

SEPP 65 Design Statement Revision 02

92-96 Victoria Avenue Chatswood | 20003

Prepared for Networked Urban Solutions Pty Ltd

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SEPP 65

Design Quality Principles

1

The following content outlines the urban design scheme against the nine Principles of Design

1.1 Principle 1: Context and Neighbourhood Character

Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions.

Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.

The site is adjacent to North Willoughby Local Centre, and well connected to the Chatswood CBD through Victoria Avenue.

Traditional streetscape in the town centre is defined by two-storey street frontages. However, North Willoughby Local Centre is under transformation. Retail/commercial uses together with shop-top housing coexist in the local centre. The area outside the local centre is characterised with low to medium density residential dwellings.

The site is bound by Victoria Avenue and George Brain Lane. Victoria Avenue is a main connector road with well planted street trees, which provides easy access to the Chatswood CBD and the region. George Brain Lane is a 6m wide service lane, providing vehicular access to the residential properties along Victoria Avenue and Macmahon Street.

The site, at the western side, is adjacent to the local centre which is subject to up to 6-storey height, and at the eastern side, is adjacent to a 2-3 storeys seniors living apartment. The site itself plays an important role transitioning the local centre character to residential living. The proposed built form carefully examines the interfaces to the different building typologies by providing a height transition from west towards east. The proposal also preserves the consistent and continuous frontage along Victoria Avenue by introducing an articulated setback approach to response to the change of land uses from North Willoughby Local Centre to the low density area.

1.2 Principle 2: Built Form and Scale

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

Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

The indicative Master Plan for North Willoughby shows an increase heights up to 6 storeys and FSR up to 2.8:1 for amalgamated sites at the corners of the intersection of Victoria and Penshurst Streets, with a building height of 3 and 4 storeys adjacent to the site. The built form across Victoria Avenue is a 5 storeys shop-top housing development. A seniors living development is to the east of the site, providing 2-3 storeys built forms. To the south of the site, across George Brain Lane, the majority of the built form is the garages of properties along Macmahon Steet.

In response to different land uses, building heights and subdivision orientation for the immediate surroundings, the proposed four discrete residential rows of terrace townhouses are of built form of different lengths, heights and relation to each other, providing a composition of built form and interstitial spaces that provide variety and interest:

- Townhouses 1-9 facing Victoria Avenue, enhance the streetscape and provide a transition street setback, from the zero setback of the local centre to the approximate 7.5m setback seniors living apartment to the east.
- A height transition from the local centre towards the R2 low density residential neighbourhood is proposed - The proposed height on the site transitions from 3 storeys close to the local centre towards 2 storeys facing the seniors living.

1.3 Principle 3: Density

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

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

The site presents a great opportunity to accommodate a higher density:

- It is close to public transport - the site is about 1.5km to the Chatswood CBD, and proximity to the proposed City Serving public transport corridor and bus routes.
- It enjoys easy access to the surrounding areas and services - future laneway upgrades (including George Brain Lane) will improve the site's accessibility for pedestrians and provides ready vehicular access to parking areas. The North Willoughby Local Centre Master Plan also includes a new east-west pedestrian link connecting Penshurst Street and George Brain Lane. To improve the pedestrian connectivity, the proposed development dedicates a 2m wide footpath for George Brain Lane widening.

The proposed density on the site presents a contextual fit. The local centre will have an FSR of 2.8:1, and to the east, R2 low density residential development has an FSR of 0.4:1. The proposed development will provide an FSR of 1:1 as an appropriate transition between local centre and low density residential.

The proposal also demonstrates high level residential amenity with compliant solar access, natural ventilation and sizable deep soil, private and public open spaces.

1.4 Principle 4: Sustainability

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

The proposed 22 townhouses all have dual aspects which will promote natural cross ventilation. The shadow analysis diagrams indicate that there is no major overshadowing issues to the surrounding properties, and all the proposed townhouses can receive sufficient solar access, which reduces the energy consumption.

Large deep soil areas are proposed to provide opportunities for soft landscaping and tree planting.

Other sustainable initiatives and strategies will be considered in the detailed design stage.

1.5 Principle 5: Landscape

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

Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values, and preserving green networks. Good landscape design optimises usability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity, provides for practical establishment and long term management.

The proposal provides opportunities for future landscaping. Sizable deep soil areas coupled with ground floor private and communal open spaces are proposed to accommodate soft and hard landscaping. The proposed deep soil areas will also protect the mature trees and provide deep soil landscaping opportunities. Detailed landscape design will be provided in DA stage.

1.6 Principle 6: Amenity

Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being.

Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, and ease of access for all age groups and degrees of mobility.

The proposed development forms four rows of townhouses. The proposed townhouses have a hybrid orientations, including north-south and east-west orientations. This provides the proposed townhouses with high level solar amenity.

All the proposed townhouses are dual aspects, therefore will enjoy natural cross ventilation. The sizable private open spaces on the ground or upper levels will provide high living amenity. In addition to the private open spaces, there is a communal open space provided in the centre of the site, associated with the pedestrian through site link to provide additional amenity and social interaction.

1.7 Principle 7 : Safety

Good design optimises safety and security, within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety.

A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.

The proposal will improve the pedestrian safety along Victoria Avenue and George Brain Lane. Townhouses 1-16 and 22 have direct access from Victoria Avenue and George Brain Lane respectively. This will contribute to activate the street frontage and provide passive surveillance.

The pedestrian through site link is proposed in the centre of the site, overlooked by Townhouses 10-22. The pedestrian safety will be further strengthened by the proposed footpath widening along George Brain Lane.

Other safety consideration will be provided in DA stage.

1.8 Principle 8: Housing Diversity and Social Interaction

Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets.

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

The proposal is a low rise medium density development compressing 22 townhouses. A total of 143sqm communal open space is proposed in the centre of the site coupled with the through site pedestrian link. This will provide a place for the future residents and visitors to meet and socialise. Detailed design will be provided in the DA stage.

1.9 Principle 9 : Aesthetics

Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures.

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

The proposal presents a considerable built form and setback outcome to response to the existing and evolving characters of the neighbourhood. The proposed building height transition, street and upper level setbacks as well as separations between the townhouses will facilitate achieving design excellence and high quality aesthetics in the detailed design stage.

ADG Response Table

2

The following content outlines the urban design scheme’s response to Part 3 & Part 4 of the Apartment Design Guide

