HOUSING SEPP – DESIGN VERIFICATION STATEMENT

DA SUBMISSION

Residential Flat Building
139 Teralba Road and 190 Brunker Road, Adamstown NSW

22 October 2024
Revision D

MODE
Level 5, 111-117 Devonshire St, Surry Hills NSW 2010
T: +61 8396 9500

Design Verification Statement

Residential Flat Building
139 Teralba Road and 190 Brunker Road, Adamstown NSW

I, Max Weston (NSW Architects Registration Board No. 11713), and Building Design Practitioner (DEP0003608) for Mode Design Corp pty ltd, verify that the residential apartment building, as shown in Architectural Drawing sheets AR-000 – AR-8201, Revision A dated 23.01.2024, was designed under my direction with regards to the Housing SEPP 2021 and the now repealed State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development (and associated Apartment Design Guide).

Yours Faithfully,

Max Weston
DipArchSt, BArch, NSW Registered Architect (11713)

HOUSING SEPP 2021 - SCHEDULE 9 DESIGN PRINCIPLES FOR RESIDENTIAL APARTMENT DEVELOPMENT

SEPP OBJECTIVE	COMPLIANCE	COMMENTS
1 CONTEXT AND NEIGHBOURHOOD CHARACTER		
(1) Good design responds and contributes to its context, which is the key natural and built features of an area, their relationship and the character they create when combined and also includes social, economic, health and environmental conditions.	✓	
(2) Responding to context involves identifying the desirable elements of an area's existing or future character.	✓	
(3) Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood.	✓	
(4) Consideration of local context is important for all sites, including sites in the following areas— (a) established areas, (b) areas undergoing change, (c) areas identified for change.	✓	
2 BUILT FORM AND SCALE		
(1) Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings.	✓	
(2) Good design also achieves an appropriate built form for a site and the building's purpose in terms of the following— (a) building alignments and proportions, (b) building type, (c) building articulation, (d) the manipulation of building elements.	✓	
(3) Appropriate built form— (a) defines the public domain, and (b) contributes to the character of streetscapes and parks, including their views and vistas, and (c) provides internal amenity and outlook.	✓	
3 DENSITY		
(1) Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context.	✓	

SEPP OBJECTIVE	COMPLIANCE	COMMENTS
(2) Appropriate densities are consistent with the area's existing or projected population.	✓	
(3) Appropriate densities are sustained by the following— (a) existing or proposed infrastructure, (b) public transport, (c) access to jobs, (d) community facilities, (e) the environment.	✓	
4 SUSTAINABILITY		
(1) Good design combines positive environmental, social and economic outcomes.	✓	
(2) Good sustainable design includes— (a) use of natural cross ventilation and sunlight for the amenity and liveability of residents, and (b) passive thermal design for ventilation, heating and cooling, which reduces reliance on technology and operation costs.	✓	
(3) Good sustainable design also includes the following— (a) recycling and reuse of materials and waste, (b) use of sustainable materials, (c) deep soil zones for groundwater recharge and vegetation.	✓	
5 LANDSCAPE		
(1) Good design recognises that landscape and buildings operate together as an integrated and sustainable system, resulting in development with good amenity.	✓	
(2) A positive image and contextual fit of well designed development is achieved by contributing to the landscape character of the streetscape and neighbourhood.	✓	
(3) Good landscape design enhances the development's environmental performance by retaining positive natural features that contribute to the following— (a) the local context, (b) co-ordinating water and soil management, (c) solar access, (d) micro-climate, (e) tree canopy, (f) habitat values, (g) preserving green networks.	✓	

