ATTACHMENT 7

Table 6: SEPP (Housing) - Apartment Design Guide Part Three – Siting the Development

Apartment Design Guide Part Three – Siting the Development		
3A Site Analysis		
Objective 3A-1 Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context.		
Design Guidance	**Comment**	**Compliance**
Each element in the Site Analysis Checklist should be addressed (as follows):		
Site location: Broad map or aerial photo showing site location in relation to surrounding centres, shops, civic/community facilities and transport.	The development includes a map of the wider area.	Compliant
Aerial photograph: Colour aerial photographs of site in its context.	The development includes colour aerial photographs.	Compliant
Local context plan: Plan(s) of the existing features of the wider context including adjoining properties and the other side of the street, that show: • land use, height and typology of adjacent and opposite buildings in the street • views to and from the site • circulation patterns and access for pedestrians, vehicles and servicing • location of heritage items and areas of environmental significance • patterns of buildings, open spaces and vegetation • significant noise sources on and near the site, particularly roads, rail, aircraft and industrial noise • building envelopes and setbacks for future development • a written statement of key issues.	The development includes plans indicating existing features of the wider context.	Compliant

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Site context and survey plan: Plan(s) of the existing site based on a survey drawing showing the features of the immediate site including: • boundaries, site dimensions, site area, north point • topography, showing relative levels and contours at 0.5 metre intervals for the site and across site boundaries where level changes exist, any unique natural features such as rock outcrops, watercourses, existing cut or fill, adjacent streets and sites • location and size of major trees on site and relative levels where relevant, on adjacent properties and street trees • location and use of existing buildings or built features on the site • location and important characteristics of adjacent public, communal and private open spaces • location and height of existing windows, balconies, walls and fences on adjacent properties facing the site, as well as parapet and ridge lines • pedestrian and vehicular access points, driveways and features such as service poles, bus stops, fire hydrants etc • location of utility services, including easements and drainage • location of any other relevant features.	The development includes plans of the existing site based on a survey including sufficient information.	Compliant
Streetscape elevations and sections: Photographs or drawings of the site in relation to the streetscape and along both sides of any street that the development fronts, that show: • overall height (storeys, metres) and important parapet/datum lines of adjacent buildings • patterns of building frontage, street setbacks and side setbacks • planned heights.	The development includes drawings of the relevant streetscapes including overall height and building frontage.	Compliant

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Analysis: Plan that synthesises and interprets the context, streetscape and site documentation into opportunities and constraints that generate design parameters, including the following information: • orientation and any overshadowing of the site and adjoining properties by neighbouring structures (excludes vegetation). The winter sun path should also be shown between 9 am and 3 pm on 21 June • identification of prevailing wind • the geotechnical characteristics of the site and suitability of the proposed development • the public domain interface and street setback • relationship to and interface with adjacent properties, including side and rear setbacks • ventilation for the subject site and immediate neighbours • proposed building footprint location • retained and proposed significant trees and deep soil zones • proposed communal open space • proposed car park footprint and depth • proposed building entries • supporting written material - this should include technical advice from specialists involved in the development process including landscape architects, arborists, geotechnical engineers and/or contamination specialists where applicable.	The development includes a site analysis plan that provides details of site orientation, overshadowing, prevailing winds and other relevant features.	Compliant
3B Orientation		
Objective 3B-1 Building types and layouts respond to the streetscape and site while optimising solar access within the development.		
Design Guidance	**Comment**	**Compliance**
Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see **Figure 3B.1**).	The development provides for buildings that define the surrounding streets of Calthorpe Street, Perrin	Compliant

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Where the street frontage is to the east or west, rear buildings should be orientated to the north.	Street, Edward Drive, Rucos Street and Glenrock Drive. Due to the surrounding streets, overshadowing onto developments is minimised. Direct access is provided to the ground level units along Calthorpe Street, Edward Drive, Rucos Street and Glenrock Drive. In terms of orientation, All buildings are orientated to their respective street to the west, north, south and east. This ensures that the units achieve a good level of solar access.	
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**).		
Objective 3B-2 Overshadowing of neighbouring properties is minimised during mid winter.		
Design Guidance	**Comment**	**Compliance**
Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access.	The development includes overshadowing diagrams which demonstrate it will not result in overshadowing to neighbouring properties. Given the site is orientated in an east-west direction, the proposed buildings will not impact on properties to the east or west. 77% of units achieve the minimum 3 hours of direct sunlight in mid winter. Adjoining properties on opposite sides of the surrounding streets will have minimal overshadowing impacts.	Compliant
Solar access to living rooms, balconies and private open spaces of neighbours should be considered.		
Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%.		
If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy.		
Overshadowing should be minimised to the south or down hill by increased upper level setbacks.		

