



**Planning &
Environment**

**STATE SIGNIFICANT DEVELOPMENT
ASSESSMENT REPORT:
*Building R4A and Building R4B,
Barangaroo South
SSD 6964 & SSD 6965***



Environmental Assessment Report
Section 89H of the
Environmental Planning and Assessment Act 1979

August 2017

ABBREVIATIONS

ADG	Apartment Design Guide
Applicant	Lend Lease (Millers Point) Pty Ltd, or any other person or persons who rely on this consent to carry out the development that is subject to this consent
CIV	Capital Investment Value
CPTED	Crime Prevention Through Environmental Design
Commission	Planning Assessment Commission
Council	City of Sydney Council
Concept Plan	Approved Barangaroo Concept Plan for the redevelopment the site (MP 06_0162)
Department	Department of Planning and Environment
EIS	Environmental Impact Statement entitled ' <i>Building R4A (SSD 6964) Barangaroo South</i> ' and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated September 2016; and Environmental Impact Statement entitled ' <i>Building R4B (SSD 6965) Barangaroo South</i> ' and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated September 2016
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	Environment Protection Authority
EPI	Environmental planning instrument
ESD	Ecologically Sustainable Development
GFA	Gross Floor Area
Minister	Minister for Planning
MD SEPP	<i>State Environmental Planning Policy (Major Development) 2005</i>
MOD 8	Modification number eight of the Concept Approval MP 06_0162
OEH	Office of Environment and Heritage
RMS	Roads and Maritime Services
RPBW	Renzo Piano Building Workshop
RTS	Response to Submissions package entitled ' <i>Building R4A (SSD 6964) Response to Submissions and Proposed Amended Development</i> ' and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated February 2017; and ' <i>Building R4B (SSD 6965) Response to Submissions and Proposed Amended Development</i> ' and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated February 2017; and <i>Further Response to Submissions</i> and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated 5 May 2017
SEARs	Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department
SLEP 2012	<i>Sydney Local Environmental Plan 2012</i>
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSD	State significant development
SSP SEPP	<i>State Environmental Planning Policy (State Significant Precincts) 2005</i>
TfNSW	Transport for New South Wales

Cover Photograph: Photomontage of Building R4A (centre) and Building R4B (centre right) with approved Crown Sydney Hotel Resort (left) and constructed Commercial Building C3 (right) (Source: EIS)

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NSW Government

Department of Planning & Environment

EXECUTIVE SUMMARY

This report provides an assessment of two State significant development applications (SSD 6964 and SSD 6965) lodged by Lend Lease (Millers Point) Pty Ltd under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The applications seek approval for the construction, use and fit-out of a 72-storey building (RL 250) and a 60-storey building (RL 210), known respectively as Building R4A and Building R4B, at Barangaroo South. The applications have been assessed concurrently.

Building R4A (SSD 6964) will contain a total of 47,564 m² of residential floorspace (327 units) and 440 m² of retail floorspace at ground floor level. Building R4B (SSD 6965) will contain a total of 38,602 m² of residential floorspace (297 units) and 294 m² of retail floorspace at ground floor level. The two buildings are to be located entirely over the previously approved Stage 1B Basement (SSD 6960) and the applications also include the fitout and use of the basement as a car park with Building R4A allocated 378 spaces and Building R4B allocated 301 spaces.

The combined Capital Investment Value (CIV) for the developments is \$750.9 million and will create 1,215 construction jobs and 55 operational jobs.

The developments constitute SSD under clause 3 of Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011*, as they are developments at Barangaroo with a CIV of more than \$10 million. Therefore, the Minister for Planning is the consent authority for each application.

The Department exhibited each of the proposals for 47 days from 29 September 2016 to 14 November 2016. The Department received 12 submissions in response to each of the applications, comprising six public submissions and six public authority submissions.

City of Sydney Council objected to each application predominantly on the grounds the proposed developments lack coordination with surrounding land, urban design and built form issues, non-compliances with *State Environmental Planning Policy No.65 (Design Quality of Residential Apartment Development)* and the *Apartment Design Guide*, traffic generation and excessive car parking, noise and public safety. No other public authorities objected to the proposal.

The six public submissions objected to the proposed buildings on the grounds of height and visual impacts, urban design, loss of views and construction impacts. The Department's assessment has considered all relevant issues including the EP&A Act and considers the key issues to be built form (including compliance with the Barangaroo Concept Plan and design excellence), residential amenity, landscaping/ public domain, and traffic and parking.

The Department's assessment concludes the applications will facilitate the development of Barangaroo South at significant benefit to the State, are in accordance with the Barangaroo Concept Plan, will achieve design excellence and will provide a high quality urban design outcome for future residents, workers and visitors.

The Department is also satisfied the proposals are consistent with the strategic objectives for the area, as outlined in *A Plan for Growing Sydney*, the *Draft Towards our Greater Sydney 2056* and the *Draft Central District Plan*, and are consistent with the requirements of relevant environmental planning instruments and policies.

As Council objects to both applications, they are being referred to the Planning Assessment Commission for determination.

The Department's assessment concludes the developments are in the public interest and are capable of being approved, subject to the recommended conditions.

