should be integrated within the overall facade	**Satisfactory**

Standards/controls	*Comment*
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	
Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	
Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals	
Objective 4M-2 **Building functions are expressed by the facade**	**Satisfactory**
Design guidance	
Building entries should be clearly defined	
Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	
The apartment layout should be expressed externally through facade features such as party walls and floor slabs	
4N Roof design	
Objective 4N-1 **Roof treatments are integrated into the building design and positively respond to the street**	**Satisfactory**
Design guidance	
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	

Standards/controls	*Comment*
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	
Objective 4N-2 **Opportunities to use roof space for residential accommodation and open space are maximised** ***Design guidance*** Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	**Satisfactory** Podium communal open space is provided for all three towers. Skylights are incorporated where possible.
Objective 4N-3 **Roof design incorporates sustainability features** ***Design guidance*** Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: • the roof lifts to the north • eaves and overhangs shade walls and windows from summer sun Skylights and ventilation systems should be integrated into the roof design	**Satisfactory**

Standards/controls	*Comment*
4O Landscape design	
Objective 4O-1 **Landscape design is viable and sustainable** ***Design guidance*** 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 Ongoing maintenance plans should be prepared 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 Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4)	**Satisfactory**
Objective 4O-2 **Landscape design contributes to the streetscape and amenity** ***Design guidance*** Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops Significant landscape features should be protected by: • tree protection zones (see figure 4O.5) • appropriate signage and fencing during construction Plants selected should be endemic to the region and reflect the local ecology	**Satisfactory**

Standards/controls	*Comment*
4P Planting on structures	
Objective 4P-1 Appropriate soil profiles are provided	**Satisfactory**
Design guidance	
Structures are reinforced for additional saturated soil weight	
Soil volume is appropriate for plant growth, considerations include: • modifying depths and widths according to the planting mix and irrigation frequency • free draining and long soil life span • tree anchorage	
Minimum soil standards for plant sizes should be provided in accordance with Table 5	
Objective 4P-2 Plant growth is optimised with appropriate selection and maintenance	**Satisfactory**
Design guidance	
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	
A landscape maintenance plan is prepared	
Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	

Standards/controls	*Comment*
Objective 4P-3 Planting on structures contributes to the quality and amenity of communal and public open spaces ***Design guidance*** 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	**Satisfactory**
4Q Universal design	
Objective 4Q-1 Universal design features are included in apartment design to promote flexible housing for all community members ***Design guidance*** Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	**Satisfactory** 20% of the units meet the universal design features.
Objective 4Q-2 A variety of apartments with adaptable designs are provided ***Design guidance*** Adaptable housing should be provided in accordance with the relevant council policy Design solutions for adaptable apartments include: • convenient access to communal and public areas • high level of solar access • minimal structural change and residential amenity loss when adapted • larger car parking spaces for accessibility • parking titled separately from apartments or shared car parking arrangements	**Satisfactory** Council requires 10% of the units to be adaptable. The Access Review prepared by Morris Goding Access Consulting states that the 10% can be incorporated into the 20% universal if they meet the relevant standards. The proposal provides 20% that meet the universal design features, 10% of which meet the adaptable requirements.

Standards/controls	*Comment*
Objective 4Q-3 Apartment layouts are flexible and accommodate a range of lifestyle needs ***Design guidance*** 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	**Satisfactory**
4R Adaptive reuse	
Objective 4R-1 New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place	**N/A**
Objective 4R-2 Adapted buildings provide residential amenity while not precluding future adaptive reuse	**N/A**
4S Mixed use	
Objective 4S-1 Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement ***Design guidance*** Mixed use development should be concentrated around public transport and centres 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	**Satisfactory**

Standards/controls	*Comment*
Objective 4S-2 **Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents** ***Design guidance*** 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 Landscaped communal open space should be provided at podium or roof levels	**Satisfactory** Commercial and residential lobby access is separated. There is a large combined service dock for both the residential and non-residential components. Residents would however utilise the waste rooms within the residential car parking areas with waste then being transported to the service dock by the building manager. Parking and communal areas are separated and secured. Secure entry points are provided to residential lobby areas. Pedestrian routes are considered to be safe with adequate passive surveillance and improved through provision of CCTV and lighting. Appropriate conditions are recommended.

Standards/controls	*Comment*
4T Awnings and signage	
Objective 4T-1 Awnings are well located and complement and integrate with the building design	**Satisfactory**
Design guidance	
Awnings should be located along streets with high pedestrian activity and active frontages	
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	
Awnings should be located over building entries for building address and public domain amenity	
Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	
Gutters and down pipes should be integrated and concealed	
Lighting under awnings should be provided for pedestrian safety	
Objective 4T-2 Signage responds to the context and desired streetscape character	**N/A** Condition is recommended confirming signage must be subject to a future application unless exempt.
4U Energy efficiency	
Objective 4U-1 Development incorporates passive environmental design	**Satisfactory**
Design guidance	
Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	
Well located, screened outdoor areas should be provided for clothes drying	

Standards/controls	*Comment*
Objective 4U-2 **Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer** ***Design guidance*** 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 Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	**Satisfactory**
Objective 4U-3 **Adequate natural ventilation minimises the need for mechanical ventilation** ***Design guidance*** 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	**Satisfactory**
4V Water management and conservation	
Objective 4V-1 **Potable water use is minimised** ***Design guidance*** Water efficient fittings, appliances and wastewater reuse should be incorporated Apartments should be individually metered Rainwater should be collected, stored and reused on site Drought tolerant, low water use plants should be used within landscaped areas	**Satisfactory**

Standards/controls	*Comment*
Objective 4V-2 **Urban stormwater is treated on site before being discharged to receiving waters** ***Design guidance*** Water sensitive urban design systems are designed by a suitably qualified professional 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	**Satisfactory** The proposal includes a Water Sensitive Urban Design Report which details water recapture and use in landscaped areas along with gross pollutant traps.
Objective 4V-3 **Flood management systems are integrated into site design** ***Design guidance*** Detention tanks should be located under paved areas, driveways or in basement car parks On large sites parks or open spaces are designed to provide temporary on site detention basins	**Satisfactory**
4W Waste management	
Objective 4W-1 **Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents** ***Design guidance*** Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park Waste and recycling storage areas should be well ventilated Circulation design allows bins to be easily manoeuvred between storage and collection points Temporary storage should be provided for large bulk items such as mattresses A waste management plan should be prepared	**Satisfactory** Suitable storage areas for waste bins for each tower are provided in close proximity to the lift cores. This includes separate bulk waste rooms and FOGO waste areas. A Waste Management Plan has been provided detailing waste volumes expected and capacity of bin rooms. Chutes are provided for general and recyclable waste.

