SEPP65 DESIGN STATEMENT
168 WALKER STREET NORTH SYDNEY

WOODS BAGOT

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SEPP65 Design Statement
168 Walker Street, North Sydney

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Contents

1

DESIGN VERIFICATION PRINCIPLES

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Design Verification Statement

Prepared to accompany the Section 96 Application submitted to Council

17 October 2017

168 Walker Street, North Sydney

Prepared on behalf:
Aqualand
Grosvenor Place
Level 29, 225 George Street
Sydney NSW 2000

Prepared by:
Woods Bagot

Verification of Qualifications

Derek Scholes and Domenic Alvaro are registered as Architects in New South Wales and are enrolled in the Division of Chartered Architects in the register of Architects pursuant to the Architect Act 1921.
Their registration Numbers are 9645 and 7445.

Statement of Design

Woods Bagot have been responsible for the design of the project since its inception and have worked with related professionals and experts in respect of the matter. The project has been designed to provide a development that is respectful of local planning and design controls and that responds to the best practice design principles of SEPP No. 65.
Woods Bagot verify that the design quality principles set out in Schedule 1, Design quality principles of the State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development are achieved for the proposed development described in the following document.

Derek Scholes
Architect - Sydney
Registered Architect NSW, No. 9645

2

SEPP65 DESIGN PRINCIPLES

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SEPP65 Design Principles 2

2.1 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 located at the north east corner of the North Sydney CBD at the corner McLaren and Walker Street, North Sydney. The subject site is currently occupied by a 19 level SAP building currently used as an office space and proposed to be converted into residential apartments with commercial and retail offerings.

The precinct is characterized by tree lined street frontages and the subject site features deep landscaped setbacks to an elevated ground plane accessed on grade from Walker Street. The site currently is disconnected from McLaren Street due to the slope of the street to Walker Street which elevates the existing ground plane requiring steps and ramping to access the ground plane.

The proposed design drops the ground plane by 900mmm to allow true at grade access off Walker Street and improve the ground plane connection to Walker Street. The existing loading dock has been located away from the prominent Walker and McLaren intersection in order to enhance the street corner through articulated landscaping. The landscaped verges retain their original depth and have been designed with additional planting and sandstone retaining walls in order to build on the character of the existing neighborhood.

The existing rectilinear building form presents a hard street wall with little character. The proposed design proposes a series of highly articulated, lightly connected stepped building forms. The sculptural outcome represents a considered resolution to the street corner and topography of the precinct.

The design of the site as a mixed use development is an appropriate response to the character of the neighborhood and will serve to provide a balanced offering of retail and commercial opportunities sensitive and appropriate to the ongoing development of this precinct.

SEPP65 Design Principles 2

2.2 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 proposed built form takes the existing SAP building as template in regards to height and scale and seeks to substantially improve the character and context of the built form as appropriate to its environment.

This has been done by creating a series of stepped residential 'pods' lightly linked by glazed corridors that respond to the topography of the landscape. The links act as light shafts separating the pods to further break down the scale of the tower forms. The towers are further articulated with a pinched form and softened with curvilinear edges.

Tower heights and setbacks from the site boundaries have been adjusted in response to Council feedback resulting in an appropriate built form that contextually responds to its environment. The forms have been located and adjusted in height to maximise daylighting to living spaces while acknowledging the principle views to the south and the corner site.

At the ground plane the tower forms are sited in order to maximise sunlight to the northern courtyard. The forms are lifted two levels above the ground plane to define the retail perimeter and provide cover to residential and commercial lobbies.

This approach is considered to be less overbearing than a singular tower, and has neatly addressed the bulk and scale issues associated with developing large sites.


McLaren Street View


Walker Street View

SEPP65 Design Principles 2

2.3 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.

Local Amenity

The proposed development is located within an area well served by public transport and community facilities.

The walking time from North Sydney station and the bus interchange to 168 Walker Street is an easy 10 minutes. Bus services can also be easily accessed to the interchange from Miller Street to the west. Public car parks and taxi ranks are plentiful in the vicinity.

With major road links like Lane Cove tunnel, Harbour Bridge links, and the Pacific Highway, North Sydney is centrally located. The nearby street network around the site allows access into the car park off Little Spring Street, directly from Pacific Highway via Berry Street.

South view from site to the North Sydney CBD

On the edge of North Sydney's CBD, 168 Walker Street is seamlessly connected to a range of lifestyle options. The site is located a stone's throw to retail, cafés, bars, fine dining, gyms, health and childcare facilities, North Sydney Oval and a community library.

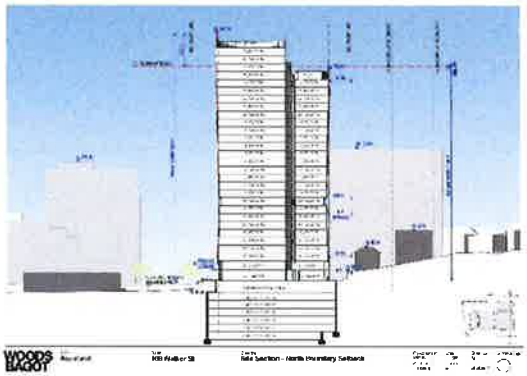
Residents will also be conveniently close to beautiful foreshore parks, premier golf courses and North Sydney Pool.

2.4 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 design proposal is structured around the concepts of sustainability and building longevity. It incorporates a number of strategies to achieve a positive environmental outcome, including:

- rainwater storage and reuse
- rooftop open space landscaping
- preservation of existing landscape features alongside climate and location suitable plant selection
- natural light and ventilation
- naturally ventilated corridors and lobbies
- energy efficient lighting
- proximity to public transport
- improved passive thermal control with winter gardens adopted on all balconies
- specification of locally sourced materials
- low-maintenance, long lifecycle, recyclable and
- reusable materials
- communal recycling and composting facilities
- efficient building services
- bicycle parking
- minimisation of excavation through considered siting of the elevated ground plane.



Minimisation of excavation

SEPP65 Design Principles 2

2.5 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.


North facing internal courtyard

The design utilises the large footprint of the site to maximise landscaping opportunities in order to enhance the landscape character along all boundaries, in particular the streetscape along Walker Street and McLaren Street.

A number of landscaping strategies have been adopted to enhance usability and privacy to neighboring properties:

a) The existing landscaped perimeter be retained wherever possible,
b) Existing trees are retained where possible to maintain a mature landscape of aged character,
c) Where tree retention cannot occur transplanting of existing mature vegetation be considered, and or ex-ground species be incorporated into the new landscape to provide immediate vegetation height,
d) Under storey planting will reflect those of the local character creating a rich landscape aesthetic, and
e) Retaining wall materials sympathetically respond to the generous sandstone aesthetic of the area. Sandstone cladding and rendered walling of complimentary colourings will be adopted.

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2.6 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.

