JACKSON TEECE

# Warriewood

8 Forest Road Warriewood,
design verification statement
14th September 2020
prepared for Northern Beaches Council

# document contents

| | Objective | Design Criteria | Proposed | Comment |
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| **Part 3 Siting the Development** | | | | |
| **Site Analysis** | *Objective 3A-1* **relating to principle 1**<br>Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context | | Consistent | A site analysis plan has been submitted together with this application. Refer to Jackson Teece drawing DA-010.<br><br>Key opportunities:<br>– Forest and District Views<br>– Respecting the Natural Terrain and Topography<br>– Connection to Bushland and adjacent creek<br>– Creating a Residential Sanctuary<br>– Northern Aspect for Solar Access<br><br>Key constraints:<br>– Narabeen Creek and riparian Corridor<br>– Adjacent Bushland and associated APZ and RFS Regulations<br>– Existing Rock outcrops<br>– 10.5m Height Plane<br>– 3.5m (approx.) level difference falling from south west to north east accross site<br><br>8 Forest Road Warriewood is bounded by Narabeen creek to the North, Bushland to the West and South, and Medium Density Housing to the East. There are also Industrial Units and Estates to the North.<br><br>Temporary Current Vehicular Access is from Jubilee Avenue with future access to be provided from Forest Road.<br><br>The development is directly adjacent to Warriewood Escarpment Nature Reserve with native flaura and fauna being present inside the site boundarries.<br><br>There is also an extensive riparian zone surrounding the creek which will be regerated as part of the proposal.<br><br>The site is consequently split into three zones ; The RU2 zone, the R3 Medium density residential zone, and the riparian zone.<br><br>The R3 zone has a maximum permissible height limit of 10.5m. This gives the opportunity for top floor apartments to have district views.<br><br>The buildings have been orientated to the north to maximise solar access to the apartments and cross ventilation. |

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| **Orientation** | *Objective 3B-1* **relating to principle 1/2**<br>Building types and layouts respond to the streetscape and site while optimising solar access within the development | Consistent | The proposed building responds to the streetscape and site;<br>– The GF and building RLs are modified for each individual zone ( A1, A2, B1, B2 ). This minimises the impact on surrounding topography and maintains a consistant scale.<br>– The buildings are orientated to the North to maximise solar access and prevailing winds for cross ventilation. Views of Narabeen Creek and surrounding bushland are maximised.<br>– There is a communal space located at the the centre of the two buildings to maximise solar acces to the southern building.<br>– The main building address is to the North and South facing the vehicle circulation road and the internal courtyard.<br><br>The building optimises solar access within the development;<br>– The buildings are orientated to the North to maximise solar access and prevailing winds for cross ventilation. |
| | *Objective 3B-2* **relating to principle 1/2**<br>Overshadowing of neighbouring properties is minimised during mid-winter | Consistent | – The proposed buildings dont overshadow any adjacent residential developments. The North and South apartment buildings are also positioned to minimise overshadowing on each other. |

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| **Public Domain Interface** | *Objective 3C-1* **relating to principle 1**<br>Transition between private and public domain is achieved without compromising safety and security | Consistent | – Secure entries are provided to all four buildings with cores that are linked to Basement Parking. Clearly defined pedestrian entries are also provided to each individual core area.<br>– Residential entries are glazed with clear site lines to the lifts.<br>– No opportunities for people to be concealed are provided.<br>– Mailboxes located within airlock and additional security door provided to access lifts to the residential buildings. |
| | *Objective 3C-2* **relating to principle 1**<br>Amenity of the public domain is retained and enhanced | Consistent | – The longer northern and southern facades are articulated with multiple pedestrian links being provided to the internal courtyard zone.<br>– The communal area is located within an internal courtyard zone with communal amenities such as bbq areas being provided.<br>– There are additional community facilities such as walking and running trails and passive recreation areas aroung the development edges so the sites natural flaura and fauna can be appreciated.<br>– Car park intakes and vents are located on the roof or within landscape elements adjacent to the building.<br>– Substation, pump rooms, garbage storage areas are located in the basement car park . |