1. BACKGROUND

1.1 Introduction

This report provides an assessment of two State significant development applications (SSD 6964 and SSD 6965) lodged by Lend Lease Millers Point Pty Ltd (the Applicant) for the construction of two residential towers at Barangaroo South known as Buildings R4A and R4B. Both buildings will be constructed above the Stage 1B basement car park which was approved by the Planning Assessment Commission (Commission) on 7 March 2017 (SSD 6960).

1.2 The Barangaroo Site

Barangaroo is located on the north-western edge of the Sydney Central Business District (CBD) and is bounded by the Sydney Harbour foreshore to the north and west, Hickson Road and Millers Point to the east, and King Street Wharf/ Cockle Bay/ Darling Harbour to the south. The 22 hectare Barangaroo precinct is divided into three distinct redevelopment areas (from north to south), comprising the Headland Park (now known as Barangaroo Reserve), Barangaroo Central and Barangaroo South (**Figure 1**). Buildings R4A and R4B are located within Barangaroo South.



Figure 1: The Barangaroo Site highlighted in red) (Base source: Google)

1.3 Approved Barangaroo Concept Plan

On 9 February 2007, the then Minister for Planning approved the Barangaroo Concept Plan (Concept Plan) (MP 06_0162) to guide the renewal of the Barangaroo site for a mix of uses, including residential, retail, commercial and public recreation.

The Concept Plan establishes nine development blocks, gross floor area (GFA) maximums, building height limits and public open space/ public domain areas. The Concept Plan also includes a set of built form principles and urban design controls to guide development.

The proposed residential Buildings R4A and R4B are located in Block 4A of the Concept Plan within Barangaroo South (**Figure 2**). Barangaroo South has also been divided into construction Stages 1A, 1B and 1C (**Figure 2**) which have informed the staging of remediation, excavation, basement and public domain works. Block 4A is located within the Stage 1B construction area. Stage 1A relates to a mixture of commercial and retail buildings and is nearly completed, and Stage 1C relates to the Crown Sydney Hotel Resort which is currently under construction.

A detailed planning history of the Concept Plan and its modifications is provided at **Appendix C**. In summary, eight modifications have been approved since the Concept Plan was originally approved.

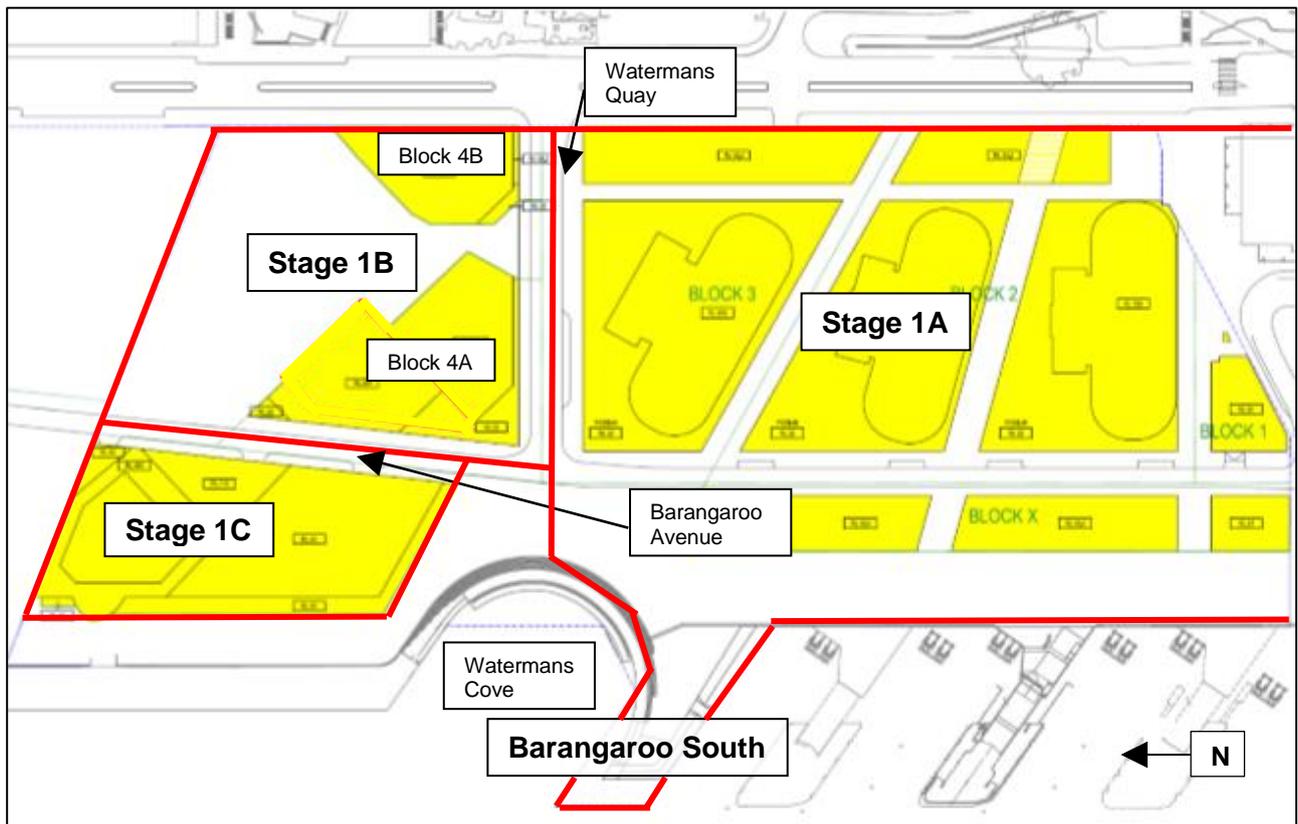


Figure 2: Barangaroo South Concept Plan blocks and construction stages (Base source: EIS)

