

ONE SYDNEY HARBOUR

DESIGN VERIFICATION STATEMENT - BUILDING R4B

(State Significant Development SSD 8892218)

Amending Development Application

October 2020

Pursuant to Part 4 of the Environmental Planning and Assessment Act 1979,

I hereby verify that to the best of my knowledge, information and belief that:

a) the residential apartment development, as modified, generally achieves the design quality principles set out in State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development, and

b) the modifications do not diminish or detract from the design quality of the development for which the development consent was granted.

The design quality principles set out in State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development have been addressed in the:

- Design Verification Statement that contains the:
 - Design Quality Principles of SEPP 65, and
 - Design Objectives and Guidance Compliance of the Apartment Design Guide (ADG)

The modified architectural design has been addressed in the:

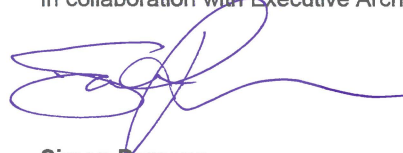
- Design Statement

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ONE SYDNEY HARBOUR - RESIDENTIAL BUILDING R4B

SEPP 65 DESIGN QUALITY PRINCIPLES STATEMENT

PREPARED BY RENZO PIANO BUILDING WORKSHOP, LENDLEASE DESIGN AND PTW ARCHITECTS

Amending DA – Building R4B, Barangaroo

Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Department of Planning, Infrastructure and Environment (DPIE) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The 'amending' SSD DA seeks approval for eight additional storeys and 5,650sqm of gross floor area (GFA), amongst other items, to Residential Building R4B approved under SSD 6965. This SSD DA proposes to amend the 60-storey Residential Building R4B development approved under SSD 6965, which in turn necessitates the inclusion of condition(s) of consent to this SSD DA that require the modification of SSD 6965.

Site Description

Barangaroo is located on the north western edge of the Sydney Central Business District (CBD), bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the northern half), The Rocks and the Sydney Harbour Bridge approach to the east; and bounded to the south by a range of new development containing large CBD commercial tenants.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Central and Barangaroo South. The Residential Building R4B site is located within Barangaroo South. The site of this proposed DA is located on land generally known and identified in the approved Concept Plan (as modified) as Block 4A, as shown in **Figure 1** below.

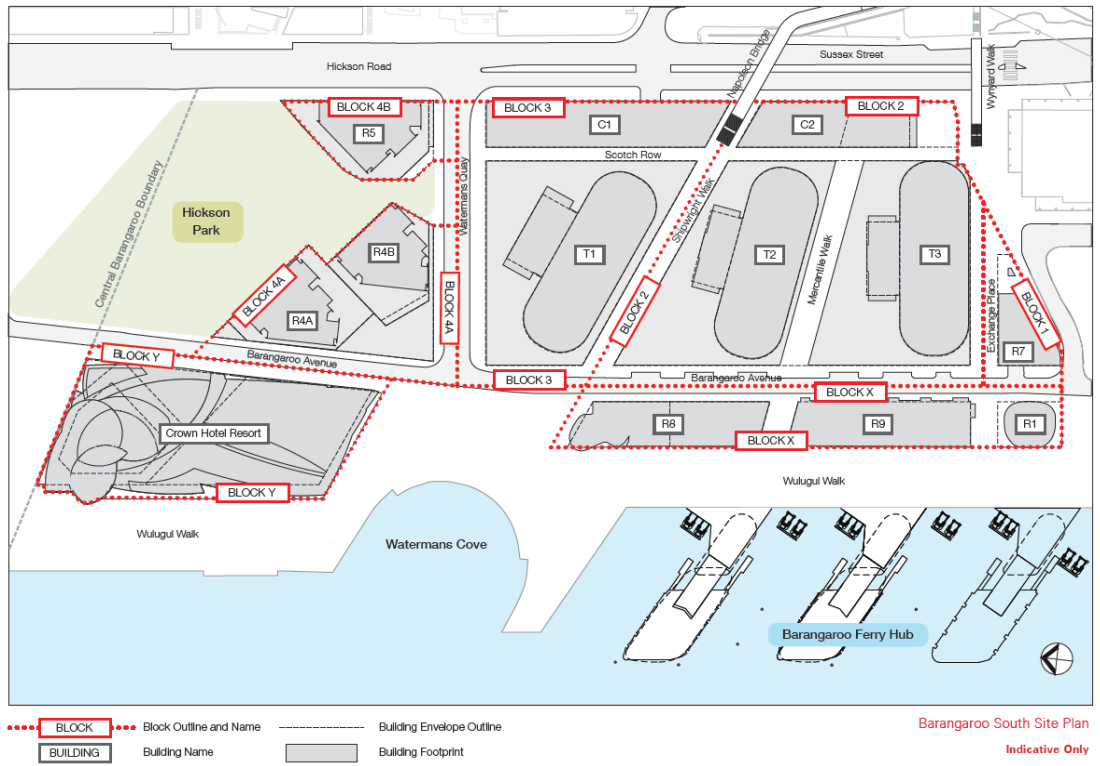


Figure 1 Block 4A in relation to Barangaroo South

Source: Lendlease

Background

Barangaroo South Concept Plan (as modified)

The approved Barangaroo South Concept Plan (MP06_0162) (as modified), includes approval for the following:

- A mixed use development involving a maximum of 602,354 sqm gross floor area (GFA), comprised of:
 - a maximum of 191,031 sqm of residential GFA of which a maximum of 162,031 sqm will be in Barangaroo South;
 - a maximum of 76,000 sqm of GFA for tourist uses of which a maximum of 59,000 sqm will be in Barangaroo South;
 - a maximum of 34,000sqm of GFA for retail uses of which a maximum of 30,000 sqm will be in Barangaroo South;
 - a maximum of 5,000 sqm of GFA for active uses in the Public Recreation zone of which 3,500 will be in Barangaroo South; and
 - a minimum of 12,000sqm GFA for community uses.
- Approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including an approximate 2.2km public foreshore promenade.
- Built form design principles, maximum building heights and GFA for each development block within the mixed use zone.
- Public domain landscape concept, including parks, streets and pedestrian connections.
- Alteration of the existing seawalls and creation of a partial new shoreline to the harbour.
- Construction, operation and maintenance of a concrete batching plant to supply concrete for construction of future development under this Concept Plan at Barangaroo South.
- No approval is granted or implied for the future use of a heliport and/or a helipad.