Standards/controls	*Comment*
Objective 4W-2 Domestic waste is minimised by providing safe and convenient source separation and recycling ***Design guidance*** 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 Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses Alternative waste disposal methods such as composting should be provided	**Satisfactory**
4X Building maintenance	
Objective 4X-1 Building design detail provides protection from weathering ***Design guidance*** 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	**Satisfactory**

Standards/controls	*Comment*
Objective 4X-2 **Systems and access enable ease of maintenance** ***Design guidance*** Window design enables cleaning from the inside of the building Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade Design solutions do not require external scaffolding for maintenance access Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems Centralised maintenance, services and storage should be provided for communal open space areas within the building	**Satisfactory**
Objective 4X-3 **Material selection reduces ongoing maintenance costs** ***Design guidance*** 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	**Satisfactory**

Tower 2

Standards/controls	*Comment*
Part 3 Siting the development **3A Site analysis** Site analysis uses the following key elements to demonstrate that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context: - Site location plan - Aerial photograph - Local context plan - Site context and survey plan - Streetscape elevations and sections - Analysis A written statement explaining how the design of the proposed development has responded to the site analysis must accompany the development application.	**Satisfactory** A suitable site analysis has been undertaken
3B Orientation *Objective 3B-1* Building types and layouts respond to the streetscape and site while optimising solar access within the development ***Design guidance*** Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1) Where the street frontage is to the east or west, rear buildings should be orientated to the north 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)	**Satisfactory** Tower 2 provides direct access from Burelli Street and the internal lane.

Standards/controls	*Comment*
Objective 3B-2 Overshadowing of neighbouring properties is minimised during mid winter ***Design guidance*** Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access Solar access to living rooms, balconies and private open spaces of neighbours should be considered 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% If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy Overshadowing should be minimised to the south or down hill by increased upper level setbacks 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 A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	**Satisfactory** Burelli Street is located to the south. Some overshadowing to neighbouring commercial properties will occur. The redesigned proposal does not result in overshadowing to MacCabe Park between 12 and 2pm.

Standards/controls	*Comment*
3C Public domain interface *Objective 3C-1* Transition between private and public domain is achieved without compromising safety and security ***Design guidance*** Terraces, balconies and courtyard apartments should have direct street entry, where appropriate 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) Upper level balconies and windows should overlook the public domain 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 Length of solid walls should be limited along street frontages Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets 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 Opportunities for people to be concealed should be minimised	**Satisfactory** The proposal has direct pedestrian access to the site from Burelli Street and the central public lane. A commercial tenancy is located directly off Burelli Street as well as a lobby to the residential component of the building and to an upper level commercial tenancy. Commercial tenancy 61 is not accessible from a public portion of the building and appears to rely on the residential access. A condition is recommended to ensure appropriate access is provided without relying on residential parts of the development. Balconies are positioned along the north and south elevation, overlooking the internal plaza to the north and Burelli Street to the south. Individual buildings within the development are appropriately differentiated.

Standards/controls	*Comment*
Objective 3C-2 Amenity of the public domain is retained and enhanced	**Satisfactory** Mail boxes are suitably located. Parking is located away from streets. Substation is not visible from the street. Direct pedestrian access is achieved from ground level. Ramps are located away from the primary entrance. Blank wall on the lower floor is located on the Burelli street frontage, however within the context of the development, this is considered a minor portion of the façade, which is otherwise suitably designed. Appropriate conditions relating to ongoing building management are recommended.
Design guidance	
Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	
The visual prominence of underground car park vents should be minimised and located at a low level where possible	
Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	
Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	
Durable, graffiti resistant and easily cleanable materials should be used	
Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and 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	
On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	
3D Communal and public open space	
Objective 3D-1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	**Variation** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 3D-2 Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting ***Design guidance*** 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 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 Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	**Satisfactory** Communal opens spaces cater to a variety of uses and age groups. The proposed plantings and use are responsive to the solar access likely to be available. Wind mitigation is proposed on the COS. Balconies from tower 1 will potentially overlook the COS on tower 2 but adequate building separation and a suitable landscaped buffer is provided. Reasonable levels of privacy are maintained into the adjacent units through suitable separation distances. The COS is capable of being well lit. This can be conditioned.
Objective 3D-3 Communal open space is designed to maximise safety ***Design guidance*** Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: • bay windows • corner windows • balconies Communal open space should be well lit Where communal open space/facilities are provided for children and young people they are safe and contained	**Satisfactory**
Objective 3D-4 Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood	**N/A**

Standards/controls	*Comment*
3E Deep soil zones *Objective 3E-1* 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	**N/A**
3F Visual privacy *Objective 3F-1* Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy	**Variation sought** See detailed discussion in body of report
Objective 3F-2 Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space	**Satisfactory** COS does not result in excessive overlooking into habitable rooms in the building or in tower 1 or 3 due to the defensive design of the eastern and western elevations.
Design guidance 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	
Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	
Balconies and private terraces should be located in front of living rooms to increase internal privacy	
Windows should be offset from the windows of adjacent buildings	

Standards/controls	*Comment*
3G Pedestrian access and entries	
Objective 3G-1 Building entries and pedestrian access connects to and addresses the public domain	**Satisfactory** Entries to the building are provided from the parking lot, the Burelli street frontage and the central public open space. Clear sightlines are provided to the residential portions of the building. Signage is not proposed as part of this application. Any signage will be subject of a future application if required. This will be conditioned. Steps and ramps are integrated into the building design.
Design guidance	
Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	
Entry locations relate to the street and subdivision pattern and the existing pedestrian network	
Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries	
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	
Objective 3G-2 Access, entries and pathways are accessible and easy to identify	**Satisfactory** Access is visible from the public domain. Clear sightlines are provided to the residential portions of the building. Steps and ramps are integrated into the building design.
Design guidance	
Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	
The design of ground floors and underground car parks minimise level changes along pathways and entries	
Steps and ramps should be integrated into the overall building and landscape design	
For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)	
For large developments electronic access and audio/video intercom should be provided to manage access	

Standards/controls	*Comment*
Objective 3G-3 Large sites provide pedestrian links for access to streets and connection to destinations ***Design guidance*** Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport 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	**Satisfactory** Through site links are provided throughout the development site, particularly from the street to the central public open space. Conditions are recommended with regard to CCTV and lighting.
3H Vehicle access	
Objective 3H-1 Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes ***Design guidance*** 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 Car park entries should be located behind the building line Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout Car park entry and access should be located on secondary streets or lanes where available Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided Access point locations should avoid headlight glare to habitable rooms Adequate separation distances should be provided between vehicle entries and street intersections	**Satisfactory** Vehicle access to the site is provided from Burelli Street. A single signalised intersection is proposed for the whole development site, which is considered acceptable and likely to minimise pedestrian vehicle conflicts. Vehicle access appears appropriately designed. Vehicle access is located away from main pedestrian site access. Servicing vehicle access is located off Burelli Street and is suitably located to avoid pedestrian conflicts.

Standards/controls	*Comment*
The width and number of vehicle access points should be limited to the minimum	
Visual impact of long driveways should be minimised through changing alignments and screen planting	
The need for large vehicles to enter or turn around within the site should be avoided	
Garbage collection, loading and servicing areas are screened	
Clear sight lines should be provided at pedestrian and vehicle crossings	
Traffic calming devices such as changes in paving material or textures should be used where appropriate	
Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation	
3J Bicycle and car parking	
Objective 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	**Does not comply** See detailed discussion in body of report
Objective 3J-2 Parking and facilities are provided for other modes of transport	See detailed discussion in body of report
Objective 3J-3 Car park design and access is safe and secure	See detailed discussion in body of report