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
3	Siting the Development				
3A	Site Analysis				
	3A-1	Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context			
		Each element in the Site Analysis Checklist should be addressed	•		
3B	Orientation				
	3B – 1	Building types and layouts respond to the streetscape and site while optimising solar access within the development			
		Buildings along the street frontage define the street, by facing it and incorporating direct access from the street	•		Victoria Avenue and George Brain Lane are defined by Townhouses 1- 16 and 22. Direct street access for the abovementioned townhouses are provided. A through site link is also proposed to provide access to townhouses 17-21.
		Where the street frontage is to the east or west, rear buildings should be orientated to the north	•		The site has three street frontages with Victoria Avenue to the north, George Brain Lane to the west and south. The proposed buildings orientations reflect the desired streetscape and maximise the amenity.
		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	•		Solar access and overshadowing are minimised. Townhouses 1-9 are fronting Victoria Avenue. The other two rows are orientated to the east and west behind Townhouses 1-9.
	3B – 2	Overshadowing of neighbouring properties is minimised during midwinter			
		Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access	•		The proposal has no major impact on solar access to the adjacent properties and proposed communal open space. The relevant ADG requirements are met.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Solar access to living rooms, balconies and private open spaces of neighbours should be considered	•		A hybrid building orientations is proposed to maximise solar amenity to both the proposed and neighbouring private open spaces.
		Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%			N/A
		If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy			N/A
		Overshadowing should be minimised to the south or downhill by increased upper level setbacks			N/A
		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	•		The potential overlooking and overshadowing issues to the adjacent properties, in particular the seniors living, are minimised by introducing the ADG compliant separations.
		A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings			N/A
3C	Public Domain Interface				
	3C – 1	Transition between private and public domain is achieved without compromising safety and security			
		Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	•		Direct entries to Victoria Avenue and George Brain Lane are proposed to Townhouses 1-16 and 22. Townhouses 17-21 have accesses to a proposed through site link connecting Victoria Avenue and George Brain Lane.
		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	•		Able to comply at the Development Application (DA) stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Upper level balconies and windows should overlook the public domain	•		The proposed building envelopes can facilitate this in the detailed design stage.
		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	•		This can be achieved in the detailed design stage.
		Length of solid walls should be limited along street frontages	•		This can be achieved in the detailed design stage.
		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	•		Townhouses are proposed on the site. Communal open space is proposed close to the centre of the site, forming a meeting place to socialise and gathering. Seating close to each townhouse entry can be provided at the detailed design stage.
		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: <ul style="list-style-type: none"> architectural detailing changes in materials plant species colours 	•		The proposed townhouse typology has this embedded in the design.
		Opportunities for people to be concealed should be minimised	•		This can be achieved in the detailed design stage.

3C – 2 Amenity of public domain is retained and enhanced

Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking			N/A. No raised terraces or sub-basement car parking to the street are proposed.
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	•		Mailboxes will be attached to each townhouse.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		The visual prominence of underground car park vents should be minimised and located at a low level where possible	•		This can be achieved in the detailed design stage.
		Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	•		Garbage storage areas are identified in the basement. The proposed basement has the potential to accommodate other required uses. Detailed design will be provided at DA stage.
		Durable, graffiti resistant and easily cleanable materials should be used	•		This can be achieved in the detailed design stage.
		Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: <ul style="list-style-type: none"> 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 			N/A. The site adjoins the North Willoughby Local Centre to the west and the established residential areas to the south and east.
		On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking			N/A
3D	Communal and Public Open Space				
	3D – 1	An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping			
	Design Criterion 1.	Communal open space has a minimum area equal to 25% of the site		•	The proposal complies with the relevant DCP requirements for low rise medium density residential development. A total of 143m ² communal open space with a minimum dimension of 5m is proposed, which is about 6% of the site.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	Design Criterion 2.	Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)	•		The proposal complies with this requirement. Refer to the shadow diagrams provided.
		Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions	•		A total of 143m ² communal open space with a minimum dimension of 5m is proposed
		Communal open space should be co-located with deep soil areas		•	Given the proposal is a low rise medium density development, the deep soil areas are co-located with the proposed ground floor private open spaces and along boundary interfaces to maximise landscaping opportunities for each townhouses. The proposed communal open space is located at the centre of the site with the basement car park proposed underneath.
		Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	•		The proposed communal open space is located at the centre of the site with easy access from a through site link.
		Where communal open space cannot be provided at ground level, it should be provided on a podium or roof			N/A
		Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: <ul style="list-style-type: none"> • Provide communal spaces elsewhere such as a landscaped roof top terrace or a common room • Provide larger balconies or increased private open space for apartments • Demonstrate good proximity to public open space and facilities and/or provide contributions to public open space 	•		The proposal contains 22 townhouses, all of which have significant level of private amenity. Sizable ground floor private open spaces coupled with upper level balconies are provided to maximise living amenity.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	3D – 2	Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting			
		Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: <ul style="list-style-type: none"> Seating for individuals or groups Barbecue areas Play equipment or play areas Swimming pools, gyms, tennis courts or common rooms 	•		This can be achieved in the detailed design stage.
		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	•		Microclimate of the site is considered. The proposed communal open space can receive adequate solar in winter and shade in summer.
		Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	•		This can be achieved in the detailed design stage.
	3D – 3	Communal open space is designed to maximise safety			
		Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: <ul style="list-style-type: none"> Bay windows Corner windows Balconies 	•		The proposed communal open space is located at the centre of the site with high visibility from the surroundings and easy access from a through site link.
		Communal open space should be well lit	•		This can be achieved in the detailed design stage.
		Where communal open space/ facilities are provided for children and young people they are safe and contained	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	3D – 4	Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood			
		The public open space should be well connected with public streets along at least one edge			N/A. The proposal does not include any public open space. A communal open space is proposed at the centre of the site.
		The public open space should be connected with nearby parks and other landscape elements			N/A
		Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid			N/A
		Solar access should be provided year round along with protection from strong winds			N/A
		Opportunities for a range of recreational activities should be provided for people of all ages			N/A
		A positive address and active frontages should be provided adjacent to public open space			N/A
		Boundaries should be clearly defined between public open space and private areas			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies														
			Yes	No	Notes												
3E	Deep Soil Zones																
	3E – 1	Deep soil zones provide areas on the site that allow for and support healthy plant tree growth. They improve residential amenity and promote management of water and air quality															
	Design Criterion 1	<div>Deep soil zones are to meet the following minimum requirements:</div> <table><tr><th>Site area</th><th>Minimum dimensions</th><th>Deep soil zone (% of site area)</th></tr><tr><td>less than 650m²</td><td>-</td><td rowspan="4">7%</td></tr><tr><td>650m² – 1,500m²</td><td>3m</td></tr><tr><td>Greater than 1,500m²</td><td>6m</td></tr><tr><td>Greater than 1,500m² with significant existing tree cover</td><td>6m</td></tr></table>	Site area	Minimum dimensions	Deep soil zone (% of site area)	less than 650m ²	-	7%	650m ² – 1,500m ²	3m	Greater than 1,500m ²	6m	Greater than 1,500m ² with significant existing tree cover	6m	<div>•</div>		The proposed ADG compliant deep soil areas, which have 6m minimum dimensions, are about 16% of the site area.
Site area	Minimum dimensions	Deep soil zone (% of site area)															
less than 650m ²	-	7%															
650m ² – 1,500m ²	3m																
Greater than 1,500m ²	6m																
Greater than 1,500m ² with significant existing tree cover	6m																
		<div>On some sites it may be possible to provide larger deep soil zones, depending on the site area and context:</div> <div><div>•</div><div>10% of the site as deep soil on sites with an area of 650m² – 1,500m²</div><div>•</div><div>15% of the site as deep soil on sites greater than 1,500m²</div></div>	<div>•</div>		A greater deep soil area is proposed. The overall deep soil areas proposed is about 656m ² of the site area, including the ones having less than 6m dimension.												