This 'amending' SSD DA seeks to achieve the maximum permissible GFA and height for Residential Building R4B that was approved as part of the latest modification to the Concept Plan (modification 10). Any consent that is granted to this SSD DA will be generally consistent with the terms of approval of the Concept Plan (as modified).

Residential Building R4B - Development consent SSD 6965

Development consent SSD 6965 was granted by the NSW Minister for Planning on 7 September 2017 for Residential Building R4B, comprising of a 60-storey mixed use building, with 297 residential units and retail floor space at ground level. This included a total gross floor area (GFA) of 38,896sqm, 38,602sqm of which was approved for residential floor space, and the remaining 294sqm was approved for retail floorspace.

Consent was also provided for associated building public domain works, fit-out and use of the basement, a link bridge connecting to Building R4A and associated building identification signage.

On 7 February, 2020, development consent SSD 6965 was amended to account for a range of design changes, including an increase in total GFA from 38,896sqm to 38,911sqm, comprised of an increase in retail GFA from 294sqm to 309sqm, and a reduction in the number of apartments to 283.

A second application to modify development consent SSD 6965 has been submitted to the DPIE. The amendments contained within the modification application broadly relate to the following changes:

- increase the number of apartments from 283 to 290;
- revised dwelling mix and internal layout changes;
- changes to the landscaped podium layout; and
- changes to the number of car spaces from 320 to 324.

It is anticipated that this modification application to development consent SSD 6965 will be determined prior to the determination of this SSD DA. As such, this SSD DA is made with the above changes in mind.

Overview of Proposed Development

This 'amending' SSD DA seeks consent for eight additional storeys with 5,650sqm of GFA and containing 32 additional apartments, and an allocation of 7 additional car parking spaces to Residential Building R4B. More specifically, this SSD DA proposes to amend Residential Building R4B, through:

an increase to the overall building height from RL208.23 up to RL235 (an additional 8 levels)

increase the overall number of apartments from to 290 to 322

revise the dwelling mix and apartment relocations within the building envelope; and

change to the number of car spaces from 324 to 331.

DESIGN QUALITY PRINCIPLES OF SEPP 65 – BUILDING R4B

Design Quality Principle	Objective / Control	Evaluation	Verification
<p>01 CONTEXT AND NEIGHBOURHOOD CHARACTER</p>	<p><i>Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions.</i></p> <p><i>Responding to context involves identifying the desirable elements of an area's existing or future character. Well-designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.</i></p>	<ul style="list-style-type: none"> ▪ Barangaroo is situated on the harbour foreshore and marks the western edge of the Sydney CBD. ▪ The site is part of the greater Barangaroo urban regeneration project that is transforming the Sydney Harbour waterfront. ▪ The site sits to the north of the commercial precinct of the Rogers Stirk Harbour + Partners (RSHP) masterplan and is framed by key thoroughfares of Watermans Quay, Barangaroo Avenue and Hickson Road. ▪ Hickson Road incorporates a range of buildings of varied use and age. ▪ Watermans Quay is defined on the south side by the RSHP commercial building - 'International Tower One' (Commercial Building C3). ▪ Nearby, fronting Barangaroo Avenue will be the Crown Sydney Hotel and Resort. ▪ The public domain will be defined by the creation of a generous north facing open space, Hickson Park (as well the harbourfront areas of Watermans Cove and boardwalk). ▪ This development has been designed concurrently with the public domain and seeks to draw upon the following characteristics of the context to create a high quality outcome: <ul style="list-style-type: none"> - Landscape: builds upon the principles of the greater masterplan vision and is marked by the creation of a north facing public open space. R4B sits at the southern edge of Hickson Park. - Architecture: R4B has been designed as part of an elegant composition of three buildings by the same architect, each founded on the concept of a "crystalline" form. These define the northern edge of Watermans Quay and frame Hickson Park. The building is envisaged as being a pure, transparent and refined form that will read cohesively with the other associated proposed adjacent residential towers and achieve an appropriate transition in architectural style between the natural landscape of the harbour and the 	<p style="text-align: center;">✓</p>

Design Quality Principle	Objective / Control	Evaluation	Verification
		<p>commercial vernacular of buildings to the east and south in the Sydney CBD. In this sense they will make a significant positive contribution to the Sydney city skyline.</p> <ul style="list-style-type: none"> - Circulation: A series of links into and through the site define the public realm. Specific to R4B is the inclusion of a strada between R4B and R4A connecting Watermans Cove to Hickson Park. - Views: The site has views to some of Sydney's prestigious landmarks including the Harbour Bridge, Opera House and Blue Mountains. Informed by analysis of the existing view corridors, R4B seeks to access these views equitably with consideration to the neighbouring developments. Furthermore, the project will enhance views to the CBD from surrounding key vantage points through its architectural contribution. - Vehicular circulation: vehicular access to the basement has been consolidated into one entry and exit point off Watermans Quay. 	
02 BUILT FORM AND SCALE	<p><i>Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings. Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.</i></p>	<ul style="list-style-type: none"> ▪ The proposed building height and scale modified the defined developable envelopes as per the approved MOD 10 Concept Plan. ▪ The approved podium of R4B is three storeys in height and responds to the scale of the RSHP International Tower One podium on the other side of Watermans Quay. ▪ The approved R4B podium defines the site extent and allows the residential tower to meet the ground plane at a human scale appropriate to the precinct. ▪ In terms of height, R4B sits between R4A (tallest) and R5 (shortest) of the family of three residential towers and responds to the scale of the adjacent Crown Sydney Hotel and Resort development, with the suite of buildings transitioning in height from west to east to meet the Hickson Road. ▪ The building footprint has been carefully designed so that it reads as a slender crystal-like form on the city skyline. 	✓