Standards/controls	*Comment*
Objective 3J-4 Visual and environmental impacts of underground car parking are minimised ***Design guidance*** Excavation should be minimised through efficient car park layouts and ramp design Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites Natural ventilation should be provided to basement and sub basement car parking areas Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	**Satisfactory** Access to parking is suitably located on the site and integrated into the design. Appropriate conditions relating to excavation and geotechnical requirements are recommended.
Objective 3J-5 Visual and environmental impacts of on-grade car parking are minimised	**NA**
Objective 3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised	**NA**
4A Solar and daylight access	
Objective 4A-1 To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	**Satisfactory** See detailed discussion in body of report
Objective 4A-2 Daylight access is maximised where sunlight is limited	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 4A-3 Design incorporates shading and glare control, particularly for warmer months ***Design guidance*** 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)	**Satisfactory** A reflectivity report has been submitted which indicates acceptable performance. Location of windows (subject to conditions) will allow acceptable levels of solar access into the building.
4B Natural ventilation	
Objective 4B-1 All habitable rooms are naturally ventilated ***Design guidance*** The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms Depths of habitable rooms support natural ventilation The area of unobstructed window openings should be equal to at least 5% of the floor area served Light wells are not the primary air source for habitable rooms Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: • adjustable windows with large effective openable areas • a variety of window types that provide safety and flexibility such as awnings and louvres • windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 4B-2 **The layout and design of single aspect apartments maximises natural ventilation** ***Design guidance*** Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3) Natural ventilation to single aspect apartments is achieved with the following design solutions: • primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) • stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries • courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells	**Satisfactory** Units with windows on a single aspect only have shallower depths.
Objective 4B-3 **The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents**	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
4C Ceiling heights ***Objective 4C-1*** Ceiling height achieves sufficient natural ventilation and daylight access ***Design criteria*** 1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are: **Minimum ceiling height for apartment and mixed use buildings** Habitable rooms: 2.7m Non-habitable: 2.4m For 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 ceiling slope If located in mixed used areas: 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired ***Design guidance*** Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	**Satisfactory** Floor to ceiling heights are 2.7m.
Objective 4C-2 Ceiling height increases the sense of space in apartments and provides for well proportioned rooms	**N/A**
Objective 4C-3 Ceiling heights contribute to the flexibility of building use over the life of the building	**N/A**

Standards/controls	*Comment*
4D Apartment size and layout *Objective 4D-1* The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity ***Design criteria*** 1. Apartments are required to have the following minimum internal areas: Apartment type / Minimum 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 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 ***Design guidance*** Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space) A window should be visible from any point in a habitable room Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits	**Satisfactory** Minimum internal areas for apartments are achieved. Windows are not visible from some of the kitchens, in some units. Condition is recommended to add an additional windows on the eastern or western façade to address this concern and provide improved solar access for relevant units.

Standards/controls	*Comment*
Objective 4D-2 Environmental performance of the apartment is maximised ***Design criteria*** 1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height 2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window ***Design guidance*** Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths All living areas and bedrooms should be located on the external face of the building	**Satisfactory** Some open plan living areas are marginally more than 8m. Only a few apartments are impacted by this, which is considered acceptable.
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	On the typical floor plan, no bathrooms or laundries have external operable windows.

Standards/controls	*Comment*
Objective 4D-3 **Apartment layouts are designed to accommodate a variety of household activities and needs** ***Design criteria*** 1. Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space) 2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space) 3. Living rooms or combined living/dining rooms have a minimum width of: • 3.6m for studio and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments 4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts ***Design guidance*** Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas All bedrooms allow a minimum length of 1.5m for robes The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high Apartment layouts allow flexibility over time, design solutions may include: • dimensions that facilitate a variety of furniture arrangements and removal • spaces for a range of activities and privacy levels between different spaces within the apartment • dual master apartments • dual key apartments *Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments* • room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) • efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	**Satisfactory** Apartment layouts are acceptable with regard to these controls. The apartments on the western end of the lower levels are less than 4m wide (3.88m). Living rooms in these apartments are therefore also a maximum of 3.88m wide. This impacts very few apartments. Conditions will be included for these apartments to include west facing windows on the western façade to ensure adequate solar access and to improve the outlook and perceived size of these apartments. Robe sizes comply. Apartment layouts are considered to be acceptable with regard to furniture layout. Penthouse units have dual master rooms. No dual key apartments are provided. Floor areas are efficient.

Standards/controls	*Comment*
4E Private open space and balconies *Objective 4E-1* **Apartments provide appropriately sized private open space and balconies to enhance residential amenity** ***Design criteria*** 1. All apartments are required to have primary balconies as follows: 	Dwelling type	Minimum area	Minimum depth
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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 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 ***Design guidance*** Increased communal open space should be provided where the number or size of balconies are reduced Storage areas on balconies is additional to the minimum balcony size Balcony use may be limited in some proposals by: • consistently high wind speeds at 10 storeys and above • close proximity to road, rail or other noise sources • exposure to significant levels of aircraft noise • heritage and adaptive reuse of existing buildings In these situations, juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated	**Satisfactory** Minimum areas are met

Standards/controls	*Comment*
Objective 4E-2 **Primary private open space and balconies are appropriately located to enhance liveability for residents** ***Design guidance*** Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space Private open spaces and balconies predominantly face north, east or west Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	**Satisfactory** POS is located adjacent to living areas Most have north, east or west aspects. POS will block solar access to some adjacent living spaces due to their location. Refer to discussion on solar access section of this table. Conditions will be included to ensure solar access into living rooms where possible.
Objective 4E-3 **Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building** ***Design guidance*** 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 Full width full height glass balustrades alone are generally not desirable Projecting balconies should be integrated into the building design and the design of soffits considered Operable screens, shutters, hoods and pergolas are used to control sunlight and wind Balustrades are set back from the building or balcony edge where overlooking or safety is an issue Downpipes and balcony drainage are integrated with the overall facade and building design Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design	**Satisfactory** POS is appropriately designed with regard to the architectural form and detail of the building.

Standards/controls	*Comment*
Ceilings of apartments below terraces should be insulated to avoid heat loss	
Water and gas outlets should be provided for primary balconies and private open space	
Objective 4E-4 **Private open space and balcony design maximises safety**	**Satisfactory** POS are of a typical design. Compliance with BCA will ensure suitable degree of safety.
Design guidance	
Changes in ground levels or landscaping are minimised	
Design and detailing of balconies avoids opportunities for climbing and falls	
4F Common circulation and spaces	
Objective 4F-1 **Common circulation spaces achieve good amenity and properly service the number of apartments**	**Satisfactory** See detailed discussion in body of report
Objective 4F-2 **Common circulation spaces promote safety and provide for social interaction between residents**	**Complies** Common circulation areas are suitably designed with regard to the design guidance.
Design guidance	
Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines	
Tight corners and spaces are avoided	
Circulation spaces should be well lit at night	
Legible signage should be provided for apartment numbers, common areas and general wayfinding	
Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	
In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally co-located with communal open space	
Where external galleries are provided, they are more open than closed above the balustrade along their length	

Standards/controls	*Comment*
4G Storage	
Objective 4G-1 **Adequate, well designed storage is provided in each apartment** ***Design criteria*** 1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size volume Studio apartments / 4m³ 1 bedroom apartments / 6m³ 2 bedroom apartments / 8m³ 3+ bedroom apartments / 10m³ At least 50% of the required storage is to be located within the apartment ***Design guidance*** Storage is accessible from either circulation or living areas Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street Left over space such as under stairs is used for storage	**Satisfactory** Apartment layouts provide for suitable storage areas. Storage is also located within the parking areas.
Objective 4G-2 **Additional storage is conveniently located, accessible and nominated for individual apartments** ***Design guidance*** Storage not located in apartments is secure and clearly allocated to specific apartments Storage is provided for larger and less frequently accessed items Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible If communal storage rooms are provided they should be accessible from common circulation areas of the building Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	**Satisfactory** Additional storage for each unit is provided within the basement with suitable areas to ensure storage is conveniently located on each car park level. Condition is recommended to ensure basement storage is located within proximity of relevant car space.