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include:</p> <ul style="list-style-type: none"> • Basement and sub-basement car park design that is consolidated beneath building footprints • Use of increased front and side setbacks • Adequate clearance around trees to ensure long term health • Co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil 	•		A 6m wide deep soil zone is proposed along the east common boundary to protect the mature tree in the adjacent property. The proposed deep soil zone will also accommodate future deep soil tree planting.
		<p>Achieving the design criteria may not be possible on some sites including where:</p> <ul style="list-style-type: none"> • The location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres) • There is 100% site coverage or non-residential uses at ground floor level • Where a proposal does not achieve deep soil requirements, acceptable storm-water management should be achieved and alternative forms of planting provided such as on structure 			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies														
			Yes	No	Notes												
3F	Visual Privacy																
	3F – 1	Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy															
	Design Criterion 1	<p>Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to the side and rear boundaries are as follows:</p> <table><tr><th>Building Height</th><th>Habitable Room and Balconies</th><th>Non Habitable</th></tr><tr><td>Up to 12 (4 storeys)</td><td>6m</td><td>3m</td></tr><tr><td>Up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr><tr><td>Over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr></table> <p>Note: Separation distances between buildings on the same site should combine required building separations depending on the type of room</p> <p>Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighbouring properties</p>	Building Height	Habitable Room and Balconies	Non Habitable	Up to 12 (4 storeys)	6m	3m	Up to 25m (5-8 storeys)	9m	4.5m	Over 25m (9+ storeys)	12m	6m	<ul style="list-style-type: none">		<p>The proposal is a low rise medium density development compressing 22 townhouses with the maximum 3-storey building height.</p> <p>3m and 6m setbacks to the east common boundary is proposed for Townhouse 9 and Townhouses 17-22 respectively. The proposed building envelopes will enable the compliances with the relevant requirements for buildings up to 4 storeys in the detailed design stage.</p> <p>Internal separations range between 5m and 13.7m, which will allow compliant separations in the detailed design stage.</p>
Building Height	Habitable Room and Balconies	Non Habitable															
Up to 12 (4 storeys)	6m	3m															
Up to 25m (5-8 storeys)	9m	4.5m															
Over 25m (9+ storeys)	12m	6m															
		Generally one step in the built form as the height increases due to building separations is desirable. Additional steps should be careful not to cause a ‘ziggurat’ appearance			N/A												
		<p>For residential buildings next to commercial buildings, separation distances should be measured as follows:</p> <ul style="list-style-type: none">For retail, office spaces and commercial balconies use the habitable room distancesFor service and plant areas use the non-habitable room distances	<ul style="list-style-type: none">		<p>3-storey townhouses are proposed facing North Willoughby Local Centre. 5m setbacks to the centre line of George Brain Lane are proposed for Townhouses 10-16 and Townhouse 1.</p>												