Design Quality Principle	Objective / Control	Evaluation	Verification
		<ul style="list-style-type: none"> ▪ The building location and alignment has been carefully considered in relation to the family of three residential towers and is positioned to allow for optimum vistas and views from the site. ▪ The R4B tower is defined by a narrow module which sets a discrete and regular rhythm on the façade. This is punctuated by wintergardens which provide a dynamic building skin that will play with light to enhance the crystalline, lightweight presence of the building. ▪ R4B addresses Waterman’s Quay and Hickson Park to the north with the approved residential lobby and retail providing activation and appropriate scale to the ground plane. ▪ The orientation and siting of the building relative to adjacent existing and proposed buildings, together with the internal floor layout and features of the façade design, will create a high level of internal and external amenity in terms of visual privacy, outlook/views, solar access, natural ventilation and space functionality. 	
03 DENSITY	<p><i>Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context. Appropriate densities are consistent with the area’s existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.</i></p>	<ul style="list-style-type: none"> ▪ The proposed density of the R4B residential tower is appropriate to the site and its urban context. ▪ The R4B residential tower will contribute to the vision of the Barangaroo masterplan as a thriving mixed use community in the Sydney CBD. ▪ The density provides for the efficient use of the land in close proximity to jobs, shops, services and transport. The development can be supported by the surrounding environment, with infrastructure and services readily available, retail, business and recreational hubs immediately nearby and high quality public transport within a short distance. ▪ The design of the three residential towers includes an array of communal residential facilities that provide both indoor and outdoor amenity to residents in the precinct. ▪ The composition of the three residential towers has been carefully considered in relation to the northerly aspect and 	✓

Design Quality Principle	Objective / Control	Evaluation	Verification
		<p>Sydney Harbour icons and optimises views, solar access and the public open space of the site.</p> <ul style="list-style-type: none"> ▪ Each apartment within R4B has been designed so that the aspect and outlook contribute to the ultimate amenity and well-being of the residents. 	
04 SUSTAINABILITY	<p><i>Good design combines positive environmental, social and economic outcomes. Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials and deep soil zones for groundwater recharge and vegetation.</i></p>	<ul style="list-style-type: none"> ▪ The Barangaroo Precinct's sustainability initiatives are extensive and are underpinned by aspirations of carbon neutral, zero waste and water positive. ▪ R4B will be a sustainable residential building, with low operational energy consumption, reduced potable water use, minimisation of waste to landfill and appropriate materials selection while at the same time maintaining a high level of indoor environmental quality through appropriate mechanical design, façade configuration and materials selection. ▪ It will appropriately contribute towards the achievement of the sustainability requirements included in the Statement of Commitments of the approved Concept Plan, is committed to a 5 Star Green Star rating and will meet the requirements of the Building Sustainability Index (BASIX). ▪ The proposed residential development will benefit from Barangaroo South's precinct sustainability initiatives such as the district cooling plant, on-site renewables and generation strategy and the precinct recycled water plant. These initiatives are essential to ensure the Barangaroo South achieves sustainability targets such as: <ul style="list-style-type: none"> - Minimal operational energy consumption off-set by offsite renewable energy to ensure a carbon neutral precinct. - The capability to export more recycled water than potable water is imported to ensure a positive water impact. - An 80% operational waste diverted from landfill, targeting zero net waste to landfill by 2020. - 20% reduction in embodied carbon (cradle to gate) not including tenant fit outs. 	✓

Design Quality Principle	Objective / Control	Evaluation	Verification
		<ul style="list-style-type: none"> - On site renewables of an amount to offset public realm and recycled water treatment plant energy use. ▪ Further, individual apartments are located and oriented to maximise opportunities for controlled solar access and natural ventilation, minimising energy use and maximise the efficient use of resources. 	
05 LANDSCAPE	<p><i>Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood. Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values and preserving green networks. Good landscape design optimises useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.</i></p>	<ul style="list-style-type: none"> ▪ The public domain and architecture have been developed through a collaborative design process. The public domain is seen as an extension of the building architecture and is an integral component of the proposal in the context of its urban setting and connectivity with the wider precinct. ▪ Hickson Park and Watermans Cove will be a significant new addition to the framework of the public realm for the city. In addition, Hickson Park will provide an extension of the residential amenity of the towers and access to green open space. ▪ The design approach to the landscape for the podium includes careful consideration of the need to provide a variety of spaces and experiences that provide necessary respite and refuge from the busy CBD and also capitalises on the impressive outward distant views across the harbour towards Balmain and Pyrmont. The design will also provide excellent views down to Watermans Cove. ▪ The podium will feel like a private garden. A garden which strives to engender ownership by residents of the tower, provide a place in which they can relax and feel comfortable in - away from the busy city streets - and engage in the magnificent harbourside setting. ▪ The landscaped podium roofs will also provide an attractive outlook for the proposed adjacent developments. 	✓