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| **Communal and Public Open Space** | *Objective 3D-1* **relating to principle 2/3**<br>An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping | 1. Communal open space has a minimum area equal to 25% of the site<br>2. Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter) | Consistent | – Communal Open Space is located as an internal courtyard in between the North and South Buildings.This includes a BBQ, Communal Garden and Lawn areas.<br>– Communal open space is provided in small areas at the periphery of the apartment development.<br>– Communal open space in the internal courtyard is accessible by the residents and has an area of 1,062 m2 against the site area (24277sqm) which is above the minimum 25% requirement.<br>– Refer to DA-801 for sun analysis at 21 June (mid winter) to communal open space. The shadow diagrams show solar access is provided to more than 50% of the internal courtyard before and after midday on June 21st. |
| | *Objective 3D-2* **relating to principle 2/3**<br>Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting | | Consistent | Facilities are provided within communal open spaces including;<br>– Passive recreation areas<br>– Communal Pocket Park<br>– Running and Walking tracks.<br>– lawn area<br>– communal garden |
| | *Objective 3D-3* **relating to principle 2/3**<br>Communal open space is designed to maximise safety | | Consistent | The following strategies work hand in hand to maximise safety in the public and communal open spaces:<br>– Surveillance by residential balconies and windows from above<br>– Fixed privacy screens are provided to apartments with windows adjacent to the communal open space<br>– Outdoor lighting strategy to be integrated into the landscape design<br>– Secure fence lines are provided around the internal courtyard zone. |

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| | *Objective 3D-4* **relating to principle 1/2/3**<br>Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood | | N/A | – Communal open space is provided within an internal courtyard to minimise disruptions to adjacent developments.<br>– Passive and smaller scale recreation zones are located directly adjacent to bushland and riparian zones. |
| **Deep Soil Zones** | *Objective 3E-1* **relating to principle 2/5**<br>Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality. | Deep soil zones are to meet the following minimum requirements: | Consistent | – Deep Soil zones are provided around the building edges and within the heavily vegetated portions of the site. The primary communal open space is located within an internal courtyard above the basement carpark. This minimises the building footprint and amount of excavation required where natural vegetation occurs.<br>– Large zones of deep soil are located in bushland and riparian zones within the site boundary. These are designated RU2 and riparian zones. |
| **Visual Privacy** | *Objective 3F-1* **relating to principle 6**<br>Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy<br><br>Note: Separation distances between buildings on the same site should combine required building separations depending on the type of room | 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: | | – Minimum seperation distances have been adhered to. Between Buildings A and B there is 6m minimum between a blank wall and habitable space.<br>– There is a 12m setback between the eastern facade of the apartment building and the adjacent subdivision dwellings.<br>– Generally, the minimum separation is achieved and architectural devices such as privacy louvres and privacy screens are proposed where protecting privacy is required. |
| | *Objective 3F-2* **relating to principle 6**<br>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 | | Consistent | – Screening devices have been proposed at the edges of balconies for privacy.<br>– Increased visual seperation has been provided by landscaped planters. |

| Site Area | Min. Dimensions | Deep Soil Zone (% of site area) |
|---|---|---|
| Less than 1,500m$^2$ | - | 15% |
| Greater than 1,500m$^2$ | 6m | |

| 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 |
| Greater than 1500m$^2$ | 12m | 6m |
| Greater than 1500m2 with significant tree cover | 6m | |

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| **Pedestrian Access and Entries** | *Objective 3G-1* **relating to principle 7**<br>Building entries and pedestrian access connects to and addresses the public domain | Consistent | – Pedestrian access to residential buildings from communal internal courtyard for Building A.<br>– Pedestrian access to residential buildings from southern ring road.<br>– Communal Landscape zones connect to building foyers. |
| | *Objective 3G-2* **relating to principle 7**<br>Access, entries and pathways are accessible and easy to identify | Consistent | – Glazed façades are provided to make entries clearly visible and unambiguous from the street<br>– Designated circulation routes are provided from communal space to foyer entries. |
| | *Objective 3G-3* **relating to principle 5/7**<br>Large sites provide pedestrian links for access to streets and connection to destinations | N/A | |
| **Vehicle Access** | *Objective 3H-1* **relating to principle 7**<br>Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes | Consistent | – Car park entry for residential and commercial parking provided to minimise void in façade.<br>– Vehicle entries are located at the lowest point of the site to minimise ramp lengths and impact on the levels at ground floor above<br>– Vehicle cueing for one car is provided at the entry to the ramp.<br>– Parking zone, Traffic Island and Intercom are provided at entry to Carpark.<br>– Garbage collection areas are contained within an enclosure at street level with designated vehicle pick up points. |

