00	APARTMENT DESIGN GUIDELINE		
ref	item description	notes	compliance
PART 3	**SITING THE DEVELOPMENT**		
3A	**SITE ANALYSIS**		
3A-1	**Objective:** Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context		✓
	Design Guidance		**Considered**
	Each element in the Site Analysis Checklist should be addressed (see Appendix 1)		YES
3B	**ORIENTATION**		
3B-1	**Objective:** Building types and layouts respond to the streetscape and site while optimising solar access within the development		✓
	Design Guidance		**Considered**
	Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1)		YES
	Where the street frontage is to the east or west, rear buildings should be orientated to the north		YES
	Where the street frontage is to the north or south, overshadowing to the south should be minimised and buildings behind the street frontage should be orientated to the east and west (see figure 3B.2)		NA
3B-2	**Objective:** Overshadowing of neighbouring properties is minimised during mid winter		✓
	Design Guidance		**Considered**
	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	Refer to sections 3D+4A. 71% (110/156) of dwellings receive 2 hours of solar access between 9am and 3pm mid-winter. The communal open space receives a minimum of 2 hours of direct sunlight mid winter	YES
	Solar access to living rooms, balconies and private open spaces of neighbours should be considered		YES
	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%		YES
	If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy		NA
	Overshadowing should be minimised to the south or down hill by increased upper level setbacks		NA
	It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	The neighbouring buildings to the south are isolated to the front portion of the site where the proposed buildings are kept to the reduced 4 storeys. The neighbouring development is mature in its site realisation and is unlikely to altered from its current site planning.	NA
	A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	No solar collectors on the neighbouring properties	NA
3C	**PUBLIC DOMAIN INTERFACES**		
3C-1	**Objective:** Transition between private and public domain is achieved without compromising safety and security		✓
	Design Guidance		**Considered**
	Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	The ground floor apartments fronting George Street have each been given large private open space terraces elevated from the street but accessed directly from the public domain.	YES
	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)	Ground floor terraces have been raised above the public domain, providing natural surveillance of the street and privacy for future occupants.	YES
	Upper level balconies and windows should overlook the public domain	Upper level balconies overlook the public domain.	YES
	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	There is no formal fencing to the street frontage and the landscape has been designed as a formal transition into the public domain giving the building a green earthing into its setting. The 3m front setback is landscape significantly with sandstone terraced walls and planting allowing the modest building to George St to sit softly in its context.	YES
	Length of solid walls should be limited along street frontages	Apartment living spaces and terraces are positioned along the length of the George St frontage, activating it entirely.	YES
	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	The residential entrance has been provided as a generous double height space that acts as an extension of the public domain.	YES
	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	The residential lobbies are differentiated in colour and landscape treatment to demarcate the entrances.	YES
	Opportunities for people to be concealed should be minimised		YES
3C-2	**Objective:** Amenity of the public domain is retained and enhanced		✓
	Design Guidance		**Considered**
	Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking		YES
	Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	Letterboxes are provided within the Building A entrance lobby.	YES
	The visual prominence of underground car park vents should be minimised and located at a low level where possible	Carpark ventilation is confined to a single low level louvre off the driveway oriented away from George Street	YES
	Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view		YES
	Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels	The building levels are set to allow on grade access from the south west corner of the site.	YES
	Durable, graffiti resistant and easily cleanable materials should be used	GF wall surfaces are a brick base pushed behind the public domain and are screened with landscaping	YES
	Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: - street access, pedestrian paths and building entries which are clearly defined - paths, low fences and planting that clearly delineate between communal/private open space and the adjoining public open space - minimal use of blank walls, fences and ground level parking		NA
	On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking	The carpark is split level to limit the basement protrusion above the natural ground line.	YES

3D	**COMMUNAL AND PUBLIC OPEN SPACE**		
3D-1	**Objective:** An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping		✓
	Design criteria		
	1. Communal open space has a minimum area equal to 25% of the site (see figure 3D.3)	2481sqm or 31% Communal Open Space. [COS]	✓
	2. Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours	The principle usable component of the COS on the ground floor and the roof terrace receives a minimum of 2 hours of direct sunlight mid winter.	✓
	Design Guidance		**Considered**
	Communal open space should be consolidated into a well designed, easily identified and usable area	The primary COS is a centrally positioned, large 2148sqm, north facing courtyard, around which the majority of apartments are positioned. A secondary COS is provided as a passive rooftop terrace on the top of the central Building B overlooking the GF COS and providing a district outlook.	YES
	Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions		YES
	Communal open space should be co-located with deep soil areas	Approximately 1,314sqm (61%) of COS is deep soil area with 815sqm of that area being deliberately located within the central courtyard.	YES
	Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	The courtyard COS is directly accessible from the building lobbies on ground floor and the roof terrace is accessible to residents via the Building B Lobby.	YES
	Where communal open space cannot be provided at ground level, it should be provided on a podium or roof	Residential COS are located on the ground floor and directly accessible from all building lobbies. A second COS has been provided on the roof for all residents.	YES
	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		NA
3D-2	**Objective:** Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting		✓
	Design Guidance		**Considered**
	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	Seating, BBQ and a walking track set amongst lush planting is coupled with informal play areas and community garden spaces on the GF	YES
	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	Facilities have been located to respond to site conditions.	YES
	Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks	Services have been coordinated to minimise visual impact from the street and communal open spaces.	YES
3D-3	**Objective:** Communal open space is designed to maximise safety		✓
	Design Guidance		**Considered**
	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		YES
	Communal open space should be well lit		YES
	Where communal open space/facilities are provided for children and young people they are safe and contained	Informal play areas; terraces, sandstone blocks with natural turf as well as garden beds have been provided.	YES
3D-4	**Objective:** Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood		NA
	Design Guidance		**Considered**
	The public open space should be well connected with public streets along at least one edge		NA
	The public open space should be connected with nearby parks and other landscape elements		NA
	Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid		NA
	Solar access should be provided year round along with protection from strong winds		NA
	Opportunities for a range of recreational activities should be provided for people of all ages		NA
	A positive address and active frontages should be provided adjacent to public open space		NA
	Boundaries should be clearly defined between public open space and private areas		NA
3E	**DEEP SOIL ZONES**		
3E-1	**Objective:** 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		✓
	Design criteria 1. Deep soil zones are to meet the following minimum requirements:	The minimum requirement of deep soil zone for the site is 524sqm (7%) 2086sqm (28%) of deep soil zone is proposed which is 4 times that required by the ADG.	✓