Design Quality Principle	Objective / Control	Evaluation	Verification
06 AMENITY	<p><i>Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being. Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas and ease of access for all age groups and degrees of mobility.</i></p>	<ul style="list-style-type: none"> ▪ The amenity of the proposed R4B apartments is of a high quality. Internal spaces include: <ul style="list-style-type: none"> - Open planned interiors which maximise the useability of each space with generous internal dimensions and functionality. - Wintergardens are continuation of the internal living space in size and materiality. The proportions are deep enough to be comfortably furnished whilst allowing penetration of winter sun into living spaces. - Wintergardens are provided at all apartments to support the useability of outdoor spaces throughout the year. - The design of the building façade promotes connectivity with the natural environment and natural ventilation, in conjunction with a high thermal performance providing ultimate comfort for residents. - Access to views and vistas, including the Harbour Bridge, Opera House and the Blue Mountains, have been maximised. - Access design allows for all users to circulate throughout the development. - Split cores serve specific levels of the building creating a sense of community through vertical villages. - Privacy is established for apartments through careful building siting, façade design and floor plan orientation to surrounding landscape and view lines rather than directly into adjacent residences. 	✓
07 SAFETY	<p><i>Good design optimises safety and security within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety. A positive relationship between public and</i></p>	<ul style="list-style-type: none"> ▪ The proposal is designed in keeping with the 4 CPTED principles: <ul style="list-style-type: none"> - Surveillance - Access control - Territorial reinforcement - Space management. ▪ Approved public spaces around the buildings have clear sight lines. ▪ R4B includes an approved strada that reinforces both visual and pedestrian connectivity between the parkland and the 	✓

Design Quality Principle	Objective / Control	Evaluation	Verification
	<p><i>private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.</i></p>	<p>cove ensuring the perimeter of the residential building has opportunities for activation and passive surveillance.</p> <ul style="list-style-type: none"> ▪ The approved lobby to R4B provides a direct and legible means of access from Watermans Quay and the public realm. ▪ The R4B proposal provides approved retail activation along the southern edge of Hickson Park, through the strada to the corner of Barangaroo Avenue and Watermans Quay. ▪ External spaces within the site are designed to be lit in a controlled fashion, providing sufficient illumination for security without impacting residents. ▪ Secure entries are provided at both ground floor lobbies and basement carpark to control access to the building interiors. 	
<p>08 HOUSING DIVERSITY & SOCIAL INTERACTION</p>	<p><i>Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets. Well-designed apartment developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people and providing opportunities for social interaction among residents.</i></p>	<ul style="list-style-type: none"> ▪ The R4B proposal contributes to the overall vision of the Barangaroo masterplan as a mixed use community. ▪ A range of apartments are provided in a range of sizes and types to cater for the likely future demographic makeup of the precinct. ▪ The apartment mix has been considered across the family of three buildings with affordable housing provided. ▪ The apartments are designed with regard for furnishability, circulation and flow. Rooms are well oriented with views to the surrounding parkland and water. 	<p style="text-align: center;">✓</p>

Design Quality Principle	Objective / Control	Evaluation	Verification
09 AESTHETICS	<p><i>Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures. The visual appearance of well-designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.</i></p>	<ul style="list-style-type: none"> ▪ The massing of the tower has been carefully composed as part of a composition of buildings fringing Hickson Park, featuring: <ul style="list-style-type: none"> - A series of dynamic, breathable glass facades each focusing on specific views towards the prime vistas and landmarks of the harbour; - Facades that express the facet of a crystal and together play with the light reflections from the sky and glittering harbour water, reflecting their setting; ▪ The R4B approved podium form and façade detailing responds to the surrounding contextual cues and brings the tower to the ground at a human scale. ▪ The proposal utilises a set of quality material textures and fittings which create visual interest in an appropriate and harmonious way within the sites wider context. 	✓

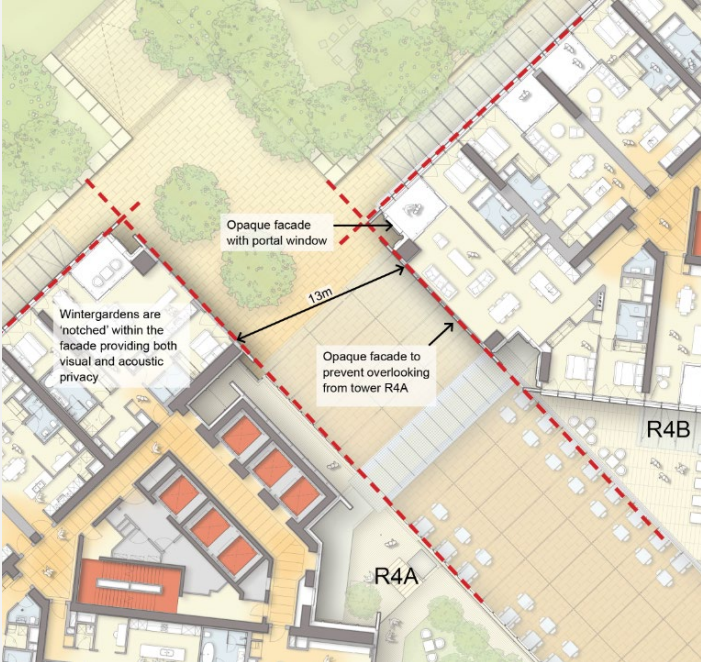
DESIGN OBJECTIVES & GUIDANCE COMPLIANCE

The following table lists the Objectives and associated Design Criteria of the Apartment Design Guide (ADG), and assesses whether the project achieves the intent of those Objectives, as required by Clause 115(3A) of the EPA Regulation.

The assessment demonstrates that the proposed development is consistent with the relevant objectives and the majority of the numeric Design Criteria, and that all apartments within the proposed development will achieve a very high standard of residential amenity. Where an alternative solution is proposed to the Design Criteria to meet the Objectives, the proposal's consistency with the Objectives and associated Design Guidance are discussed in further detail below the table.