SEPP OBJECTIVE	COMPLIANCE	COMMENTS
(4) Good landscape design optimises the following— (a) usability, (b) privacy and opportunities for social interaction, (c) equitable access, (d) respect for neighbours' amenity.	✓	
(5) Good landscape design provides for practical establishment and long term management.	✓	
6 AMENITY		
(1) Good design positively influences internal and external amenity for residents and neighbours.	✓	
(2) Good amenity contributes to positive living environments and resident well-being.	✓	
(3) Good amenity combines the following— (a) appropriate room dimensions and shapes, (b) access to sunlight, (c) natural ventilation, (d) outlook, (e) visual and acoustic privacy, (f) storage, (g) indoor and outdoor space, (h) efficient layouts and service areas, (i) ease of access for all age groups and degrees of mobility.	✓	
7 SAFETY		
(1) Good design optimises safety and security within the development and the public domain.	✓	
(2) Good design provides for quality public and private spaces that are clearly defined and fit for the intended purpose.	✓	
(3) Opportunities to maximise passive surveillance of public and communal areas promote safety.	✓	
(4) 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.	✓	
8 HOUSING DIVERSITY AND SOCIAL INTERACTION		
(1) Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets.	✓	

SEPP OBJECTIVE	COMPLIANCE	COMMENTS
(2) Well designed residential apartment development responds to social context by providing housing and facilities to suit the existing and future social mix.	✓	
(3) Good design involves practical and flexible features, including— (a) different types of communal spaces for a broad range of people, and (b) opportunities for social interaction among residents.	✓	
9 AESTHETICS		
(1) Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure.	✓	
(2) Good design uses a variety of materials, colours and textures.	✓	
(3) The visual appearance of well designed residential apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.	✓	