Standards/controls	*Comment*
4H Acoustic privacy	
Objective 4H-1 Noise transfer is minimised through the siting of buildings and building layout ***Design guidance*** 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) Window and door openings are generally orientated 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 Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources The number of party walls (walls shared with other apartments) are limited and are appropriately insulated Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms	**Satisfactory** The layout provides separation from noisy or common areas where possible.
Objective 4H-2 Noise impacts are mitigated within apartments through layout and acoustic treatments ***Design guidance*** Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: • double or acoustic glazing • acoustic seals • use of materials with low noise penetration properties • continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	**Satisfactory** Significant noise impacts are not considered likely for the units in tower 2.

Standards/controls	*Comment*
4J Noise and pollution *Objective 4J-1* In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings	**Satisfactory** See detailed discussion in body of report
Objective 4J-2 Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission ***Design guidance*** 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	**Satisfactory**
4K Apartment mix *Objective 4K-1* A range of apartment types and sizes is provided to cater for different household types now and into the future ***Design guidance*** A variety of apartment types is provided 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 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	**Satisfactory** The proposal provides a mixture of 3, 2, and 1 bedroom units with a variety of floor plans.

Standards/controls	*Comment*
Objective 4K-2 The apartment mix is distributed to suitable locations within the building ***Design guidance*** Different apartment types are located to achieve successful facade composition and to optimise solar access (see figure 4K.3) 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	**Satisfactory**
4L Ground floor apartments	
Objective 4L-1 Street frontage activity is maximised where ground floor apartments are located	**N/A**
Objective 4L-2 Design of ground floor apartments delivers amenity and safety for residents	**N/A**
4M Facades	
Objective 4M-1 Building facades provide visual interest along the street while respecting the character of the local area ***Design guidance*** 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 Building services should be integrated within the overall facade	**Satisfactory** The conditioning of additional windows on parts of the western and eastern façade is not expected to have a negative impact on building design.

Standards/controls	*Comment*
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	
Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	
Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals	
Objective 4M-2 **Building functions are expressed by the facade**	**Satisfactory** Building entries for the various uses are clearly defined.
Design guidance	
Building entries should be clearly defined	
Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	
The apartment layout should be expressed externally through facade features such as party walls and floor slabs	
4N Roof design	
Objective 4N-1 **Roof treatments are integrated into the building design and positively respond to the street**	**Satisfactory**
Design guidance	
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	

Standards/controls	*Comment*
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	
Objective 4N-2 **Opportunities to use roof space for residential accommodation and open space are maximised** ***Design guidance*** Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	**Satisfactory** Roof is not accessible, but larger POS for the top floor apartment is provided.
Objective 4N-3 **Roof design incorporates sustainability features** ***Design guidance*** Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: • the roof lifts to the north • eaves and overhangs shade walls and windows from summer sun Skylights and ventilation systems should be integrated into the roof design	**Satisfactory** Solar panels are provided on roofs throughout the development.

Standards/controls	*Comment*
4O Landscape design	
Objective 4O-1 **Landscape design is viable and sustainable** ***Design guidance*** 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 Ongoing maintenance plans should be prepared 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 Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4)	**Satisfactory**
Objective 4O-2 **Landscape design contributes to the streetscape and amenity** ***Design guidance*** Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops Significant landscape features should be protected by: • tree protection zones (see figure 4O.5) • appropriate signage and fencing during construction Plants selected should be endemic to the region and reflect the local ecology	**Satisfactory**

Standards/controls	*Comment*
4P Planting on structures	
Objective 4P-1 Appropriate soil profiles are provided	**Satisfactory**
Design guidance	
Structures are reinforced for additional saturated soil weight	
Soil volume is appropriate for plant growth, considerations include: • modifying depths and widths according to the planting mix and irrigation frequency • free draining and long soil life span • tree anchorage	
Minimum soil standards for plant sizes should be provided in accordance with Table 5	
Objective 4P-2 Plant growth is optimised with appropriate selection and maintenance	**Satisfactory**
Design guidance	
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	
A landscape maintenance plan is prepared	
Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	

Standards/controls	*Comment*
Objective 4P-3 Planting on structures contributes to the quality and amenity of communal and public open spaces ***Design guidance*** 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	**Satisfactory** COS is appropriately designed and will provide a suitable level of amenity to residents.
4Q Universal design	
Objective 4Q-1 Universal design features are included in apartment design to promote flexible housing for all community members ***Design guidance*** Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	**Satisfactory** 20% of the units meet the universal design features.
Objective 4Q-2 A variety of apartments with adaptable designs are provided ***Design guidance*** Adaptable housing should be provided in accordance with the relevant council policy Design solutions for adaptable apartments include: • convenient access to communal and public areas • high level of solar access • minimal structural change and residential amenity loss when adapted • larger car parking spaces for accessibility • parking titled separately from apartments or shared car parking arrangements	**Satisfactory** Council requires 10% of the units to be adaptable. The Access Review prepared by Morris Goding Access Consulting states that the 10% can be incorporated into the 20% universal if they meet the relevant standards. The proposal provides 20% that meet the universal design features, 10% of which meet the adaptable requirements.

Standards/controls	*Comment*
Objective 4Q-3 Apartment layouts are flexible and accommodate a range of lifestyle needs ***Design guidance*** 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	**Satisfactory** Variety in apartment layouts is provided.
4R Adaptive reuse	
Objective 4R-1 New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place	**N/A**
Objective 4R-2 Adapted buildings provide residential amenity while not precluding future adaptive reuse	**N/A**
4S Mixed use	
Objective 4S-1 Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement ***Design guidance*** Mixed use development should be concentrated around public transport and centres 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	**Satisfactory**

Standards/controls	*Comment*
Objective 4S-2 **Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents** ***Design guidance*** 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 Landscaped communal open space should be provided at podium or roof levels	**Satisfactory** Condition is recommended to ensure access to commercial unit 61 is not from residential portion of building. There is a large combined service dock for both the residential and non-residential components. Residents would however utilise the waste rooms within the residential car parking areas with waste then being transported to the service dock by the building manager. Parking and communal areas are separated and secured. Secure entry points are provided to residential lobby areas. Pedestrian routes are considered to be safe with adequate passive surveillance and improved through provision of CCTV and lighting. Appropriate conditions are recommended.