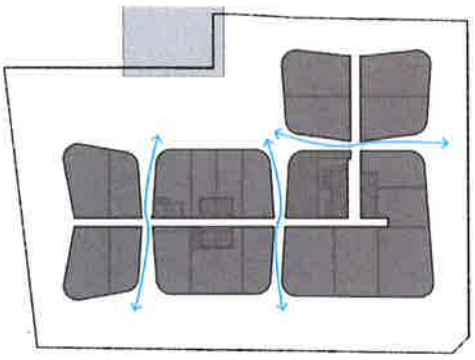
The proposed building design achieves a high degree of resident amenity, fully utilising the 'pod' planning rationale while acknowledging that the primary views of the development lie towards the harbor in an arc from the south east to the south west.

The articulation of the 'pods' in an L shape maximises all available natural light and allows for cross-ventilation within a majority of apartments and in all corridors.

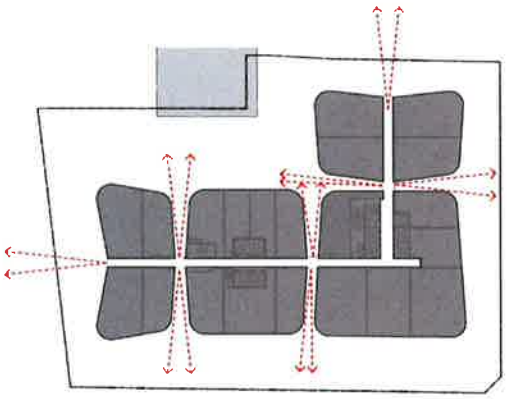
The elevated position of the site is acknowledge by providing residents maximum outlook with floor to ceiling glazing allowing all apartments and residential corridors access to views and natural light. Visual and acoustic privacy is maintained through appropriate, agreed setbacks and acoustic treatment of the facade.

The careful siting of the ground plane and introduction of a mobility lift from McLaren Street along with at grade access off Walker Street allows equitable access to the site from both street frontages.

The outdoor spaces at ground plane are positioned to allow sunlight amenity along with excellent retail frontage to enhance site permeability to encourage community interface.



Natural ventilated corridors



View corridors

SEPP65 Design Principles 2

2.7 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 proposed building design incorporates a number of planning initiatives to optimise safety and security within private spaces and the public domain.

a) Easily identified entries from McLaren and Walker Street for residents and public.
b) Well defined public space. The articulation of the residential apartments above maximises passive surveillance to these areas.
c) Private lobby areas are discreet but clearly defined and accessible from the public domain.
d) The building floor plate is articulated in order to create pedestrian flow through and around the site.
e) Rooftop pool, gym and communal areas provide for an enhanced residential experience within the site where neighbourly interaction is encouraged.
f) Public and private communal areas encourage social interaction and shared ownership.

Ground Plane

Roof Plan

SEPP65 Design Principles 2

2.8 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 proposed development located on the periphery of the North Sydney CBD incorporates a number of apartment types to cater for an eclectic residential market.

Apartment types all sit within ADG guidelines in terms of overall areas, living areas and balcony sizes depending on type. A total number of 441 apartments feature studios, 1 bed, 2 bed, 3 bed and penthouses on the upper levels of the south west plate.

In consideration of the view opportunities surrounding the development the glazing in all apartments is floor to ceiling with winter gardens providing additional thermal control and ventilation opportunities

A shared rooftop pool, secure gym, a communal function areas provide for a variety of enhanced residential experiences catering for a broad range of residents.

Retail and commercial offerings on the lower floors provide further opportunities for social interaction and commercial opportunities in a rapidly evolving precinct.

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2.9 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 built form design is a considered response to the available building envelope on the site. The stepped, curvilinear design of the towers forms is designed to be read as an urban sculpture in the round, to take maximum advantage of sunlight while acknowledging that the principle and most desirable views are to the south facing the Sydney Harbour vista.

The building responds to its existing and future context through a number of initiatives:

- The colour and texture of materials have been selected to complement the existing local context while equally responding to a modern architectural composition.
- The proposed form has been articulated to create a contemporary building of visual interest, exhibiting design excellence in a prominent corner site of the CBD.
- Fine detailing of the facade with the use of metallic and glazed fins will embody the building with a unique ability to respond to light.
- Incorporation of building lighting and a public art programme based on light will embue the building with a unique, design led character within the city.

3

APARTMENT DESIGN GUIDE ASSESSMENT

ADG Assessment 3

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Item	3A – Site Analysis	Yes	No	Notes
Objective	Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding content	✓		
Design Guidance	Refer to Site Analysis Checklist Sheet.	✓		

Item	3B – Orientation	Yes	No	Notes
Objective	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.	✓		
Design Guidance	Solar access to living rooms, balconies and private open spaces of neighbours should be considered	✓		
	Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%	✓		
	If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy	✓		
	Overshadowing should be minimised to the south or downhill by increased upper level setbacks	✓		
	It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts,particularly where minimum setbacks are used and where buildings are higher than the adjoining development	✓		
	A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings.	✓		

Item	3C – Public Domain Interface	Yes	No	Notes
Objective	Objective 3C 1 Transition between private and public domain is achieved without compromising safety and security	✓		
Design Guidance	Terraces, balconies and courtyard apartments should have direct street entry, where appropriate			Not Applicable
	Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings (see figure 3C.1)	✓		
	Upper level balconies and windows should overlook the public domain	✓		
	Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls should be limited to 1m	✓		
	Length of solid walls should be limited along street Frontages Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets	✓		
	In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries should be differentiated to improve legibility for residents, using a number of the following design solutions: - architectural detailing - changes in materials - plant species - colours Opportunities for people to be concealed should be minimised.	✓		

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Item	3D – Communal/Public Open Space	Yes	No	Notes
Objective	Objective 3D 1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	✓		
Design Guidance	Communal open space has a minimum area equal to 25% of the site. See figure 3D.3	✓		Exceeds criteria – incorporating ground plane and roof top areas
	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)	✓		Exceeds criteria. Communal/ P.O.S have been located on the rooftop or North Facing locations.
	Communal open space should be consolidated into a well-designed, easily identified and usable area	✓		
	Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions	✓		
	Communal open space should be co-located with deep soil areas	✓		Communal open space incorporates deep soil and hardstand areas
	Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	✓		
	Where communal open space cannot be provided at ground level, it should be provided on a podium or roof	✓		
	Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: - provide communal spaces elsewhere such as a landscaped roof top terrace or a common room - provide larger balconies or increased private - open space for apartments - demonstrate good proximity to public open space and facilities and/or provide contributions to public open space	✓		