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It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development.		
A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings.		
3C Public Domain Interface		
Objective 3C-1 Transition between private and public domain is achieved without compromising safety and security.		
Design Guidance	**Comment**	**Compliance**
Terraces, balconies and courtyard apartments should have direct street entry, where appropriate.	The development achieves an appropriate transition between private and public domain without compromising safety and security. Ground floor units fronting Calthorpe St, Edward Dr, Rucos St & Glenrock Dr have direct access to the street with upper floor balconies and windows overlooking the public domain they are facing. Permeable fencing has been provided at the ground level providing for both solar penetration and passive surveillance while offering sufficient privacy for the courtyards. There are no solid building walls along street frontages. The individual front doors for the ground level units are considered a feature that will provide for excellent opportunities for casual interaction between residents as it allows for casual interaction between residents.	Compliant
Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings (see **Figure 3C.1**).		
Upper level balconies and windows should overlook the public domain.		
Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls should be limited to 1m.		
Length of solid walls should be limited along street frontages.		
Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries,		

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near letter boxes and in private courtyards adjacent to streets.	The individual entries into the communal area are clearly defined through landscaped elements of planting and built forms such as awnings, variable setbacks and colour variations. Access to the upper floor units of the buildings is clearly defined via architectural detailing of the lift and stairwell cores.	
In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries should be differentiated to improve legibility for residents, using a number of the following design solutions: • architectural detailing • changes in materials • plant species • colours.		
Opportunities for people to be concealed should be minimised.		
Objective 3C-2 Amenity of the public domain is retained and enhanced.		
Design Guidance	**Comment**	**Compliance**
Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking.	The ground level units and common area street frontages include landscaping within in the front setback. Being a development site entirely bounded by public streets, the development is ringed by landscaping. Letterboxes are in groups at each communal lobby. Car parking ventilation will be integrated into the building façade of all buildings. Waste storage areas are located within the basement carparking areas. Ramping is minimised throughout the site whilst materials at ground level are durable and easily cleaned.	Compliant
Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided.		
The visual prominence of underground car park vents should be minimised and located at a low level where possible.		
Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view.		
Ramping for accessibility should be minimised by building entry location and setting ground floor levels in relation to footpath levels.		

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Durable, graffiti resistant and easily cleanable materials should be used.		
Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and planting that clearly delineate between communal/private open space and the adjoining public open space • minimal use of blank walls, fences and ground level parking.		
On sloping sites protrusion of car parking above ground level should be minimised by using split levels to step underground car parking.		
3D Communal and Public Open Space		
Objective 3D-1 An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping.		
Design Criteria	**Comment**	**Compliance**
Communal open space has a minimum area equal to 25% of the site (see **Figure 3D.3**).	The site has an area of 11,901 sqm. The total communal open space for the site is 3,005 sqm which is 25% of the site. This meets ADG requirement and exceeds the DCP requirement of 20% of the site. Greater than 50% of the communal open space receives more than 2 hours sunlight between 9am and 3pm on the winter solstice.	Compliant
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).		
Design Guidance	**Comment**	**Compliance**
Communal open space should be consolidated into a well designed, easily identified and usable area.	The development provides an area of communal open space in the centre of the site which	Compliant

Apartment Design Guide Part Three – Siting the Development		
Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions.	includes a pool, gymnasium and communal lounge area. All units will have access to this space which includes high quality planting throughout and a number of co-located deep soil zones.	
Communal open space should be co-located with deep soil areas.		
Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies.		
Where communal open space cannot be provided at ground level, it should be provided on a podium or roof.		
Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: • provide communal spaces elsewhere such as a landscaped roof top terrace or a common room • provide larger balconies or increased private open space for apartments • demonstrate good proximity to public open space and facilities and/or provide contributions to public open space.		
Objective 3D-2 Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting.		
Design Guidance	**Comment**	**Compliance**
Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: • seating for individuals or groups • barbecue areas • play equipment or play areas • swimming pools, gyms, tennis courts or common rooms.	The development provides a communal open space area in a combined form of landscaped areas, swimming pool, gymnasium and communal lounge area and walking paths. The communal open space area is protected from the	Compliant

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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.	prevailing breezes by the surrounding buildings. The visual impacts of services have been minimised as they have been integrated into the building design notwithstanding the electricity substation in the south-east corner of the site which is an existing feature.	
Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks.		
Objective 3D-3 Communal open space is designed to maximise safety.		
Design Guidance	**Comment**	**Compliance**
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.	All buildings have rooms and/or balconies facing the central open space offering sufficient passive surveillance to the communal area. There is sufficient safety and security measures proposed for the communal open space area, including planting types, lighting and passive surveillance. The communal open space provides for safe, contained facilities for children and young people including communal seating areas and walkways through the site.	Compliant
Communal open space should be well lit.		
Where communal open space/facilities are provided for children and young people they are safe and contained.		
Objective 3D-4 Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood.		
Design Guidance	**Comment**	**Compliance**
The public open space should be well connected with public streets along at least one edge.	The communal open space area provides a range of recreation size spaces and activities. Pedestrian access to the development is provided from various points between the buildings. In total, five entry points are provided to the	Compliant
The public open space should be connected with nearby parks and other landscape elements.		

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Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid. Solar access should be provided year round along with protection from strong winds. Opportunities for a range of recreational activities should be provided for people of all ages. A positive address and active frontages should be provided adjacent to public open space. Boundaries should be clearly defined between public open space and private areas.	communal open space area. The internal pedestrian network is clearly visible from the street network via view lines and pedestrian paths. The development is located within walking distance to the Googong Town Centre and Bunyip Park offering multiple leisure and community facilities for recreational and socialisation opportunities.	