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>New development should be located and oriented to maximise visual privacy between buildings on site and for neighbouring buildings. Design solutions include:</p> <ul style="list-style-type: none"> • Site layout and building orientation to minimise privacy impacts (see also section 3B Orientation) • On sloping sites, apartments on different levels have appropriate visual separation distances 	•		Compliant separation distances are proposed to ensure visual privacy between buildings on site and for neighbouring buildings. The proposed building envelopes will also enable other privacy measures in the detailed design stage.
		Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping			N/A. The proposal is a low rise medium density development comprising 22 townhouses. No apartment buildings are proposed on the site.
		Direct lines of sight should be avoided for windows and balconies across corners	•		This can be achieved in the detailed design stage.
		No separation is required between blank walls	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	3F – 2	Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space			
		Communal open space, common areas and access paths should be separated from private open space and windows to apartments, particularly habitable room windows. Design solutions may include: <ul style="list-style-type: none"> • 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 	•		Landscaping and fencing are proposed as buffers between private open spaces, communal open space and other public domain. Other amenity/privacy measures can be achieved in the detailed design stage.
		Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	•		This can be achieved in the detailed design stage.
		Balconies and private terraces should be located in front of living rooms to increase internal privacy	•		This can be achieved in the detailed design stage.
		Windows should be offset from the windows of adjacent buildings	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Recessed balconies and/or vertical fins should be used between adjacent balconies	•		This can be achieved in the detailed design stage.
3G	Pedestrian Access and Entries				
	3G – 1	Building entries and pedestrian access connects to and address the public domain			
		Multiple entries (including communal building entries and individual ground floor entries) are provided to activate the street edge	•		Direct access from either a street or a through site link is proposed to all the townhouses.
		Entry locations relate to the street and subdivision pattern and the existing pedestrian network	•		Direct access from either a street or a through site link is proposed to all the townhouses.
		Building entries are clearly identifiable. Communal entries are clearly distinguishable from private entries	•		This can be achieved in the detailed design stage.
		Where street frontage is limited and multiple buildings are located on the site, a primary street address is provided with clear sight lines and pathways to secondary building entries	•		Townhouses 1- 16 and 22 enjoy street address to Victoria Avenue and George Bring Lane. A through site link is proposed to provide access and address to Townhouses 17-21.
	3G – 2	Access, entries and pathways are equitable and easy to identify			
		Building access areas including lift lobbies, stairwells and hallways are clearly visible from the public domain and communal spaces	•		All the townhouses will have clear and direct access from a street or a through site link. No lift lobbies are proposed.
		The design of ground floors and underground car parks minimise level changes along pathways and entries	•		The proposal does not envision any level changes within the basement or ground floors.
		Steps and ramps are integrated into the overall building and landscape design	•		This can be achieved in the detailed design stage.
		For large developments 'way finding' maps should be provided to assist visitors and residents	•		This can be achieved in the detailed design stage.
		For large developments electronic access and audio/video intercom should be provided to manage access	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	3G – 3	Pedestrian links through developments provide access to streets and connect destinations			
		Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport	•		A pedestrian through site link is proposed through the centre of the site, connecting Victoria Avenue and George Brain Lane.
		Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate	•		The proposed through site link has a direct line of sight from Victoria Ave and George Brain Lane and is overlooked by the proposed townhouses.
3H		Vehicle Access			
	3H – 1	Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes			
		Car park access is integrated with the building's overall facade, design solutions may include: <ul style="list-style-type: none"> The materials and colour palette minimise visibility from the street Security doors or gates at entries that minimise voids in the facade Where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed 	•		This can be achieved in the detailed design stage.
		Car park entries are located behind the building line		•	The proposal is a low rise medium density development. The vehicular entry to the basement is between two rows of the townhouse rather than underneath a building.
		Vehicle entries are located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout		•	The site has a minor topography change. The proposed vehicular access is determined by the road function rather than topography. Therefore the basement entry is located along George Brain Lane to avoid vehicular access from Victoria Avenue.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Car park entry and access is located on secondary streets or lanes where available	•		The basement entry is located along George Brain Lane to avoid vehicular access from Victoria Avenue..
		Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided	•		This can be achieved in the detailed design stage.
		Access point locations avoid headlight glare to habitable rooms	•		This can be achieved in the detailed design stage.
		Adequate separation distances are provided between vehicular entries and street intersections	•		The proposed basement access is located along George Brain Lane and away from any street intersections.
		The width and number of vehicle access points is limited to the minimum	•		Only one vehicular access point is proposed along George Brain Lane.
		Visual impact of long driveways is minimised through changing alignments and screen planting	•		The overall proposed ramp to the basement is about 14.8m.
		The requirement for large vehicles to enter or turnaround within the site is avoided	•		The proposal does not envision large vehicles to enter or turnaround within the site.
		Garbage collection, loading and servicing areas are screened	•		This can be achieved in the detailed design stage.
		Clear sight lines should be provided at pedestrian and vehicle crossings	•		This can be achieved in the detailed design stage.
		Traffic calming devices such as changes in paving material or textures should be used where appropriate	•		This can be achieved in the detailed design stage..
		Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: <ul style="list-style-type: none"> • Changes in surface materials • Level changes • The use of landscaping for separation 	•		The proposed pedestrian and vehicular entries are separated.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
3J	Bicycle and Car Parking				
	3J – 1	Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas			
	Design Criterion 1	<p>For development in the following locations:</p> <ul style="list-style-type: none">On sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; orOn land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre <p>The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less The car parking needs for a development must be provided off street</p>			N/A
		Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site			N/A
		Where less car parking is provided in a development, council should not provide on street resident parking permits			N/A
	3J – 2	Parking and facilities are provided for other modes of transport			
		Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters	<ul style="list-style-type: none">		The proposed indicative basement plan shows the areas designated for motorbikes. The actual layout is subject to detailed design.
		Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas	<ul style="list-style-type: none">		The proposed indicative basement plan shows the areas designated for bicycle parking. The actual layout is subject to detailed design.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Conveniently located charging stations are provided for electric vehicles, where desirable	•		This can be achieved in the detailed design stage.
3J – 3 Car park design and access is safe and secure					
		Supporting facilities within car parks, including garbage, plant and switch rooms, storage areas and car wash bays can be accessed without crossing car parking spaces	•		The proposed indicative basement plan shows the areas designated for storage and services etc. The actual layout is subject to detailed design,
		Direct, clearly visible and well lit access should be provided into common circulation areas	•		This can be achieved in the detailed design stage.
		A clearly defined and visible lobby or waiting area should be provided to lifts and stairs	•		This can be achieved in the detailed design stage.
		For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards	•		The proposal only contains one level of basement. Pedestrian safety can be achieved in the detailed design stage.
3J – 4 Visual and environmental impacts of underground car parking are minimised					
		Excavation should be minimised through efficient car park layouts and ramp design	•		The proposed indicative basement plan shows the function areas. The actual layout is subject to detailed design. Efficient layout can be achieved in the detailed design stage.
		Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles	•		Same as above.
		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	•		The proposed basement level does not protrude above the ground.
		Natural ventilation should be provided to basement and sub-basement car parking areas	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	•		This can be achieved in the detailed design stage.
3J – 5 Visual and environmental impacts of on-grade car parking are minimised					
		On-grade car parking should be avoided	•		The proposal does not contain any on-grade parking.
		Where on-grade car parking is unavoidable, the following design solutions are used: <ul style="list-style-type: none"> • Parking is located on the side or rear of the lot away from the primary street frontage • Cars are screened from view of streets, buildings, communal and private open space areas • Safe and direct access to building entry points is provided • Parking is incorporated into the landscape design of the site, by extending planting and materials into the car park space • Storm-water run-off is managed appropriately from car parking surfaces • Bio-swales, rain gardens or on site detention tanks are provided, where appropriate • Light coloured paving materials or permeable paving systems are used and shade trees are planted between every 4-5 parking spaces to reduce increased surface temperatures from large areas of paving 			N/A.
3J – 6 Visual and environmental impacts of above ground enclosed car parking are minimised					
		Exposed parking should not be located along primary street frontages			N/A. The proposal does not contain any exposed parking.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Screening, landscaping and other design elements including public art should be used to integrate the above ground car parking with the facade. Design solutions may include: <ul style="list-style-type: none"> Car parking that is concealed behind the facade, with windows integrated into the overall facade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels) Car parking that is 'wrapped' with other uses, such as retail, commercial or two storey Small Office/Home Office (SOHO) units along the street frontage 			N/A. The proposal does not contain any exposed parking.
		Positive street address and active frontages should be provided at ground level			N/A. The proposal does not contain any exposed parking.
4	Designing The Building				
4A	Solar and Daylight Access				
	4A – 1	To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space			
	Design Criterion 1	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas	•		The proposed building envelopes demonstrate the capacity of achieving this requirement. The location of living rooms and upper level private open spaces is subject to detailed architectural design at the DA stage.
	Design Criterion 2	In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9am and 3pm at mid-winter			N/A. The site is within Sydney Metropolitan Area.
	Design Criterion 3	A maximum of 15% of apartments in a building receive no direct sunlight between 9am and 3pm at mid winter	•		The proposed building envelopes demonstrate the capacity of achieving this requirement. The internal layout of the individual townhouses is subject to detailed architectural design at the DA stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		The design maximises north aspect and the number of single aspect south facing apartments is minimised	•		All the proposed townhouses have dual aspects. The proposed townhouses are orientated east-west or northerly to maximise the solar access.
		Single aspect, single storey apartments should have a northerly or easterly aspect			N/A. All the proposed townhouses have dual aspects.
		Living areas are best located to the north and service areas to the south and west of apartment	•		The proposed building envelopes demonstrate a great level of solar amenity. The internal layout of the individual townhouses is subject to detailed architectural design at the DA stage.
		To optimise the direct sunlight to habitable rooms and balconies a number of the following design features are used: <ul style="list-style-type: none"> • Dual aspect apartments • Shallow apartment layouts • Two storey and mezzanine level apartments • Bay windows 	•		Same as above.
		To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m ² of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes	•		Same as above.
		Achieving the design criteria may not be possible on some sites. This includes: <ul style="list-style-type: none"> • Where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source • On south facing sloping sites • Where significant views are oriented away from the desired aspect for direct sunlight Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria and how the development meets the objective			N/A. The proposal can achieve the design criteria.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4A – 2	Daylight access is maximised where sunlight is limited			
		Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms	•		The proposed building envelopes demonstrate a great level of solar amenity. The internal layout of the individual townhouses is subject to detailed architectural design at the DA stage.
		Where courtyards are used: <ul style="list-style-type: none"> • Use is restricted to kitchens, bathrooms and service areas • Building services are concealed with appropriate detailing and materials to visible walls • Courtyards are fully open to the sky • Access is provided to the light well from a communal area for cleaning and maintenance • Acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved 			N/A.
		Opportunities for reflected light into apartments are optimised through: <ul style="list-style-type: none"> • Reflective exterior surfaces on buildings opposite south facing windows • Positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light • Integrating light shelves into the design • Light coloured internal finishes 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4A – 3	Design incorporates shading and glare control, particularly for warmer months			
		<p>A number of the following design features are used:</p> <ul style="list-style-type: none"> 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) 	•		This can be achieved in the detailed design stage.
4B	Natural Ventilation				
	4B – 1	All habitable rooms are naturally ventilated			
		The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms	•		The proposed townhouses are orientated east-west or northerly to maximise the solar access and cross ventilation.
		Depths of habitable rooms support natural ventilation	•		This can be achieved in the detailed design stage.
		The area of unobstructed window openings should be equal to at least 5% of the floor area served	•		This can be achieved in the detailed design stage.
		Light wells are not the primary air source for habitable rooms			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>Doors and open-able windows maximise natural ventilation opportunities by using the following design solutions:</p> <ul style="list-style-type: none"> Adjustable windows with large effective open-able 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 	•		This can be achieved in the detailed design stage.
4B – 2 The layout and design of single aspect apartments maximises natural ventilation					
		Apartment depths are limited to maximise ventilation and airflow			N/A. No single aspect townhouses are proposed.
		<p>Natural ventilation to single aspect apartments is achieved with the following design solutions:</p> <ul style="list-style-type: none"> 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 			Same as above.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4B – 3	The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents			
	Design Criterion 1	At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed	•		The proposal achieves 100% natural ventilation. All the proposed townhouses have dual aspects, and therefore are naturally cross ventilated.
	Design Criterion 2	Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line			N/A. The proposal is a low rise medium density development including 22 townhouses. No cross-through apartments are proposed. All the proposed townhouses have a maximum building depth of 12m.
		The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths	•		The proposal is a low rise medium density development including 22 townhouses.
		In cross-through apartments external window and door opening sizes/areas on one side of an apartment (inlet side) are approximately equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side)			N/A. The proposal is a low rise medium density development including 22 townhouses. No cross-through apartments are proposed.
		Apartments are designed to minimise the number of corners, doors and rooms that might obstruct airflow	•		This can be achieved in the detailed design stage.
		Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow	•		All the proposed townhouses have a minimum of 3.1m floor to floor height.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies														
			Yes	No	Notes												
4C	Ceiling Heights																
	4C – 1	Ceiling height achieves sufficient natural ventilation and daylight access															
	Design Criterion 1	<div>Measured from finished floor level to finished ceiling level, minimum ceiling heights are:</div> <table><tr><td colspan="2">Minimum ceiling height for apartment and mixed use buildings</td></tr><tr><td>Habitable rooms</td><td>2.7m</td></tr><tr><td>Non-habitable rooms</td><td>2.4m</td></tr><tr><td>For 2 storey apartments</td><td>2.7m for main living area floor 2.4m for second floor, where its apartment area does not exceed 50% of the apartment area</td></tr><tr><td>Attic spaces</td><td>1.8m at edge of room with a 30 degree minimum ceiling slope</td></tr><tr><td>If located in mixed use areas</td><td>3.3m for ground and first floor to promote future flexibility of use</td></tr></table> <div>These minimums do not preclude higher ceilings if desired</div>	Minimum ceiling height for apartment and mixed use buildings		Habitable rooms	2.7m	Non-habitable rooms	2.4m	For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its apartment area does not exceed 50% of the apartment area	Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope	If located in mixed use areas	3.3m for ground and first floor to promote future flexibility of use	<div>•</div>		All the proposed townhouses have a minimum of 3.1m floor to floor height to enable the compliance with the ceiling height. The design of attic spaces will be in concordance with the relevant standards.
Minimum ceiling height for apartment and mixed use buildings																	
Habitable rooms	2.7m																
Non-habitable rooms	2.4m																
For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its apartment area does not exceed 50% of the apartment area																
Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope																
If located in mixed use areas	3.3m for ground and first floor to promote future flexibility of use																
		Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	<div>•</div>		This can be achieved in the detailed design stage.												