Item	3D – Communal/Public Open Space	Yes	No	Notes
Objective	Objective 3D 2 Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting.	✓		
Design Guidance	Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: - seating for individuals or groups - barbecue areas - play equipment or play areas - swimming pools, gyms, tennis courts or common rooms	✓		
	The location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts	✓		Refer to Wind Consultant Report
	Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks.	✓		
Item	**3D – Communal/Public Open Space**	**Yes**	**No**	**Notes**
Objective	Objective 3D 3 Communal open space is designed to maximize safety	✓		
Design Guidance	Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include - bay windows - corner windows - balconies	✓		
	Communal open space should be well lit	✓		
	Where communal open space/facilities are provided for children and young people they are safe and contained.	✓		

Item	3D – Communal/Public Open Space	Yes	No	Notes
Objective	Objective 3D 4 Public open spaces where provided is responsive to the existing pattern and uses of the neighbourhood	✓		
Design Guidance	The public open space should be well connected with public streets along at least one edge	✓		
	The public open space should be connected with nearby parks and other landscape elements	✓		
	Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid	✓		
	Solar access should be provided year round along with protection from strong winds	✓		
	Opportunities for a range of recreational activities should be provided for people of all ages	✓		
	A positive address and active frontages should be provided adjacent to public open space	✓		
	Boundaries should be clearly defined between public open space and private areas	✓		

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<table>
<tr><th>Item</th><th>3E – Deep Soil Zones</th><th>Yes</th><th>No</th><th>Notes</th></tr>
<tr><td>Objective</td><td>Objective 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.</td><td>✓</td><td></td><td></td></tr>
<tr><td>Design Guidance</td><td>Deep soil zones are to meet the following minimum requirements.

<table><tr><th>Site Area</th><th>Min Dimensions</th><th>Deep Soil Zone (5 of site area)</th></tr><tr><td><650m²</td><td></td><td rowspan="4">7%</td></tr><tr><td>650-1500m²</td><td>3m</td></tr><tr><td>>1500m²</td><td>6m</td></tr><tr><td>>1500m² with significant tree cover</td><td>6m</td></tr></table>
On some sites it may be possible to provide larger deep soil zones, depending on the site area and context:
- 10% of the site as deep soil on sites with an area of 650m2 - 1,500m2
- 15% of the site as deep soil on sites greater than 1,500m2</td><td>✓</td><td></td><td>Refer to Landscape Architect's Report</td></tr>
<tr><td></td><td>Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include:
- basement and sub-basement car park design that is consolidated beneath building footprints
- use of increased front and side setbacks
- adequate clearance around trees to ensure long term health
- co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td>Achieving the design criteria may not be possible on some sites including where:
- The location and building typology have limited or no space for deep soil at ground level (e.g. central business district,constrained sites, high density areas, or in centres).
- There is 100% site coverage or nonresidential uses at ground floor level. Where a proposal does not achieve deep soil requirements, acceptable stormwater management should be achieved and alternative forms of planting provided such as on structure.</td><td></td><td></td><td>Not Applicable</td></tr>
</table>

<table>
<tr><th>Item</th><th>3F – Visual Privacy</th><th>Yes</th><th>No</th><th>Notes</th></tr>
<tr><td>Objective</td><td>Objective 3E 1
Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy</td><td>✓</td><td></td><td></td></tr>
<tr><td>Design Guidance</td><td><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</td><td>9m</td><td>4.5m</td></tr><tr><td>Over 25m</td><td>12m</td><td>6m</td></tr></table>
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:
- Separation distances between buildings on the same site should combine required building separations depending on the type of room (see figure 3F.2)
- Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighbouring properties.</td><td>✓</td><td></td><td>In consultation with North Sydney Council the following setbacks have been adopted to achieve reasonable levels of external and internal visual privacy to adjacent buildings. Northern boundary: Between 9-11.2 metres. Western boundary: Between 6-9m (excluding the 3m wide Right of Footway benefitting 168 Walker Street)</td></tr>
<tr><td></td><td>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</td><td></td><td></td><td>Not Applicable</td></tr>
<tr><td></td><td>For residential buildings next to commercial buildings, separation distances should be measured as follows:
- for retail, office spaces and commercial
- balconies use the habitable room distances
- for service and plant areas use the non-habitable room distances</td><td>✓</td><td></td><td></td></tr>
</table>

	New development should be located and oriented to maximise visual privacy between buildings on site and for neighbouring buildings. Design solutions include: - site layout and building orientation to minimise privacy impacts (see also section 3B Orientation) - - on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4)	✓		
	Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping (figure 3F.5)	✓		
	Direct lines of sight should be avoided for windows and balconies across corners	✓		
	No separation is required between blank walls.	✓		

Item	3F – Visual Privacy	Yes	No	Notes
Objective	Objective 3F 2 Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space.	✓		
Design Guidance	Communal open space, common areas and access paths should be separated from private open space and windows to apartments, particularly habitable room windows. Design solutions may include: - setbacks - solid or partially solid balustrades to balconies at lower levels - fencing and/or trees and vegetation to separate spaces - screening devices - bay windows or pop out windows to provide privacy in one direction and outlook in another - raising apartments/private open space above the public domain or communal open space - planter boxes incorporated into walls and balustrades to increase visual separation - pergolas or shading devices to limit overlooking of lower apartments or private open space - on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres	✓		

	or screen panels to windows and/or balconies			
	Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas			Not Applicable
	Balconies and private terraces should be located in front of living rooms to increase internal privacy			Not Applicable
	Windows should be offset from the windows of adjacent buildings	✓		
	Recessed balconies and/or vertical fins should be used between adjacent balconies.	✓		

Item	3G – Pedestrian Access and Entries	Yes	No	Notes
Objective	Objective 3G 1 Building entries and pedestrian access connects to and address the public domain	✓		
Design Guidance	Multiple entries (including communal building entries and individual ground floor entries) are provided to activate the street edge	✓		
	Entry locations relate to the street and subdivision pattern and the existing pedestrian network	✓		
	Building entries are clearly identifiable. Communal entries are clearly distinguishable from private entries	✓		
	Where street frontage is limited and multiple buildings are located on the site, a primary street address is provided with clear sight lines and pathways to secondary building entries.			Not Applicable

Item	3G – Pedestrian Access and Entries	Yes	No	Notes
Objective	Objective 3G 2 Access, entries and pathways are equitable and easy to identify	✓		
Design Guidance	Building access areas including lift lobbies, stairwells and hallways are clearly visible from the public domain and communal spaces	✓		
	The design of ground floors and underground car parks minimise level changes along pathways and entries	✓		
	Steps and ramps are integrated into the overall building and landscape design	✓		
	Finding maps are provided to assist visitors and residents	✓		
	For large developments electronic access and	✓		

	audio/video intercom should be provided to manage access			

Item	3G – Pedestrian Access and Entries	Yes	No	Notes
Objective	Objective 3G 3 Pedestrian links through developments provide access to streets and connect destinations	✓		
Design Guidance	Pedestrian links through sites facilitatie direct connections to open space, main streets, centres and public transport	✓		
	Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate.	✓		