1.4 The Subject Site

The Building R4A site and the adjacent Building R4B site are located in the south-western corner of the Stage 1B construction area, adjacent to the intersection of Barangaroo Avenue and Watermans Quay. In combination, the two sites (herein referred to as the subject site) comprise a total area of 3,692 m². Building R4A is located on the western side of the site adjacent to Barangaroo Avenue. Building R4B is located to the south-east of Building R4A, adjacent to

Watermans Quay. Basement car park access will be obtained via Watermans Quay. A site plan is provided as **Figure 3**.

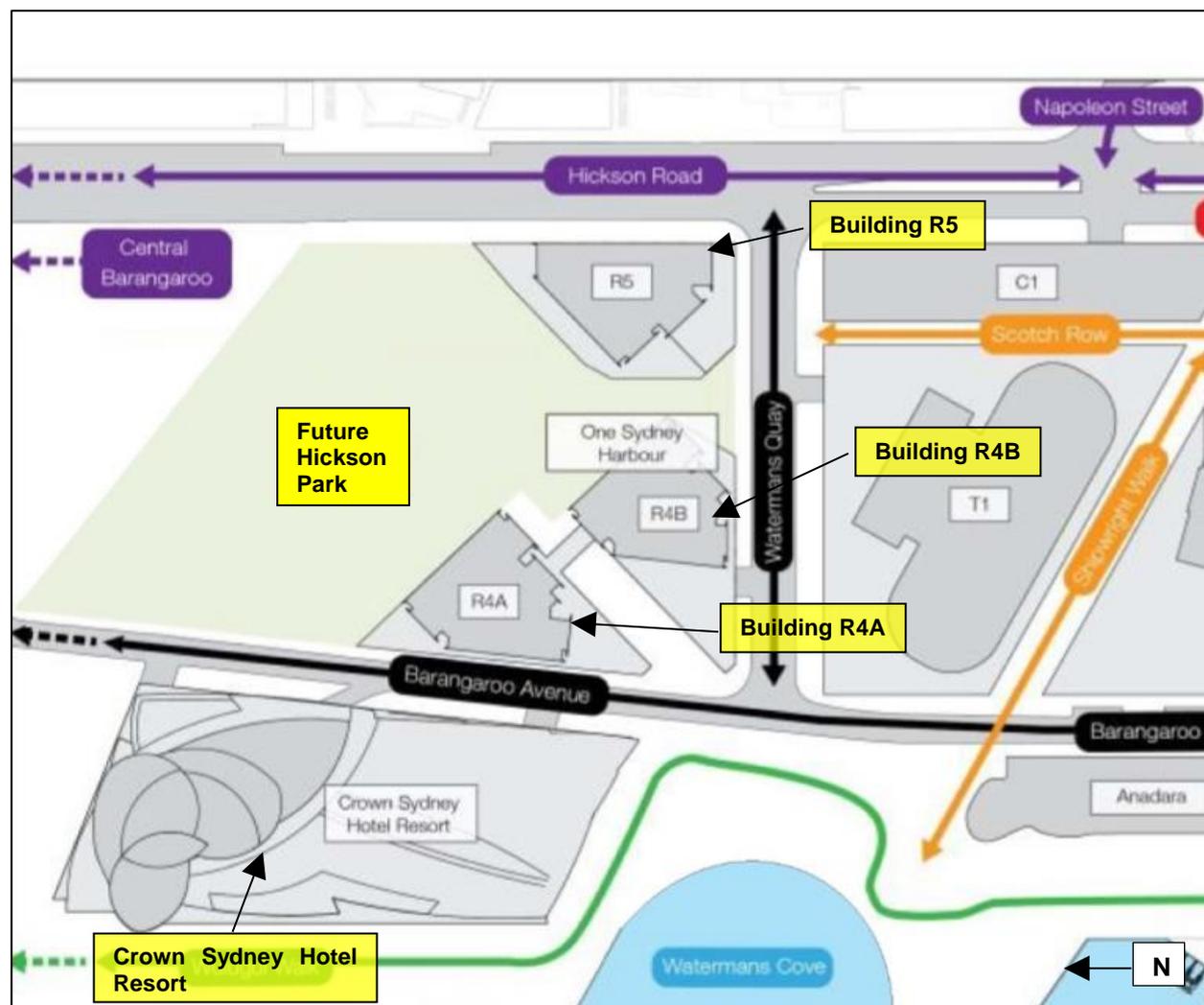


Figure 3: Stage 1B site plan (Base source: EIS)

1.5 Current Construction Works and Completed Projects

A number of key approvals have been issued for development at Barangaroo South, Headland Park and one at Barangaroo Central (**Figure 4**), including:

- stage 1B basement car park (under construction);
- blocks 4 and 5 and Hickson Road remediation works (under construction);
- retail Building R1 (under construction);
- Crown Sydney Hotel Resort (under construction);
- Barangaroo ferry hub (complete);
- commercial Building C3 (complete);
- commercial Building C4 (complete);
- commercial Building C5 (complete);
- commercial Building C2 (complete);
- residential buildings R8 and R9 (complete);
- stage 1A basement car park (complete);
- stage 1A permanent public domain works (complete);
- retail Building R7 (complete);
- Headland Park (Barangaroo Reserve – complete); and
- Barangaroo Central foreshore promenade (complete).