Design Criteria	Approved	Proposal	Achievement of Objective
Part 3 Siting the Development			
3D Communal and Public Open Space			
<i>Objective 3D-1</i> An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping	✓	✓ No change to approved	
<i>Design Criteria</i> Communal open space has a minimum area equal to 25% of the site	✓	✓ No change to approved	
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)	Achieves intent →	✓ No change to approved	<p>A total of 67% of the Building R4B site area has been provided as communal and publicly accessible open space, exceeding the Design Criteria minimum by 42%. Of this communal and publicly accessible space 24% achieves direct sunlight during the winter solstice. Achieving direct sunlight to 50% of the total communal and publicly accessible open space would require direct sunlight to 34% of the Building R4B site area, which is equivalent to more than double the 12.5% of the site area recommended by the ADG if the minimum area of communal and public open space was provided (i.e. 50% of 25% of the site area).</p> <p>More broadly, the communal and publicly accessible open spaces within Buildings R4A, R4B and R5 will be accessible to the occupants of all three towers. Additionally, the residents of Buildings R4A, R4B and R5 gain amenity from their position adjoining the future Hickson Park, a large open space to the north, which will receive plenty of solar access throughout the year.</p> <p>In light of the above, the proposed communal open space achieves the intent of Objective 3D-1 as adequate area of communal open space will be provided in a way that enhances the residential amenity of the development.</p>

Design Criteria	Approved	Proposal	Achievement of Objective						
3E Deep Soil Zones									
<p><i>Objective 3E-1</i> 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.</p>	Achieves intent →	✓ No change to approved	Refer to discussion below, the site includes a site-wide basement, which precludes the provision of deep soil areas, although provides sufficient soil depth for plating of mature trees.						
<p><i>Design Criteria</i> Deep soil zones are to meet the following minimum requirements:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Site Area</th> <th>Minimum Dimensions</th> <th>Deep Soil Zone (% of site area)</th> </tr> </thead> <tbody> <tr> <td>Greater than 1,500m²</td> <td>6m</td> <td>7%</td> </tr> </tbody> </table>	Site Area	Minimum Dimensions	Deep Soil Zone (% of site area)	Greater than 1,500m ²	6m	7%	Achieves intent →	✓ No change to approved	<p>Deep Soil Zones are defined as 'areas of soil within a development that are unimpeded by buildings or structures above and below ground and have a minimum dimension of 6m. Deep soil zones exclude basement car parks, services, swimming pools, tennis courts and impervious surfaces including car parks, driveways and roof areas.'</p> <p>Buildings R4A, R4B and R5 are positioned above a site-wide basement, which precludes the provision of deep soil zones. The Design Guidance acknowledges this may not be possible on sites where:</p> <ul style="list-style-type: none"> - The location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres); and / or - There is 100% site coverage or non-residential uses at ground floor level. <p>Consistent with the Design Guidance, the site is located in a high density precinct, within the Central Business District. There are also non-residential uses at ground floor which limit the provision of deep soil zones.</p> <p>Notwithstanding this, the proposal meets Objective 3E-1 with the landscape design developed by McGregor Coxall featuring a combination of hardscape, bed planting and new planting in specially designed pits to ensure healthy growth and long term viability. A range of sustainable stormwater management solutions are also proposed in the precinct, as set out in the ESD Report, Services Report and the Construction Framework Environmental Management Plan.</p>
Site Area	Minimum Dimensions	Deep Soil Zone (% of site area)							
Greater than 1,500m ²	6m	7%							
3F Visual Privacy									
<i>Objective 3F-1</i>	✓	✓ No change to approved							

Design Criteria	Approved	Proposal	Achievement of Objective												
<p>Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy.</p>															
<p><i>Design Criteria</i> 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:</p> <table border="1" data-bbox="219 432 864 675"> <thead> <tr> <th>Building Height</th> <th>Habitable rooms and balconies</th> <th>Non-habitable rooms</th> </tr> </thead> <tbody> <tr> <td>Up to 12m (4 storeys)</td> <td>6m</td> <td>3m</td> </tr> <tr> <td>Up to 25m (5-8 storeys)</td> <td>9m</td> <td>4.5m</td> </tr> <tr> <td>Over 25m (9+ storeys)</td> <td>12m</td> <td>6m</td> </tr> </tbody> </table>	Building Height	Habitable rooms and balconies	Non-habitable rooms	Up to 12m (4 storeys)	6m	3m	Up to 25m (5-8 storeys)	9m	4.5m	Over 25m (9+ storeys)	12m	6m	<p>Achieves intent →</p>	<p>✓ No change to approved</p>	<p>The minimum separation distance between the habitable rooms of adjacent Buildings R4A and R4B is:</p> <ul style="list-style-type: none"> - approximately 18m between the wintergardens in Building R4A and wintergardens in Building R4B on Levels 01-65 (Building R4A) and Levels 01-65 (Building R4B); and - approximately 13.0m between bedrooms in Building R4A on Levels 01-65 and the living room and wintergardens in Building R4B. <p>These separation distances are shown in the figure below. In both instances, the separation is less than the 24m between habitable rooms and wintergardens recommended in the Design Criteria.</p>
Building Height	Habitable rooms and balconies	Non-habitable rooms													
Up to 12m (4 storeys)	6m	3m													
Up to 25m (5-8 storeys)	9m	4.5m													
Over 25m (9+ storeys)	12m	6m													
			 <p>The diagram is a site plan showing two buildings, R4A and R4B, separated by a red dashed line. A 13m distance is marked between the buildings. Callouts include: 'Wintergardens are 'notched' within the facade providing both visual and acoustic privacy', 'Opaque facade with portal window', and 'Opaque facade to prevent overlooking from tower R4A'. The buildings are labeled R4A and R4B.</p>												