Item	3H – Vehicle Access	Yes	No	Notes
Objective	Objective 3H 1 Vehicle access points are designed and located to achieve safety, minimize conflicts between pedestrians and vehicles and create high quality streetscapes	✓		
Design Guidance	Car park access is integrated with the building's overall facade, design solutions may include: - the materials and colour palette minimise visibility from the street - security doors or gates at entries that minimise voids in the facade - where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed	✓		
	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.	✓		
	Car park entries are located behind the building line			Not Applicable – carpark entry is integrated into the lower ground plane at McLaren Street
	Vehicle entries are located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	✓		
	Car park entry and access is located on secondary streets or lanes where available			Not Applicable
	Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided	✓		

	Access point locations avoid headlight glare to habitable rooms	✓		
	Adequate separation distances are provided between vehicular entries and street intersections	✓		
	The width and number of vehicle access points is limited to the minimum	✓		
	Visual impact of long driveways is minimised through changing alignments and screen planting	✓		
	The requirement for large vehicles to enter or turnaround within the site is avoided	✓		
	Garbage collection, loading and servicing areas are screened	✓		
	Clear sight lines should be provided at pedestrian and vehicle crossings	✓		
	Traffic calming devices such as changes in paving material or textures should be used where appropriate	✓		
	Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: - changes in surface materials - level changes - the use of landscaping for separation	✓		

Item	3J – Bicycle and Car Parking	Yes	No	Notes
Objective	Objective 3J 1 Car Parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	✓		
Design Guidance	For development in the following locations: - on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or - on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre	✓		
	The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less. The car parking needs for a development must be provided off street.	✓		

	Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site		✓	
	Where less car parking is provided in a development, council should not provide on street resident parking permits			Not Applicable

Item	3J – Bicycle and Car Parking	Yes	No	Notes
Objective	Objective 3J-2 Parking and facilities are provided for other modes of transport	✓		
Design Guidance	Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters	✓		
	Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas	✓		
	Conveniently located charging stations are provided for electric vehicles, where desirable		✓	

Item	3J – Bicycle and Car Parking	Yes	No	Notes
Objective	Objective 3J-4 Visual and experimental impacts of underground car parking are minimised	✓		
Design Guidance	Excavation should be minimised through efficient car park layouts and ramp design	✓		
	Car parking layout should be well organised, using a logical, efficient structural grid and double loaded isles	✓		
	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 carpark has been integrated into the ground plane
	Natural ventilation should be provided to basement and sub-basement car parking areas		✓	
	Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design	✓		

Item	3J – Bicycle and Car Parking	Yes	No	Notes
Objective	Objective 3J-5 Visual and environmental impacts of on-grade car parking are minimised	✓		

Design Guidance	On-grade car parking should be avoided	✓		
	Where on-grade car parking is unavoidable, the following design solutions are used: - parking is located on the side or rear of the lot away from the primary street frontage - cars are screened from view of streets, buildings, communal and private open space areas - safe and direct access to building entry points is provided - parking is incorporated into the landscape design of the site, by extending planting and materials into the car park space - stormwater run-off is managed appropriately from car parking surfaces - bio-swales, rain gardens or on site detention tanks are provided, where appropriate - light coloured paving materials or permeable paving systems are used and shade trees are planted between every 4-5 parking spaces to reduce increased surface temperatures from large areas of paving			Not Applicable. Parking and servicing of the building will be in lower ground and basement levels.

Item	3J – Bicycle and Car Parking	Yes	No	Notes
Objective	Objective 3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised			Not Applicable
Design Guidance	Exposed parking should not be located along primary street frontages			
	Screening, landscaping and other design elements including public art should be used to integrate the above ground car parking with the facade. Design solutions may include: - car parking that is concealed behind the facade, with windows integrated into the overall façade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels) - car parking that is 'wrapped' with other uses, such as retail, commercial or two storey Small Office/Home Office (SOHO) units along the street frontage (see figure 3J.9)			
	Positive street address and active frontages should be provided at ground level	✓		

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Item	4A – Solar and Daylight Access	Yes	No	Notes
Objective	Objective 4A-1 To optimize the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	✓		
Design Guidance	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas		✓	67% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter
	In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid-winter	✓		
	A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter		✓	33% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter. The planning of apartment floor plates are designed to maintain excellent solar access on a long east-west axis acknowledging that the most desirable views are to the south facing the harbour
	The design maximises north aspect and the number of single aspect south facing apartments is minimised	✓		
	Single aspect, single storey apartments should have a northerly or easterly aspect	✓		
	Living areas are best located to the north and service areas to the south and west of apartment	✓		

	To optimise the direct sunlight to habitable rooms and balconies a number of the following design features are used: - dual aspect apartments - shallow apartment layouts - two storey and mezzanine level apartments - bay windows	✓		
	To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m2 of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes	✓		
	Achieving the design criteria may not be possible on some sites. This includes: - where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source - on south facing sloping sites - where significant views are oriented away from the desired aspect for direct sunlight Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria and how the development meets the objective.	✓		

Item	4A – Solar and Daylight Access	Yes	No	Notes
Objective	Objective 4A-2 Daylight access is maximized where sunlight is limited	✓		
Design Guidance	Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms	✓		
	Where courtyards are used: - use is restricted to kitchens, bathrooms and service areas - building services are concealed with appropriate detailing and materials to visible walls - courtyards are fully open to the sky - access is provided to the light well from a communal area for cleaning and maintenance - acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved			Not applicable
	Opportunities for reflected light into apartments are optimised through: - reflective exterior surfaces on buildings opposite south facing windows	✓		

	- positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light - integrating light shelves into the design - light coloured internal finishes			

Item	4A – Solar and Daylight Access	Yes	No	Notes
Objective	Objective 4A-3 Design incorporates shading and glare control, particularly for warmer months	✓		
Design Guidance	A number of the following design features are used: - balconies or sun shading that extend far enough to shade summer sun, but allow winter sun to penetrate living areas - shading devices such as eaves, awnings, balconies, pergolas, external louvres and planting - horizontal shading to north facing windows - vertical shading to east and particularly west facing windows - operable shading to allow adjustment and choice - high performance glass that minimises external glare off windows, with consideration given to reduced tint glass or glass with a reflectance level below 20% (reflective films are avoided)	✓		

Item	4B – Natural Ventilation	Yes	No	Notes
Objective	Objective 4B-1 All habitable rooms are naturally ventilated	✓		
Design Guidance	The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms	✓		
	Depths of habitable rooms support natural ventilation	✓		
	The area of unobstructed window openings should be equal to at least 5% of the floor area served	✓		
	Light wells are not the primary air source for habitable rooms	✓		
	Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: - adjustable windows with large effective	✓		

	- openable areas - a variety of window types that provide safety and flexibility such as awnings and louvres - windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors			