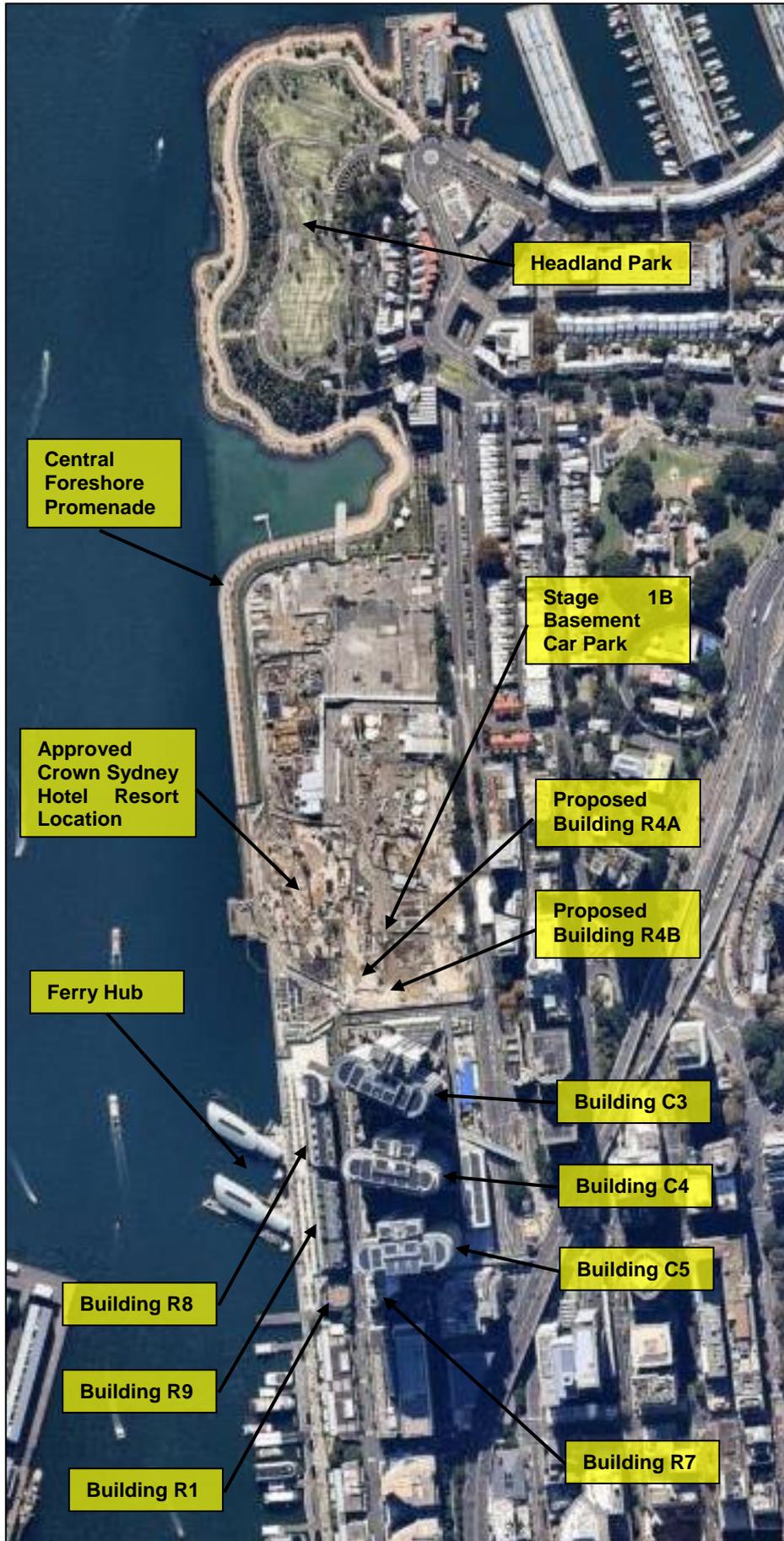


Figure 4: Barangaroo construction and completed projects plan (Base source: Nearmap)

The proposed buildings R4A and R4B are to be located above the Stage 1B basement car park approved by the Commission on 7 March 2017. All car parking associated with the proposed buildings will be provided within the single Stage 1B basement car park. Building R5, which is currently under assessment, will also be serviced by the Stage 1B basement car park.

The construction of the Stage 1B basement includes excavation to a maximum depth of RL-18.5, construction of basement slabs, loading docks, structural cores for the proposed buildings (up to ground level), and low rise elements above ground including car park ramps and risers (to be incorporated into the proposed building podiums).