Design Criteria	Approved	Proposal	Achievement of Objective
			<p>Separation between R4B and R4A demonstrating the orientation of apartments towards key views, mitigating cross-viewing.</p> <p>With regards to the separation between Buildings R4A and R4B, and consistency with the Design Guidance, the architectural composition and alignment of the buildings in relation to each other has been carefully considered to maximise views and outlook, whilst providing privacy between the buildings to achieve the intent of Objective 3F-1 as follows:</p> <ul style="list-style-type: none"> - Sightlines into a living area or wintergarden from an adjacent living area or wintergarden have been avoided by arrangement of the floor layout of each building and apartment. - Sightlines from living areas / wintergardens into bedrooms, and vice versa, are obstructed by architectural elements including opaqued facades and overlapping façade wings. - The relevant apartments are offset, or oriented towards available views to the north and north-east, rather than towards the bedrooms and living rooms of the apartments of the adjacent building (which are north-west and south-east from R4A and east and north-west from R4B). <p>At the closest interfaces between the two buildings, measures have been incorporated to limit overlooking (see below). The Building R4A and R4B wintergardens are 18m apart with an opaque screen on Building R4B to provide additional privacy. The wintergardens are also both orientated to the primary view line and are notched within the facade providing both visual and acoustic privacy. Overlapping façade wings also minimise overlooking. The western façade of Building R4B opposite the lift core also has an opaque finish to prevent introspection from R4A.</p> <p>Furthermore, the potential for development on adjacent land has been thoroughly considered. The proposed building forms part of a unified architectural composition together with the approved Crown Sydney Hotel and Resort. The siting of the buildings is intended to achieve a better amenity outcome and more efficient use of the land than a scheme that strictly meets the Design Criteria separations. The Concept Plan design responds to the height and separation from Barangaroo Central and the substantial amenity provided by the outlook and views across the park and to the more significant distant views. By grouping</p>

Design Criteria	Approved	Proposal	Achievement of Objective
			<p>the towers at the southern end of the site the maximum number of apartments are given the opportunity to benefit from the amenity of having uninterrupted views, rather than spacing them to achieve a 'compliant' view 24m across to another tower.</p> <p>The proposed design cleverly deals with the immediate privacy interface through apartment layouts, the inclusion of appropriate architectural responses, and the orientation of the buildings to minimise sightlines between buildings and maximise exposure to the north facing views. With this in mind any additional separation distance would not materially benefit the occupants of the proposed buildings.</p> <p>Considering the architectural responses, view line orientation and the site's context in the dense urban environment that is the Sydney CBD, the proposed building separation distances will achieve a reasonable level of external and internal visual privacy, consistent with Objective 3F-1.</p>
3J Bicycle and Car Parking			
<p><i>Objective 3J-1</i> Car Parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas</p>		✓	
<p><i>Design Criteria</i> For development in the following locations:</p> <ul style="list-style-type: none"> ▪ 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 <p>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.</p>		✓	<p>The 331 car spaces proposed is well within the maximum permissible 375 spaces allowable under the approved Concept Plan (MP06_0162).</p>

Design Criteria	Approved	Proposal	Achievement of Objective
Part 4 Designing the Buildings			
4A Solar and Daylight access			
<i>Objective 4A-1</i> To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space	✓	✓ No change to approved	
<i>Design Criteria</i> 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.	Achieves intent →	Achieves intent →	<p>Consistent with the Design Guidance the proposed apartment layout and design optimises the number of apartments that receive sunlight. A total of 62% of apartment living areas and private open spaces in Building R4B will achieve 2 hours of direct sunlight between 9am and 3pm in mid-winter, 8% below the 70% target recommended by the Design Criteria. Solar access to Building R4B is constrained by the existing CBD development to the east and development proposed to the west. However, as One Sydney Harbour is positioned near the harbour edge, further development to the west is highly unlikely to occur in the future, and therefore receive direct sunlight even at low solar altitudes. For this reason, daylight access has also been studied for the 9am-5pm period. During this extended 9am to 5pm period, 79% of apartments will achieve 2 hours of direct sunlight to apartment living areas and private open space, exceeding the 70% target recommended by the Design Criteria.</p> <p>The proposed variation to the Design Criteria is considered minor (8% additional, equating to 26 apartments out of the 322 apartments) in the context of the scale of the development and the other amenity benefits afforded on the site through access to open space, views and recreational opportunities of the Barangaroo site and broader CBD.</p> <p>The apartments located within the 8 additional levels (the subject of this approval) will all benefit from higher floor to floor ceiling heights. Additionally, the proposed façade typology will allow a high light transmission glass to be used, with automated cavity blinds provide solar control when needed.</p> <p>In light of the above the development achieves Objective 4A-1 by optimising the number of apartments receiving good daylight access to functional areas of the dwelling.</p>
A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter.	Achieves intent →	Achieves intent →	The Design Criteria also recommends that a maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3

Design Criteria	Approved	Proposal	Achievement of Objective
			<p>pm at mid-winter. Approximately 19% of apartments in Building R4B do not receive direct sunlight between 9am and 3pm at mid-winter.</p> <p>The proposed 4% variation represents approximately 13 additional apartments, or 1.6% of the 849 apartments proposed across the three buildings. Furthermore, when considered across the extended 9am to 5pm period, 99% apartments will receive some direct sunlight on the winter solstice. The proposed variation is minor and is considered acceptable in the context of the scale of the development and the other amenity benefits afforded on the site, as detailed above.</p> <p>In light of the above the development achieves Objective 4A-1 by optimising the number of apartments receiving good daylight access to functional areas of the dwelling.</p>
4B Natural Ventilation			
<p><i>Objective 4B-3</i> The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents</p>	✓	✓	
<p><i>Design Criteria</i> 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.</p>	X	N/A	<p>3 x one-bed apartments do not achieve cross ventilation as required. As per SSD 6965 MOD 2 application, pending approval.</p> <p>This proposal relates to apartments above 9 storeys for which this criteria is not applicable.</p>
<p>Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.</p>		✓	
4C Ceiling Height			
<p><i>Objective 4C-1</i> Ceiling height achieves sufficient natural ventilation and daylight access</p>		✓	