Site area	Minimum dimensions	Deep soil zone (% of site area)
less than 650m2	-	7%
650m2 - 1,500m2	3m	
greater than 1,500m2	6m	
greater than 1,500m2 with significant existing tree cover	6m	

	Design Guidance		**Considered**
	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	2086sqm (28%) of deep soil zone is proposed	YES
	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	The basement is largely consolidated beneath the building footprint to allow for the replacement of the existing trees on the site. Proposed trees have been given generous curtilage to ensure their long term health.	YES

	- 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		YES
3F	**VISUAL PRIVACY**		
3F-1	**Objective:** Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy		✓
	Design criteria 1. 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: Building height / Habitable rooms and balconies / Non-habitable rooms up to 12m (4 storeys) / 6m / 3m up to 25m (5-8 storeys) / 9m / 4.5m over 25m (9+ storeys) / 12m / 6m Note: 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	The site planning is derived from a courtyard typology that mirrors the approach of the southern neighbour but more importantly carves out 3 distinct built forms around a large central north facing courtyard. Building separation within the site meets ADG requirements. Building separation to northern boundary is 9m in compliance with the ADG. The 4 storey Building A separation to the southern boundary is 6m in compliance with the ADG. The neighbouring buildings to the south are part of a mature site realisation that is unlikely to altered from its current site planning. These building are isolated to the front portion of the site which are directly aligned with the 4 storey building A form. The 6 storey Building B provides a predominate 6m separation to the southern boundary. Building B avoids the ADG privacy triggers as it sits adjacent the neighbouring COS providing a technical compliance with the ADG. Of the 39m building B frontage to the southern boundary, 27% of it provides at least 9.4m setback. A 12m separation between the proposed rear massed buildings provides a significant void to the building form parallel to the boundary which reduces privacy impacts by limiting the number of apartments adjacent the boundary and the neighbouring swimming pool. The 6 storey Building C provides a 9m setback to the southern boundary, in compliance with the ADG.	✓
	Design Guidance		**Considered**
	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		YES
	For residential buildings next to commercial buildings, separation distances should be measured as follows:		NA
	- 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 (see also section 3B Orientation) - on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4)		YES
	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)		YES
	Direct lines of sight should be avoided for windows and balconies across corners	Solid walls are located to internal corner edges with habitable windows oriented away from adjacent balconies and windows	YES
	No separation is required between blank walls		YES
3F-2	**Objective:** 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		**Considered**
	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		YES
	Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas		YES
	Balconies and private terraces should be located in front of living rooms to increase internal privacy	All units have balconies directly in front of living spaces.	YES
	Windows should be offset from the windows of adjacent buildings	Adequate building separation has been provided and where possible windows have been offset from adjacent development windows.	YES
	Recessed balconies and/or vertical fins should be used between adjacent balconies		YES
3G	**PEDESTRIAN ACCESS AND ENTRIES**		
3G-1	**Objective:** Building entries and pedestrian access connects to and addresses the public domain		✓
	Design Guidance		**Considered**
	Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge		YES
	Entry locations relate to the street and subdivision pattern and the existing pedestrian network		YES
	Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries		YES