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4C – 2	Ceiling height increases the sense of space in apartments and provides for well-proportioned rooms			
		<p>A number of the following design solutions can be used:</p> <ul style="list-style-type: none"> The hierarchy of rooms in an apartment is defined using changes in ceiling heights and alternatives such as raked or curved ceilings, or double height spaces Well-proportioned rooms are provided, for example, smaller rooms feel larger and more spacious with higher ceilings Ceiling heights are maximised in habitable rooms by ensuring that bulkheads do not intrude. The stacking of service rooms from floor to floor and coordination of bulkhead location above non-habitable areas, such as robes or storage, can assist 	•		This can be achieved in the detailed design stage.
	4C – 3	Ceiling heights contribute to the flexibility of building use over the life of the building			
		<p>Ceiling heights of lower level apartments in centres should be greater than the minimum required by the design criteria allowing flexibility and conversion to non-residential uses</p>			This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies												
			Yes	No	Notes										
4D	Apartment Size and Layout														
	4D – 1	The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity													
	Design Criterion 1	<p>Apartments are required to have the following minimum internal areas:</p> <table><tr><th>Apartment Type</th><th>Minimum Internal Area</th></tr><tr><td>Studio</td><td>35m²</td></tr><tr><td>1 bedroom</td><td>50m²</td></tr><tr><td>2 bedroom</td><td>70m²</td></tr><tr><td>3 bedroom</td><td>90m²</td></tr></table> <p>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</p>	Apartment Type	Minimum Internal Area	Studio	35m ²	1 bedroom	50m ²	2 bedroom	70m ²	3 bedroom	90m ²	•		The proposed building envelopes have provided adequate floor areas to achieve this criterion.
Apartment Type	Minimum Internal Area														
Studio	35m ²														
1 bedroom	50m ²														
2 bedroom	70m ²														
3 bedroom	90m ²														
	Design Criterion 2	<p>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</p> <p>Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)</p> <p>A window should be visible from any point in a habitable room</p> <p>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</p>	•		<p>This can be achieved in the detailed design stage.</p> <p>This can be achieved in the detailed design stage.</p> <p>This can be achieved in the detailed design stage.</p> <p>N/A. All the proposed townhouses are above the minimum internal area requirements.</p>										

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4D – 2	Environmental performance of the apartment is maximised			
	Design Criterion 1	Habitable room depths are limited to a maximum of 2.5 x the ceiling height	•		This can be achieved in the detailed design stage.
	Design Criterion 2	In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window	•		This can be achieved in the detailed design stage.
		Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths			N/A
		All living areas and bedrooms should be located on the external face of the building	•		This can be achieved in the detailed design stage.
		Where possible: <ul style="list-style-type: none"> Bathrooms and laundries should have an external open-able window Main living spaces should be oriented toward the primary outlook and aspect and away from noise sources 	•		This can be achieved in the detailed design stage.
	4D – 3	Apartment layouts are designed to accommodate a variety of household activities and needs			
	Design Criterion 1	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² (excluding wardrobe space)	•		This can be achieved in the detailed design stage.
	Design Criterion 2	Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	•		This can be achieved in the detailed design stage.
	Design Criterion 3	Living rooms or combined living/ dining rooms have a minimum width of: <ul style="list-style-type: none"> 3.6m for studio and 1 bedroom apartments 4m for 2 and 3 bedroom apartments 	•		The width of the proposed townhouses ranges between 4.1m and 4.3m, which complies with the 4m requirement for 2 and 3 bedroom apartments.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	Design Criterion 4	The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts	•		The proposal is a low rise medium density development including 22 townhouses. No cross-through apartments are proposed.
		Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	•		This can be achieved in the detailed design stage.
		All bedrooms allow a minimum length of 1.5m for robes	•		This can be achieved in the detailed design stage.
		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	•		This can be achieved in the detailed design stage.
		Apartment layouts allow flexibility over time, design solutions may include: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies																	
			Yes	No	Notes															
4E	Private Open Space and Balconies																			
	4E – 1	Apartments provide appropriately sized private open space and balconies to enhance residential amenity																		
	Design Criterion 1	<p>All apartments are required to have primary balconies as follows:</p> <table><tr><th>Dwelling Type</th><th>Minimum Area</th><th>Minimum Depth</th></tr><tr><td>Studio apartment</td><td>4m²</td><td>-</td></tr><tr><td>1 bedroom apartments</td><td>8m²</td><td>2m</td></tr><tr><td>2 bedroom apartments</td><td>10m²</td><td>2m</td></tr><tr><td>3 bedroom apartments</td><td>12m²</td><td>2.4m</td></tr></table> <p>The minimum balcony depth to be counted as contributing to the balcony area is 1m</p>	Dwelling Type	Minimum Area	Minimum Depth	Studio apartment	4m ²	-	1 bedroom apartments	8m ²	2m	2 bedroom apartments	10m ²	2m	3 bedroom apartments	12m ²	2.4m	•		<p>The proposed 22 townhouses all have private open spaces on the ground level or the levels above:</p> <ul style="list-style-type: none">Townhouses 1, 2, 3, 4 and 5 have a total private open space area of 83m² , 43m², 43m² , 43m² , and 43m² respectively.Townhouses 6, 7, 8 and 9 have a total private open space area of 61m², 71m², 71m² and 145m² respectively.Townhouses 10, 11, 12, 13, 14, 15 and 16 have a total private open space area of 46m², 46m², 46m², 46m², 42m², 39m² and 76m² respectively.Townhouses 17, 18, 19, 20, 21 and 22 have a total private open space area of 38m², 38m², 38m², 35m², 32m² and 70m² respectively.
Dwelling Type	Minimum Area	Minimum Depth																		
Studio apartment	4m ²	-																		
1 bedroom apartments	8m ²	2m																		
2 bedroom apartments	10m ²	2m																		
3 bedroom apartments	12m ²	2.4m																		
	Design Criterion 2	<p>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</p>	•		<p>All the proposed townhouses have courtyards at ground level with areas range between 28m² and 125m² and a minimum depth of 4m.</p>															
		<p>Increased communal open space should be provided where the number or size of balconies are reduced</p>			<p>N/A</p>															
		<p>Storage areas on balconies is additional to the minimum balcony size</p>			<p>N/A. No storage areas are proposed on balcony.</p>															