Item	4B – Natural Ventilation	Yes	No	Notes
Objective	Objective 4B-2 The layout and design of single aspect apartments maximizes natural ventilation	✓		
Design Guidance	Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3)	✓		
	Natural ventilation to single aspect apartments is achieved with the following design solutions: - primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) - stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries - courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells	✓		

Item	4B – Natural Ventilation	Yes	No	Notes
Objective	Objective 4B-3 The number of apartments with natural cross ventilation is mazimised to create a comfortable indoor environment for residents	✓		
Design Guidance	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	✓		81% counting all levels of the development. 92.5% if only non-compliant apartments to Level 9 are included in the calculation.
	Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line			Not Applicable
	The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths	✓		
	In cross-through apartments external window and door opening sizes/areas on one side of an apartment (inlet side) are approximately	✓		

	equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side) (see figure 4B.4)			
	Apartments are designed to minimise the number of corners, doors and rooms that might obstruct airflow Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow	✓		

Item	4C – Ceiling Heights	Yes	No	Notes
Objective	Objective 4C-1 Ceiling height achieves sufficient natural ventilation and daylight access	✓		
Design Guidance	Measured from finished floor level to finished ceiling level, minimum ceiling heights are: Minimum ceiling height (for apartment and mixed use buildings) Habitable rooms: 2.7m Non-habitable: 2.4m For 2 storey apartments: 2.7m for main living area floor; 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces: 1.8m at edge of room with a 30 people degree minimum ceilingslope If located in mixed use areas: 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired	✓		
	Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	✓		

Item	4C – Ceiling Heights	Yes	No	Notes
Objective	Objective 4C-2 Ceiling height increases the sense of space in apartments and provides for well proportioned rooms	✓		
Design Guidance	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			

Item	4C – Ceiling Heights	Yes	No	Notes
Objective	Objective 4C-3 Ceiling heights contribute to the flexibility of building use over the life of the building			
Design Guidance	Ceiling heights of lower level apartments in centres should be greater than the minimum required by the design criteria allowing flexibility and conversion to non-residential uses (see figure 4C.1)	✓		

Item	4D – Apartment Size and Layout	Yes	No	Notes
Objective	Objective 4D-1 The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity			
Design Guidance	1. Apartments are required to have the following minimum internal areas: Apartment Type / Min. Internal Area Studio / 35m² 1 bedroom / 50m² 2 bedroom / 70m² 3 bedroom / 90m² The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m2 each A fourth bedroom and further additional bedrooms increase the minimum internal area by 12 m² each	✓		
	Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms	✓		
	Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)	✓		
	A window should be visible from any point in a habitable room	✓		
	Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits.	✓		

Item	4D – Apartment Size and Layout	Yes	No	Notes
Objective	Objective 4D-2 Environmental performance of the apartment is maximised	✓		
Design Guidance	Habitable room depths are limited to a maximum of 2.5 x the ceiling height	✓		
	In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window	✓		
	Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths	✓		
	All living areas and bedrooms should be located on the external face of the building	✓		

Item	4D – Apartment Size and Layout	Yes	No	Notes
Objective	Objective 4D-3 Apartment layouts are designed to accommodate a variety of household activities and needs	✓		
Design Guidance	Master bedrooms have a minimum area of 10m2 and other bedrooms 9 m^2 (excluding wardrobe space)	✓		
	Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	✓		
	Living rooms or combined living/dining rooms have a minimum width of: - 3.6m for studio and 1 bedroom apartments - 4m for 2 and 3 bedroom apartments	✓		
	The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	✓		
	All bedrooms allow a minimum length of 1.5m for robes	✓		
	The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high	✓		
	Apartment layouts allow flexibility over time, design solutions may include: - dimensions that facilitate a variety of furniture arrangements and removal	✓		

	- spaces for a range of activities and privacy levels between different spaces within the apartment - dual master apartments - dual key apartments - Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments - room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) - efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms.			

Item	4E – Private Open Space and Balconies	Yes	No	Notes
Objective	Objective 4E-1 Apartment provide appropriately sized private open space and balconies to enhance residential amenity	✓		
Design Guidance	All apartments are required to have primary balconies as follows: Dwelling Type / Minimum Area / Minimum Depth Studio Apartments / 4m² / - 1 bedroom apartments / 8 m² / 2 m² 2 bedroom apartments / 10 m² / 2 m² 3+ bedroom apartments / 12 m² / 2.4 m² The minimum balcony depth to be counted as contributing to the balcony area is 1m	✓		
	For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m2 and a minimum depth of 3m			Not Applicable
	Increased communal open space should be provided where the number or size of balconies are reduced	✓		
	Storage areas on balconies is additional to the minimum balcony size	✓		

	Balcony use may be limited in some proposals by: • consistently high wind speeds at 10 storeys and above • close proximity to road, rail or other noise sources • exposure to significant levels of aircraft noise • heritage and adaptive reuse of existing buildings In these situations, Juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated.	✓		Winter gardens used in a majority of apartments and all apartments above 10 storeys

Item	4E – Private Open Space and Balconies	Yes	No	Notes
Objective	Objective 4E-2 Primary private open space and balconies are appropriately located to enhance liveability for residents	✓		
Design Guidance	Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space	✓		
	Private open spaces and balconies predominantly face north, east or west Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	✓		

Item	4E – Private Open Space and Balconies	Yes	No	Notes
Objective	Objective 4E-3 Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building	✓		
Design Guidance	Solid, partially solid or transparent fences and balustrades are selected to respond to the location. They are designed to allow views and passive surveillance of the street while maintaining visual privacy and allowing for a range of uses on the balcony. Solid and partially solid balustrades are preferred	✓		
	Full width full height glass balustrades alone are generally not desirable	✓		
	Projecting balconies should be integrated into the building design and the design of soffits considered	✓		

	Operable screens, shutters, hoods and pergolas are used to control sunlight and wind	✓		
	Balustrades are set back from the building or balcony edge where overlooking or safety is an issue	✓		
	Downpipes and balcony drainage are integrated with the overall facade and building design	✓		
	Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design	✓		
	Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design			Not Applicable
	Ceilings of apartments below terraces should be insulated to avoid heat loss	✓		
	Water and gas outlets should be provided for primary balconies and private open space	✓		

Item	4E – Private Open Space and Balconies	Yes	No	Notes
Objective	Objective 4E-4 Private open space and balcony design maximizes safety			
Design Guidance	Changes in ground levels or landscaping are minimised	✓		
	Design and detailing of balconies avoids opportunities for climbing and falls	✓		