3E Deep Soil Zones		
Objective 3E-1 Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality.		
Design Criteria	**Comment**	**Compliance**
Deep soil zones are to meet the following minimum requirements: **Site Area** / **Minimum Dimensions** / **Deep Soil Zone (% of site area)** Less than 650m^2 / - / 7% 650m^2 – 1,500m^2 / 3.0m / 7% Greater than 1,500m^2 / 6.0m / 7% Greater than 1,500m^2 with significant existing tree cover / 6.0m / 7%	The site has an area of 11,901 sqm. The deep soil zones make up 2005 sqm which is 17% of the site – larger than the minimum requirement of 7% of site area. All deep soil zones have minimum dimension greater than 6m.	Compliant

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3F Visual Privacy

Objective 3F-1 Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy.

Design Criteria	Comment	Compliance
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: **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 development has two height requirements: part 12m and part 16m height requirement which align with the split zoning of the site. Buildings range between 3 storey and 5 storey. Required separation distances are assessed on buildings up to 4 storeys because there are no instances within the site where two 5 storey buildings interface. The recommended separation distances are therefore 12m between habitable rooms and balconies and 6m between non-habitable rooms. North-South Separation The separation between Buildings B/C and E/F is greater than 12m so is compliant. Additionally, Buildings E/F incorporate angled glazing to bedrooms to increase visual privacy. East-West Separation The separation between buildings varies and in some instances is less than 12m however the building design orientates apartments to avoid direct interface and incorporates privacy devices such as screening / louvres where appropriate to achieve good visual privacy.	Minor non-compliance which is acceptable

Building Height	Habitable Rooms & Balconies	Non-Habitable Rooms
Up to 12m (Four Storeys)	6.0m	3.0m
Up to 25m (5-8 storeys)	9.0m	4.5m
Over 25m (9+ storeys)	12.0m	6.0m

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Objective 3F-2 Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space.		
Design Guidance	**Comment**	**Compliance**
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.	The communal open space area is separated from the windows to apartments and private open space by planting and internal circulation routes.	Compliant
Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas.	Due to the layout of the units, some bedrooms are adjacent to the gallery access. However, given the small number of units that are accessed from each gallery level (maximum six units) the access arrangements are considered acceptable.	Not compliant but acceptable
Balconies and private terraces should be located in front of living rooms to increase internal privacy.	Balconies and terraces are located in front of living rooms.	Compliant
Windows should be offset from the windows of adjacent buildings.	Due to the orientation of the buildings, all windows are	Compliant

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	offset between blocks and have sufficient separations.	
Recessed balconies and/or vertical fins should be used between adjacent balconies.	Adjacent balconies and terraces are separated by a solid partition.	Compliant
3G Pedestrian Access and Entries		
Objective 3G-1 Building entries and pedestrian access connects to and addresses the public domain.		
Design Guidance	**Comment**	**Compliance**
Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge.	The design provides multiple entries around the site to ensure that each street has active address points including communal building entries individual gates.	Compliant
Entry locations relate to the street and subdivision pattern and the existing pedestrian network.	The provision of multiple individual entries to units from street level is consistent with street activation best practice.	Compliant
Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries.	All building entries are clearly identified.	Compliant
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.	Street frontage is not limited.	Compliant
Objective 3G-2 Access, entries and pathways are accessible and easy to identify.		
Design Guidance	**Comment**	**Compliance**
Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces.	The building access points that are located in the central communal open space and are clearly visible from the communal space.	Compliant

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The design of ground floors and underground car parks minimise level changes along pathways and entries.	The development includes a basement car park with access from Calthorpe Street to the north and Perrin Street to the south. Due to the topography of the site which has a small slope from the west to east of the site, level changes are minimised. Changes are accommodated through ramps and stairs within the central common open space area.	Compliant
Steps and ramps should be integrated into the overall building and landscape design.	All proposed steps and ramps are integrated into the overall building and landscaping design.	Compliant
For large developments 'way finding' maps should be provided to assist visitors and residents (see **Figure 4T.3**).	Signage is proposed to be integrated into the overall building and landscaping design.	Compliant
For large developments electronic access and audio/video intercom should be provided to manage access.	Electronic access is proposed to be used.	Compliant
Objective 3G-3 Large sites provide pedestrian links for access to streets and connection to destinations.		
Design Guidance	**Comment**	**Compliance**
Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport.	The development includes five pedestrian access points through the development that will link the northern and southern sides of the site with surrounding residential and commercial areas surrounding the site.	Compliant
Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate.	The proposed pedestrian links have clear sight lines, are overlooked by habitable rooms and will be well lit as demonstrated by the submitted lighting plan. The pedestrian links pass through the communal open space	Compliant

Apartment Design Guide Part Three – Siting the Development		
	area which contains active uses.	
3H Vehicle Access		
Objective 3H-1 Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes.		
Design Guidance	**Comment**	**Compliance**
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.	Vehicle access to the basements is integrated into the building's overall architectural and landscape treatment. Basement entries are all located off the internal driveway so do not face the street.	Compliant
Car park entries should be located behind the building line.	The car park entry is located behind the building line of Building four.	Compliant
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 location of basement entry near the lowest point of the site minimises ramping.	Compliant
Car park entry and access should be located on secondary streets or lanes where available.		Compliant
Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided.	The driveway entrance is sufficient in length to avoid having to accommodate standing vehicles on the driveway.	Compliant
Access point locations should avoid headlight glare to habitable rooms.	Entry does not interface habitable rooms or is mitigated with screening to ensure no light-spill issues.	Compliant
Adequate separation distances should be provided between vehicle entries and street intersections.	Adequate separation distances are proposed.	Compliant