Design Criteria	Approved	Proposal	Achievement of Objective												
<p><i>Design Criteria</i> Measured from finished floor level to finished ceiling level, minimum ceiling heights are:</p> <table border="1"> <thead> <tr> <th colspan="2">Minimum ceiling height</th> </tr> </thead> <tbody> <tr> <td>Habitable rooms</td> <td>2.7m</td> </tr> <tr> <td>Non-habitable</td> <td>2.4m</td> </tr> <tr> <td>For 2 storey apartments</td> <td>2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area</td> </tr> <tr> <td>Attic spaces</td> <td>1.8m at edge of room with a 30 degree minimum ceiling slope</td> </tr> <tr> <td>If located in mixed use areas</td> <td>3.3m for ground and first floor to promote future flexibility of use</td> </tr> </tbody> </table> <p>These minimums do not preclude higher ceilings if desired.</p>	Minimum ceiling height		Habitable rooms	2.7m	Non-habitable	2.4m	For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area	Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope	If located in mixed use areas	3.3m for ground and first floor to promote future flexibility of use	Achieves intent →	✓ No change to approved	<p>The living, dining and kitchen open plan design means the majority of the habitable space has a 2.7m ceiling height. The bulkhead is integrated in the interior design and lines up with the front of the island bench to reduce the extent of the 2.4m ceiling. Study area has a 2.4m ceiling height with permanent openings to main open living area with borrowed light, ventilation and connected volume and space.</p> <p>As the 2.4m ceiling is a small percentage of the habitable area and in the wet area, the design is achieving the intent of the ADG.</p> <p>The ceiling heights of some non-habitable areas is 2.37m, which is 30mm lower than the 2.4m required by the ADG. Despite the minor variation, the reduced ceiling height will achieve sufficient natural ventilation and daylight access, which meets the objectives of the design criteria.</p> <p>All additional 8 levels will have higher floor to ceiling heights at 3m in the majority of the habitable rooms, with 2.7m achieved at integrated bulkheads within habitable rooms and in non-habitable rooms.</p>
Minimum ceiling height															
Habitable rooms	2.7m														
Non-habitable	2.4m														
For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area														
Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope														
If located in mixed use areas	3.3m for ground and first floor to promote future flexibility of use														

4D Apartment Size and Layout

<p><i>Objective 4D-1</i> The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity</p>	✓	✓ No change to approved											
<p><i>Design Criteria</i> Apartments are required to have the following minimum internal areas:</p> <table border="1"> <thead> <tr> <th>Apartment Type</th> <th>Minimum internal area</th> </tr> </thead> <tbody> <tr> <td>Studio</td> <td>35m²</td> </tr> <tr> <td>1 bedroom</td> <td>50m²</td> </tr> <tr> <td>2 bedroom</td> <td>70m²</td> </tr> <tr> <td>3 bedroom</td> <td>90m²</td> </tr> </tbody> </table> <p>The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each.</p> <p>A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each.</p>	Apartment Type	Minimum internal area	Studio	35m ²	1 bedroom	50m ²	2 bedroom	70m ²	3 bedroom	90m ²	✓	✓ No change to approved	
Apartment Type	Minimum internal area												
Studio	35m ²												
1 bedroom	50m ²												
2 bedroom	70m ²												
3 bedroom	90m ²												
<p>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.</p>	Achieves intent. →	✓ No change to approved	<p>All apartments in Building R4B achieve the minimum internal areas and have been designed to achieve a high level of amenity with a predominantly glazed façade and abundance of natural light.</p>										

Design Criteria	Approved	Proposal	Achievement of Objective
			In some apartments (not subject to this Amending DA), studies do not have direct access to windows. In instances where this occurs, the proposed design is consistent with the Design Guidance under Objective 4D-1 and the Design Criteria under Objective 4D-2 by providing a direct line of sight to a window / natural light that is generally 8m from the glass line to allow for the sharing of natural light and ventilation. On this basis, the Objectives to provide rooms with a high standard of amenity will be achieved. As per SSD 6965 MOD 2 application, pending approval.
<i>Objective 4D-2</i> Environmental performance of the apartment is maximised	✓	✓ No change to approved	
<i>Design Criteria</i> Habitable room depths are limited to a maximum of 2.5 x the ceiling height.	✓	✓ No change to approved	
In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window.	Achieves intent →	✓ No change to approved	Whilst some apartments in Building R4B have a habitable room depth of up to 8.5m, a minor variation to the Design Criteria, the apartment design will achieve Objective 4D-2, and will maximise the environmental performance of the apartments as follows: <ul style="list-style-type: none"> - the majority of the kitchen area, including the main work surfaces, is within approximately 8m of the window; - the windows are full height windows which will allow large amounts of light to reach the back of the habitable space; and - the spaces are open plan, and there are no walls or obstructions between the windows and the kitchen area and therefore the layout does not impede internal access to light and ventilation.
<i>Objective 4D-3</i> Apartment layouts are designed to accommodate a variety of household activities and needs	✓	✓ No change to approved	
<i>Design Criteria</i> Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² (excluding wardrobe space).	✓	✓ No change to approved	
Bedrooms have a minimum dimension of 3m (excluding wardrobe space).	✓	✓ No change to approved	