Item	4F – Common Circulation and Spaces	Yes	No	Notes
Objective	Objective 4F-1 Common circulation spaces achieve good amenity and properly service the number of apartments	✓		
Design Guidance	The maximum number of apartments off a circulation core on a single level is eight	✓		No more than 6 apartments located in a residential floor 'pod'
	For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	✓		
	Greater than minimum requirements for corridor widths and/ or ceiling heights allow comfortable movement and access particularly in entry lobbies, outside lifts and at apartment entry doors	✓		
	Daylight and natural ventilation should be provided to all common circulation spaces that are above ground	✓		
	Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors Longer corridors greater than 12m in length from the lift core should be articulated. Design solutions may include: • a series of foyer areas with windows and spaces for seating • wider areas at apartment entry doors and varied ceiling heights	✓		
	Design common circulation spaces to maximize opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments	✓		
	Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: • sunlight and natural cross ventilation in apartments • access to ample daylight and natural ventilation in common circulation spaces • common areas for seating and gathering • generous corridors with greater than minimum ceiling heights • other innovative design solutions that provide high levels of amenity	✓		

	Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level	✓		
	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.	✓		

Item	4F – Common Circulation and Spaces	Yes	No	Notes
Objective	Objective 4F-2 Common circulation spaces promote safety and provide for social interaction between residents	✓		
Design Guidance	Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines	✓		
	Tight corners and spaces are avoided	✓		
	Circulation spaces should be well lit at night	✓		
	Legible signage should be provided for apartment numbers, common areas and general wayfinding Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided	✓		
	In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally collocated with communal open space	✓		
	Where external galleries are provided, they are more open than closed above the balustrade along their length			Not Applicable

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Item	4G – Storage	Yes	No	Notes
Objective	Objective 4G-1 Adequate, well designed storage is provided in each apartment	✓		
Design Guidance	In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling Type / Storage Size Studio Apartments / 4m² 1 bedroom apartments / 6 m² 2 bedroom apartments / 8 m² 3+ bedroom apartments / 10 m² with at least 50% located within the apartment	✓		
	Storage is accessible from either circulation or living areas	✓		
	Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street			Not Applicable
	Left over space such as under stairs is used for storage			Not Applicable

Item	4G – Storage	Yes	No	Notes
Objective	Objective 4G-2 Additional storage is conveniently located, accessible and nominated for individual apartments	✓		
Design Guidance	Storage not located in apartments is secure and clearly allocated	✓		
	Storage is provided for larger and less frequently accessed items, where practical	✓		
	Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible	✓		
	If communal storage rooms are provided they should be accessible from common circulation areas of the building	✓		
	Storage not located in an apartment is integrated into the overall building design and not visible from the public domain			

Item	4H – Acoustic Privacy	Yes	No	Notes
Objective	Objective 4H-1 Noise transfer is minimized through the siting of buildings and building layout	✓		
Design Guidance	Adequate building separation is provided within the development and from neighbouring buildings / adjacent uses (also see section 2F Building separation and section 3F Visual Privacy)	✓		
	Window and door openings are generally orientated away from noise sources	✓		
	Noisy areas within buildings including building entries and corridors are located next to or above each other and quieter areas next to or above quieter areas	✓		
	Storage, circulation areas and non-habitable rooms are located to buffer noise from external sources	✓		
	The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	✓		
	Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas are located at least 3m away from bedrooms	✓		

Item	4H – Acoustic Privacy	Yes	No	Notes
Objective	Objective 4H-2 Noise transfer is minimised through the siting of buildings and building layout	✓		
Design Guidance	Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers	✓		
	Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: • double or acoustic glazing • acoustic seals • use of materials with low noise penetration • Properties continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	✓		

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Item	4J – Noise and Pollution	Yes	No	Notes
Objective	Objective 4J-1 In noisy or hostile environments the impacts of external noise and pollution are minimized through the careful siting and layout of buildings.	✓		
Design Guidance	To minimise impacts the following design solutions may be used: • physical separation between buildings and the noise or pollution source • residential uses are located perpendicular to the noise source and where possible buffered by other uses • non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces • Non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources • Buildings should respond to both solar access and noise. Where solar access is away from the noise source, non-habitable rooms can provide a buffer • Where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable (see figure 4J.4) • Landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry	✓		
	Achieving the design criteria in this Apartment Design Guide may not be possible in some situations due to noise and pollution. Where developments are unable to achieve the design criteria, alternatives may be considered in the following areas: • solar and daylight access • private open space and balconies • natural cross ventilation	✓		

Item	4J – Noise and Pollution	Yes	No	Notes
Objective	Objective 4J-2 Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission.	✓		
Design Guidance	Design solutions to mitigate noise include: - limiting the number and size of openings facing noise sources • providing seals to prevent noise transfer through gaps • using double or acoustic glazing, acoustic louvres or enclosed balconies (wintergardens) using materials with mass and/or sound insulation or absorption properties e.g. solid balcony balustrades, external screens and soffits	✓		

Item	4K – Apartment Mix	Yes	No	Notes
Objective	Objective 4K-1 A range of apartment types and sizes is provided to cater for different household types now and into the future.	✓		
Design Guidance	A variety of apartment types is provided	✓		
	The apartment mix is appropriate, taking into consideration: • the distance to public transport, employment and education centres • the current market demands and projected future demographic trends • the demand for social and affordable housing • different cultural and socioeconomic groups	✓		
	Flexible apartment configurations, 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	✓		

Item	4K – Apartment Mix	Yes	No	Notes
Objective	Objective 4K-2 The apartment mix is distributed to suitable locations within the building	✓		
Design Guidance	Different apartment types are located to achieve successful facade composition and to optimize solar access. See figure 4A.3	✓		
	Larger apartment types are located on the ground or roof level where there is potential for more open space and on corners where more building frontage is available	✓		

Item	4L – Ground Floor Apartments	Yes	No	Notes
Objective	Objective 4L-1 Street frontage activity is maximised where ground floor apartments are located	✓		
Design Guidance	Direct street access should be provided to ground floor apartments			Not Applicable
	Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: • both street and foyer entrances to ground floor apartments • private open space is next to the street • doors and windows face the street			Not Applicable
	Retail or home office spaces are located along street frontages	✓		
	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			Not Applicable

Item	4L – Ground Floor Apartments	Yes	No	Notes
Objective	Objective 4L-2 Design of ground floor apartments delivers amenity and safety for residents	✓		
Design Guidance	Privacy and safety is provided without obstructing casual surveillance. Design solutions may include: • elevation of private gardens and terraces above the street level by 1m – 1.5m (see Figure 4L.4) • landscaping and private courtyards • window sill heights that minimise sight lines into apartments • integrating balustrades, safety bars or screens with the exterior design	✓		
	Solar access is maximised through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer	✓		