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| **Bicycle and Car Parking** | *Objective 3J-1* **relating to principle 7**<br>Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas | For development in the following locations:<br>– on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or<br>– on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre<br><br>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<br><br>The car parking needs for a development must be provided off street. | Consistent | – All parking requirements of the development have been provided off street.<br>– Car parking requirements for the residential development are set out in Northern Beaches Councils Pittwater 21 Development Control Plan (DCP). Refer to Traffic Impact Assessment for further details.<br>The development requires:<br>118 resident carparking spaces including 16 accessible carparking spaces<br>21 visitor carparking spaces including one accessible carspace. |
| | *Objective 3J-2* **relating to principle 7**<br>Parking and facilities are provided for other modes of transport | | Consistent | – Secure undercover bicycle parking / storage is provided in accordance with the Northern Beaches DCP at a rate of 1 bike rack per 3 dwellings. There is no bicycle parking requirement for visitors. The bicycle development would require 21 bicycle spaces to comply with the DCP. |
| | *Objective 3J-3* **relating to principle 7**<br>Car park design and access is safe and secure | | N/A | – On grade car parking is not proposed in this development. |
| | *Objective 3J-4* **relating to principle 7/9**<br>Visual and environmental impacts of underground car parking are minimised | | Consistent | – A vehicle entry ramp has been provided at the lowest building entry point. Ventilation of basement has been designed by mechanical engineer, plenums provided at the North and South ends of the basement.<br>– Air Intake and Exhuasts have been concealed in Landscape or on roof.<br>– Carpark prtorudes a maximum of 1m from natural ground level with a landscape buffer being used to conceal this element. |
| | *Objective 3J-5* **relating to principle 7/9**<br>Visual and environmental impacts of on-grade car parking are minimised | | N/A | – Car parking is located underground |
| | *Objective 3J-6* **relating to principle 7/9**<br>Visual and environmental impacts of above ground enclosed car parking are minimised | | N/A | – Entries and exits to car parking have been located at the lowest point of the site.<br>– Positive street addresses and active frontages are maximised. |

| Part 4 – Designing the Building | | | | |
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| **Solar and Daylight Access** | *Objective 4A-1* **relating to principle 4/6**<br>To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space | 1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas | Consistent | – The design of the residential apartments prioritises aspect and spatial quality to the living spaces where residents will typically spend most of their time.<br>– 52 out of 64 apartments (81%) receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid-winter. This meets the requirements of the ADG.<br>– The design maximises north aspect to the apartments and the number of single aspect south facing apartments is minimised. |
| | | 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 | N/A | |
| | | 3. A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter | Inconsistent | – The development has no , apartments with no direct sunlight at mid-winter.<br>– The design maximises the number of north facing apartments per floor.<br>– Larger apartments are located at corners. |
| | *Objective 4A-2* **relating to principle 4/6**<br>Daylight access is maximised where sunlight is limited | | Consistent | – Full height glazing is proposed throughout for living rooms.<br>– Opportunities to reflect light into apartments are optimised through proposed light coloured internal finishes.<br>– High level windows and skylights proposed as secondary light source in habitable rooms. |
| | *Objective 4A-3* **relating to principle 4/6**<br>Design incorporates shading and glare control, particularly for warmer months | | Consistent | – Balconies shade summer sun but allow winter sun to penetrate living areas.<br>– Vertical louvres provide privacy but also act to as shading devices to east and western facades.<br>– Glazing specification will be designed to meet performance requirements based on sustainability consultant's assessment and recommendations. |
| **Natural Ventilation** | *Objective 4B-1* **relating to principle 4/6**<br>All habitable rooms are naturally ventilated | | Consistent | – All habitable rooms are able to be naturally ventilated in the development.<br>– The building is orientated into the prevailing wind direction to maximise and capture breezes for natural ventilation.<br>– Depth of habitable rooms and building indents designed to aid natural ventilation. |
| | *Objective 4B-2*<br>The layout and design of single aspect apartments maximises natural ventilation | | Consistent | – Apartment depths are limited in accordance with figure 4D.3 in the Apartment design guide to maximise ventilation and airflow. 8m maximum depth to rear wall of kitchen from openable window based on 2.7 ceiling height to habitable open plan living, dining and kitchen typical.<br>– Building indents have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation. |
| | *Objective 4B-3* **relating to principle 4/6**<br>The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents | 1. At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building.<br>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 | Consistent | – There are 54 apartments which are naturally cross ventilated out of total 64 units which equates to 84%. This meets the ADG requirement.<br>– Apartments are designed to maximise open plan living and minimise the number of corners, doors and rooms that might obstruct airflow<br>– Apartment offer open plan living with combined kitchen, dining and lounge area. Depths of open plan living areas are limited to 8m to maximise cross ventilation and airflow. |
| | | 2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line | N/A | – The depth of cross over apartments within the development is 14.9m and does not exceed 18m. |