1.6 Environment Protection Authority Declaration Area

The site incorporates part of a 'remediation site' as declared by the Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997*, (EPA Declaration Area 21122). The Declaration Area is to be remediated in three stages:

- Stage 1 involves the remediation of Block 4 and the adjacent public domain areas (SSD 5897) and was approved by the Department on 10 November 2014. These works are currently well advanced;
- Stage 2 involves the remediation of Block 5 (SSD 6533) to the north and was approved by the Department on 18 December 2015; and
- Stage 3 relates to the remediation of part of Hickson Road (SSD 6617) and was approved by the Department on 25 August 2016. This section of Hickson Road abuts the northern boundary of Block 4B (Building R5) to the east of the proposed buildings.

The EPA has indicated the Declaration will not be lifted until the entire area has been successfully remediated.

The majority of the Stage 1B construction area is currently being remediated as part of the approved Block 4 remediation works (SSD 5897). Accordingly, the subject applications do not include remediation works.

2. PROPOSED DEVELOPMENT

2.1 Development Description

Two separate but related SSD applications seek approval for two buildings being:

- Building R4A (SSD 6964) proposed to be 246.5 m (RL 250 m) in height (72 storeys) and contain 327 residential units and ground level retail; and
- Building R4B (SSD 6965) proposed to be 206.5 m (RL 210 m) in height (60 storeys) and contain 297 residential units and ground level retail.

The key components and features of each of the proposed developments, as refined in the Response to Submissions (RTS) (refer to **Section 4.4**), are provided in **Table 1** and **Table 2** below and are shown in **Figures 5** and **6**.

Table 1: Key components of Building R4A (SSD 6964)

Aspect	Description
Demolition	<ul style="list-style-type: none"> • Demolition of interim basement elements, such as access points and service risers, constructed on a temporary basis under the Stage 1B basement approval.
Built form	<ul style="list-style-type: none"> • Construction of a 72-storey mixed use building with a height of 246.5 m (RL 250 m) including a three-storey, 10.6 m high podium.
Use	<ul style="list-style-type: none"> • Two ground floor retail tenancies and 327 residential units above, including podium level communal facilities/ open space.
Public domain/ landscaping	<ul style="list-style-type: none"> • Provision of a publicly accessible pedestrian through-site link (known as the Strada) at ground level located between the building and Building R4B;

	<ul style="list-style-type: none"> paving for a pedestrian area surrounding the building; a new porte cochere adjacent to Barangaroo Avenue; and landscape works including a podium rooftop garden.
GFA	<ul style="list-style-type: none"> Total GFA of 48,004 m², comprising: <ul style="list-style-type: none"> 47,564 m² residential floorspace; and 440 m² retail floorspace.
Basement Use	<ul style="list-style-type: none"> Fitout and use of approved Stage 1B basement car park (driveway access from Watermans Quay) to accommodate: <ul style="list-style-type: none"> 378 parking spaces (377 residential, 1 retail) allocated specifically to Building R4A; residential and retail storage; waste rooms; facilities management offices; shared plant and services; end-of-trip facilities (changing rooms, lockers and showers); and 327 resident bicycle parking spaces (located within the individual unit storage areas) and retail worker bicycle parking spaces.
Signage	<ul style="list-style-type: none"> A signage zone to accommodate future building identification on the Barangaroo Avenue frontage.

Table 2: Key components of Building R4B (SSD 6965)

Aspect	Description
Demolition	<ul style="list-style-type: none"> Demolition of interim basement elements, such as access points and service risers, constructed on a temporary basis under the Stage 1B basement approval.
Built form	<ul style="list-style-type: none"> Construction of a 60-storey mixed use building with a height of 206.5 m (RL 210 m) including a three-storey, 10.6 m high podium; construction of a covered pedestrian link bridge connecting with the podium of Building R4A; and construction of a canopy over the Strada located between Building R4A and R4B.
Use	<ul style="list-style-type: none"> Two ground floor retail tenancies and 297 residential units above, including podium level communal facilities/ open space.
Public domain/ landscaping	<ul style="list-style-type: none"> Paving for a pedestrian area surrounding the building; and landscape works, including a podium rooftop garden.
GFA	<ul style="list-style-type: none"> Total GFA of 38,896 m², comprising: <ul style="list-style-type: none"> 38,602 m² residential floorspace; and 294 m² retail floorspace.
Basement Use	<ul style="list-style-type: none"> Fitout and use of approved Stage 1B basement car park (driveway access from Watermans Quay) to accommodate: <ul style="list-style-type: none"> 301 parking spaces (300 residential, 1 retail) allocated specifically to Building R4B; residential and retail storage; waste rooms; facilities management offices; shared plant and services; end-of-trip facilities (changing rooms, lockers and showers); and 297 resident bicycle parking spaces (located within the individual unit storage areas) and retail worker bicycle parking spaces.
Signage	<ul style="list-style-type: none"> A signage zone to accommodate future building identification on the Watermans Quay frontage.

2.2 Capital Investment Value/ Jobs

The Capital Investment Value (CIV) of the proposed developments is:

- Building R4A: \$407.17 million;
- Building R4B: \$343.75 million; and
- Combined CIV: \$750.92 million.

The combined developments will create 1,215 construction jobs and 55 operational jobs.