	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	There is only one building with one consolidated entry.	YES
3G-2	**Objective:** Access, entries and pathways are accessible and easy to identify		✓
	Design Guidance		**Considered**
	Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces	A double height entrance space and awning acts as a formal threshold into the site from the public domain. The entrance foyer, is then extended into the depth of the site along a considered landscape path that links the internal lobbies to the communal open space	YES
	The design of ground floors and underground car parks minimise level changes along pathways and entries	The carpark is designed as split level to better address the sloping site and minimise the level changes within the design.	YES
	Steps and ramps should be integrated into the overall building and landscape design	The footpaths, steps and terraces are paved with a similar finish to integrate the ground floor plane into the base of the building	YES
	For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3)	Wayfinding and courtyard signage will be provided to direct people through the site into the rear lobbies.	YES
	For large developments electronic access and audio/video intercom should be provided to manage access	Audio/video intercom will be provided adjacent to the main building entry and then at subsequent lobby entrances.	YES
3G-3	**Objective:** Large sites provide pedestrian links for access to streets and connection to destinations		NA
	Design Guidance		**Considered**
	Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport		NA
	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		NA
3H	**VEHICLE ACCESS**		
3H-1	**Objective:** Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes		✓
	Design Guidance		**Considered**
	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	The car park entry and exit is located at the northern end of the site at what is the lowest level along George Street. A security shutter is proposed for controlled access which is provided via a swipe card mechanism and audio intercom system for visitor access.	YES
	Car park entries should be located behind the building line	The basement carpark entrance is located behind the building facade.	YES
	Vehicle entries should be located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	The driveway is located at the lowest point of the site.	YES
	Car park entry and access should be located on secondary streets or lanes where available		NA
	Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided		NA
	Access point locations should avoid headlight glare to habitable rooms		N/A
	Adequate separation distances should be provided between vehicle entries and street intersections		NA
	Visual impact of long driveways should be minimised through changing alignments and screen planting		YES
	The width and number of vehicle access points should be limited to the minimum	Minimum driveway widths are provided to facilitate a an MRV for the servicing of apartments and private vehicle access	YES
	The need for large vehicles to enter or turn around within the site should be avoided		YES
	Garbage collection, loading and servicing areas are screened	Garbage areas are located within the basement and are screened from the rest of the development and the street.	YES
	Clear sight lines should be provided at pedestrian and vehicle crossings		YES
	Traffic calming devices such as changes in paving material or textures should be used where appropriate		YES
	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		YES
3J	**BICYCLE AND CAR PARKING**		
3J-1	**Objective:** Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas		✓
	Design criteria		
	1. 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	A total of 142 car parking spaces have been provided. This is made up of 126 residential and 16 visitor parking spaces over two basement levels.	✓
	Design Guidance		**Considered**
	Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site		NA
	Where less car parking is provided in a development, council should not provide on street resident parking permits		NA
3J-2	**Objective:** Parking and facilities are provided for other modes of transport		✓ ✗
	Design Guidance		**Considered**
	Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters		NO
	Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas	156 bicycle parking spaces are provided under cover in the basement for residents. All storage cages have been sized to adequately store a bicycle. 16 visitor bicycle parking spaces have also been provided	YES
	Conveniently located charging stations are provided for electric vehicles, where desirable		NA
3J-3	**Objective:** Car park design and access is safe and secure		✓
	Design Guidance		**Considered**
	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	One visitor car parking space is equipped with car wash facilities such a cold water tap and connection to the sewer system.	YES

	Direct, clearly visible and well lit access should be provided into common circulation areas		YES
	A clearly defined and visible lobby or waiting area should be provided to lifts and stairs		YES
	For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards		YES
3J-4	**Objective:** Visual and environmental impacts of underground car parking are minimised		✓
	Design Guidance		**Considered**
	Excavation should be minimised through efficient car park layouts and ramp design		YES
	Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles		YES
	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	To minimise excavation and given the site gradients the carpark at the lowest part of the site protrudes 2.3m. This non compliance also allows for the accommodation of the onsite stormwater detention and is largely concealed through the landscape treatment of the public domain and the George Street setback	NO
	Natural ventilation should be provided to basement and sub basement car parking areas	Natural ventilation has been provided to the basement car park with air intake adjacent the driveway and exhaust from the rear of the site.	YES
	Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design		YES
3J-5	**Objective:** Visual and environmental impacts of on-grade car parking are minimised		✓
	Design Guidance		**Considered**
	On-grade car parking should be avoided	No on-grade parking is provided	YES
	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		NA
3J-6	**Objective:** Visual and environmental impacts of above ground enclosed car parking are minimised		✓
	Design Guidance		**Considered**
	Exposed parking should not be located along primary street frontages		NA
	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 (see figure 3J.9)		NA

	Positive street address and active frontages should be provided at ground level		YES

PART 4	**DESIGNING THE BUILDING**		
4A	**SOLAR AND DAYLIGHT ACCESS**		
4A-1	**Objective:** To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space		✓
	Design criteria		
	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	71% (110/156) of dwellings receive 2 hours of solar access between 9am and 3pm mid-winter.	✓
	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		NA
	3. A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter	10% (16) of dwellings receive no direct sunlight to living areas between 9am and 3pm mid-winter. A holistic approach to amenity is sought for residents by orienting apartments away from the noise and pollution of the Railway line and onto the communal open space.	✘
	Design Guidance		**Considered**
	The design maximises north aspect and the number of single aspect south facing apartments is minimised	38% (59/156) apartments are north facing	YES
	Single aspect, single storey apartments should have a northerly or easterly aspect	The number of single aspect apartments have been minimised through the utilisation of corner apartments.	YES
	Living areas are best located to the north and service areas to the south and west of apartments		YES
	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		YES
	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		YES
	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		NA

	Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria		NA
4A-2	**Objective:** Daylight access is maximised where sunlight is limited		✓
	Design Guidance		**Considered**
	Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms		YES
	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		NA
	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		NA
4A-3	**Objective:** Design incorporates shading and glare control, particularly for warmer months		✓
	Design Guidance		**Considered**
	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)	All apartments have living spaces recessed behind balconies for shading in summer. Slab edges are extended and coupled with deep window reveals to shade west and east facing glazing.	YES
4B	**NATURAL VENTILATION**		
4B-1	**Objective:** All habitable rooms are naturally ventilated		✓
	Design Guidance		**Considered**
	The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms		YES
	Depths of habitable rooms support natural ventilation		YES
	The area of unobstructed window openings should be equal to at least 5% of the floor area served		YES
	Light wells are not the primary air source for habitable rooms		YES
	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		YES
4B -2	**Objective:** The layout and design of single aspect apartments maximises natural ventilation		✓
	Design Guidance		**Considered**
	Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3)		YES
	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	Apartments fronting the railway line respond to the noise source by allowing occupants the opportunity to acoustically screen their private open space through a glazed winter garden. This is not an internal space enclosed by an external wall, but rather the POS with an optional noise screen to allow optimal use of the external POS. Natural ventilation of those apartments can not be relied upon through the opening of windows and as such is provided through and acoustic baffle within the external façade. This has been designed by IGS Engineers to meet Australian standards for fresh air intake.	NA
4B-3	**Objective:** The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents		✓
	Design criteria		
	1. At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed	60% (94 of 156) of residential apartments are naturally cross or corner ventilated across the whole of the building	✓
	2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line		✓
	Design Guidance		**Considered**
	The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths		YES
	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)		YES
	Apartments are designed to minimise the number of corners, doors and rooms that might obstruct airflow		YES
	Apartment depths, combined with appropriate ceiling heights, maximise cross ventilation and airflow		YES
4C	**CEILING HEIGHTS**		
4C-1	**Objective:** Ceiling height achieves sufficient natural ventilation and daylight access		✓
	Design criteria 1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are:	Ceiling height to living rooms and bedrooms is 2.7m Kitchens under the ADG are classified as Habitable rooms which would technically require a 2.7m ceiling. The proposed kitchens have ceilings at 2.4m minimum where island benches have been provided. This 2.4m ceiling height to a kitchen allows for the concealment of water supply and ducting throughout each of the apartments and has no impact on amenity, solar access or ventilation and is universally accepted as good practice in apartment design.	✓ ✗

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	Ceiling height to bathrooms are 2.4m minimum. Floor to floors are 3.1m to achieve the above internal heights.	
		Attic spaces: 1.8m at edge of room with a 30 degree minimum ceiling slope		
		If located in mixed used areas: 3.3m for ground and first floor to promote future flexibility of use		
		These minimums do not preclude higher ceilings if desired		
	Design Guidance			**Considered**
	Ceiling height can accommodate use of ceiling fans for cooling and heat distribution			YES
4C-2	**Objective:** Ceiling height increases the sense of space in apartments and provides for well-proportioned rooms			✓
	Design Guidance			**Considered**
	A number of the following design solutions can be used: - the hierarchy of rooms in an apartment is defined using changes in ceiling heights and alternatives such as raked or curved ceilings, or double height spaces - well-proportioned rooms are provided, for example, smaller rooms feel larger and more spacious with higher ceilings - ceiling heights are maximised in habitable rooms by ensuring that bulkheads do not intrude. The stacking of service rooms from floor to floor and coordination of bulkhead location above non-habitable areas, such as robes or storage, can assist			YES
4C-3	**Objective:** Ceiling heights contribute to the flexibility of building use over the life of the building			✓
	Design Guidance			**Considered**
	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)			**YES**
4D	**APARTMENT SIZE AND LAYOUT**			
4D-1	**Objective:** The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity			✓
	Design criteria			
	1. Apartments are required to have the following minimum internal areas: 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		A range of apartment sizes are proposed and comply with the minimum internal areas. Proposed areas: 1 Bedroom – 50-54sqm - 50(32%) 2 Bedroom– 75-84sqm – 102 (65%) 3 Bedroom– 96-104sqm - 4 (3%)	✓
	2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms			✓
	Design Guidance			**Considered**
	Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)		Kitchen are separated from the main circulation space	YES
	A window should be visible from any point in a habitable room		windows are visible from any point in a habitable room	YES
	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		All habitable rooms meet minimum room dimensions and areas	NA
4D-2	**Objective:** Environmental performance of the apartment is maximised			✓
	Design criteria			
	1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height			✓
	2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window		Habitable room depths change within the various unit types. The open plan layout with an island kitchen bench sometimes exceed the 8m measured to the back of the kitchen cupboard, but never by more than 10%. Amenity and environmental performance is not compromised.	✓ ✗
	Design Guidance			**Considered**
	Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths			NA
	All living areas and bedrooms should be located on the external face of the building			YES
	Where possible: - bathrooms and laundries should have an external openable window - main living spaces should be oriented toward the primary outlook and aspect and away from noise sources		The building has been designed to minimise the number of apartments orientated towards the Railway Line and maximise those overlooking and fronting the internal courtyard and communal open space	YES
4D-3	**Objective:** Apartment layouts are designed to accommodate a variety of household activities and needs			✓
	Design criteria			YES
	1. Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space)		1 Bedroom apartments - Master bedrooms = 10sqm min. 2 Bedroom apartments – Master bedrooms = 10sqm min.. - Bedroom 2 = 9sqm min. 3 Bedroom apartments – – Master bedrooms = 10sqm min.. - Bedrooms 2&3 = 9sqm min.	✓
	2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)		3m minimum width is provided to all bedrooms	✓
	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		1 bedroom living room widths are a minimum 3.6m and 2+3 bedroom living room widths range from 4.0-4.2m.	✓
	4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts			
	Design Guidance			**Considered**
	Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas			YES
	All bedrooms allow a minimum length of 1.5m for robes		All wardrobes are equal to or over 1.5m in length. The majority of apartments have a wardrobe length of 1.8m	YES
	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		All main bedrooms have wardrobe length of 1.8m	YES
	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		Internal apartment layouts have been planned with careful consideration of furnishing (refer to floor plans). Most living areas are rectangular spaces. Corridors and circulation has been minimized.	YES