**Ceiling Heights**

*Objective 4C-1* **relating to principle 4/6**
Ceiling height achieves sufficient natural ventilation and daylight access

Measured from finished floor level to finished ceiling level, minimum ceiling heights are:

| Minimum ceiling height for apartment and mixed use buildings | |
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| Habitable Rooms | 2.7m |
| Non-Habitable | 2.4m |
| For 2 storey Apartments | 2.7m for main living area floor<br>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 use areas | 3.3m for ground and first floor to promote future flexibility of use |

Consistent

- All the habitable rooms have 2.7m ceiling height and 2.4m in other rooms.
- There are no attic spaces proposed in the development.
- Floor to floor heights within the apartment building are 3.1m which is sufficient to accomodate the selected mechanical ventilation system.

*Objective 4C-2* **relating to principle 6**
Ceiling height increases the sense of space in apartments and provides for well-proportioned rooms

Consistent

- 2.7m ceiling height provided to habitable rooms
- 2.4m ceiling height provided to non-habitable rooms
- Service rooms are stacked and services such as air-conditioning will be located over non-habitable areas such as robes, storage areas and corridors.

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| **Apartment Size and Layout** | *Objective 4D-1* **relating to principle 6/8**<br>The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity | 1. Apartments are required to have the following minimum internal areas:<br><br>**Apartment Types** / **Minimum Internal Area**<br>Studio / 35m²<br>1 Bedroom / 50m²<br>2 Bedroom / 70m²<br>3 Bedroom / 90m²<br><br>The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each.<br><br>A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each. | Consistent | A variety of apartment types and sizes have been provided to cater for a wide cross section of the residents.<br><br>The range of apartment sizes is as follows:<br><br>1 Bed = 50 - 66 sqm<br><br>2 Bed with 2 bath = 85 - 93sqm<br><br>3 Bed with 2 baths = 107 - 125sqm |
| | | 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 | Consistent | – All habitable rooms have been designed to have external walls with external operable windows.<br>– The windows in all habitable rooms well exceed the minimum requirement of 10% of the floor area of the room.<br>– No habitable room has been designed to borrow air from other rooms. |
| | *Objective 4D-2* **relating to principle 4/6**<br>Environmental performance of the apartment is maximised | 1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height | Consistent | – No Habitable rooms exceed a depth to ceiling height ratio of 2.5. This excludes open plan layouts (living, dining, and kitchen) which can have a depth to ceiling height ratio of 3 (as stipulated in figure 4D.3 of the ADG). |
| | | 2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window | Consistent | – Kitchens are designed as part of the main circulation space. Receiving daylight and natural ventilation.<br>– Open plan layouts allow habitable room depths to be 8m maximum distance from a window. |
| | *Objective 4D-3* **relating to principle 4/6/8**<br>Apartment layouts are designed to accommodate a variety of household activities and needs | 1. Master bedrooms have a minimum area of 10m2 and other bedrooms 9m² (excluding wardrobe space) | Consistent | Refer to DA-110-DA-112 for details of apartment layouts |
| | | 2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space) | Consistent | Refer to DA-110-DA-112for details of apartment layouts |
| | | 3. Living rooms or combined living/dining rooms have a minimum width of:<br><br>3.6m for studio and 1 bedroom apartments<br><br>4m for 2 and 3 bedroom apartments | Consistent | Refer to DA-110-DA-112 for details of apartment layouts |
| | | 4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts | N/A | Refer to DA-110-DA-112 for details of apartment layouts |