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The width and number of vehicle access points should be limited to the minimum.	The development proposes a two vehicle ingress and egress points on two sides of the development.	Compliant
Visual impact of long driveways should be minimised through changing alignments and screen planting.	The through driveway has been designed with a bend and garden beds to reduce the visual length through the site.	Compliant
The need for large vehicles to enter or turn around within the site should be avoided.	The need for larger vehicles to turn around within the site is avoided as servicing vehicles can enter from one side and leave in a forward direction to the other side of the development.	Compliant
Garbage collection, loading and servicing areas are screened.	Four waste storage rooms are proposed within the basement and central pickup point located adjacent to the driveway between Blgs B & F.	Compliant
Clear sight lines should be provided at pedestrian and vehicle crossings.	All pedestrian and vehicular crossings have clear sight lines.	Compliant
Traffic calming devices such as changes in paving material or textures should be used where appropriate.	The central driveway has been designed to give driveway priority over the two access basements under Blgs A & F. Due to the confluence of basement entrances between Blgs A & F, stop signage is to be installed to mitigate the potential conflicts at the intersection and line marking for clarity.	Compliant
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.	Pedestrian and vehicular access points are separated by a change in levels, landscaping and building design.	Compliant

Apartment Design Guide Part Three – Siting the Development		
3J Bicycle and Car Parking		
Objective 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas.		
Design Criteria	**Comment**	**Compliance**
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.	Each unit is provided with basement car parking to meet the requirements of Part 7 of the GDCP. Individual lifts and stairwell cores provide access to each building. It is noted that the upper levels of Blgs E & F are not accessible by lifts. A total of 316 resident parking spaces, 33 visitor parking spaces are provided on-site. The supplied car parking meets the on-site requirements for the proposed development. Each unit is provided with additional storage space within the basement carpark.	Compliant
Objective 3J-2 Parking and facilities are provided for other modes of transport		
Design Guidance	**Comment**	**Compliance**
Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters.	There is no requirement for motorcycle parking.	Non-Compliant
Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas.	There is no requirement for visitor bicycle parking. Residential bicycle parking is provided within individual basement storage cages.	Compliant
Conveniently located charging stations are provided for electric vehicles, where desirable.	The development does not propose vehicle charging stations.	n/a
Objective 3J-3 Car park design and access is safe and secure		

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Design Guidance	**Comment**	**Compliance**
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.	Relevant supporting facilities including storage cages are located adjoining the car parking spaces for each unit. Each unit is provided with designated car parking spaces and storage cages.	Compliant
Direct, clearly visible and well lit access should be provided into common circulation areas.	Direct, clear access will be provided to the lift and stair cores for each building from the basement car park.	Compliant
A clearly defined and visible lobby or waiting area should be provided to lifts and stairs.	Building lobbies are spread evenly throughout the basement. Lobbies can be accessed without crossing car park spaces.	Compliant
For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards.	The basement carpark will include sufficient lighting and signage to ensure safe pedestrian access as demonstrated by the submitted lighting plan.	Compliant. Included as a Condition of Consent
Objective 3J-4 Visual and environmental impacts of underground car parking are minimised.		
Design Guidance	**Comment**	**Compliance**
Excavation should be minimised through efficient car park layouts and ramp design.	The basement car parking area minimises excavation by providing the access point at a lower part of the site.	Compliant
Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles.	The car parking layout is considered to be well organised.	Compliant
Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites.	The car park does not extrude above ground except at the entry points.	Compliant
Natural ventilation should be provided to basement and sub basement car parking areas.	Natural ventilation is proposed for the car park.	Compliant

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Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design.	Ventilation grills will be provided within the building façade.	Compliant
Objective 3J-5 Visual and environmental impacts of on-grade car parking are minimised		
Design Guidance	**Comment**	**Compliance**
On-grade car parking should be avoided.	On-grade car parking for 12 visitor spaces including 2 accessible spaces is proposed and is acceptable.	Compliant
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.	The 12 visitor spaces are suitably located off the driveway entry and visible once entered onto the site.	Compliant

Table 4: SEPP (Housing) - Apartment Design Guide Part Four – Designing the Building

Apartment Design Guide Part Four – Designing the Building		
4A Solar and Daylight Access		
Objective 4A-1 To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space.		
Design Criteria	**Comment**	**Compliance**
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.	N/A	N/A
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.	Living rooms and private open spaces of 77% of apartments receive at least 3 hours of direct sunlight between 9am and 3pm at mid-winter. This exceeds the minimum recommendation of 70%.	Compliant
A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter.	The master plan design ensures dwellings address all surrounding streets. For this reason, 14% of apartments receive no direct sunlight between 9am and 3pm at mid-winter. This is less than the minimum recommendation of 15%.	Compliant
Objective 4A-2 Daylight access is maintained where sunlight is limited.		
Design Guidance	**Comment**	**Compliance**
Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms.	The design receives excellent daylighting to all habitable rooms without need for skylights or high-level windows. Additionally, the design provides opportunity for windows to wet areas such as bathrooms which provides significant amenity in apartment dwellings.	Compliant