	- 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		
4E	**PRIVATE OPEN SPACE AND BALCONIES**		
4E-1	**Objective:** Apartments provide appropriately sized private open space and balconies to enhance residential amenity		✓
	Design criteria		
	1. All apartments are required to have primary balconies as follows: Dwelling type / Minimum area / Minimum depth Studio apartments / 4m2 / - 1 bedroom apartments / 8m2 / 2m 2 bedroom apartments / 10m2 / 2m 3+ bedroom apartments / 12m2 / 2.4m The minimum balcony depth to be counted as contributing to the balcony area is 1m	Each dwelling has access to a secure private open space, such as a balcony or terrace, with a minimum area for the balconies of 8sqm for 1 beds, 10sqm for 2 beds and 12sqm for 3 beds. The minimum balcony depth is 2m	✓
	2. For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m2 and a minimum depth of 3m		✓
	Design Guidance		**Considered**
	Increased communal open space should be provided where the number or size of balconies are reduced	The number and size of balconies are not reduced.	NA
	Storage areas on balconies is additional to the minimum balcony size	Storage areas are not proposed on balconies	NA
	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	Wintergardens are proposed for apartments fronting the railway line.	YES
4E-2	**Objective:** Primary private open space and balconies are appropriately located to enhance liveability for residents		✓
	Design Guidance		**Considered**
	Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space	All units have balconies adjacent to the living spaces. Some with the balconies located directly in front of the living area whilst others have balconies located to side of the living space to provide outlook for residents and where positioned within corner apartments open the corner of the building from the living spaces.	YES
	Private open spaces and balconies predominantly face north, east or west	90% of private open spaces predominantly face north, east or west	YES
	Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms	The unit types implemented to realise the development potential of the site in a sustainable manner whilst responding to the adjacent noise impacts of the railway line have meant balconies made more sense to be slightly defensive by recessing them behind the building line and offering a level of acoustic protection without compromising greater amenity.	NO
4E-3	**Objective:** Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building		✓
	Design Guidance		**Considered**
	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	Aluminium palisade balustrades are provided on balconies to take advantage of district view whilst maintain privacy.	YES
	Full width full height glass balustrades alone are generally not desirable	No glass balustrade are utilised through the proposal.	YES
	Projecting balconies should be integrated into the building design and the design of soffits considered	Balconies are integrated into the main line of the façade	YES
	Operable screens, shutters, hoods and pergolas are used to control sunlight and wind		NA
	Balustrades are set back from the building or balcony edge where overlooking or safety is an issue		YES
	Downpipes and balcony drainage are integrated with the overall facade and building design		YES
	Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design	Air-conditioning units have been integrated into the building design.	YES
	Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design		YES
	Ceilings of apartments below terraces should be insulated to avoid heat loss		YES
	Water and gas outlets should be provided for primary balconies and private open space	Water outlets will be provided for terraces only	YES
4E-4	**Objective:** Private open space and balcony design maximises safety		✓
	Design Guidance		**Considered**
	Changes in ground levels or landscaping are minimised		YES
	Design and detailing of balconies avoids opportunities for climbing and falls	Designed to comply with BCA requirements	YES
4F	**COMMON CIRCULATION AND SPACES**		
4F-1	Common circulation spaces achieve good amenity and properly service the number of apartments		✓
	Design criteria		
	1. The maximum number of apartments off a circulation core on a single level is eight	Building A and B each have 2 lift cores servicing a maximum 6 apartments per core. Building C has a single core servicing a maximum 8 apartments per core.	✓
	2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40		NA
	Design Guidance		**Considered**
	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		YES
	Daylight and natural ventilation should be provided to all common circulation spaces that are above ground	Corridors have been kept deliberately compact but for cores A2, B and C2 the longer corridors culminate in s window that provides natural ventilation and daylight.	YES
	Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors		YES
	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	Corridors have been kept deliberately compact but for cores A2, B and C2 the longer corridors culminate in a window that provides natural ventilation and daylight.	YES

	Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments		YES
	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		YES
	Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level		YES
	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		NO
4F-2	**Objective:** Common circulation spaces promote safety and provide for social interaction between residents		✓
	Design Guidance		**Considered**
	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		YES
	Tight corners and spaces are avoided	All corridors are a minimum of 1.5m wide	YES
	Circulation spaces should be well lit at night		YES
	Legible signage should be provided for apartment numbers, common areas and general wayfinding		YES
	Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided		YES
	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		NO
	Where external galleries are provided, they are more open than closed above the balustrade along their length		YES
4G	**STORAGE**		
4G-1	**Objective:** Adequate, well designed storage is provided in each apartment		✓
	Design criteria 1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage size volume Studio apartments: 4m3 1 bedroom apartments: 6m3 2 bedroom apartments: 8m3 3+ bedroom apartments: 10m3 At least 50% of the required storage is to be located within the apartment	Storage areas to all apartments comply with minimum volumes. Above minimal storage within basements will be provided to allow for increased amenity for future occupants.	✓
	Design Guidance		**Considered**
	Storage is accessible from either circulation or living areas		YES
	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	Storage spaces are not provided on balconies	NA
	Left over space such as under stairs is used for storage		NA
4G-2	**Objective:** Additional storage is conveniently located, accessible and nominated for individual apartments		✓
	Storage not located in apartments is secure and clearly allocated to specific apartments	No more than 50% of required storage is provided in the basement. These are clearly allocated chainwire storage cages.	YES
	Storage is provided for larger and less frequently accessed items		YES
	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	Allocated storage cages are to be located as close as possible to designated car spaces for residents.	YES
	If communal storage rooms are provided they should be accessible from common circulation areas of the building	All residents are provided individual storage.	NA
	Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain	Storage will be provided in clearly allocated chainwire storage cages in the basement and will not be visible from the public domain	YES
4H	**ACOUSTIC PRIVACY**		
4H-1	**Objective:** Noise transfer is minimised through the siting of buildings and building layout		✓
	Design Guidance		**Considered**
	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)		YES
	Window and door openings are generally orientated away from noise sources		YES
	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		YES
	Storage, circulation areas and non-habitable rooms should be located to buffer noise from external sources		YES
	The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	Party walls to be constructed to comply with NCC	YES
	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		YES
4H-2	**Objective:** Noise impacts are mitigated within apartments through layout and acoustic treatments		✓
	Design Guidance		**Considered**
	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	Adjacent apartments are planned so that like rooms are grouped together	YES
	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		YES
4J	**NOISE AND POLLUTION**		
4J-1	**Objective:** In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings		✓
	Design Guidance		**Considered**
	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	Apartments fronting the railway line respond to the noise source by allowing occupants the opportunity to acoustically screen their private open space through a glazed winter garden. This is not an internal space enclosed by an external	YES

	- 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	wall, but rather the POS with an optional noise screen to allow optimal use of the external POS. Natural ventilation of those apartments can not be relied upon through the opening of windows and as such is provided through and acoustic baffle within the external façade. This has been designed by IGS Engineers to meet Australian standards for fresh air intake.	
	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		YES
4J-2	**Objective:** Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission		✓
	Design Guidance		**Considered**
	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	Glazing specification have been designed in consultation with Acoustic Engineers in compliance, Planning NSW's Development Near Rail Corridors And Busy Roads – Interim Guideline to ensure an acceptable level of amenity.	YES
4K	**APARTMENT MIX**		
4K-1	**Objective:** A range of apartment types and sizes is provided to cater for different household types now and into the future		✓
	Design Guidance		**Considered**
	A variety of apartment types is provided	A range of apartment types and sizes are proposed. Mix and sizes are as follows: 1 Bedroom – 50-54sqm - 50 (32%) 2 Bedroom– 75-84sqm – 102 (65%) 3 Bedroom– 96-104sqm - 4 (3%)	YES
	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		YES
	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		YES
4K-2	**Objective:** The apartment mix is distributed to suitable locations within the building		✓
	Design Guidance		**Considered**
	Different apartment types are located to achieve successful facade composition and to optimise solar access (see figure 4K.3)	Apartments are located to maximise solar access.	YES
	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	All 3B units are located on ground floor and have been allocated large private open space terraces.	YES
4L	GROUND FLOOR APARTMENTS		
4L-1	**Objective:** Street frontage activity is maximised where ground floor apartments are located		
	Design Guidance		**Considered**
	Direct street access should be provided to ground floor apartments		
	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		
	Retail or home office spaces should be 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		
4L-2	**Objective:** Design of ground floor apartments delivers amenity and safety for residents		
	Design Guidance		**Considered**
	Privacy and safety should be provided without obstructing casual surveillance. Design solutions may include: - elevation of private gardens and terraces above the street level by 1-1.5m (see figure 4L.4) - landscaping and private courtyards - window sill heights that minimise sight lines into apartments - integrating balustrades, safety bars or screens with the exterior design		
	Solar access should be maximised through: - high ceilings and tall windows - trees and shrubs that allow solar access in winter and shade in summer		
4M	**FACADES**		
4M-1	**Objective:** Building facades provide visual interest along the street while respecting the character of the local area		
	Design Guidance		**Considered**
	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	The building is conceived of as modern expression of the predominantly brick banded buildings within the Bakehouse quarter. Those forms present a coupling of storeys expressed horizontally through a brick corbel or step in the façade. This same gesture is incorporated within the proposal, albeit through a modern interpretation of the corbel. The proposal takes the colour hues of the existing brick context with a similar horizontal band expression and inserts vertical windows into what is a modern form. The banding is generated through a slab extension that then allows variation between bands as the form gets higher. The banded form is articulated through the insertion of angled external walls resting on the bands. Slots are then carved out of the resultant form to demarcate lobby entries and variations in the floor plan. The form is then further modified by pulling the facade out to offer variation to the building expression in specific locations. This variation uses the same materiality as the base building but expresses slab edges and frames as a grid rather than horizontal bands.	YES