<table>
<tr><td rowspan="6">Private Open Space and Balconies</td><td>Objective 4E-1 relating to principle 6/8<br>Apartments provide appropriately sized private open space and balconies to enhance residential amenity</td><td>1. All apartments are required to have primary balconies as follows;<br><br><table><tr><th>Dwelling Type</th><th>Minimum Area</th><th>Minimum Depth</th></tr><tr><td>Studio</td><td>4m²</td><td>-</td></tr><tr><td>1 Bedroom</td><td>8m²</td><td>2m</td></tr><tr><td>2 Bedroom</td><td>10m²</td><td>2m</td></tr><tr><td>3 Bedroom</td><td>12m²</td><td>2.4m</td></tr></table><br>The minimum balcony depth to be counted as contributing to the balcony area is 1m.</td><td>Consistent</td><td>All apartment types meet the minimum requirements of the ADG in relation to balcony area and balcony depth.</td></tr>
<tr><td></td><td>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.</td><td>Consistent</td><td>All apartments located on the GF have larger private terraces and meet the minimum 15sqm area. Most apartments meet the 3m depth requirement of the ADG.</td></tr>
<tr><td>Objective 4E-2 relating to principle 6/8<br>Primary private open space and balconies are appropriately located to enhance liveability for residents</td><td></td><td>Consistent</td><td>All private open spaces are located adjacent to a living room, dining room or a kitchen.</td></tr>
<tr><td>Objective 4E-3 relating to principle 6/8<br>Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building</td><td></td><td>Consistent</td><td>All apartment types meet the minimum requirements of the ADG in relation to balcony area and balcony depth.<br><br>A/C units are and located in a roof plant zone.<br><br>Operable and fixed screens are used on the east, west and north facing balconies to provide privacy and shelter from the sun.<br><br>Downpipes are integrated with the overall façade and hidden from plain view.</td></tr>
<tr><td>Objective 4E-4 relating to principle 6/7<br>Private open space and balcony design maximises safety</td><td></td><td>Consistent</td><td>All operable and fixed screens are designed to be fixed outside the line of balustrade in order to avoid opportunities for climbing and falls.</td></tr>
<tr><td rowspan="4">Common Circulation and Spaces</td><td>Objective 4F-1 relating to principle 6<br>Common circulation spaces achieve good amenity and properly service the number of apartments</td><td>1. The maximum number of apartments off a circulation core on a single level is eight</td><td>Consistent</td><td>Typical floor plate contains a maximum of 6 units per core containing three lifts.<br><br>Natural daylight and ventilation is introduced to the common circulation spaces to provide a high level of amenity as per the Design guidance in section 4F-1 of the ADG :<br><br>“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: ...access to ample daylight and natural ventilation in common circulation spaces”<br><br>Also Objective 4F-1 of the ADG also stipulates, “Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level.”</td></tr>
<tr><td></td><td>2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40</td><td>Consistent</td><td>The plans have been reviewed by a vertical transport engineer and lifts provide a mid-range service which is considered acceptable for the development. Refer to Vertical Transport Engineer for details.</td></tr>
<tr><td>Objective 4F-2 relating to principle 6/7<br>Common circulation spaces promote safety and provide for social interaction between residents</td><td></td><td>Consistent</td><td>All common circulation spaces have security access and allow for social interaction with natural daylight and ventilation.</td></tr>
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| **Storage** | *Objective 4G-1*<br>Adequate, well designed storage is provided in each apartment | Consistent | – 50% of the required storage is to be located within the apartment.<br>– Refer to architectural plans DA-102 to DA-116 for table detailing provision of storage per apartment.<br>– The proposal meets the following minimum requirements;<br>1 Bed 4m³<br>2 Bed 8m³<br>3 Bed + 10m³<br>– Storage is accessible from either circulation or living areas<br>– The remaining storage is placed in designated Basement Carpark areas in cages. |
| | *Objective 4G-2*<br>Additional storage is conveniently located, accessible and nominated for individual apartments | Consistent | – Additional secure storage is located in the basement adjacent or in close proximity to residential car spaces allocated to each unit. |
| **Acoustic Privacy** | *Objective 4H-1* **relating to principle 6**<br>Noise transfer is minimised through the siting of buildings and building layout | | – Service areas, plant rooms, building services are located in the basement.<br>– Details of wall performance including acoustic performance to be developed at detail design stage. Party walls to be appropriately insulated and utilise discontinous construction to avoid any transfer of noise between apartments and adjacent apartments or common areas. |
| | *Objective 4H-2* **relating to principle 6**<br>Noise impacts are mitigated within apartments through layout and acoustic treatments | Consistent | – Internal apartment layouts seperate noisy spaces from quiet spaces with bedrooms coupled and seperated from living spaces. |
| **Noise and Pollution** | *Objective 4J-1* **relating to principle 6**<br>In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings | Consistent | – Residential towers are set back fromthe ring road with Landscape buffers and POS being provided. |
| | *Objective 4J-2* **relating to principle 6**<br>Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission | Consistent | – External walls are to be constructed of concrete or masonry elements providing mass and sound absorption properties |