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>Balcony use may be limited in some proposals by:</p> <ul style="list-style-type: none"> 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 <p>In these situations, Juliet balconies, operable walls, enclosed winter-gardens 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</p>			N/A
4E – 2 Primary private open space and balconies are appropriately located to enhance liveability for residents					
		Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space	•		This can be achieved in the detailed design stage.
		Private open spaces and balconies predominantly face north, east or west	•		All the proposed townhouses have both front and rear courtyards facing either 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	•		The solar access to the proposed primary open spaces and balconies are maximised.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4E – 3	Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building			
		Solid, partially solid or transparent fences and balustrades are selected to respond to the location. They are 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	•		This can be achieved in the detailed design stage.
		Full width full height glass balustrades alone are generally not desirable	•		This can be achieved in the detailed design stage.
		Projecting balconies should be integrated into the building design and the design of soffits considered	•		This can be achieved in the detailed design stage.
		Operable screens, shutters, hoods and pergolas are used to control sunlight and wind	•		This can be achieved in the detailed design stage.
		Balustrades are set back from the building or balcony edge where overlooking or safety is an issue	•		This can be achieved in the detailed design stage.
		Downpipes and balcony drainage are integrated with the overall facade and building design	•		This can be achieved in the detailed design stage.
		Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design	•		This can be achieved in the detailed design stage.
		Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design	•		This can be achieved in the detailed design stage.
		Ceilings of apartments below terraces should be insulated to avoid heat loss	•		This can be achieved in the detailed design stage.
		Water and gas outlets should be provided for primary balconies and private open space	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4E – 4	Private open space and balcony design maximises safety			
		Changes in ground levels or landscaping are minimised	•		This can be achieved in the detailed design stage.
		Design and detailing of balconies avoids opportunities for climbing and falls	•		This can be achieved in the detailed design stage.
4F	Common Circulation and Spaces				
	4F – 1	Common circulation spaces achieve good amenity and properly service the number of apartments			
	Design Criterion 1	The maximum number of apartments off a circulation core on a single level is eight			N/A. The proposal is a low rise medium density development including 22 townhouses.
	Design Criterion 2	For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40			N/A. The proposal is a low rise medium density development up to 3 storeys in height.
		Greater than minimum requirements for corridor widths and/ or ceiling heights allow comfortable movement and access particularly in entry lobbies, outside lifts and at apartment entry doors			N/A
		Daylight and natural ventilation should be provided to all common circulation spaces that are above ground			N/A
		Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors			N/A
		Longer corridors greater than 12m in length from the lift core should be articulated. Design solutions may include: <ul style="list-style-type: none"> • A series of foyer areas with windows and spaces for seating • Wider areas at apartment entry doors and varied ceiling heights 			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments			N/A
		Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: <ul style="list-style-type: none"> • Sunlight and natural cross ventilation in apartments • Access to ample daylight and natural ventilation in common circulation spaces • Common areas for seating and gathering • Generous corridors with greater than minimum ceiling heights • Other innovative design solutions that provide high levels of amenity 			N/A
		Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level			N/A
		Primary living room or bedroom windows should not open directly onto common circulation spaces, whether open or enclosed. Visual and acoustic privacy from common circulation spaces to any other rooms should be carefully controlled			N/A
4F – 2		Common circulation spaces promote safety and provide for social interaction between residents			
		Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines			N/A
		Tight corners and spaces are avoided			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies												
			Yes	No	Notes										
		Circulation spaces should be well lit at night	•		This can be achieved in the detailed design stage.										
		Legible signage should be provided for apartment numbers, common areas and general wayfinding	•		This can be achieved in the detailed design stage.										
		Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided			N/A										
		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			N/A										
		Where external galleries are provided, they are more open than closed above the balustrade along their length			N/A										
4G	Storage														
	4G – 1	Adequate, well designed storage is provided in each apartment													
	Design Criterion 1	<div>In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:<table><tr><th>Dwelling Type</th><th>Storage size</th></tr><tr><td>Studio apartment</td><td>4m³</td></tr><tr><td>1 bedroom apartments</td><td>6m³</td></tr><tr><td>2 bedroom apartments</td><td>8m³</td></tr><tr><td>3 bedroom apartments</td><td>10m³</td></tr></table></div> <div>At least 50% of the required storage is to be located within the apartment</div>	Dwelling Type	Storage size	Studio apartment	4m ³	1 bedroom apartments	6m ³	2 bedroom apartments	8m ³	3 bedroom apartments	10m ³	•		<div>This can be achieved in the detailed design stage.</div> <div>Note: The proposal is a low rise medium density development. The DCP requires a minimum space of 3m² / dwelling for the townhouse type of development. The proposal has the capacity to accommodate the required storage areas.</div>
Dwelling Type	Storage size														
Studio apartment	4m ³														
1 bedroom apartments	6m ³														
2 bedroom apartments	8m ³														
3 bedroom apartments	10m ³														
		Storage is accessible from either circulation or living areas	•		This can be achieved in the detailed design stage.										

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		Notes
			Yes	No	
		Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street			N/A
		Left over space such as under stairs is used for storage	•		This can be achieved in the detailed design stage.
4G – 2 Additional storage is conveniently located, accessible and nominated for individual apartments					
		Storage not located in apartments is secure and clearly allocated	•		This can be achieved in the detailed design stage.
		Storage is provided for larger and less frequently accessed items	•		This can be achieved in the detailed design stage.
		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	•		This can be achieved in the detailed design stage.
		If communal storage rooms are provided they should be accessible from common circulation areas of the building			N/A
		Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	•		This can be achieved in the detailed design stage.
4H	Acoustic Privacy				
	4H – 1	Noise transfer is minimised through the siting of buildings and building layout			
		Adequate building separation is provided within the development and from neighbouring buildings / adjacent uses (also see section 2F Building separation and section 3F Visual Privacy)	•		Refer to Section 3F Design Criterion 1.
		Window and door openings are generally orientated away from noise sources	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Noisy areas within buildings including building entries and corridors are located next to or above each other and quieter areas next to or above quieter areas	•		This can be achieved in the detailed design stage.
		Storage, circulation areas and non-habitable rooms are located to buffer noise from external sources	•		This can be achieved in the detailed design stage.
		The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	•		This can be achieved in the detailed design stage.
		Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas are located at least 3m away from bedrooms	•		This can be achieved in the detailed design stage.
4H – 2		Noise impacts are mitigated through internal apartment layout and acoustic treatments			
		Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: <ul style="list-style-type: none"> • Rooms with similar noise requirements are grouped together • Doors separate different use zones • Wardrobes in bedrooms are co-located to act as sound buffers 	•		This can be achieved in the detailed design stage.
		Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
4J	Noise and Pollution				
	4J – 1	<p>In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings</p>			
		<p>To minimise impacts the following design solutions may be used:</p> <ul style="list-style-type: none">• Physical separation between buildings and the noise or pollution source• Residential uses are located perpendicular to the noise source and where possible buffered by other uses• Non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces• Non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources• Buildings should respond to both solar access and noise. Where solar access is away from the noise source, non-habitable rooms can provide a buffer• Where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable• Landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry	<ul style="list-style-type: none">•		<p>This can be achieved in the detailed design stage.</p>