APARTMENT DESIGN GUIDE

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
3A SITE ANALYSIS				
3A-1 Site analysis illustrates that design decisions have been based on opportunity and constraints of the site conditions and their relationships 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	✓	
		Where the street frontage is to the east or west, rear buildings should be orientated to the north	✓	
		Where the street frontage is to the north or south, overshadowing to the south should be minimised and buildings behind the street frontage should be orientated to the east and west	N/A	
3B-2 Overshadowing of neighbouring properties is minimised during mid winter		Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access	✓	
		Solar access to living rooms, balconies and private open spaces of neighbours should be considered	✓	
		Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%	✓	
		If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		minimums contained in section 3F Visual privacy		
		Overshadowing should be minimised to the south or down hill by increased upper level setbacks	✓	
		It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	N/A	
		A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	✓	
3C PUBLIC DOMAIN INTERFACE				
3C-1 Transition between private and public domain is achieved without compromising safety and securtiy		Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	N/A	Deemed not appropriate, as there is no ground level dwelling facing or close to the streets.
		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	N/A	Deemed not appropriate, as there is no ground level dwelling facing or close to the streets.
		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	✓	Perforated pattern artwork wall is proposed on Teralba Road frontage while glazed wall and 1m perforated fence is proposed on Brunker Road frontage.
		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	N/A	Deemed not appropriate for Social Housing due to proximity of Liquor store
		In developments with multiple buildings and/or entries,	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	✓	
3C-2 Amenity of the 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 subbasement 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	✓	
		The visual prominence of underground car park vents should be minimised and located at a low level where possible	N/A	No underground car park is proposed but a semi-opened on ground car park.
		Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	✓	Service rooms are enclosed on ground level & basement The garbage storage areas and services meters facing Brunker Road are enclosed with perforated patterned wall for visual interest. Substation is not required.
		Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	✓	
		Durable, graffiti resistant and easily cleanable materials should be used	✓	
		Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and planting that clearly delineate	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		between communal/private open space and the adjoining public open space • minimal use of blank walls, fences and ground level Parking		
		On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	✓	
3D COMMUNAL AND PUBLIC OPEN SPACE				
Objective 3D-1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	Communal open space has a minimum area equal to 25% of the site		✓	
	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)		✓	
		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	✓	Part of the communal open space cannot be co-located with deep soil areas as it is on the carpark slab roof.
		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	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:	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• 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		
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: • seating for individuals or groups • barbecue areas • play equipment or play areas • swimming pools, gyms, tennis courts or common rooms	✓	Seatings are proposed.
		The location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts	✓	
		Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	✓	
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: • 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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
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	No public open space is proposed. 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	
3E DEEP SOIL ZONES				
3E-1 Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality	Deep soil zones are to meet the following minimum requirements: Min dimension: • N/A for site area less than 650m^2 • 3m for site area between 650-1500m^2 • 6m for site area greater than 1500m^2 (with significant existing tree cover) Percentage of site area: 7%		✓	
		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 650m^2 - 1,500m^2 • 15% of the site as deep soil on sites greater than 1,500m^2	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	✓	
		Achieving the design criteria may not be possible on some sites including where: • the location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres) • there is 100% site coverage or non-residential uses at ground floor level Where a proposal does not achieve deep soil requirements, acceptable stormwater management should be achieved and alternative forms of planting provided such as on structure	N/A	
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	Separation between windows and balconies is provided to ensure visual privacy is achieved Minimum required separation distances from buildings to the site and rear boundaries are as follows: • 4 storeys: 6m for habitable rooms and balconies; 3m for nonhabitable rooms • 5-8 storeys: 9m for habitable rooms and balconies; 4.5m for nonhabitable rooms • 9+ storeys: 12m for habitable rooms and balconies; 6m for nonhabitable rooms		✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	✓	
		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	✓	
		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 • on sloping sites, apartments on different levels have appropriate visual separation distances	✓	
		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	
		Direct lines of sight should be avoided for windows and balconies across corners	✓	
		No separation is required between blank walls	✓	
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: • 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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		increase visual separation • pergolas or shading devices to limit overlooking of lower apartments or private open space • on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres or screen panels to windows and/or balconies		
		Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	✓	
		Balconies and private terraces should be located in front of living rooms to increase internal privacy	✓	
		Windows should be offset from the windows of adjacent Buildings	✓	
		Recessed balconies and/or vertical fins should be used between adjacent balconies	✓	
3G PEDESTRIAN ACCESS AND ENTRIES				
3G-1 Building entries and pedestrian access connects to and addresses the public domain		Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge	✓	Communal building entries provided. Individual unit entries deemed not appropriate, as there is no ground level dwelling facing or close to the streets.
		Entry locations relate to the street and subdivision pattern and the existing pedestrian network	✓	
		Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries	✓	
		Where street frontage is limited and multiple buildings are located on the site, a primary street address should be provided with clear sight lines and pathways to secondary building entries	✓	
3G-2 Access, entries and pathways are accessible and easy to identify		Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	✓	
		The design of ground floors and underground car parks minimise level changes along pathways and entries	✓	
		Steps and ramps should be integrated into the overall building and landscape design	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		For large developments 'way finding' maps should be provided to assist visitors and residents	✓	
		For large developments electronic access and audio/video intercom should be provided to manage access	✓	
3G-3 Large sites provide pedestrian links for access to streets and connection to destinations		Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport	✓	
		Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate	✓	Habitable rooms and POS are orientated to the north
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 should be integrated with the building's overall facade. Design solutions may include: • the materials and colour palette to minimise visibility from the street • security doors or gates at entries that minimise voids in the facade • where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed	✓	
		Car park entries should be located behind the building line	✓	
		Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	✓	
		Car park entry and access should be located on secondary streets or lanes where available	✓	
		Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided	✓	
		Access point locations should avoid headlight glare to habitable rooms	✓	
		Adequate separation distances should be provided between vehicle entries and street intersections	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		The width and number of vehicle access points should be limited to the minimum	✓	
		Visual impact of long driveways should be minimised through changing alignments and screen planting	✓	
		The need for large vehicles to enter or turn around within the site should be avoided	✓	
		Garbage collection, loading and servicing areas are screened	✓	
		Clear sight lines should be provided at pedestrian and vehicle crossings	✓	
		Traffic calming devices such as changes in paving material or textures should be used where appropriate	✓	
		Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation	✓	
3J BICYCLE AND CAR PARKING				
3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	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	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	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	✓	
		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	✓	Provisions for future installation has been incorporated
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	✓	
		Direct, clearly visible and well lit access should be provided into common circulation areas	✓	
		A clearly defined and visible lobby or waiting area should be provided to lifts and stairs	✓	
		For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards	✓	
3J-4 Visual and environmental impacts of underground car parking are minimised		Excavation should be minimised through efficient car park layouts and ramp design	✓	
		Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles	✓	
		Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites	✓	Carpark is concealed behind the building and cut into the sloping site
		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
3J-5 Visual and environmental impacts of on-grade car parking are minimised		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	✓	
3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised		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 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	✓	
		Positive street address and active frontages should be provided at ground level	✓	
4A SOLAR AND DAYLIGHT ACCESS				