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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.	Courtyards are not used for lighting.	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.	Reflected light is not proposed.	N/A
Objective 4A-3 Design incorporates shading and glare control, particularly for warmer months.		
Design Guidance	**Comment**	**Compliance**
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	The design incorporates appropriate passive sun control elements, notably deep balconies for solar shading of balconies which extend off the main living space. Bedrooms include sensible proportion of window to wall. There are no glass curtain walls which cause apartments to overheat in summer and increase reliance on mechanical air conditioning. In addition, the vertical blades on the upper levels of Buildings B, C, D, E & F also provide shading whilst	Compliant

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glass or glass with a reflectance level below 20% (reflective films are avoided).	balconies provide further shading to the unit below.	
4B Natural Ventilation		
Objective 4B-1 All habitable rooms are naturally ventilated.		
Design Guidance	**Comment**	**Compliance**
The building's orientation maximises capture and use of prevailing breezes for natural ventilation in habitable rooms.	78% of apartments are naturally cross ventilated (corner or cross-through apartments), which exceeds the minimum ADG recommendation of 60%.	Compliant
Depths of habitable rooms support natural ventilation.	The maximum overall depth of cross-through apartments is 15.5m so does not exceed the maximum recommendation of 18m.	Compliant
The area of unobstructed window openings should be equal to at least 5% of the floor area served.	Due to the dual aspect nature of the units, each unit has an area of unobstructed window openings in excess of 5% of the floor area served.	Compliant
Light wells are not the primary air source for habitable rooms.	No light wells are proposed	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.	The doors and openable windows are considered to maximise natural ventilation opportunities.	Compliant

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Objective 4B-2 The layout and design of single aspect apartments maximises natural ventilation.		
Design Guidance	**Comment**	**Compliance**
Apartment depths are limited to maximise ventilation and airflow (see also **Figure 4D.3**).	Unit depths have been limited to maximise ventilation and airflow.	Compliant
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.	Buildings A, B, E & F have single aspect units which are single bedroom.	To be conditioned to provide details prior to Construction Certificate.
Objective 4B-3 The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents.		
Design Criteria	**Comment**	**Compliance**
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.	78% of units have a dual aspect and are naturally cross ventilated.	Compliant
Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.	N/A	N/A
4C Ceiling Heights		
Objective 4C-1 Ceiling height achieves sufficient natural ventilation and daylight access.		
Design Criteria	**Comment**	**Compliance**

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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 Two 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.	Floor-to-floor heights are 3.1m. This allows ceiling heights of 2.7m to be provided for habitable rooms and 2.4m for non-habitable rooms. Ground floor apartments addressing Glenrock Drive and Rucos Streets include higher ceilings to allow future adaptations to commercial use.	Compliant

4D Apartment Size and Layout

Objective 4D-1 The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity.

Design Criteria	**Comment**	**Compliance**
Apartments are required to have the following minimum internal areas: **Apartment Type** / **Minimum Internal Area** Studio: 35m^2 One Bedroom: 50m^2 Two Bedroom: 70m^2 Three Bedroom: 90m^2 The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m^2 each. A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m^2 each.	The units have the following sizes in compliance with this control: One bedroom: 70 m^2 – 86 m^2 Two bedroom: 96 m^2 – 118 m^2 Three bedroom: 139 m^2 – 166 m^2	Compliant

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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.	Each habitable room has a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room.	Compliant
Objective 4D-2 Environmental performance of the apartment is maximised.		
Design Criteria	**Comment**	**Compliance**
Habitable room depths are limited to a maximum of 2.5 x the ceiling height.	The development is compliant in respect of this control.	Compliant
In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window.	Dwellings include open plan layout of maximum 8m depth to the kitchen joinery.	Compliant
Objective 4D-3 Apartment layouts are designed to accommodate a variety of household activities and needs.		
Design Criteria	**Comment**	**Compliance**
Master bedrooms have a minimum area of 10m2 and other bedrooms 9m^2 (excluding wardrobe space).	All master bedrooms have dimension greater than 10sqm (excluding wardrobe space). All other bedrooms have dimension greater than 9sqm (excluding wardrobe space).	Non-compliant but acceptable
Bedrooms have a minimum dimension of 3m (excluding wardrobe space).	Whilst all minimum areas are achieved, some secondary bedrooms have a minimum dimension of 2.9m (excluding wardrobe space).	Compliant
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.	All living rooms exceed minimum widths (greater than 3.6m for 1-bedroom apartments and greater than 4m for 2- and 3-bedroom apartments).	Compliant
The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts.	The width of cross-through apartments exceeds the minimum width of 4m.	Compliant

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4E Private Open Space and Balconies.

Objective 4E-1 Apartments provide appropriately sized private open space and balconies to enhance residential amenity.

Design Criteria	Comment	Compliance
All apartments are required to have primary balconies as follows: **Dwelling Type** / **Minimum Area** / **Minimum Depth** Studio Apartment / 4.0m^2 / - One Bedroom Apartment / 8.0m^2 / 2.0m Two Bedroom Apartment / 10.0m^2 / 2.0m Three Bedroom Apartment / 12.0m^2 / 2.4m The minimum balcony depth to be counted as contributing to the balcony area is 1m.	All units achieve in excess of the minimum POS areas. The non-compliant units are as follows:	Compliant
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 15m^2 and a minimum depth of 3.0m.	All units at ground level are provided with a POS that achieves the required dimensions.	Compliant
Increased communal open space should be provided where the number or size of balconies are reduced.	N/A	N/A

Objective 4E-2 Primary private open space and balconies are appropriately located to enhance liveability for residents.