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| **Apartment Mix** | *Objective 4K-1* **relating to principle 8**<br>A range of apartment types and sizes is provided to cater for different household types now and into the future | Consistent | A variety of apartment types and sizes have been provided to cater for a wide cross section of the residents.<br>The range of apartment sizes is as follows:<br>1 Bed = 50 - 66 sqm<br>2 Bed with 2 bath = 85 - 93sqm<br>3 Bed with 2 baths = 107 - 125sqm |
| | *Objective 4K-2* **relating to principle 8**<br>The apartment mix is distributed to suitable locations within the building | Consistent | Various types of apartments are distributed throughout the development with different types of layout.<br>Larger apartments have been located in the following locations where more building frontage and balcony/ open space is available;<br>– Corners of the floor plate of the typical floor in each tower<br>– Large crossover apartments are located in the middle of the building.<br>The apartment mix (as listed below) is generally distributed equally vertically across all floors of the buildings. The typical floor extends from level 5-14 and is a mix of 1,2 and 3 bedroom apartments. This means there are opportunities for 1 bedroom units on higher levels and larger 3 bed room units on lower levels. This ensures that apartment types and sizes cater for different household types.<br>The unit mix<br>Unit / Unit count / Achieved mix<br>1 bed / 10 / 16%<br>2 bed / 25 / 39%<br>3 bed / 29 / 45%<br>total / 64 / 100% |
| **Ground Floor Apartments** | *Objective 4L-1* **relating to principle 6/8**<br>Street frontage activity is maximised where ground floor apartments are located | N/A | |
| | *Objective 4L-2* **relating to principle 6/7/8**<br>Design of ground floor apartments delivers amenity and safety for residents | | Ground Floor Apartments have Landscape buffer zones and a secure internal courtyard area. |