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
4A-1 To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas		✓	
	2. In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid winter		✓	
	3. A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter		✓	
		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 apartments	✓	
		To optimise the direct sunlight to habitable rooms and balconies a number of the following design features are used: • dual aspect apartments • shallow apartment layouts • two storey and mezzanine level apartments • bay windows	✓	
		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	✓	
		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	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• 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		
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	✓	
		Where courtyards are used : • use is restricted to kitchens, bathrooms and service areas • building services are concealed with appropriate detailing and materials to visible walls • courtyards are fully open to the sky • access is provided to the light well from a communal area for cleaning and maintenance • acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved	N/A	
		Opportunities for reflected light into apartments are optimised through: • reflective exterior surfaces on buildings opposite south facing windows • positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light • integrating light shelves into the design • light coloured internal finishes	N/A	
4A-3 Design incorporates shading and glare control, particularly for warmer months		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		are avoided)		
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	✓	
		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	N/A	
		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	✓	
4B-2 The layout and design of single aspect apartments maximises natural ventilation		Apartment depths are limited to maximise ventilation and airflow	✓	
		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	✓	
4B-3 The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents	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		✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
	2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line		✓	
		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)	✓	
		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	✓	
4C CEILING HEIGHTS				
4C-1 Ceiling height achieves sufficient natural ventilation and daylight access	1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are: **Minimum ceiling height for apartment and mixed use buildings** Habitable rooms: 2.7m Non-habitable: 2.4m For 2 storey apartments: 2.7m for main living area floor; 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces: 1.8m at edge of room with a 30 degree minimum ceiling slope If located in mixed used areas: 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired		✓	
		Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	✓	
4C-2		A number of the following design solutions can be used: • the hierarchy of rooms in an apartment is defined using	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
Ceiling height increases the sense of space in apartments and provides for well proportioned rooms		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		
4C-3 Ceiling heights contribute to the flexibility of building use over the life of the building		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	✓	
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	1. Apartments are required to have the following minimum internal areas: Apartment type / Minimum internal area Studio / 35m² 1 bedroom / 50m² 2 bedroom / 70m² 3 bedroom / 90m² The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each. A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each		✓	
	2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms		✓	
		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits	N/A	
4D-2 Environmental performance of the apartment is maximised	1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height		✓	
	2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window		✓	
		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	✓	
4D-3 Apartment layouts are designed to accommodate a variety of household activities and needs	1. Master bedrooms have a minimum area of $10m^2$ and other bedrooms $9m^2$ (excluding wardrobe space)		✓	
	2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)		✓	
	3. Living rooms or combined living/dining rooms have a minimum width of: • 3.6m for studio and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments		✓	
	4. The width of cross-over or cross through apartments are at least 4m internally to avoid deep narrow apartment layouts		✓	
		Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	✓	Some apartments have bathroom/ laundry opening to kitchen.

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	✓	No dual key apartment is proposed.
4E PRIVATE OPEN SPACE AND BALCONIES				
4E-1 Apartments provide appropriately sized private open space and balconies to enhance residential amenity	1. All apartments are required to have primary balconies as follows: Dwelling type / Minimum area / Minimum depth Studio apartments / 4m² / - 1 bedroom apartments / 8m² / 2m 2 bedroom apartments / 10m² / 2m 3+ bedroom apartments / 12m² / 2.4m The minimum balcony depth to be counted as contributing to the balcony area is 1m		✓	
	2. For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m² and a minimum depth of 3m		✓	
		Increased communal open space should be provided where the number or size of balconies are reduced	N/A	The required number and size of balconies is provided.