Design Guidance	Comment	Compliance
Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space.	Primary open space areas and balconies are located adjacent to living/dining/kitchens.	Compliant
Private open spaces and balconies predominantly face north, east or west.	All POS areas and balconies face either north, east or west except for 10 units in Blg A that face in a south easterly direction.	Non-compliant but acceptable

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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.	Majority of private open space and balconies are orientated with the longer side facing outwards.	Compliant
Objective 4E-3 Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building.		
Design Guidance	**Comment**	**Compliance**
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.	Given the variation in topography and environment around the site, the development proposes a combination of fencing, landscaping and solid balustrades. Balustrades to the units are a mix of solid and transparent glass which breaks up the façade.	Compliant
Full width full height glass balustrades alone are generally not desirable.	The development provides full height glass balustrades mostly on upper levels.	Non-compliant but acceptable
Projecting balconies should be integrated into the building design and the design of soffits considered.	Projected balconies are integrated into the building design.	Compliant
Downpipes and balcony drainage are integrated with the overall facade and building design.	Downpipes and balcony drainage are integrated with the overall façade and building design.	Compliant
Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design.	Air conditioning units will be provided in a mixture of roof top areas and balconies and will be fully integrated into the building design.	Compliant
Objective 4E-4 Private open space and balcony design maximises safety.		
Design Guidance	**Comment**	**Compliance**
Changes in ground levels or landscaping are minimised.	The topography of the site means there are changes in levels throughout. Where possible, it is considered that the development has minimised ground level	Compliant

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	changes through the use of landscaping in the communal open space area.	
Design and detailing of balconies avoids opportunities for climbing and falls.	The balustrades and balcony designs achieve this requirement.	Compliant
4F Common Circulation and Spaces		
Objective 4F-1 Common circulation spaces achieve good amenity and properly service the number of apartments.		
Design Criteria	**Comment**	**Compliance**
The maximum number of apartments off a circulation core on a single level is eight.	The maximum number of apartments off a circulation core on a single level is six. Common circulation spaces are generous, without extended length, and all have daylight and natural ventilation. All common stairs are glazed to encourage their use in lieu of lifts.	Compliant
For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40.	N/A	N/A
Objective 4F-2 Common circulation spaces promote safety and provide for social interaction between residents.		
Design Guidance	**Comment**	**Compliance**
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.	Corridors to each unit are minimised, providing short, straight and clear sight lines.	Compliant
Tight corners and spaces are avoided.	The layout of circulation spaces ensures that tight corners and spaces are avoided	Compliant

<table>
<tr><th colspan="3">Apartment Design Guide Part Four – Designing the Building</th></tr>
<tr><td>Circulation spaces should be well lit at night.</td><td>The development includes a lighting plan which confirms that circulation spaces will be well lit.</td><td>Compliant</td></tr>
<tr><td>Legible signage should be provided for apartment numbers, common areas and general wayfinding.</td><td>The development proposes signage throughout.</td><td>Compliant</td></tr>
<tr><td>Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided.</td><td>The development provides incidental spaces throughout the communal open space area.</td><td>Compliant</td></tr>
<tr><td>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.</td><td>The development is not of such scale to require a communal room.</td><td>Compliant</td></tr>
<tr><td>Where external galleries are provided, they are more open than closed above the balustrade along their length.</td><td>The development includes external gallery access corridors which are more open than closed.</td><td>Compliant</td></tr>
<tr><th colspan="3">4G Storage</th></tr>
<tr><td colspan="3">Objective 4G-1 Adequate, well designed storage is provided in each apartment.</td></tr>
<tr><td>Design Criteria</td><td>Comment</td><td>Compliance</td></tr>
<tr><td>In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:
<table>
<tr><th>Dwelling Type</th><th>Storage Size Volume</th></tr>
<tr><td>Studio Apartment</td><td>4.0m^3</td></tr>
<tr><td>One Bedroom Apartment</td><td>6.0m^3</td></tr>
<tr><td>Two Bedroom Apartment</td><td>8.0m^3</td></tr>
<tr><td>Three Bedroom Apartment</td><td>10.0m^3</td></tr>
</table>
At least 50% of the required storage is to be located within the apartment.</td><td>All dwellings are provided with storage that meets or exceeds the minimum ADG recommended volume.</td><td>Compliant</td></tr>
</table>

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Design Guidance	**Comment**	**Compliance**
Storage is accessible from either circulation or living areas.	Storage for each unit is accessible from either circulation or living areas.	Compliant
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	N/A
Left over space such as under stairs is used for storage.	N/A	N/A
Objective 4G-2 Additional storage is conveniently located, accessible and nominated for individual apartments.		
Design Guidance	**Comment**	**Compliance**
Storage not located in apartments is secure and clearly allocated to specific apartments.	Each dwelling has secure storage within the basement of 3.5 cbm (or no greater than 50% of the required storage)	Compliant
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.	The basement storage is provided in cages behind car parking spaces.	Compliant
4H Acoustic Privacy		
Objective 4H-1 Noise transfer is minimised through the siting of buildings and building layout.		
Design Guidance	**Comment**	**Compliance**
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**).	There is adequate separation between buildings to ensure acoustic privacy. All bedrooms are located greater than 3m from noise sources (internal driveways) except in one location at Building A (adjacent the basement ramp). In this location the bedroom window is 2m from the ramp, but includes a buffer of landscaped planter. Additionally, the taller ceilings	Compliant