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| **Facades** | *Objective 4M-1* **relating to principle 9**<br>Building facades provide visual interest along the street while respecting the character of the local area | Consistent | – The building has a distinct base middle and top.<br>– The facade is broken up into smaller elements with corners that are expressed for visual interest.<br>– The facade has a concrete and natural materials palette for which is a reference to the natural surroundings.<br>– Building services such as down pipes and air conditioning units are to be concealed or screened. |
| | *Objective 4M-2* **relating to principle 9**<br>Building functions are expressed by the facade | Consistent | – The residential entries are clearly defined with large glazed entries.<br>– Larger 3 bedroom apartments are located at corners where there are articulated facade elements.<br>– The apartment layout is expressed externally through facade features such as party walls, floor slabs and large transperant glazing to living areas. |
| **Roof Design** | *Objective 4N-1* **relating to principle 1/2/9**<br>Roof treatments are integrated into the building design and positively respond to the street | Consistent | – Roof design relates to the street by pitching up towards the corners.<br>– Timber Soffits are provided to roof elements for a unified roof and facade design. |
| | *Objective 4N-2* **relating to principle 4/5/6/9**<br>Opportunities to use roof space for residential accommodation and open space are maximised | Consistent | – No opportunity for open space on roofs is available as roofs are articulated and occupied by plant equipment |
| | *Objective 4N-3* **relating to principle 4/5/6/9**<br>Roof design incorporates sustainability features | Consistent | – Skylights have been integrated into the roof design to enhance natural light and ventilation to penthouse apartments.<br>– Photovoltaic panels are located on the roof to satisfy BASIX requirements for this development. |
| **Landscape Design** | *Objective 4O-1* **relating to principle 5/6**<br>Landscape design is viable and sustainable | Consistent | – Landscape design to incorporate diverse and appropriate planting. Refer to landscape architect for details of plant selection.<br>– Ongoing maintenance plans should be prepared by a suitable professional at a later stage. |
| | *Objective 4O-2*<br>Landscape design contributes to the streetscape and amenity | | – Landscape design is integrated into various levels of the development and maximises opportunites for planting on structure.<br>– Pocket parks and small green spaces have been provided throughout the development.<br>– Regeneration of the riparian zone is occuring improving amenity and outlook from apartments. |
| **Planting on Structures** | *Objective 4P-1* **relating to principle 5/6**<br>Appropriate soil profiles are provided | Consistent | – Structural design to be further developed at detail design stage following the development application. Structural engineer is to ensure structure provides sufficient structural reinforcement for additional saturated soil weight particularly at GF Transfer Slab.<br>– Refer to landscape architect's drawings for details of soil profiles. |
| | *Objective 4P-2* **relating to principle 5/6**<br>Plant growth is optimised with appropriate selection and maintenance | Consistent | – Refer to landscape architect's drawings for details of plant selection and maintenance. |
| | *Objective 4P-3* **relating to principle 5/6**<br>Planting on structures contributes to the quality and amenity of communal and public open spaces | Consistent | – Building design incorporates opportunities for planting on structures and includes raised planters and a mix of shallow and deep profile garden beds. |

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| **Universal Design** | *Objective 4Q-1*<br>Universal design features are included in apartment design to promote flexible housing for all community members | Consistent | – 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features. Refer to DA-500, DA-501 and access report prepared by CityPlan consultants for details.<br><br>Silver level Universal Housing<br>20% of total units (required) 13<br>Comprised of a mix of<br>Livable 13<br>Adaptable 16<br>Total 16 ( Silver Level and Adaptable are the same apartment type) |
| | *Objective 4Q-2*<br>A variety of apartments with adaptable designs are provided | Consistent | The development proposes a total of minimum 25% adaptable units.<br>Equating to minimum 16 apartments. They comprise of:<br>– 6 x 1 Bed<br>– 7 x 2 Bed<br>– 3 x 3 Bed<br><br>A mix of 1, 2 and 3 bedroom apartment types with adaptable designs have been provided in the developement.<br>Adaptable apartments have been designed to minimise structural change and residential amenity loss when adapted.There is also only minor work required between pre and post adaptation layouts. |
| | *Objective 4Q-3*<br>Apartment layouts are flexible and accommodate a range of lifestyle needs | Consistent | – Apartments have open plan living, dining and kitchen arrangement allowing for flexible living. |
| **Adaptive Reuse** | *Objective 4R-1*<br>New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place | N/A | N/A |
| | *Objective 4R-2*<br>Adapted buildings provide residential amenity while not precluding future adaptive reuse | N/A | N/A |
| **Mixed Use** | *Objective 4S-1*<br>Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement | N/A | |
| | *Objective 4S-2*<br>Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents. | Consistent | Residential levels of the building are integrated within the development to ensure safety and amenity are maximised for the residents by the following means:<br>– Surveillance by residential balconies and windows from above.<br>– Clear sight lines through the space.<br>– Outdoor lighting strategy for night time.<br>– Landscaped communal open space is provided at Ground Level. |
| **Awnings and Signage** | *Objective 4T-1*<br>Awnings are well located and complement and integrate with the building design | N/A | |
| | *Objective 4T-2*<br>Signage responds to the context and desired streetscape character | Consistent | – Signage does not form part of this application and will be subject to a separate application at a later stage.<br>– The residential lobby entries will take advantage of lobby walls for signage and wayfinding. |