Figure 5: Proposed buildings viewed from the south-west in context with existing Barangaroo developments and the wider CBD (Base source: Design Statement)

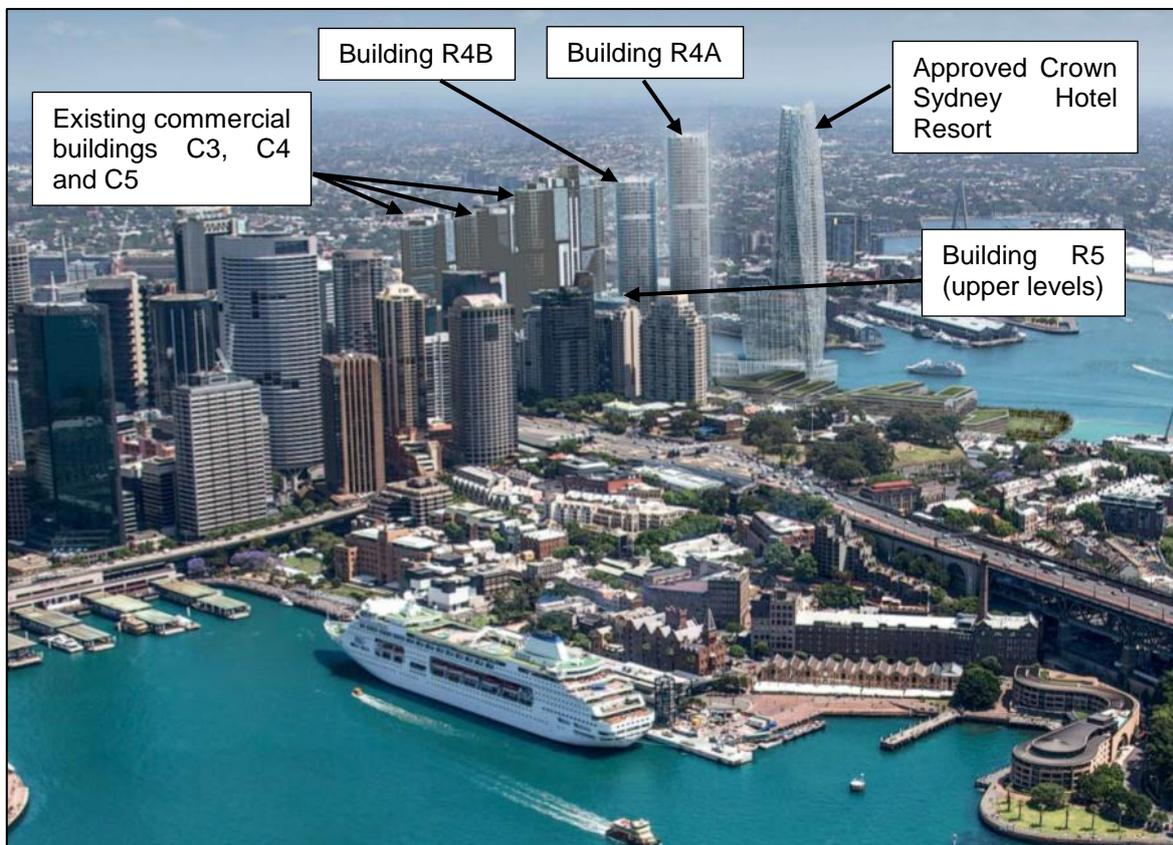


Figure 6: Proposed buildings viewed from the north-east in context with existing Barangaroo developments and the wider CBD (Base source: Design Statement)

3. STATUTORY CONTEXT

3.1 State Significant Development

The construction of Buildings R4A and R4B are SSD pursuant to section 89C of *Environmental Planning and Assessment Act 1979* (EP&A Act) as they are developments at Barangaroo each with a CIV in excess of \$10 million under clause 3 of Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Therefore, the Minister for Planning is the consent authority for each of the developments.

3.2 Permissibility

The Barangaroo site is listed as a State Significant Precinct under Part 12 of Schedule 3 of the *State Environmental Planning Policy (State Significant Precincts) 2005* (SSP SEPP). The SSP SEPP zones each of the subject sites 'B4 Mixed Use'. The proposed developments, comprising ground level retail with residential above, are permissible with consent in the B4 zone.

3.3 Delegated Authority

Determination

On 14 September 2011, the Minister delegated functions to determine SSD applications to the Commission in cases where an objection has been received from the relevant local council, where the Applicant has provided a political donation disclosure statement, or where there are more than 25 public submissions objecting to the proposal.

As City of Sydney Council (Council) objects to both proposals, they are being referred to the Commission for determination.

Design Competition Waiver

On 1 December 2014, the Secretary delegated her functions under Schedule 3 of the SSP SEPP and Modification C2(7) of the Concept Plan to the Executive Directors who report to the Deputy Secretary, Planning Services. This enables the Acting Executive Director, Regions to waive the requirement for a design competition under Schedule 3 of the SSP SEPP and the terms of the Concept Plan. The delegation does not extend to the functions of the Commission.

Because the buildings exhibit design excellence and because of the outstanding reputation of the architect responsible for the design (Renzo Piano Building Workshop), it is considered reasonable for the Acting Executive Director, Regions to grant a waiver for each building. This is further considered in **Section 5.3.1**.