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		Storage areas on balconies is additional to the minimum balcony size	N/A	No storage areas are proposed on balcony.
		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	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	✓	
		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	✓	
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	✓	
		Full width full height glass balustrades alone are generally not desirable	N/A	No glass balustrade is proposed.
		Projecting balconies should be integrated into the building design and the design of soffits considered	N/A	No projecting balcony is proposed.
		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	N/A	Balustrade with sufficient height and screening are provided.
		Downpipes and balcony drainage are integrated with the overall facade and building design	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design	✓	AC units are located in balconies behind screens.
		Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design	✓	AC units are located in balconies behind screens.
		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	✓	
4E-4 Private open space and balcony design maximises safety		Changes in ground levels or landscaping are minimised	✓	
		Design and detailing of balconies avoids opportunities for climbing and falls	✓	
4F COMMON CIRCULATION AND SPACES				
4F-1 Common circulation spaces achieve good amenity and properly service the number of apartments	1. The maximum number of apartments off a circulation core on a single level is eight		✓	
	2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40		N/A	Building is less than 10 storeys.
		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	N/A	Corridor is less than 12m.

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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: • 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	Design criteria 1 is achieved.
		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	Design criteria 1 is achieved.
		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	No window opened onto common circulation spaces is proposed.
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	✓	
		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	✓	Details will be provided 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	Short and efficient corridor is proposed.
		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	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size volume Studio apartments / 4m³ 1 bedroom apartments / 6m³ 2 bedroom apartments / 8m³ 3+ bedroom apartments / 10m³ At least 50% of the required storage is to be located within the apartment		✓	16 apartments out of 25 are complaint while 9 are almost compliant. Additional storage to be verified during Detailed Design stage.
		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	N/A	No storage is proposed on balconies.
		Left over space such as under stairs is used for storage	✓	
4G-2 Additional storage is conveniently located, accessible and nominated for individual apartments		Storage not located in apartments is secure and clearly allocated to specific apartments	✓	Details will be provided in the Detailed Design stage.
		Storage is provided for larger and less frequently accessed items	✓	
		Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible	✓	
		If communal storage rooms are provided they should be accessible from common circulation areas of the building	N/A	No communal storage room is provided.
		Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	✓	Storage in the basement is clustered and located at the rear corner with less visibility.
4H ACOUSTIC PRIVACY				