Standards/controls	*Comment*
4T Awnings and signage	
Objective 4T-1 Awnings are well located and complement and integrate with the building design	**Satisfactory**
Design guidance	
Awnings should be located along streets with high pedestrian activity and active frontages	
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	
Awnings should be located over building entries for building address and public domain amenity	
Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	
Gutters and down pipes should be integrated and concealed	
Lighting under awnings should be provided for pedestrian safety	
Objective 4T-2 Signage responds to the context and desired streetscape character	**N/A** Condition is recommended confirming signage must be subject to a future application unless exempt.
4U Energy efficiency	
Objective 4U-1 Development incorporates passive environmental design	**Satisfactory** Conditions recommended for additional windows to the eastern and western façade of some units will result in improved solar access.
Design guidance	
Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	
Well located, screened outdoor areas should be provided for clothes drying	

Standards/controls	*Comment*
Objective 4U-2 **Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer** ***Design guidance*** 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 Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	**Satisfactory**
Objective 4U-3 **Adequate natural ventilation minimises the need for mechanical ventilation** ***Design guidance*** 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	**Satisfactory**
4V Water management and conservation	
Objective 4V-1 **Potable water use is minimised** ***Design guidance*** Water efficient fittings, appliances and wastewater reuse should be incorporated Apartments should be individually metered Rainwater should be collected, stored and reused on site Drought tolerant, low water use plants should be used within landscaped areas	**Satisfactory**

Standards/controls	*Comment*
Objective 4V-2 **Urban stormwater is treated on site before being discharged to receiving waters** ***Design guidance*** Water sensitive urban design systems are designed by a suitably qualified professional 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	**Satisfactory** The proposal includes a Water Sensitive Urban Design Report which details water recapture and use in landscaped areas along with gross pollutant traps.
Objective 4V-3 **Flood management systems are integrated into site design** ***Design guidance*** Detention tanks should be located under paved areas, driveways or in basement car parks On large sites parks or open spaces are designed to provide temporary on site detention basins	**Satisfactory**
4W Waste management	
Objective 4W-1 **Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents** ***Design guidance*** Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park Waste and recycling storage areas should be well ventilated Circulation design allows bins to be easily manoeuvred between storage and collection points Temporary storage should be provided for large bulk items such as mattresses A waste management plan should be prepared	**Satisfactory** Suitable storage areas for waste bins for each tower are provided in close proximity to the lift cores. This includes separate bulk waste rooms and FOGO waste areas. A Waste Management Plan has been provided detailing waste volumes expected and capacity of bin rooms. Chutes are provided for general and recyclable waste.

Standards/controls	*Comment*
Objective 4W-2 Domestic waste is minimised by providing safe and convenient source separation and recycling ***Design guidance*** 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 Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses Alternative waste disposal methods such as composting should be provided	**Satisfactory**
4X Building maintenance	
Objective 4X-1 Building design detail provides protection from weathering ***Design guidance*** 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	**Satisfactory**
Objective 4X-2 Systems and access enable ease of maintenance ***Design guidance*** Window design enables cleaning from the inside of the building Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade Design solutions do not require external scaffolding for maintenance access	**Satisfactory**

Standards/controls	*Comment*
Objective 4X-3 **Material selection reduces ongoing maintenance costs** ***Design guidance*** 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	**Satisfactory**

Tower 3

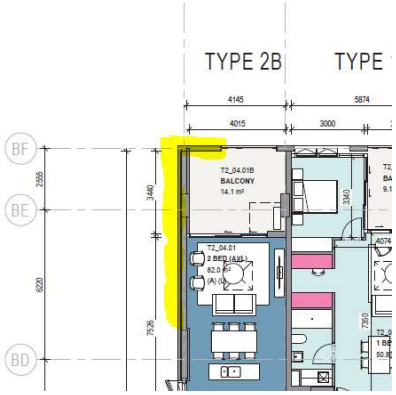
Standards/controls	*Comment*
Part 3 Siting the development	
3A Site analysis Site analysis uses the following key elements to demonstrate that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context: - Site location plan - Aerial photograph - Local context plan - Site context and survey plan - Streetscape elevations and sections - Analysis A written statement explaining how the design of the proposed development has responded to the site analysis must accompany the development application.	**Satisfactory** The site analysis for the overall redevelopment of the site contains this information, including the relationship to potential future built form on surrounding sites as shown in the BVN Design Report
3B Orientation *Objective 3B-1* Building types and layouts respond to the streetscape and site while optimising solar access within the development ***Design guidance*** Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1) Where the street frontage is to the east or west, rear buildings should be orientated to the north 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)	**Satisfactory** Tower 3 aligns to Burelli Street with direct access from the street (at RL 15.00) and also from the basement car park (at RL 18.00).

Standards/controls	*Comment*
Objective 3B-2 Overshadowing of neighbouring properties is minimised during mid winter ***Design guidance*** Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access Solar access to living rooms, balconies and private open spaces of neighbours should be considered 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% If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy Overshadowing should be minimised to the south or down hill by increased upper level setbacks 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 A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	**Satisfactory** There are no existing residential developments on the southern side of Burelli Street and Tower 3 has been redesigned to remove shadowing to MacCabe Park to the south-east of the site.

Standards/controls	*Comment*
3C Public domain interface *Objective 3C-1* Transition between private and public domain is achieved without compromising safety and security ***Design guidance*** Terraces, balconies and courtyard apartments should have direct street entry, where appropriate 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) Upper level balconies and windows should overlook the public domain 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 Length of solid walls should be limited along street frontages Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets 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 Opportunities for people to be concealed should be minimised	**Satisfactory** Commercial uses are proposed at ground level with lobby entrances available from Burelli Street and the internal plaza, with Burelli Street being the primary entry point, providing opportunities for interaction between residents and the public domain.

Standards/controls	*Comment*
Objective 3C-2 Amenity of the public domain is retained and enhanced	**Satisfactory**
Design guidance	Mailboxes are proposed within the lobby (RL 15.00)
Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	Entry to the residential lobby is available from the carpark and also level pedestrian access from Burelli Street.
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	Landscaping around the building is provided to enhance the public domain, with an existing street tree being retained in front of Tower 3.
The visual prominence of underground car park vents should be minimised and located at a low level where possible	Services, including fire control rooms, fire pump room are located behind the lobby and commercial tenancy.
Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	Basement waste storage areas are provided.
Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	
Durable, graffiti resistant and easily cleanable materials should be used	
Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and 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	
On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	
3D Communal and public open space	
Objective 3D-1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 3D-2 Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting ***Design guidance*** 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 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 Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	**Satisfactory** The south facing undercroft area of COS will receive no solar access and be open to the elements, however this area has seating and ping pong tables that will offer recreational opportunities in warmer months. The western area of COS receives good solar access and reasonable amenity will be available overall.
Objective 3D-3 Communal open space is designed to maximise safety ***Design guidance*** Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: • bay windows • corner windows • balconies Communal open space should be well lit Where communal open space/facilities are provided for children and young people they are safe and contained	**Satisfactory** The roof terrace will be visible from the upper levels of the tower from habitable rooms and some balcony areas.
Objective 3D-4 Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood	**Satisfactory** The internal plaza will remain in private ownership but will be publicly accessible 24/7 from all street frontages. This space will not be dedicated to Council as part of the development.