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| **Energy Efficiency** | *Objective 4U-1*<br>Development incorporates passive environmental design | Consistent | – Refer to 4A Solar and daylight access and 4B Natural Ventilation.<br>– Orientation and Planning of apartments have been designed to maximise passive heating and cooling as well as cross ventilation.<br>– Refer to landscape architect's drawings for details of soil profiles. |
| | *Objective 4U-2*<br>Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer | Consistent | – All roofs will be insulated to meet the minimum requirements of BASIX.<br>– Glazing performance to meet the requirements of sustainability consultants advice.<br>– Insulated roofs, walls and floors and seals on window and door openings to be provided.<br>– Overhangs and shading devices such as fins and screens provided.<br>– Refer to landscape architect for details of plant selection and maintenance. |
| | *Objective 4U-3*<br>Adequate natural ventilation minimises the need for mechanical ventilation | Consistent | – Natural ventilation is provided to all habitable rooms.<br>– 85% of apartments achieve natural cross ventilation. |
| **Water Management and Conservation** | *Objective 4V-1*<br>Potable water use is minimised | Consistent | – Water efficient fittings, appliances are proposed to meet the requirements of the sustainability consultant report.<br>– Water conservation requirements for the residential as per BASIX assessment.<br>– Rainwater tanks as per BASIX assessment |
| | *Objective 4V-2*<br>Urban stormwater is treated on site before being discharged to receiving waters | Consistent | – Refer to civil engineering stormwater management report for stormwater management plan and details. |
| | *Objective 4V-3*<br>Flood management systems are integrated into site design | Consistent | – Refer to civil engineering stormwater management report for stormwater management plan and details.<br>– On-site detention tank is located in basement 1. |
| **Waste Management** | *Objective 4W-1*<br>Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents | Consistent | – Waste storage facilities are provided at Ground Level in an enclosure sympathetic with the surroundings.<br>– Bulky Waste is located in Basement directly adjacent to ramp. |
| | *Objective 4W-2*<br>Domestic waste is minimised by providing safe and convenient source separation and recycling | Consistent | – There are garbage chutes and designated waste rooms located at each core within the Basement.<br>– There are garbage chutes and recycling cupboards at every level within each core zone. |

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| **Building Maintenance** | *Objective 4X-1*<br>Building design detail provides protection from weathering | Consistent | – Details of the building facade will be developed at detail design stage to provide protection from weathering. |
| | *Objective 4X-2*<br>Systems and access enable ease of maintenance | Consistent | – Where windows are inaccessible from balconies for cleaning window will be designed to enable cleaning from the inside of the building.<br>– Centralised maintenance, services and storage are available within the Basement. |
| | *Objective 4X-3*<br>Material selection reduces ongoing maintenance costs | Consistent | – The buildings have been designed with long term costs in mind. The high percentage of glazed exterior will ensure that maintenance costs are kept to a minimum.<br>– Lighting will be designed with a lighting consultant and to include sensors to control artificial lighting in common circulation and spaces. |

**DESIGN VERIFICATION STATEMENT**

**My name is Jun Sakaguchi and I am a Studio Director at Jackson Teece.**

**Jackson Teece is an architectural firm with an established reputation. It has received numerous awards from Australian Institute of Architects and other recognised organisations associated with architecture, design and property.**

**I confirm that I hold the following qualifications:**

- **Registered Architect NSW, Board of Architects Registration No. 7361**
- **Master Degree at Waseda University in Tokyo, Japan**
- **1st class certified Architect, Japan**

**I verify that:**

**a. I have been responsible for leading the design team up to the lodgement of the Development Application. The phases of work completed are Concept Design and Development Application preparation. The design has been progressed with a team of specialist consultants to provide a development outcome that addresses the relevant planning and design controls.**

**b. The design quality and principles as set out in this statement and specified by SEPP 65 and the Apartment Design Guide (ADG) have been achieved.**

**The design maximises amenities to the residential apartments providing sufficient solar access and cross ventilation, together with common amenities such as landscaped communal open space, publicly accessible retail units, podium top pool and gym.**

**Yours sincerely,**

**Jun Sakaguchi**

**Studio Director**