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
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 (see also section 2F Building separation and section 3F Visual privacy)	✓	
		Window and door openings are generally orientated away from noise sources	✓	
		Noisy areas within buildings including building entries and corridors should be located next to or above each other and quieter areas next to or above quieter areas	✓	
		Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources	✓	
		The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	✓	
		Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms	✓	
4H-2 Noise impacts are mitigated within apartments through layout and acoustic treatments		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	✓	Details will be provided in the Detailed Design stage.
4J NOISE AND POLLUTION				
4J-1 In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces • non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources • buildings should respond to both solar access and noise. Where solar access is away from the noise source, nonhabitable rooms can provide a buffer • where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable • 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	✓	
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: • 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	✓	
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	✓	
		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		Flexible apartment configurations are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households	✓	
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	✓	
		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	
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	N/A	No ground floor apartment is closed to or facing the street.
		Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: • both street, foyer and other common internal circulation entrances to ground floor apartments • private open space is next to the street • doors and windows face the street	N/A	No ground floor apartment is closed to or facing the street.
		Retail or home office spaces should be located along street frontages	N/A	No retail or home office is proposed in this project.
		Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion	N/A	No retail or home office is proposed in this project.
4L-2 Design of ground floor apartments delivers amenity and safety for residents		Privacy and safety should be provided without obstructing casual surveillance. Design solutions may include: • elevation of private gardens and terraces above the street level by 1-1.5m • 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 should be maximised through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
4M FACADES				
4M-1 Building facades provide visual interest along the street while respecting the character of the local area		Design solutions for front building facades may include: • a composition of varied building elements • a defined base, middle and top of buildings • revealing and concealing certain elements • changes in texture, material, detail and colour to modify the prominence of elements	✓	
		Building services should be integrated within the overall 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 facade throughout the day with building articulation, balconies and deeper window reveals	✓	
4M-2 Building functions are expressed by the facade		Building entries should be clearly defined	✓	
		Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height	✓	
		The apartment layout should be expressed externally through facade features such as party walls and floor slabs	✓	
4N ROOF DESIGN				
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: • 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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• 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 compliment the building • service elements are integrated	✓	
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: • penthouse apartments • dormer or clerestory windows • openable skylights	✓	
		Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	N/A	No open space is provided on roof top.
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: • the roof lifts to the north • eaves and overhangs shade walls and windows from summer sun	✓	
		Skylights and ventilation systems should be integrated into the roof design	N/A	
4O LANDSCAPE DESIGN				
4O-1 Landscape design is viable and sustainable		Landscape design should be environmentally sustainable and can enhance environmental performance by incorporating: • diverse and appropriate planting • bio-filtration gardens • appropriately planted shading trees • areas for residents to plant vegetables and herbs • composting • green roofs or walls	✓	
		Ongoing maintenance plans should be prepared	✓	
		Microclimate is enhanced by: • appropriately scaled trees near the eastern and western elevations for shade	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• a balance of evergreen and deciduous trees to provide shading in summer and sunlight access in winter • shade structures such as pergolas for balconies and courtyards		
		Tree and shrub selection considers size at maturity and the potential for roots to compete	✓	
4O-2 Landscape design contributes to the streetscape and amenity		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 • appropriate signage and fencing during construction	✓	
		Plants selected should be endemic to the region and reflect the local ecology	✓	
4P PLANTING ON STRUCTURES				
4P-1 Appropriate soil profiles are provided		Structures are reinforced for additional saturated soil weight	✓	Details will be provided in the Detailed Design stage.
		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	✓	Details will be provided in the Detailed Design stage.
		Minimum soil standards for plant sizes should be provided in accordance with Table 5	✓	Details will be provided in the Detailed Design stage.
4P-2 Plant growth is optimised with appropriate selection and maintenance		Plants are suited to site conditions, considerations include: • drought and wind tolerance • seasonal changes in solar access • modified substrate depths for a diverse range of plants • plant longevity	✓	