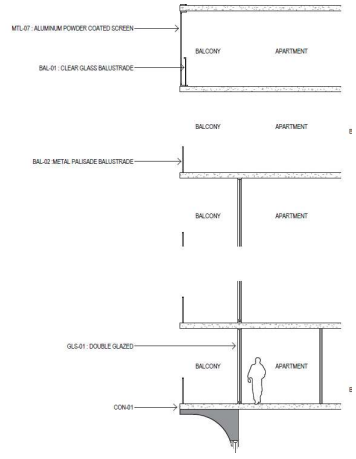
Standards/controls	*Comment*
3E Deep soil zones *Objective 3E-1* Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality	**N/A**
3F Visual privacy *Objective 3F-1* Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy	**Variation sought** See detailed discussion in body of report
Objective 3F-2 Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space	**Satisfactory with conditions** Outlook, light and views from habitable rooms and balconies in apartments located along the eastern and western ends of Tower 3 are limited by blank walls to living areas and fixed perforated screens. At the lower levels, this is a result of reduced building separation, however there appears opportunity to increase access to light, air and outlook by providing additional screened or pop out windows to living areas (eg typical low level apartment identified as Type 2B on dwg AR-DA-B-20-11): 
Design guidance 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	
Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	
Balconies and private terraces should be located in front of living rooms to increase internal privacy	
Windows should be offset from the windows of adjacent buildings	

Standards/controls	*Comment*
3G Pedestrian access and entries	
Objective 3G-1 Building entries and pedestrian access connects to and addresses the public domain	**Satisfactory** Pedestrian access to Tower 3 is available from Burelli Street, from the internal plaza and from the car park. Condition is recommended to ensure direct access to the building is possible from the basement parking. The lobby is identifiable from Burelli Street, being the primary street address.
Design guidance	
Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	
Entry locations relate to the street and subdivision pattern and the existing pedestrian network	
Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries	
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	
Objective 3G-2 Access, entries and pathways are accessible and easy to identify	**Satisfactory** The lobby has a generous void area with glazed roof and glazed façade to Burelli Street to be easily identifiable. Level access to the lifts from the lower ground level (Burelli Street and the carpark area at RL 15.0) is provided. Another more discreet entry point from the internal plaza is available.
Design guidance	
Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	
The design of ground floors and underground car parks minimise level changes along pathways and entries	
Steps and ramps should be integrated into the overall building and landscape design	
For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)	
For large developments electronic access and audio/video intercom should be provided to manage access	

Standards/controls	*Comment*
Objective 3G-3 Large sites provide pedestrian links for access to streets and connection to destinations ***Design guidance*** Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport 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	**Satisfactory** The site incorporates multiple pedestrian links that will provide additional routes between the city centre and the railway station through the site. Inclusion of windows to retail premises increases passive surveillance to these links. Activation of the central link between Tower 2 and 3 could be improved by incorporating a play area or specific reason to occupy this area.
3H Vehicle access	
Objective 3H-1 Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes ***Design guidance*** 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 Car park entries should be located behind the building line Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout Car park entry and access should be located on secondary streets or lanes where available Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided Access point locations should avoid headlight glare to habitable rooms Adequate separation distances should be provided between vehicle entries and street intersections	**Satisfactory** Vehicle access to the site is provided from Burelli Street. A single signalised intersection is proposed for the whole development site, which is considered acceptable and likely to minimise pedestrian vehicle conflicts. Vehicle access appears appropriately designed. Vehicle access is located away from main pedestrian site access. Servicing vehicle access is located off Burelli Street and is suitably located to avoid pedestrian conflicts.

Standards/controls	*Comment*
The width and number of vehicle access points should be limited to the minimum	
Visual impact of long driveways should be minimised through changing alignments and screen planting	
The need for large vehicles to enter or turn around within the site should be avoided	
Garbage collection, loading and servicing areas are screened	
Clear sight lines should be provided at pedestrian and vehicle crossings	
Traffic calming devices such as changes in paving material or textures should be used where appropriate	
Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation	
3J Bicycle and car parking	
Objective 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	**Does not comply** See detailed discussion in body of report
Objective 3J-2 Parking and facilities are provided for other modes of transport	See detailed discussion in body of report
Objective 3J-3 Car park design and access is safe and secure	See detailed discussion in body of report

Standards/controls	*Comment*
Objective 3J-4 Visual and environmental impacts of underground car parking are minimised ***Design guidance*** Excavation should be minimised through efficient car park layouts and ramp design Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites Natural ventilation should be provided to basement and sub basement car parking areas Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	**Satisfactory** Access to parking is suitably located on the site and integrated into the design. Appropriate conditions relating to excavation and geotechnical requirements are recommended.
Objective 3J-5 Visual and environmental impacts of on-grade car parking are minimised	**NA**
Objective 3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised	**NA**
4A Solar and daylight access	
Objective 4A-1 To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	**Satisfactory** See detailed discussion in body of report
Objective 4A-2 Daylight access is maximised where sunlight is limited	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
Objective 4A-3 Design incorporates shading and glare control, particularly for warmer months ***Design guidance*** 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)	**Satisfactory** External louvres, screens, and deep balconies assist with glare control in warmer months. Limited window openings on the western elevation assist with limiting summer sun
4B Natural ventilation	
Objective 4B-1 All habitable rooms are naturally ventilated ***Design guidance*** The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms Depths of habitable rooms support natural ventilation The area of unobstructed window openings should be equal to at least 5% of the floor area served Light wells are not the primary air source for habitable rooms Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: • adjustable windows with large effective openable areas • a variety of window types that provide safety and flexibility such as awnings and louvres • windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors	**Satisfactory** Towers 2 and 3 incorporate perforated operable screens to control glare  

Standards/controls	*Comment*
Objective 4B-2 **The layout and design of single aspect apartments maximises natural ventilation** ***Design guidance*** Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3) Natural ventilation to single aspect apartments is achieved with the following design solutions: • primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) • stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries • courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells	**Satisfactory** Units with windows on a single aspect only have shallower depths.
Objective 4B-3 **The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents**	**Satisfactory** See detailed discussion in body of report

Standards/controls	*Comment*
4C Ceiling heights ***Objective 4C-1*** Ceiling height achieves sufficient natural ventilation and daylight access ***Design criteria*** 1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are: **Minimum ceiling height for apartment and mixed use buildings** Habitable rooms: 2.7m Non-habitable: 2.4m For 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 ceiling slope If located in mixed used areas: 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired ***Design guidance*** Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	**Satisfactory** Floor to ceiling heights are minimum 2.7m.
Objective 4C-2 Ceiling height increases the sense of space in apartments and provides for well proportioned rooms	**N/A**
Objective 4C-3 Ceiling heights contribute to the flexibility of building use over the life of the building	**N/A**

Standards/controls	*Comment*
4D Apartment size and layout *Objective 4D-1* The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity ***Design criteria*** 1. Apartments are required to have the following minimum internal areas: Apartment type / Minimum 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 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 ***Design guidance*** Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space) A window should be visible from any point in a habitable room Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits	**Satisfactory** Minimum internal areas for apartments are achieved. Windows are not visible from some of the kitchens, in some units. Condition is recommended to add an additional windows on the eastern or western façade to address this concern and provide improved solar access for relevant units.

Standards/controls	*Comment*
Objective 4D-2 Environmental performance of the apartment is maximised ***Design criteria*** 1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height 2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window ***Design guidance*** Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths All living areas and bedrooms should be located on the external face of the building Where possible: • bathrooms and laundries should have an external openable window • main living spaces should be oriented toward the primary outlook and aspect and away from noise sources	**Satisfactory** 8m distance to a window is achieved. Most bathrooms and laundries are internalised and do not have an openable external window.