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Achieving the design criteria in this Apartment Design Guide may not be possible in some situations due to noise and pollution. Where developments are unable to achieve the design criteria, alternatives may be considered in the following areas: <ul style="list-style-type: none"> Solar and daylight access Private open space and balconies Natural cross ventilation 			N/A
	4J – 2	Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission			
		Design solutions to mitigate noise include: <ul style="list-style-type: none"> 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 	•		This can be achieved in the detailed design stage.
4K	Apartment Mix				
	4K – 1	A range of apartment types and sizes is provided to cater for different household types now and into the future			
		A variety of apartment types is provided			N/A. The proposal is a low rise medium density development.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>The apartment mix is appropriate, taking into consideration:</p> <ul style="list-style-type: none"> The distance to public transport, employment and education centres The current market demands and projected future demographic trends The demand for social and affordable housing Different cultural and socioeconomic group 			N/A. Save as above.
		Flexible apartment configurations, such as dual key apartments, are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households			N/A. Save as above.
	4K – 2	The apartment mix is distributed to suitable locations within the building			
		Different apartment types are located to achieve successful facade composition and to optimise solar access			N/A. The proposal is a low rise medium density development.
		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			N/A. Save as above.
4L	Ground Floor Apartments				
	4L – 1	Street frontage activity is maximised where ground floor apartments are located			
		Direct street access should be provided to ground floor apartments	•		All the proposed townhouses have direct ground floor access.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: <ul style="list-style-type: none"> Both street and foyer entrances to ground floor apartments Private open space is next to the street Doors and windows face the street 	•		All the proposed townhouses have direct access and front yard along a street or through site link.
		Retail or home office spaces are located along street frontages			N/A. The proposal is a low rise medium density development.
		Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion			N/A. Same as above.
4L – 2		Design of ground floor apartments delivers amenity and safety for residents			
		Privacy and safety is provided without obstructing causal surveillance. Design solutions may include: <ul style="list-style-type: none"> Elevation of private gardens and terraces above the street level by 1m – 1.5m Landscaping and private courtyards Window sill heights that minimise sight lines into apartments Integrating balustrades, safety bars or screens with the exterior design 	•		This can be achieved in the detailed design stage.
		Solar access is maximised through: <ul style="list-style-type: none"> High ceilings and tall windows Trees and shrubs that allow solar access in winter and shade in summer 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
4M	Facades				
	4M – 1	Building facades provide visual interest along the street respecting the character of the local area			
		Design solutions for front building facades may include: <ul style="list-style-type: none"> • A composition of varied building elements • A defined base, middle and top of the buildings • Revealing and concealing certain elements • Changes in texture, material, detail and colour to modify the prominence of elements 	•		This can be achieved in the detailed design stage.
		Building services should be integrated within the overall façade	•		This can be achieved in the detailed design stage.
		Building facades should be well resolved with an appropriate scale and proportion to the streetscape and human scale. Design solutions may include: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.
		Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	•		This can be achieved in the detailed design stage.
		Shadow is created on the façade throughout the day with building articulation, balconies and deeper window reveals	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4M – 2	Building functions are expressed by the façade			
		Building entries should be clearly defined	•		This can be achieved in the detailed design stage.
		Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	•		This can be achieved in the detailed design stage.
		The apartment layout should be expressed externally through façade features as parti walls and floor slabs	•		This can be achieved in the detailed design stage.
4N	Roof Design				
	4N – 1	Roof treatments are integrated into the building design and positively respond to the street			
		Roof design relates to the street. Design solutions may include: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage. A hybrid roof forms are envisioned for the site, including pitched roofs to reflect the existing streetscape.
		Roof treatments should be integrated with the building design. Design solutions may include: <ul style="list-style-type: none"> • Roof design proportionate to the overall building size, scale and form • Roof materials complement the building • Service elements are integrated 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4N – 2	Opportunities to use roof space for residential accommodation and open space are maximised			
		Habitable roof space should be provided with good levels of amenity. Design solutions may include: <ul style="list-style-type: none"> Penthouse apartments Dormer or clerestory windows Open-able skylights 	•		This can be achieved in the detailed design stage.
		Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	•		This can be achieved in the detailed design stage.
	4N – 3	Roof design incorporates sustainability features			
		Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: <ul style="list-style-type: none"> The roof lifts to the north Eaves and overhangs shade walls and windows from summer sun 	•		This can be achieved in the detailed design stage.
		Skylights and ventilation systems should be integrated into the roof design	•		This can be achieved in the detailed design stage.
40	Landscape Design				
	40 – 1	Landscape design is viable and sustainable			
		Landscape design should be environmentally sustainable and can enhance environmental performance by incorporating: <ul style="list-style-type: none"> Diverse and appropriate planting Biol-filtration gardens Appropriately planted shading trees Areas for residents to plant vegetables and herbs Composting Green roofs or walls 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Ongoing maintenance plans should be prepared	•		This can be achieved in the detailed design stage.
		Microclimate is enhanced by: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.
		Tree and shrub selection considers size at maturity and the potential for roots to complete	•		This can be achieved in the detailed design stage.
40 – 2		Landscape design contributes to the streetscape and amenity			
		Landscape design responds to the existing site conditions including: <ul style="list-style-type: none"> • Changes of levels • Views • Significant landscape features including trees and rock outcrops 	•		This can be achieved in the detailed design stage.
		Significant landscape features should be protected by: <ul style="list-style-type: none"> • Tree protection zones • Appropriate signage and fencing during construction 	•		This can be achieved in the detailed design stage.
4P	Planting on Structures				
	4P – 1	Appropriate soil profiles are provided			
		Structures are reinforced for additional saturated soil weight	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Soil volume is appropriate for plant growth, considerations include: <ul style="list-style-type: none"> • Modifying depths and widths according to the planting mix and irrigation frequency • Free draining and long soil life span • Tree anchorage 	•		This can be achieved in the detailed design stage.
		Minimum soil standards for plant sizes should be provided in accordance with Table 5	•		This can be achieved in the detailed design stage.
4P – 2 Plant growth is optimised with appropriate selection and maintenance					
		Plants are suited to site conditions, considerations include: <ul style="list-style-type: none"> • Drought and wind tolerance • Seasonal changes in solar access • Modified substrate depths for diverse range of plants • Plant longevity 	•		This can be achieved in the detailed design stage.
		A landscape maintenance plan is prepared	•		This can be achieved in the detailed design stage.
		Irrigation and drainage systems respond to : <ul style="list-style-type: none"> • Changing site conditions • Soil profile and the planting regime • Whether rainwater, stormwater recycled grey water is used 	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4P – 3	Planting on structure contributes to the quality and amenity of communal and public open spaces			
		<p>Building design incorporates opportunities for planting on structures. Design solutions may include:</p> <ul style="list-style-type: none"> Green walls with specialised lighting for indoor green walls All design that incorporates planting Green roofs, particularly where roofs are visible from public domain Planter boxes <p>Note: structures designed to accommodate green walls should be integrated into the building façade and consider the ability of the façade to change over time</p>	•		This can be achieved in the detailed design stage.
4Q	Universal Design				
	4Q – 1	Universal design features are included in apartment design to promote flexible housing for all community members			
		<p>Developments achieve a benchmark of 20% of the total apartment incorporating the Liveable Housing Guideline's silver level universal design features</p>	•		This can be achieved in the detailed design stage.
	4Q – 2	A variety of apartments with adaptable designs are provided			
		<p>Adaptable housing should be provided in accordance with the relevant council policy</p>	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Design solutions for adaptable apartments include: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.
	4Q – 3	Apartment layouts are flexible and accommodate a range of lifestyle needs			
		Apartments design incorporates flexible design solutions which may include: <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.
4R	Adaptive Reuse				
	4R – 1	New additional to existing buildings are contemporary and complementary and enhance an area's identity and sense of place			
		Design solutions may include: <ul style="list-style-type: none"> • New elements to align with the existing building • Additions that complement the existing character, sitting scale, proportion, pattern form and detailing • Use of contemporary and complementary materials, finishes, textures and colours 			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4R – 2	Adapted buildings provide residential amenity while not precluding future adaptive reuse			
		<p>Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include:</p> <ul style="list-style-type: none"> • Generously sized voids in deeper buildings • Alternative apartment types when orientation is poor • Using additions to expand the existing building envelope 			N/A
		<p>Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where developments are unable to achieve the design criteria, alternatives could be considered in the following areas:</p> <ul style="list-style-type: none"> • Where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar and daylight access (see also sections 4A Solar and daylight access and 4B Natural ventilation) • Alternatives to providing deep soil where less than the minimum requirement is currently available on the site • Building and visual separation – subject to demonstrating alternative design approaches to achieving privacy • Common circulation • Car parking • Alternative approaches to private open space and balconies 			N/A