	Building services should be integrated within the overall facade		YES
	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		YES
	Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights		YES
	Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals		YES
4M-2	**Objective:** Building functions are expressed by the facade		
	Design Guidance		**Considered**
	Building entries should be clearly defined	Double height space with a splayed awning clearly defines the building entry	YES
	Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height		NA
	The apartment layout should be expressed externally through facade features such as party walls and floor slabs	Apartments layouts are expressed externally through an extension of the living space.	YES
4N	**ROOF DESIGN**		
4N-1	**Objective:** Roof treatments are integrated into the building design and positively respond to the street		✓
	Design Guidance		**Considered**
	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	The penthouse level vertical band is given a special expression as an adequate way to cap the form. The roof banding itself sits between two concrete slab extensions. The floor is given a concrete upstand to window sill height and a dark metal cladding is inserted above, further breaking the form down when perceived from the ground.	YES
	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		YES
4N-2	**Objective:** Opportunities to use roof space for residential accommodation and open space are maximised		✓
	Design Guidance		**Considered**
	Design guidance Habitable roof space should be provided with good levels of amenity. Design solutions may include: - penthouse apartments - dormer or clerestory windows - openable skylights	Skylights have been provided to penthouse apartments for increased amenity.	YES
	Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations	A Communal Open space has been provided on the roof with the utmost amenity, safety and security considerations.	YES
4N-3	**Objective:** Roof design incorporates sustainability features		✓
	Design Guidance		**Considered**
	Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: - the roof lifts to the north	Slab extensions provide sun shading.	YES
	- eaves and overhangs shade walls and windows from summer sun		
	Skylights and ventilation systems should be integrated into the roof design	Skylights into penthouse apartments.	YES
4O	**LANDSCAPE DESIGN**		
4O-1	**Objective:** Landscape design is viable and sustainable		
	Design Guidance		**Considered**
	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		YES
	Ongoing maintenance plans should be prepared		YES
	Microclimate is enhanced by: - appropriately scaled trees near the eastern and western elevations for shade - a balance of evergreen and deciduous trees to provide shading in summer and sunlight access in winter - shade structures such as pergolas for balconies and courtyards		YES
	Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4)		YES

Site Area (sqm)	Recommended Tree Planting
Up to 850	1 medium tree per 50sqm of deep soil zone
850 - 1,500	1 large tree or 2 medium trees per 90sqm of deep soil zone
Greater than 1,500	1 large tree or 2 medium trees per 80sqm of deep soil zone

40-2	**Objective:** Landscape design contributes to the streetscape and amenity		
	Design Guidance		**Considered**
	Landscape design responds to the existing site conditions including: - changes of levels - views - significant landscape features including trees and rock outcrops		YES
	Significant landscape features should be protected by: - tree protection zones (see figure 4O.5) - appropriate signage and fencing during construction	The management of trees will be in compliance with the Arboricultural Impact Assessment recommendations.	YES
	Plants selected should be endemic to the region and reflect the local ecology		YES
4P	**PLANTING ON STRUCTURE**		
4P-1	**Objective:** Appropriate soil profiles are provided		
	Design Guidance		**Considered**
	Structures are reinforced for additional saturated soil weight		YES
	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		YES
	Minimum soil standards for plant sizes should be provided in accordance with Table 5		YES