Item	4M – Facades	Yes	No	Notes
Objective	Objective 4M-1 Building facades provide visual interest along the street respecting the character of the local area	✓		
Design Guidance	Design solutions for front building facades may include: - A composition of varied building elements - A defined base, middle and top of the buildings - Revealing and concealing certain elements - Changes in texture, material, detail and colour to modify the prominence of elements	✓		
	Building services should be integrated within the overall façade	✓		
	Building facades should be well resolved with an appropriate scale and proportion to the streetscape and human scale. Design solutions may include: - Well composed horizontal and vertical elements - Variation in floor heights to enhance the human scale - Elements that are proportional and arranged in patterns - Public artwork or treatments to exterior blank walls - Grouping of floors or elements such as balconies and windows on taller buildings	✓		
	Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	✓		
	Shadow is created on the façade throughout the day with building articulation, balconies and deeper window reveals	✓		

Item	4M – Facades	Yes	No	Notes
Objective	Objective 4M-2 Building functions are expressed by the facade	✓		
Design Guidance	Building entries should be clearly defined	✓		
	Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	✓		
	The apartment layout should be expressed externally through façade features as party walls and floor slabs	✓		

Item	4N – Roof Design	Yes	No	Notes
Objective	Objective 4N-1 Roof treatments are integrated into the building design and positively respond to the street	✓		
Design Guidance	Roof design relates to the street. Design solutions may include: • Special roof features and strong corners • Use of skillion or very low pitch hipped roofs • Breaking down the massing of the roof by using smaller elements to avoid bulk • Using materials or a pitched form complementary to adjacent buildings	✓		
	Roof treatments should be integrated with the building design. Design solutions may include: - Roof design proportionate to the overall building size, scale and form - Roof materials complement the building - Service elements are integrated	✓		

Item	4N – Roof Design	Yes	No	Notes
Objective	Objective 4N-2 Roof treatments are integrated into the building design and positively respond to the street	✓		
Design Guidance	Habitable roof space should be provided with good levels of amenity. Design solutions may include: - Special roof features and strong corners - Use of skillion or very low pitch hipped roofs - Breaking down the massing of the roof by using smaller elements to avoid bulk - Using materials or a pitched form complementary to adjacent buildings	✓		
	Roof treatments should be integrated with the building design. Design solutions may include: - Roof design proportionate to the overall building size, scale and form - Roof materials complement the building - Service elements are integrated	✓		

Item	4N – Roof Design	Yes	No	Notes
Objective	Objective 4N-3 Roof design incorporates sustainability features	✓		
Design Guidance	Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: - The roof lifts to the north - Eaves and overhangs shade walls and windows from summer sun			Not Applicable
	Skylights and ventilation systems should be integrated into the roof design	✓		

Item	4O – Landscape Design	Yes	No	Notes
Objective	Objective 4O – 1 Landscape design is viable and sustainable	✓		
Design Guidance	Landscape design should be environmentally sustainable and can enhance environmental performance by incorporating: - Diverse and appropriate planting - Bio-filtration gardens - Appropriately planted shading trees - Areas for residents to plant vegetables and herbs - Composting - Green roofs or walls	✓		
	Ongoing maintenance plans should be prepared	✓		
	Microclimate in enhanced by: - Appropriately scaled trees near the eastern and western elevations for shade - A balance of evergreen and deciduous trees to provide shading in summer and sunlight access in winter - Shade structures such as pergolas for balconies and courtyards	✓		
	Tree and shrub selection considers size at maturity and the potential for roots to complete (see table 4)	✓		

Item	4O – Landscape Design	Yes	No	Notes
Objective	Objective 4O – 2 Landscape design is contributes to the streetscape and amenity	✓		
Design Guidance	Landscape design responds to the existing site conditions including: • Changes of levels • Views • Significant landscape features including trees and rock outcrops	✓		
	Significant landscape features should be protected by: • Tree protection zones (see figure 40.5) • Appropriate signage and fencing during construction	✓		
	Plants selected should be endemic to the region and reflect the local ecology	✓		

Item	4P – Planting on Structures	Yes	No	Notes
Objective	Objective 4P – 1 Appropriate soil profiles are provided	✓		
Design Guidance	Soil volume is appropriate for plant growth, considerations include: • Modifying depths and widths according to the planting mix and irrigation frequency • Free draining and long soil life span • Tree anchorage	✓		
	Minimum soil standards for plant sizes should be provided in accordance with Table 5	✓		

Item	4P – Planting on Structures	Yes	No	Notes
Objective	Objective 4P – 2 Plant growth is optimised with appropriate selection and maintenance	✓		
Design Guidance	Plants are suited to site conditions, considerations include: • Drought and wind tolerance • Seasonal changes in solar access • Modified substrate depths for diverse range of plants • Plant longevity	✓		
	A landscape maintenance plan is prepared	✓		
	Irrigation and drainage systems respond to : • Changing site conditions • Soil profile and the planting regime • Whether rainwater, stormwater recycled grey water is used	✓		

Item	4P – Planting on Structures	Yes	No	Notes
Objective	Objective 4P – 3 Planting on structure contributes to the quality and amenity of communal and public open spaces	✓		
Design Guidance	Building design incorporates opportunities for planting on structures. Design solutions may include: • Green walls with specialised lighting for indoor green walls • All design that incorporates planting • Green roofs, particularly where roofs are visible form public domain • Planter boxes Note: structures designed to accommodate green walls should be integrated into the building façade and consider the ability of the façade to change over time	✓		

Item	4Q – Universal Design	Yes	No	Notes
Objective	Objective 4Q – 1 Universal design features are included in apartment design to promote flexible housing for all community members	✓		
Design Guidance	Developments achieve a benchmark of 20% of the total apartment incorporating the Livable Housing Guideline's silver level universal design features	✓		

Item	4Q – Universal Design	Yes	No	Notes
Objective	Objective 4Q – 2 A variety of apartments with adaptable designs are provided	✓		
Design Guidance	Adaptable housing should be provided in accordance with the relevant council policy	✓		
	Design solutions for adaptable apartments include: • Convenient access to communal and public areas • High level of solar access • Minimal structural change and residential amenity loss when adapted • Larger car parking spaces for accessibility • Parking titled separately from apartments or shared car parking arrangements	✓		

Item	4Q – Universal Design	Yes	No	Notes
Objective	Objective 4Q – 3 Apartment layouts are flexible and accommodate a range of lifestyle needs	✓		
Design Guidance	Apartments design incorporates flexible design solutions which may include: • Rooms with multiple functions • Dual master bedroom apartments with separate bathrooms • Larger apartments with various living space options • Open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom	✓		

Item	4R – Adaptive Reuse	Yes	No	Notes
Objective	Objective 4R – 1 New additional to existing buildings are contemporary and complementary and enhance area's identity and sense of place			Not Applicable
Design Guidance	Design solutions may include: • New elements to align with the existing building • Additions that complement the existing character, siting, scale, proportion, pattern form and detailing • Use of contemporary and complementary materials, finishes, textures and colours			
	Additions to heritage items should be clearly identifiable form the original building			
	New additions allow for the interpretation and future evolution of the building			