Plant type	Definition	Soil volume	Soil depth	Soil area
Large trees	12-18m high, up to 16m crown spread at maturity	150m³	1,200mm	10m x 10m or equivalent
Medium trees	8-12m high, up to 8m crown spread at maturity	35m³	1,000mm	6m x 6m or equivalent
Small trees	6-8m high, up to 4m crown spread at maturity	9m³	800mm	3.5m x 3.5m or equivalent
Shrubs			500-600mm	
Ground cover			300-450mm	
Turf			200mm	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		A landscape maintenance plan is prepared	✓	Details will be provided in the Detailed Design stage.
		Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	✓	Details will be provided in the Detailed Design stage.
4P-3 Planting on structures contributes to the quality and amenity of communal and public open spaces		Building design incorporates opportunities for planting on structures. Design solutions may include: • green walls with specialised lighting for indoor green walls • wall design that incorporates planting • green roofs, particularly where roofs are visible from the public domain • planter boxes Note: structures designed to accommodate green walls should be integrated into the building facade and consider the ability of the facade to change over time	✓	
4Q UNIVERSAL DESIGN				
4Q-1 Universal design features are included in apartment design to promote flexible housing for all community members		Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	✓	
4Q-2 A variety of apartments with adaptable designs are provided		Adaptable housing should be provided in accordance with the relevant council policy	N/A	
		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	N/A	
4Q-3 Apartment layouts are flexible and accommodate a range of lifestyle needs		Apartment design incorporates flexible design solutions which may include: • rooms with multiple functions • dual master bedroom apartments with separate bathrooms • larger apartments with various living space options	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		• open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom		
4R ADAPTIVE REUSE				
4R-1 New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place		Design solutions may include: • new elements to align with the existing building • additions that complement the existing character, siting, scale, proportion, pattern, form and detailing • use of contemporary and complementary materials, finishes, textures and colours	N/A	
		Additions to heritage items should be clearly identifiable from the original building	N/A	
		New additions allow for the interpretation and future evolution of the building	N/A	
4R-2 Adapted buildings provide residential amenity while not precluding future adaptive reuse		Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: • generously sized voids in deeper buildings • alternative apartment types when orientation is poor • using additions to expand the existing building envelope	N/A	
		Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where developments are unable to achieve the design criteria, alternatives could be considered in the following areas: • where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar and daylight access (see also sections 4A Solar and daylight access and 4B Natural ventilation) • alternatives to providing deep soil where less than the minimum requirement is currently available on the site • building and visual separation – subject to demonstrating alternative design approaches to achieving privacy • common circulation • car parking • alternative approaches to private open space and balconies	N/A	
4S MIXED USE				
4S-1		Mixed use development should be concentrated around public transport and centres	N/A	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement		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	✓	
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: • residential entries are separated from commercial entries and directly accessible from the street • commercial service areas are separated from residential components • residential car parking and communal facilities are separated or secured • security at entries and safe pedestrian routes are provided • concealment opportunities are avoided	✓	
		Landscaped communal open space should be provided at podium or roof levels	✓	
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	✓	
		A number of the following design solutions are used: • continuous awnings are maintained and provided in areas with an existing pattern • height, depth, material and form complements the existing street character • protection from the sun and rain is provided • awnings are wrapped around the secondary frontages of corner sites • awnings are retractable in areas without an established pattern	✓	
		Awnings should be located over building entries for building address and public domain amenity	✓	
		Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		Gutters and down pipes should be integrated and concealed	✓	
		Lighting under awnings should be provided for pedestrian safety	✓	Details will be provided in the Detailed Design stage.
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	✓	Details will be provided in the Detailed Design stage.
		Legible and discrete way finding should be provided for larger developments	✓	Details will be provided in the Detailed Design stage.
		Signage is limited to being on and below awnings and a single facade sign on the primary street frontage	✓	Details will be provided in the Detailed Design stage.
4U ENERGY EFFICIENCY				
4U-1 Development incorporates passive environmental design		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	✓	
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: • the use of smart glass or other technologies on north and west elevations • thermal mass in the floors and walls of north facing rooms is maximised • polished concrete floors, tiles or timber rather than carpet • insulated roofs, walls and floors and seals on window and door openings • overhangs and shading devices such as awnings, blinds and screens	✓	Details will be provided in the Detailed Design stage.
		Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)	✓	
4U-3 Adequate natural ventilation minimises the need for mechanical ventilation		A number of the following design solutions are used: • rooms with similar usage are grouped together • natural cross ventilation for apartments is optimised • natural ventilation is provided to all habitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible	✓	
4V WATER MANAGEMENT AND CONSERVATION				
4V-1 Potable water use is minimised		Water efficient fittings, appliances and wastewater reuse should be incorporated	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
		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	✓	
Objective 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	✓	
		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	✓	
4V-3 Flood management systems are integrated into site design		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	N/A	
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	✓	
		Waste and recycling storage areas should be well ventilated	✓	
		Circulation design allows bins to be easily manoeuvred between storage and collection points	✓	
		Temporary storage should be provided for large bulk items such as mattresses	✓	
		A waste management plan should be prepared	✓	
4W-2 Domestic waste is minimised by providing safe and convenient		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	✓	

ADG OBJECTIVE	DESIGN CRITERIA	DESIGN GUIDANCE	COMPLIANCE	COMMENTS
source separation and recycling		Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core	✓	
		For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses	N/A	
		Alternative waste disposal methods such as composting should be provided	N/A	
4X BUILDING MAINTENANCE				
4X-1 Building design detail provides protection from weathering		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	✓	
4X-2 Systems and access enable ease of maintenance		Window design enables cleaning from the inside of the building	✓	
		Building maintenance systems should be incorporated and integrated into the design of the building form, roof and 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	✓	
4X-3 Material selection reduces ongoing maintenance costs		A number of the following design solutions are used: • sensors to control artificial lighting in common circulation and spaces • natural materials that weather well and improve with time such as face brickwork • easily cleaned surfaces that are graffiti resistant • robust and durable materials and finishes are used in locations which receive heavy wear and tear, such as common circulation areas and lift interiors	✓	