4P-2	**Objective:** Plant growth is optimised with appropriate selection and maintenance		
	Design Guidance		**Considered**
	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		YES
	A landscape maintenance plan is prepared		YES
	Irrigation and drainage systems respond to: - changing site conditions - soil profile and the planting regime - whether rainwater, stormwater or recycled grey water is used		YES
4P-3	**Objective:** Planting on structures contributes to the quality and amenity of communal and public open spaces		
	Design Guidance		**Considered**
	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	Considered and well integrated planting on structure is provided on ground level	YES
4Q	UNIVERSAL DESIGN		
4Q-1	**Objective:** Universal design features are included in apartment design to promote flexible housing for all community members		✓
	Design Guidance		**Considered**
	Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features	20% of the total apartments (32/156) incorporate the Livable Housing Guideline's silver level universal design features.	YES
4Q-2	**Objective:** A variety of apartments with adaptable designs are provided		✓
	Design Guidance		**Considered**
	Adaptable housing should be provided in accordance with the relevant council policy	15% (24/156) of the apartments are adaptable housing as per DCP requirements.	YES
	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	Adaptable apartments are design to comply with AS4299-1995	YES
4Q-3	**Objective:** Apartment layouts are flexible and accommodate a range of lifestyle needs		✓
	Design Guidance		**Considered**
	Apartment design incorporates flexible design solutions which may include: - rooms with multiple functions - dual master bedroom apartments with separate bathrooms - larger apartments with various living space options - open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom		YES
4R	ADAPTIVE REUSE		
4R-1	**Objective:** New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place		NA
	Design Guidance		**Considered**
	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 from the original building		
	New additions allow for the interpretation and future evolution of the building		
4R-2	**Objective:** Adapted buildings provide residential amenity while not precluding future adaptive reuse		NA
	Design Guidance		**Considered**
	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 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		
4S	MIXED USE		
4S-1	**Objective:** Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement		
	Design Guidance		**Considered**
	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		
4S-2	**Objective:** Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents		
	Design Guidance		**Considered**
	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	**Objective:** Awnings are well located and complement and integrate with the building design		✓
	Design Guidance		**Considered**
	Awnings should be located along streets with high pedestrian activity and active frontages		N/A
	A number of the following design solutions are used: - continuous awnings are maintained and provided in areas with an existing pattern - height, depth, material and form complements the existing street character - protection from the sun and rain is provided - awnings are wrapped around the secondary frontages of corner sites - awnings are retractable in areas without an established pattern		N/A
	Awnings should be located over building entries for building address and public domain amenity	A double height awning has been provided over the buildings main entrance.	YES
	Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure		YES
	Gutters and down pipes should be integrated and concealed		YES
	Lighting under awnings should be provided for pedestrian safety		YES
4T-2	**Objective:** Signage responds to the context and desired streetscape character		✓
	Design Guidance		**Considered**
	Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development		YES
	Legible and discrete way finding should be provided for larger developments		YES
	Signage is limited to being on and below awnings and a single facade sign on the primary street frontage		YES
4U	**ENERGY EFFICIENCY**		
4U-1	**Objective:** Development incorporates passive environmental design		✓
	Design Guidance		**Considered**
	Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)		YES
	Well located, screened outdoor areas should be provided for clothes drying		N/A
4U-2	**Objective:** Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer		✓
	Design Guidance		**Considered**
	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		YES
	Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)		
4U-3	**Objective:** Adequate natural ventilation minimises the need for mechanical ventilation		✓
	Design Guidance		**Considered**
	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		YES
4V	**WATER MANAGEMENT AND CONVERSATION**		
4V-1	**Objective:** Potable water use is minimised		✓
	Design Guidance		**Considered**
	Water efficient fittings, appliances and wastewater reuse should be incorporated		YES
	Apartments should be individually metered		YES
	Rainwater should be collected, stored and reused on site		YES
	Drought tolerant, low water use plants should be used within landscaped areas		YES
4V-2	**Objective:** Urban stormwater is treated on site before being discharged to receiving waters		✓
	Design Guidance		**Considered**
	Water sensitive urban design systems are designed by a suitably qualified professional		YES
	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		YES
4V-3	**Objective:** Flood management systems are integrated into site design		✓
	Design Guidance		**Considered**
	Detention tanks should be located under paved areas, driveways or in basement car parks		YES
	On large sites parks or open spaces are designed to provide temporary on site detention basins		YES
4W	**WASTE MANAGEMENT**		
4W-1	**Objective:** Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents		✓
	Design Guidance		**Considered**
	Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park	Residential bin holding areas are located within the basement.	YES
	Waste and recycling storage areas should be well ventilated Circulation design allows bins to be easily manoeuvred between storage and collection points	Direct access is provided from the waste holding area to the loading area within the basement	YES
	Temporary storage should be provided for large bulk items such as mattresses		YES
	A waste management plan should be prepared		YES
4W-2	**Objective:** Domestic waste is minimised by providing safe and convenient source separation and recycling		✓
	Design Guidance		**Considered**
	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	A waste chute for general waste and recycling has been provided on each residential.	YES

	Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core		YES	
	For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses		NA	
	Alternative waste disposal methods such as composting should be provided		NO	
4X	**BUILDING MAINTENANCE**			
4X-1	**Objective:** Building design detail provides protection from weathering			✓
	Design Guidance		**Considered**	
	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		YES	
4X-2	**Objective:** Systems and access enable ease of maintenance			✓
	Design Guidance		**Considered**	
	Window design enables cleaning from the inside of the building		YES	
	Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade		YES	
	Design solutions do not require external scaffolding for maintenance access		YES	
	Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems		NA	
	Centralised maintenance, services and storage should be provided for communal open space areas within the building		YES	
4X-3	**Objective:** Material selection reduces ongoing maintenance costs			✓
	Design Guidance		**Considered**	
	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	The building façade is composed of light weight masonry cladding with paint finish, powdercoated aluminium framed windows, metallic powdercoated aluminium extrusion screens.	YES	