Item	4R – Adaptive Reuse	Yes	No	Notes
Objective	Objective 4R – 2 Adapted buildings provide residential amenity while not precluding future adaptive reuse	✓		
Design Guidance	Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: • Generously sized voids in deeper buildings • Alternative apartment types when orientation • is poor • Using additions to expand the existing • building envelope	✓		
	Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where	✓		

	developments are unable to achieve the design criteria, alternatives could be considered in the following areas: • Where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar an daylight access (see also sections 4A Solar and daylight access and 4B Natural ventilation) • Alternatives to providing deep soil where less than the minimum requirement is currently available on the site • Building and visual separation subject to demonstrating alternative design approaches to achieving privacy • Common circulation • Car parking • Alternative approaches to private open space and balconies			

Item	4S – Mixed Use	Yes	No	Notes
Objective	Objective 4S – 1 Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement	✓		
Design Guidance	Mixed use development should be concentrated around public transport and centres	✓		
	Mixed use developments positively contribute to the public domain. Design solutions may include: • Development addresses the street • Active frontages are provided • Diverse activities and uses • Avoiding blank walls at the ground level • Live/work apartments on the ground floor level, rather than commercial	✓		

Item	4S – Mixed Use	Yes	No	Notes
Objective	Objective 4S – 2 Residential levels of the building are integrated within the development, and safety and amenity is maximized for residents	✓		
Design Guidance	Residential circulation areas should be clearly defined. Design solutions may include: • Residential entries are separated from commercial entries and directly accessible from the street • Commercial service areas are separated from residential components • Residential car parking and communal facilities are separated or secured • Concealment opportunities are avoided	✓		
	Landscape communal open space should be provided at podium or roof levels	✓		

Item	4T – Awnings and Signage	Yes	No	Notes
Objective	Objective 4T – 1 Awnings are well located and compliment and integrate with the building design	✓		
Design Guidance	Awnings should be located along streets with high pedestrian activity and active frontages	✓		
	A number of the following design solutions are used: • Continuous awnings are maintained and provided in areas with existing pattern • Height, depth, material and form complements the existing street character • Protection from the sun and rain is provided • Awnings are wrapped around the secondary frontages of corner sites • Awnings are retractable in areas without an established pattern	✓		
	Awnings should be located over building entries for building address and public domain amenity	✓		
	Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	✓		
	Gutters and down pipes should be integrated and concealed	✓		
	Lighting under awnings should be provided for pedestrian safety	✓		

Item	4T – Awnings and Signage	Yes	No	Notes
Objective	Objective 4T – 2 Signage responds to the context and desired streetscape character	✓		
Design Guidance	Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development	✓		
	Legible and discrete way finding should be provided for larger developments	✓		
	Signage is limited to being on and below awnings and in single façade sign on the primary street frontage	✓		

Item	4U – Energy Efficiency	Yes	No	Notes
Objective	Objective 4U – 1 Development incorporates passive environmental design	✓		
Design Guidance	Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)	✓		
	Well located, screened outdoor areas should be provided for clothes drying	✓		

Item	4U – Energy Efficiency	Yes	No	Notes
Objective	Objective 4U – 2 Development incorporates passive solar design to optimize heat storage in winter and reduce heat transfer in summer	✓		
Design Guidance	A number of the following design solutions are used: • The use of smart glass or other technologies on north and west elevations • Thermal mass in the floors and walls of north facing rooms 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	✓		
	Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	✓		

Item	4U – Energy Efficiency	Yes	No	Notes
Objective	Objective 4U – 3 Adequate natural ventilation minimizes the need for mechanical ventilation	✓		
Design Guidance	A number of the following design solution are used: • Rooms with similar usage are grouped together • Natural cross ventilation for apartments is optimised • Natural ventilation is provided to all inhabitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible	✓		

Item	4V – Water management and conservation	Yes	No	Notes
Objective	Objective 4V – 1 Potable water use is minimised	✓		
Design Guidance	Water efficient fittings, appliances and wastewater reuse should be incorporated	✓		
	Apartments should be individually metered	✓		
	Rainwater should be collected, stored and reused on site	✓		
	Drought tolerant, low water use plants should be used within landscaped areas	✓		

Item	4V – Water management and conservation	Yes	No	Notes
Objective	Objective 4V – 2 Urban stormwater is treated on site before being discharged to receiving waters	✓		
Design Guidance	Water sensitive urban design systems are designed by a suitably qualified professional	✓		
	A number of the following design solutions are used: • Runoff is collected from roofs and balconies in water tanks and plumbed into toilets, laundry and irrigation • Porous and open paving materials is maximised • On site stormwater and infiltration, including bio-retention systems such as rain gardens or street tree pits	✓		

Item	4V – Water management and conservation	Yes	No	Notes
Objective	Objective 4V – 3 Flood management systems are designed to minimise impacts on the streetscape, building entry and amenity of residents	✓		
Design Guidance	Detention tanks should be located under paved areas, driveways or in basement car parks	✓		
	On large sites parks or open spaces are designed to provide temporary on site detention basins	✓		

Item	4W – Waste Management	Yes	No	Notes
Objective	Objective W – 1 Flood management systems are designed to minimise impacts on the streetscape, building entry and amenity of residents	✓		
Design Guidance	Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park	✓		
	Waste and recycling storage areas should be well ventilated	✓		
	Circulation design allows bins to be easily maneuvered between storage and collection points	✓		
	Temporary storage should be provided for large bulk items such as mattresses	✓		
	A waste management plan should be prepared	✓		

Item	4W – Waste Management	Yes	No	Notes
Objective	Objective W – 2 Domestic waste is minimised by providing safe and convenient source separation and recycling	✓		
Design Guidance	All dwellings should have a waste and recycling cupboard or temporary storage area of sufficient size to hold two days' worth of waste and recycling			Not Applicable
	Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core	✓		
	For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses	✓		
	Alternative waste disposal methods such as composting should be provided		✓	

Item	4X – Building Maintenance	Yes	No	Notes
Objective	Objective 4 X – 1 Building design detail provides protection from weathering	✓		
Design Guidance	A number of the following design solutions are used: • Roof overhangs to protect walls • Hoods over windows and doors to protect openings • Detailing horizontal edges with drip lines to avoid staining of surfaces • Methods to eliminate or reduce planter box leaching • Appropriate design and material selection for hostile locations	✓		

Item	4X – Building Maintenance	Yes	No	Notes
Objective	Objective 4 X – 2 Systems and access enable ease of maintenance	✓		
Design Guidance	Window design enables cleaning from the inside of the building	✓		
	Building maintenance systems should in incorporated and integrated into the design of the building form, roof and façade	✓		
	Design solutions do not require external scaffolding for maintenance access	✓		
	Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems	✓		
	Centralised maintenance, services and storage should be provided for communal open space areas within the building	✓		