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
4S	Mixed Use				
	4S – 1	Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement			
		Mixed use development should be concentrated around public transport and centres			N/A. The proposal is a low rise medium density development.
	4S – 2	Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents			
		Residential circulation areas should be clearly defined. Design solutions may include: <ul style="list-style-type: none">Residential entries are separated from commercial entries and directly accessible from the streetCommercial service areas are separated from residential componentsResidential car parking and communal facilities are separated or securedConcealment opportunities are avoided			N/A. Same as above.
		Landscape communal open space should be provided at podium or roof levels			N/A. Same as above.
4T	Awnings and Signage				
	4T – 1	Awnings are well located and complement and integrate with the building design			
		Awnings should be located along streets with high pedestrian activity and active frontages			N/A. The proposal is a low rise medium density development. No awnings or signage are proposed.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		A number of the following design solutions are used: <ul style="list-style-type: none"> Continuous awnings are maintained and provided in areas with existing pattern Height, depth, material and form complements the existing street character Protection from the sun and rain is provided Awnings are wrapped around the secondary frontages of corner sites Awnings are retractable in areas without an established pattern 			N/A. Same as above.
		Awnings should be located over building entries for building address and public domain amenity			N/A. Same as above.
		Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure			N/A. Same as above.
		Gutters and down pipes should be integrated and concealed			N/A. Same as above.
		Lighting under awnings should be provided for pedestrian safety			N/A. Same as above.
4T – 2		Signage responds to the context and desired streetscape character			
		Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development	•		N/A. The proposal is a low rise medium density development. No awnings or signage are proposed.
		Legible and discrete way finding should be provided for larger developments			N/A. Same as above.
		Signage is limited to being on and below awnings and in single façade sign on the primary street frontage	•		N/A. Same as above.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
4U	Energy Efficiency				
	4U – 1	Development incorporates passive environmental design			
		Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	•		This can be achieved in the detailed design stage.
		Well located, screened outdoor areas should be provided for clothes drying	•		This can be achieved in the detailed design stage.
	4U – 2	Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer			
		A number of the following design solutions are used: <ul style="list-style-type: none">• The use of smart glass or other technologies on north and west elevations• Thermal mass in the floors and walls of north facing rooms in maximised• Polished concrete floor, tiles, or timber rather than carpet• Insulated roofs, walls and floors and seals on window and door openings• Overhangs and shading devices such as awnings, blinds and screens	•		This can be achieved in the detailed design stage.
		Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4U – 3	Adequate natural ventilation minimises the need for mechanical ventilation			
		<p>A number of the following design solution are used:</p> <ul style="list-style-type: none"> • Rooms with similar usage are grouped together • Natural cross ventilation for apartments is optimised • Natural ventilation is provided to all inhabitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible 	•		This can be achieved in the detailed design stage.
4V	Water Management and Conservation				
	4V – 1	Potable water use is minimised			
		Water efficient fittings, appliances and wastewater reuse should be incorporated	•		This can be achieved in the detailed design stage.
		Apartments should be individually metered	•		This can be achieved in the detailed design stage.
		Rainwater should be collected, stored and reused on site	•		This can be achieved in the detailed design stage.
		Drought tolerant, low water use plants should be used within landscaped areas	•		This can be achieved in the detailed design stage.
	4V – 2	Urban stormwater is treated on site before being discharged to receiving waters			
		Water sensitive urban design systems are designed by a suitably qualified professional	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		<p>A number of the following design solutions are used:</p> <ul style="list-style-type: none"> 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 	•		This can be achieved in the detailed design stage.
4V – 3 Flood management systems are integrated into site design					
		Detention tanks should be located under paved areas, driveways or in basement car parks	•		This can be achieved in the detailed design stage.
		On large sites parks or open spaces are designed to provide temporary on site detention basins	•		This can be achieved in the detailed design stage.
4W	Waste Management				
	4W – 1	Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents			
		Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park	•		Storage of rubbish bins is proposed in the basement level with collection being up on the street. The detailed design will be provided in the DA stage.
		Waste and recycling storage areas should be well ventilated	•		This can be achieved in the detailed design stage.
		Circulation design allows bins to be easily manoeuvred between storage and collection points	•		This can be achieved in the detailed design stage.
		Temporary storage should be provided for large bulk items such as mattresses	•		This can be achieved in the detailed design stage.
		A waste management plan should be prepared	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
	4W – 2	Domestic waste is minimised by providing safe and convenient source separation and recycling			
		All dwellings should have a waste and recycling cupboard or temporary storage area of sufficient size to hold two days' worth of waste and recycling	•		This can be achieved in the detailed design stage.
		Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core	•		This can be achieved in the detailed design stage.
		For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other use			N/A. The proposal is a low rise medium density development compressing 22 townhouses.
		Alternative waste disposal methods such as composting should be provided	•		This can be achieved in the detailed design stage.
4X	Building Maintenance				
	4X – 1	Building design detail provides protection from weathering			
		A number of the following design solutions are used: <ul style="list-style-type: none"> • 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 	•		Able to comply at DA stage.
	4X – 2	Systems and access enable ease of maintenance			
		Window design enables cleaning from the inside of the building	•		This can be achieved in the detailed design stage.

Part No.	Objective No.	Objective Design Criteria Design Guidance	Complies		
			Yes	No	Notes
		Building maintenance systems should be incorporated and integrated into the design of the building form, roof and façade	•		This can be achieved in the detailed design stage.
		Design solutions do not require external scaffolding for maintenance access	•		This can be achieved in the detailed design stage.
		Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems	•		This can be achieved in the detailed design stage.
		Centralised maintenance, services and storage should be provided for communal open space areas within the building	•		This can be achieved in the detailed design stage.
4X – 3		Material selection reduces ongoing maintenance costs			
		<p>A number of the following design solutions are used:</p> <ul style="list-style-type: none"> • 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 	•		This can be achieved in the detailed design stage.

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