3.4 Airports Act 1996

The proposed buildings extend into airspace, which, under the *Airports (Protection of Airspace) Regulations 1996*, is prescribed airspace for Sydney Airport. The proposed buildings will penetrate the prescribed airspace above the site by 94 m (Building R4A) and 54 m (Building R4B). Accordingly, construction of each building constitutes a 'controlled activity' under section 182 of the *Airports Act 1996*. The Department notes a controlled activity approval for each building was granted by the Commonwealth in February 2017.

3.5 Environmental Planning Instruments

The environmental planning instruments (EPIs) that apply to the site include:

- *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP);
- *State Environmental Planning Policy (State Significant Precincts) 2005* (SSP SEPP);
- *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP);
- *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004* (BASIX);

- *State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55);*
- *State Environmental Planning Policy No.64 – Advertising and Signage (SEPP 64);*
- *State Environmental Planning Policy No.65 – Design Quality of Residential Apartment Development (SEPP 65); and*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP 2005).*

The Department’s detailed consideration of the proposal against the EPIs is provided in **Appendix D** of this report. In summary, the Department is satisfied the application complies with the relevant provisions of the EPIs.

3.6 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects set out in **Section 5** of that Act. Decision-makers are required to consider the objects in Section 5 of the EP&A Act when making decisions under that Act. The Department has considered the objects of the EP&A Act in **Table 3** and is satisfied that the proposals comply with all objects.

Table 3: Compliance with EP&A Act objects

Objects of the EP&A Act	Consideration
<i>(a) to encourage:</i>	
<i>(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment</i>	The proposals do not impact on natural and artificial resources, as they involve development within an already disturbed urban area. The proposals will increase housing supply to meet a range of housing needs (i.e. one, two, three and four bedroom units) and provide retail opportunities and improved public domain outcomes which will enhance economic and social welfare.
<i>(ii) the promotion and co-ordination of the orderly and economic use and development of land</i>	The proposed land use is permitted and the merits of the proposals are considered in Section 5 .
<i>(iii) the protection, provision and co-ordination of communication and utility services</i>	The EIS for each application includes an Infrastructure Services Report that considers the impact of the proposal on existing communication and utility services. The infrastructure and services for each building will connect to the approved Stage 1B basement infrastructure. No existing infrastructure is anticipated to be impacted or require relocation because of the proposed works. Sydney Water and Ausgrid have raised no concerns with the proposals.
<i>(iv) the provision of land for public purposes</i>	The proposals include the provision of a publicly accessible Strada between Buildings R4A and R4B and will provide pedestrian linkages to the future Hickson Park.
<i>(v) the provision and co-ordination of community services and facilities</i>	As per the Concept Plan, the proposals do not include the provision or co-ordination of community services and facilities.
<i>(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats</i>	The proposals will have no adverse impact on the environment including native animals and plants, threatened species and ecological communities and their habitats.
<i>(vii) ecologically sustainable development (ESD)</i>	Section 3.6 of this report considers the proposals against the principles of ESD.
<i>(viii) the provision and maintenance of affordable housing</i>	The proposals do not involve the provision or maintenance of affordable housing.

<i>(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State</i>	The proposals are SSD in accordance with the SRD SEPP. The Department consulted with Council and other relevant agencies on the proposals.
<i>(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.</i>	Section 4 sets out details of the Department's public exhibition of the proposals.

3.7 Compliance with Clause 3B of Schedule 6A of the EP&A Act

Clause 3B(2)(d) of Schedule 6A the EP&A Act specifies that a consent authority must not grant consent under Part 4 unless it is satisfied that a development is consistent with the terms of the approval of a Concept Plan. The Department has considered the proposed developments and is of the opinion the proposals are consistent with the Concept Plan as they:

- reflect the approved block configuration and are permissible with consent on the subject site;
- comply with the maximum GFA and height controls;
- comply with all relevant built form principles and urban design controls (**Appendix E**); and
- will provide the anticipated urban context for the delivery of a high quality Hickson Park (**Section 5.5**).

3.8 Ecologically Sustainable Development

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) from the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) the precautionary principle;*
- (b) inter-generational equity;*
- (c) conservation of biological diversity and ecological integrity; and*
- (d) improved valuation, pricing and incentive mechanisms.*

The Environmental Impact Statement (EIS) for each application has considered and addressed ESD principles. This describes the Applicant's approach to integrating energy efficient technologies and sustainable practices in the design, construction and ongoing operation of the development.

The Department has assessed the proposed developments in relation to the ESD principles and has made the following conclusions:

- **Precautionary Principle** – the proposals will not result in any serious or irreversible environmental damage, as:
 - Barangaroo is in the process of being developed and has been appropriately planned for development;
 - the location of the site encourages sustainable transport choices as it is well served by public transport including a future metro station and ferry hub;
 - all utility infrastructure services and connections have been previously approved as part of the Stage 1B basement car park and the proposals include a stormwater management strategy; and
 - the proposals include measures to reduce water, energy and waste through a mixture of passive design and efficient systems to achieve the target of a 5-star Green Star Design rating.
- **Inter-Generational Equity** – the proposals will not result in adverse impacts on the health, diversity and productivity of the environment for the benefit of future generations, as detailed above and the proposals consider existing environmental impacts in the area.
- **Biodiversity Principle** – the proposals will have no significant impact on biodiversity or ecological value.
- **Valuation Principle** – the proposals include energy, water and waste reducing measures that will reduce the ongoing operating costs of the development.