Design Criteria	Approved	Proposal	Achievement of Objective															
Living rooms or combined living/dining rooms have a minimum width of: <ul style="list-style-type: none"> 3.6m for studio and 1 bedroom apartments 4m for 2 and 3 bedroom apartments 	✓	✓ No change to approved																
<ul style="list-style-type: none"> The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts. 	✓	✓ No change to approved																
4E Private Open Space and Balconies																		
<i>Objectives 4E-1</i> Apartments provide appropriately sized private open space and balconies to enhance residential amenity	✓	✓ No change to approved																
<i>Design Criteria</i> All apartments are required to have primary balconies as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Dwelling Type</th> <th>Minimum Area</th> <th>Minimum internal area</th> </tr> </thead> <tbody> <tr> <td>Studio apartment</td> <td>4m²</td> <td>-</td> </tr> <tr> <td>1 bedroom apartment</td> <td>8m²</td> <td>2m</td> </tr> <tr> <td>2 bedroom apartment</td> <td>10m²</td> <td>2m</td> </tr> <tr> <td>3+ bedroom apartment</td> <td>12m²</td> <td>2.4m</td> </tr> </tbody> </table> The minimum balcony depth to be counted as contributing to the balcony area is 1m.	Dwelling Type	Minimum Area	Minimum internal area	Studio apartment	4m ²	-	1 bedroom apartment	8m ²	2m	2 bedroom apartment	10m ²	2m	3+ bedroom apartment	12m ²	2.4m	Achieves intent →	Achieves intent →	All wintergardens for the 1 bedroom apartments are consistent with the Design Criteria and wintergardens for all typologies achieve or exceed the minimum depths. Some 2 bedroom apartments have wintergardens which are 0.3-0.5m ² smaller than the recommended Design Criteria. Some 3 bedroom apartments have wintergardens which are 1.4 – 1.6m ² smaller than the recommended Design Criteria by the ADG. The proposed variations are considered minor, and the minimum depth is met or exceeded in all instances, thereby ensuring the useability and functionality of the outdoor space. All wintergardens are of a size and shape which is practical, usable and able to be furnished. Finally, residents of One Sydney Harbour will have access to Hickson Park, which will provide extensive open space for passive and active recreation. In light of the above the proposed wintergardens achieve the intent of Objective 4E-1 as they will provide appropriately sized open space and wintergardens that enhance residential amenity.
Dwelling Type	Minimum Area	Minimum internal area																
Studio apartment	4m ²	-																
1 bedroom apartment	8m ²	2m																
2 bedroom apartment	10m ²	2m																
3+ bedroom apartment	12m ²	2.4m																
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 3m.	N/A	N/A																
4F Common Circulation and Spaces																		
<i>Objective 4F-1</i> Common circulation spaces achieve good amenity and properly service the number of apartments	✓	✓ No change to approved																

Design Criteria	Approved	Proposal	Achievement of Objective												
<p><i>Design Criteria</i> The maximum number of apartments off a circulation core on a single level is eight.</p>	✓	✓ No change to approved	This building has maximum of six apartments per core												
<p>For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40.</p>	Achieves intent →	Achieves intent →	<p>In Building R4B, the ratio of lifts to apartments is 1:54. Whilst the proposal seeks to vary the recommended ratio, the lift service has been designed to be commensurate with global standards for luxury residential apartments, using high speed lifts and low interval waiting times. As detailed at in the table below and in the Services Report, the following indicative performance guidelines have been adopted as part of the performance criteria for the lifts in each tower.</p> <table border="1" data-bbox="1317 528 2051 676"> <thead> <tr> <th colspan="2">Indicative Performance Guidelines</th> </tr> </thead> <tbody> <tr> <td>Occupancy</td> <td>1.5 persons/ bedroom</td> </tr> <tr> <td>Lift Dispatcher</td> <td>Conventional Collective</td> </tr> <tr> <td>Lift Traffic Type</td> <td>Two way – no interfloor.</td> </tr> <tr> <td>Interval</td> <td><60s seconds at lobby</td> </tr> <tr> <td>Handling Capacity</td> <td>10% of population in 5 minutes</td> </tr> </tbody> </table> <p>With the above in mind, the proposal will achieve the intent of the Objective 4F-1.</p>	Indicative Performance Guidelines		Occupancy	1.5 persons/ bedroom	Lift Dispatcher	Conventional Collective	Lift Traffic Type	Two way – no interfloor.	Interval	<60s seconds at lobby	Handling Capacity	10% of population in 5 minutes
Indicative Performance Guidelines															
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4G Storage															
<p><i>Objective 4G-1</i> Adequate, well designed storage is provided in each apartment</p>	✓	✓ No change to approved													
<p><i>Design Criteria</i> In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:</p> <table border="1" data-bbox="219 970 857 1134"> <thead> <tr> <th>Dwelling Type</th> <th>Minimum Area</th> </tr> </thead> <tbody> <tr> <td>Studio apartment</td> <td>4m³</td> </tr> <tr> <td>1 bedroom apartment</td> <td>6m³</td> </tr> <tr> <td>2 bedroom apartment</td> <td>8m³</td> </tr> <tr> <td>3+ bedroom apartment</td> <td>10m³</td> </tr> </tbody> </table> <p>At least 50% of the required storage is to be located within the apartment.</p>	Dwelling Type	Minimum Area	Studio apartment	4m ³	1 bedroom apartment	6m ³	2 bedroom apartment	8m ³	3+ bedroom apartment	10m ³	✓	✓ No change to approved			
Dwelling Type	Minimum Area														
Studio apartment	4m ³														
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ADAPTABLE AND SILVER LEVEL HOUSING OBJECTIVES

Design Criteria	Achievement of Objective
<i>Objective 4Q-1</i> Universal design features are included in apartment design to promote flexible housing for all community members	All apartments include universal design characteristics to all for flexible use.
<i>Objective 4Q-2</i> A variety of apartments with adaptable designs are provided	All apartments are of a size and proportion that allow for flexible use and accommodate range of lifestyle needs.
<i>Objective 4Q-3</i> Apartment layouts are flexible and accommodate a range of lifestyle needs	As above