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	to the ground floor of Building A allow windows to be raised to provide a higher sill level.	
Window and door openings are generally orientated away from noise sources.	Window and door openings are orientated away from noise sources.	Compliant
Objective 4H-2 Noise impacts are mitigated within apartments through layout and acoustic treatments.		
Design Guidance	**Comment**	**Compliance**
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.	Apartment layouts are carefully designed to allow isolation of noisy spaces from quiet spaces. Ground floor apartments have appropriate courtyard wall treatments for acoustic privacy.	Compliant
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.	N/A	N/A
4J Noise and Pollution		
Objective 4J-1 In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings.		
Design Guidance	**Comment**	**Compliance**
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	The site is surround by streets categorised as collector, local, main and urban access. There are no arterial roads around the site and therefore it is considered a low-speed traffic environment with little	Compliant

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• 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.	adverse road noise and pollution. On this basis no specific mitigation measures have been implemented to address noise and pollution beyond sensible and compliant design of the building fabric.	
Objective 4J-2 Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission.		
Design Guidance	**Comment**	**Compliance**
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.		Compliant

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4K Apartment Mix		
Objective 4K-1 A range of apartment types and sizes is provided to cater for different household types now and into the future.		
Design Guidance	**Comment**	**Compliance**
A variety of apartment types is provided.	The development proposes a combination of units types with a range of bedrooms. The following mix of units is proposed: One bedroom – 16 One bedroom plus study - 12 Two bedroom – 107 Three bedroom – 28	Compliant
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.	The development provides a mix of units that is considered to respond to current and future demographic trends. Additionally, the proposal includes both adaptable and liveable silver dwellings. The development therefore supports diverse household types and stages of life.	Compliant
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.	The development proposes a range of flexible unit configurations from studio units to three bedroom units.	Compliant
Objective 4K-2 The apartment mix is distributed to suitable locations within the building.		
Design Guidance	**Comment**	**Compliance**
Different apartment types are located to achieve successful facade composition and to optimise solar access (see **Figure 4K.3**).	The overall façade composition is successful given the mix of units whilst each unit maximises solar access.	Compliant
Larger apartment types are located on the ground or roof level where there is potential for more open space and on		

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corners where more building frontage is available.		
4L Ground Floor Apartments		
Objective 4L-1 Street frontage activity is maximised where ground floor apartments are located.		
Design Guidance	**Comment**	**Compliance**
Direct street access should be provided to ground floor apartments.	The site has significant typography. In accordance with the Googong Design Guidelines, the development has been carefully designed to ensure ground floor apartments have appropriate relationship to surrounding public realm. Where possible ground floor dwellings include individual access points off the surrounding streets or the internal landscape.	Compliant
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.	All ground floor apartments include courtyard walls and landscaping allowing visual and acoustic privacy.	Compliant
Retail or home office spaces should be located along street frontages.	N/A	N/A
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.	Ground floor apartments addressing Glenrock Drive and Rucos Streets include higher ceilings to allow future adaptations to commercial use.	Compliant

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Objective 4L-2 Design of ground floor apartments delivers amenity and safety for residents.		
Design Guidance	**Comment**	**Compliance**
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.	The ground level units include raised landscaping, privacy fencing and passive surveillance features to provide for privacy and safety.	Compliant
Solar access should be maximised through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer.	As previously assessed, the units receive an acceptable level of solar access.	Compliant
4M Facades		
Objective 4M-1 Building facades provide visual interest along the street while respecting the character of the local area.		
Design Guidance	**Comment**	**Compliance**
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 designed as a contemporary, suburban apartment complex within a landscape setting.	Compliant
Building services should be integrated within the overall façade.	In accordance with the Googong Design Guidelines, the proposal provides articulated built form with a mix of materials to provide variation, interest, and scale.	Compliant

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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.	The façade utilises a restrained and robust material palette which will provide timeless design including concrete, expressed steelwork and metal claddings and roofing. Warm colours and tones are utilised to ensure the building is inviting and speaks to the natural surrounds including the immediate landscape setting.	Compliant
Objective 4M-2 Building functions are expressed by the façade.		
Design Guidance	**Comment**	**Compliance**
Building entries should be clearly defined.	The building entries at ground level are clearly defined by landscaping and level changes whilst the entries to the upper floors in the communal open space area are defined through architectural detailing and landscaping.	Compliant
4N Roof Design		
Objective 4N-1 Roof treatments are integrated into the building design and positively respond to the street.		
Design Guidance	**Comment**	**Compliance**
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 roof design includes a variety of parapet and low-pitched roofs for visual variety, complementing the architectural articulation of simple clean lines. Low pitched roofs are utilised across the site maximise site lines to surrounding vistas.	Compliant