Standards/controls	*Comment*
Objective 4D-3 **Apartment layouts are designed to accommodate a variety of household activities and needs**	**Satisfactory** Most units achieve the minimum dimensions aside from 2C-1 master bedroom does not achieve 3m minimum dimension.
Design criteria	
1. Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space)	
2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	
3. Living rooms or combined living/dining rooms have a minimum width of: • 3.6m for studio and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments	
4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts	
Design guidance	
Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	
All bedrooms allow a minimum length of 1.5m for robes	
The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high	
Apartment layouts allow flexibility over time, design solutions may include: • dimensions that facilitate a variety of furniture arrangements and removal • spaces for a range of activities and privacy levels between different spaces within the apartment • dual master apartments • dual key apartments *Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments* • room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) • efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	

Standards/controls	*Comment*

4E Private open space and balconies

Objective 4E-1

Apartments provide appropriately sized private open space and balconies to enhance residential amenity

Design criteria

1. All apartments are required to have primary balconies as follows:

Dwelling type	Minimum area	Minimum depth
Studio apartments	4m²	-
1 bedroom apartments	8m²	2m
2 bedroom apartments	10m²	2m
3+ bedroom apartments	12m²	2.4m

The minimum balcony depth to be counted as contributing to the balcony area is 1m

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

Design guidance

Increased communal open space should be provided where the number or size of balconies are reduced

Storage areas on balconies is additional to the minimum balcony size

Balcony use may be limited in some proposals by:

- consistently high wind speeds at 10 storeys and above
- close proximity to road, rail or other noise sources
- exposure to significant levels of aircraft noise
- heritage and adaptive reuse of existing buildings

In these situations, juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated

Satisfactory

Primary balconies meet the minimum size and dimensions.

ADG report by BVN notes that a an additional 0.5sqm allowance above the minimum areas is provided for AC units.

There are no ground level apartments

Standards/controls	*Comment*
Objective 4E-2 **Primary private open space and balconies are appropriately located to enhance liveability for residents** ***Design guidance*** Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space Private open spaces and balconies predominantly face north, east or west Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	**Satisfactory** POS directly accessible from living areas.
Objective 4E-3 **Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building** ***Design guidance*** 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 Full width full height glass balustrades alone are generally not desirable Projecting balconies should be integrated into the building design and the design of soffits considered Operable screens, shutters, hoods and pergolas are used to control sunlight and wind Balustrades are set back from the building or balcony edge where overlooking or safety is an issue Downpipes and balcony drainage are integrated with the overall facade and building design Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design	**Satisfactory** POS is appropriately designed and integrated into the architectural form and detail of the building.

Standards/controls	*Comment*
Ceilings of apartments below terraces should be insulated to avoid heat loss	
Water and gas outlets should be provided for primary balconies and private open space	
Objective 4E-4 **Private open space and balcony design maximises safety**	**Satisfactory** Minimum 1.2m high balustrades are proposed.
Design guidance	
Changes in ground levels or landscaping are minimised	
Design and detailing of balconies avoids opportunities for climbing and falls	
4F Common circulation and spaces	
Objective 4F-1 **Common circulation spaces achieve good amenity and properly service the number of apartments**	**Satisfactory** See detailed discussion in body of report
Objective 4F-2 **Common circulation spaces promote safety and provide for social interaction between residents**	**Satisfactory** Corridors are straight, but with limited opportunity for seating.
Design guidance	
Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines	
Tight corners and spaces are avoided	
Circulation spaces should be well lit at night	
Legible signage should be provided for apartment numbers, common areas and general wayfinding	
Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	
In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally co-located with communal open space	
Where external galleries are provided, they are more open than closed above the balustrade along their length	

Standards/controls	*Comment*
4G Storage	
Objective 4G-1 **Adequate, well designed storage is provided in each apartment** ***Design criteria*** 1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size volume Studio apartments / 4m³ 1 bedroom apartments / 6m³ 2 bedroom apartments / 8m³ 3+ bedroom apartments / 10m³ At least 50% of the required storage is to be located within the apartment ***Design guidance*** Storage is accessible from either circulation or living areas Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street Left over space such as under stairs is used for storage	**Satisfactory** Storage schedule shows provision of storage within apartments and in basement storage cages to meet these requirements.
Objective 4G-2 **Additional storage is conveniently located, accessible and nominated for individual apartments** ***Design guidance*** Storage not located in apartments is secure and clearly allocated to specific apartments Storage is provided for larger and less frequently accessed items Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible If communal storage rooms are provided they should be accessible from common circulation areas of the building Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	**Satisfactory** Additional storage for each unit is provided within the basement with suitable areas to ensure storage is conveniently located on each car park level. Condition is recommended to ensure basement storage is located within proximity of relevant car space.

Standards/controls	*Comment*
4H Acoustic privacy	
Objective 4H-1 Noise transfer is minimised through the siting of buildings and building layout	**Satisfactory** The layout provides separation from noisy or common areas where possible. Conditions are recommended for the installation of ceiling fans where the acoustic report relies on apartment windows to be closed to achieve suitable acoustic levels.
Design guidance	
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)	
Window and door openings are generally orientated 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	
Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources	
The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	
Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms	
Objective 4H-2 Noise impacts are mitigated within apartments through layout and acoustic treatments	**Satisfactory** Layout achieves this objective, see above comments and also noted that the access to loading dock is separated from bedroom areas.
Design guidance	
Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers	
Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: • double or acoustic glazing • acoustic seals • use of materials with low noise penetration properties • continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	

Standards/controls	*Comment*
4J Noise and pollution ***Objective 4J-1*** **In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings**	**Satisfactory** See detailed discussion in body of report
Objective 4J-2 **Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission** ***Design guidance*** 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	**Satisfactory** Conditions are recommended to ensure the provisions contained within he submitted acoustic report are incorporated into the design.
4K Apartment mix ***Objective 4K-1*** **A range of apartment types and sizes is provided to cater for different household types now and into the future** ***Design guidance*** A variety of apartment types is provided 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 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	**Satisfactory** The proposal provides a mixture of 3, 2, and 1 bedroom units with a variety of floor plans.

Standards/controls	*Comment*
Objective 4K-2 The apartment mix is distributed to suitable locations within the building ***Design guidance*** Different apartment types are located to achieve successful facade composition and to optimise solar access (see figure 4K.3) 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	**Satisfactory** 1 x 3B apartment is located on Level 5 where COS is proposed. This level also has a generous 1B apartment. Other 3B units are located on higher levels with larger balconies.
4L Ground floor apartments	
Objective 4L-1 Street frontage activity is maximised where ground floor apartments are located	**N/A**
Objective 4L-2 Design of ground floor apartments delivers amenity and safety for residents	**N/A**
4M Facades	
Objective 4M-1 Building facades provide visual interest along the street while respecting the character of the local area ***Design guidance*** 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 Building services should be integrated within the overall facade	**Satisfactory** Different materials identify the podium base comprising brickwork and concrete with lighter elements above. Level 5 where the COS areas are located provides a visual break in the building to identify the podium, consistent with adjacent Tower 2 and to provide the appearance of a street frontage height to meet Council's controls (i.e. 12m-24m street frontage).

Standards/controls	*Comment*
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	
Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	
Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals	
Objective 4M-2 **Building functions are expressed by the facade**	**Satisfactory** The residential lobby and apartments are identifiable on the Burelli Street façade.
Design guidance	
Building entries should be clearly defined	
Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	
The apartment layout should be expressed externally through facade features such as party walls and floor slabs	
4N Roof design	
Objective 4N-1 **Roof treatments are integrated into the building design and positively respond to the street**	**Satisfactory** A flat roof is proposed which accommodates some PV panels.
Design guidance	
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	

Standards/controls	*Comment*
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	
Objective 4N-2 **Opportunities to use roof space for residential accommodation and open space are maximised** ***Design guidance*** Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	**Satisfactory** The podium roof level is used for communal open space. The penthouse unit utilises a large part of the roof as private open space. The roof of the building is not proposed to be habitable or accessed
Objective 4N-3 **Roof design incorporates sustainability features** ***Design guidance*** Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: • the roof lifts to the north • eaves and overhangs shade walls and windows from summer sun Skylights and ventilation systems should be integrated into the roof design	**Satisfactory** The roof accommodates some PV panels and water catchment.

Standards/controls	*Comment*
4O Landscape design	
Objective 4O-1 **Landscape design is viable and sustainable** ***Design guidance*** 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 Ongoing maintenance plans should be prepared 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 Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4)	**Satisfactory** Landscaping is proposed to the podium COS area. Appropriate conditions relating to landscaping are recommended by Council's landscape officer.
Objective 4O-2 **Landscape design contributes to the streetscape and amenity** ***Design guidance*** Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops Significant landscape features should be protected by: • tree protection zones (see figure 4O.5) • appropriate signage and fencing during construction Plants selected should be endemic to the region and reflect the local ecology	**Satisfactory** The site incorporates landscaped areas on either side of Tower 3 and retains the existing street trees in Burelli Street. This will contribute towards a green streetscape.

Standards/controls	*Comment*
4P Planting on structures ***Objective 4P-1*** Appropriate soil profiles are provided ***Design guidance*** Structures are reinforced for additional saturated soil weight Soil volume is appropriate for plant growth, considerations include: • modifying depths and widths according to the planting mix and irrigation frequency • free draining and long soil life span • tree anchorage Minimum soil standards for plant sizes should be provided in accordance with Table 5	**Satisfactory** Conditions are recommended to ensure planting on structure is supported by adequate soil depth.
Objective 4P-2 Plant growth is optimised with appropriate selection and maintenance ***Design guidance*** 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 A landscape maintenance plan is prepared Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	**Satisfactory** Suitable conditions are recommended.

Standards/controls	*Comment*
Objective 4P-3 Planting on structures contributes to the quality and amenity of communal and public open spaces ***Design guidance*** 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	**Satisfactory** COS is appropriately designed and will provide a suitable level of amenity to residents.
4Q Universal design	
Objective 4Q-1 Universal design features are included in apartment design to promote flexible housing for all community members ***Design guidance*** Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	**Satisfactory** 20% of the units meet the universal design features.
Objective 4Q-2 A variety of apartments with adaptable designs are provided ***Design guidance*** Adaptable housing should be provided in accordance with the relevant council policy Design solutions for adaptable apartments include: • convenient access to communal and public areas • high level of solar access • minimal structural change and residential amenity loss when adapted • larger car parking spaces for accessibility • parking titled separately from apartments or shared car parking arrangements	**Satisfactory** Council requires 10% of the units to be adaptable. The Access Review prepared by Morris Goding Access Consulting states that the 10% can be incorporated into the 20% universal if they meet the relevant standards. The proposal provides 20% that meet the universal design features, 10% of which meet the adaptable requirements.

Standards/controls	*Comment*
Objective 4Q-3 Apartment layouts are flexible and accommodate a range of lifestyle needs ***Design guidance*** 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	**Satisfactory** Variety in apartment layouts is provided.
4R Adaptive reuse	
Objective 4R-1 New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place	**N/A**
Objective 4R-2 Adapted buildings provide residential amenity while not precluding future adaptive reuse	**N/A**
4S Mixed use	
Objective 4S-1 Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement ***Design guidance*** Mixed use development should be concentrated around public transport and centres 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	**Satisfactory**

Standards/controls	*Comment*
Objective 4S-2 **Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents** ***Design guidance*** 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 Landscaped communal open space should be provided at podium or roof levels	**Satisfactory** There is a large combined service dock for both the residential and non-residential components. Residents would however utilise the waste rooms within the residential car parking areas with waste then being transported to the service dock by the building manager. Parking and communal areas are separated and secured. Secure entry points are provided to residential lobby areas. Pedestrian routes allow adequate passive surveillance and improved through provision of CCTV and lighting. Appropriate conditions are recommended.

Standards/controls	*Comment*
4T Awnings and signage	
Objective 4T-1 Awnings are well located and complement and integrate with the building design	**Satisfactory**
Design guidance	
Awnings should be located along streets with high pedestrian activity and active frontages	
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	
Awnings should be located over building entries for building address and public domain amenity	
Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	
Gutters and down pipes should be integrated and concealed	
Lighting under awnings should be provided for pedestrian safety	
Objective 4T-2 Signage responds to the context and desired streetscape character	**N/A** Condition is recommended confirming signage must be subject to a future application unless exempt.
4U Energy efficiency	
Objective 4U-1 Development incorporates passive environmental design	**Satisfactory** Conditions recommended for additional windows to the eastern and western façade of some units will result in improved solar access.
Design guidance	
Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	
Well located, screened outdoor areas should be provided for clothes drying	

Standards/controls	*Comment*
Objective 4U-2 **Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer** ***Design guidance*** 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 Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	**Satisfactory**
Objective 4U-3 **Adequate natural ventilation minimises the need for mechanical ventilation** ***Design guidance*** 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	**Satisfactory**
4V Water management and conservation	
Objective 4V-1 **Potable water use is minimised** ***Design guidance*** Water efficient fittings, appliances and wastewater reuse should be incorporated Apartments should be individually metered Rainwater should be collected, stored and reused on site Drought tolerant, low water use plants should be used within landscaped areas	**Satisfactory**

Standards/controls	*Comment*
Objective 4V-2 **Urban stormwater is treated on site before being discharged to receiving waters** ***Design guidance*** Water sensitive urban design systems are designed by a suitably qualified professional 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	**Satisfactory** The proposal includes a Water Sensitive Urban Design Report which details water recapture and use in landscaped areas along with gross pollutant traps.
Objective 4V-3 **Flood management systems are integrated into site design** ***Design guidance*** Detention tanks should be located under paved areas, driveways or in basement car parks On large sites parks or open spaces are designed to provide temporary on site detention basins	**Satisfactory**
4W Waste management	
Objective 4W-1 **Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents** ***Design guidance*** Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park Waste and recycling storage areas should be well ventilated Circulation design allows bins to be easily manoeuvred between storage and collection points Temporary storage should be provided for large bulk items such as mattresses A waste management plan should be prepared	**Satisfactory** Suitable storage areas for waste bins for each tower are provided in close proximity to the lift cores. This includes separate bulk waste rooms and FOGO waste areas. A Waste Management Plan has been provided detailing waste volumes expected and capacity of bin rooms. Chutes are provided for general and recyclable waste.

Standards/controls	*Comment*
Objective 4W-2 Domestic waste is minimised by providing safe and convenient source separation and recycling ***Design guidance*** 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 Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses Alternative waste disposal methods such as composting should be provided	**Satisfactory**
4X Building maintenance	
Objective 4X-1 Building design detail provides protection from weathering ***Design guidance*** 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	**Satisfactory**
Objective 4X-2 Systems and access enable ease of maintenance ***Design guidance*** Window design enables cleaning from the inside of the building Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade Design solutions do not require external scaffolding for maintenance access	**Satisfactory**

Standards/controls	*Comment*
Objective 4X-3 **Material selection reduces ongoing maintenance costs** ***Design guidance*** 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	**Satisfactory**