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Objective 4N-2 Opportunities to use roof space for residential accommodation and open space are maximised.		
Design Guidance	**Comment**	**Compliance**
Habitable roof space should be provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights.	Due to the flat nature of the roof areas, no habitable areas are provided at roof level.	N/A
Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations.	N/A	N/A
Objective 4N-3 Roof design incorporates sustainability features.		
Design Guidance	**Comment**	**Compliance**
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.	The roof design allows for sunlight penetration to the central communal open space area and the units.	Compliant
Skylights and ventilation systems should be integrated into the roof design.	All services including ventilation will be integrated into the building design.	Compliant
4O Landscape Design		
Objective 4O-1 Landscape design is viable and sustainable.		
Design Guidance	**Comment**	**Compliance**
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	The proposed landscape design incorporates a mix of native and deciduous species. Trees are proposed within the central communal space and along the boundaries where deep soil is most available. The courtyard design incorporates both hard and soft landscaping and	Compliant

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• green roofs or walls.	sufficient planting area for residents to create microclimates.	
Objective 40-2 Landscape design responds to the existing site conditions		
Design Guidance	**Comment**	**Compliance**
Landscape design responds to the existing site conditions including: • changes of levels • views • significant landscape features including trees and rock outcrops.	The site is cleared of vegetation and contains no existing natural features.	N/A
Significant landscape features should be protected by: • tree protection zones (see **Figure 4O.5**) • appropriate signage and fencing during construction.		
4P Planting on Structures		
Objective 4P-1 Appropriate soil profiles are provided.		
Design Guidance	**Comment**	**Compliance**
Structures are reinforced for additional saturated soil weight.	Planting zones over the basement have been designed to achieve 600-800mm soil depth where planting is proposed.	Compliant
4Q Universal Design		
Objective 4Q-1 Universal design features are included in apartment design to promote flexible housing for all community members.		
Design Guidance	**Comment**	**Compliance**
Developments achieve a benchmark of 20% of the total apartments incorporating the Liveable Housing Guideline's silver level universal design features.	20% of the apartments in the development have been designed to achieve the Liveable Housing Guideline's Silver Level design features so is compliant with ADG recommendations.	Compliant

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Objective 4Q-2 A variety of apartments with adaptable designs are provided.		
Design Guidance	**Comment**	**Compliance**
Adaptable housing should be provided in accordance with the relevant council policy.	10% of the apartments in the development are adaptable to AS4299 Class C.	Compliant
Objective 4Q-3 Apartment layouts are flexible and accommodate a range of lifestyle needs.		
Design Guidance	**Comment**	**Compliance**
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.	The proposed internal layouts are flexible and can cater for a range of lifestyles. Larger unit layouts mostly provide two living spaces over two stories. Large open plan living spaces in the units allow for individual styling and furniture positions.	Compliant
4U Energy Efficiency		
Objective 4U-1 Development incorporates passive environmental design.		
Design Guidance	**Comment**	**Compliance**
Adequate natural light is provided to habitable rooms (see **4A Solar and Daylight Access**).	As previously assessed, adequate natural light is provided to habitable rooms.	Compliant
Well located, screened outdoor areas should be provided for clothes drying.	All units have POS areas in excess of the minimum requirements. Sufficient space is available outside for clothes drying.	Compliant
Objective 4U-2 Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer.		
Design Guidance	**Comment**	**Compliance**

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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.	A BASIX Certificate is provided with the development application which confirms that passive design features are incorporated into the design including orientation of buildings, natural ventilation and insulation.	Compliant
Objective 4U-3 Adequate natural ventilation minimises the need for mechanical ventilation.		
Design Guidance	**Comment**	**Compliance**
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.	Majority of units are dual aspect and will benefit from natural ventilation.	Compliant
4V Water Management and Conservation		
Objective 4V-2 Urban stormwater is treated on site before being discharged to receiving waters.		
Design Guidance	**Comment**	**Compliance**
Water sensitive urban design systems are designed by a suitably qualified professional.	The development incorporates water efficiency measures as outlined in the submitted BASIX certificate. The development will be integrated into Googong reticulated water supply System.	Compliant

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Objective 4V-3 Flood management systems are integrated into site design.		
Design Guidance	**Comment**	**Compliance**
Detention tanks should be located under paved areas, driveways or in basement car parks.	The development is proposed to discharge into the existing Googong Stormwater management System.	Compliant
4W Waste Management		
Objective 4W-1 Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents.		
Design Guidance	**Comment**	**Compliance**
Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement car park.	All waste storage is discreetly integrated into the basement level of the built form. Waste disposal is convenient for all residents with waste points no more than 75m from any dwelling.	Compliant
Waste and recycling storage areas should be well ventilated.	The proposed waste storage areas will be naturally ventilated.	Compliant
Circulation design allows bins to be easily manoeuvred between storage and collection points.	The bins can be easily moved from the storage rooms to the kerbside collection areas.	Compliant
Temporary storage should be provided for large bulk items such as mattresses.	Storage is available in the storage cages for temporary bulky items.	Compliant
A waste management plan should be prepared.	A Waste Management Plan was submitted with the development application.	Compliant
Objective 4W-2 Domestic waste is minimised by providing safe and convenient source separation and recycling.		
Design Guidance	**Comment**	**Compliance**
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.	Each unit is provided with sufficient waste collection space within the kitchen.	Compliant

Apartment Design Guide Part Four – Designing the Building		
Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core.	All waste storage is discreetly integrated into the basement level of the built form. Waste disposal is convenient for all residents with waste points no more than 75m from any dwelling.	Compliant