Having considered the objects of the EP&A Act, including the encouragement of ESD in its assessment of the application, the Department is satisfied the proposals encourage ESD.

3.9 Secretary's Environmental Assessment Requirements

In accordance with section 78A (8A) of the EP&A Act, the Secretary notified the Applicant of the Secretary's Environmental Assessment Requirements (SEARs) for the SSD applications. The Department is satisfied the Applicant's EIS for both projects adequately addresses compliance with the SEARs to enable the assessment of each application for determination purposes.

3.10 Environmental Planning and Assessment Regulation 2000

Subject to any other references to compliance with the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) cited in this report, the requirements for notification (Part 6, Division 6 of the EP&A Regulation) and fees (Part 15, Division 1AA of the EP&A Regulation) have been complied with.

3.11 Strategic Context

The Department considers the proposals are consistent with the following State strategies:

- the objectives of *NSW 2021* (the State Plan) via the creation of 1,215 full time equivalent jobs during construction and 55 full time jobs during operation;
- the objectives of *Towards our Greater Sydney 2056* and *A Plan for Growing Sydney*, including the following key directions and actions:
 - facilitate the delivery of Barangaroo as part of Global Sydney and as an emerging major mixed use, tourism and entertainment precinct which would expand upon and diversify Sydney's Cultural Ribbon,
 - suitably manage the impacts of development on the environment,
 - promote new development to accommodate additional new jobs within the Sydney Central subregion; and
- the relevant priorities and actions of the Greater Sydney Commission's *Draft Central District Plan*, in particular by providing:
 - a 'Productive City' by driving economic growth and contributing to job targets,
 - a 'Liveable City' by facilitating construction of residential development at Barangaroo South improving housing choice, improving housing diversity and contributing to housing targets, and
 - a 'Sustainable City' by suitably managing the potential impacts of the development on the environment.

4. CONSULTATION

4.1 Exhibition

The Department publicly exhibited the applications for 47 days from 29 September 2016 until 14 November 2016. The applications were publicly available on the Department's website, at the Department's Information Centre and at Council.

The Department also advertised the proposals in the *Sydney Morning Herald*, *The Daily Telegraph* and the *Central Courier* on Wednesday 28 September 2016, and notified adjoining landholders and relevant State and local government authorities in writing.

The Department received six public authority submissions (including one objection from Council) and six public submissions (all of which were objections) in response to the exhibition of the applications. The submissions were identical for each application and are summarised below. A link to all submissions may be viewed at **Appendix B**.

4.2 Public Authority Submissions

The Department received six public authority submissions. The submissions from public authorities to the exhibition are summarised in **Table 4** below.

Table 4: Summary of public authority submissions

City of Sydney Council (Council)
<p>Council objects to each of the proposals on the following grounds:</p> <ul style="list-style-type: none"> • the applications may be prohibited should the current Court appeal for Modification 8 (MOD 8) and the Crown Sydney Hotel Resort SSD be successful (note: the Court appeal was dismissed on 23 December 2016); • lodgement of the applications is premature as the applications are not coordinated with the adjacent future Hickson Park; • podium forms should be introduced on each frontage of the towers; • the wind impacts of the developments have not been adequately assessed; • the canopy over the Strada encloses and privatises the public domain and the link bridge between the buildings is not supported; • excessive apartment yield arising from variations to <i>Apartment Design Guide</i> (ADG) guidelines; • the number of car parking spaces proposed is excessive and should be restricted to rates within <i>Sydney Local Environmental Plan 2012</i> (SLEP 2012); • potential impacts on traffic circulation; • lack of loading dock service spaces; • lack of information regarding bicycle parking and end of trip facilities; • exceedances of construction noise criteria are predicted at three identified receivers; and • cumulative noise impacts on residents from future retail uses.
Transport for NSW (TfNSW)
<p>TfNSW recommends conditions be imposed requiring the approval of a Construction Pedestrian and Traffic Management Plan and a Loading Dock Management Plan.</p>
Environment Protection Agency (EPA)
<p>EPA notes the building footprints are located within the Declared Block 4 Remediation Area and the Stage 1B basement car park footprint and that separate consent has been granted for remediation of these areas. Given no additional excavation or bulk earthworks are proposed, the proposals do not constitute a scheduled activity under Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i>.</p>
Office of Environment and Heritage (OEH) – Heritage Division
<p>OEH (Heritage Division) comments the proposals comply with the building envelopes set out in the Concept Plan, however:</p> <ul style="list-style-type: none"> • the proposed buildings will alter significant views from a number of State Heritage Register items; • the proposed buildings will cumulatively interrupt the western views from the Sydney Observatory and its setting within Observatory Park; • no archaeological assessment is required given the location of the site within the EPA remediation zone; and • interpretation should be incorporated into the detailed design in accordance with the Outline Interpretation Plan prepared for Barangaroo South.
Foreshores and Waterways Planning and Development Advisory Committee
<p>No comments provided noting the proposed buildings are generally consistent with the overall Concept Plan.</p>
Commonwealth Department of Infrastructure and Regional Development (Airspace Protection)
<p>Controlled activity approval was granted subject to conditions relating to maximum RLs of 250 and 210 for Building R4A and R4B respectively, obstacle lighting arrangements (Building R4A only) and separate approval requirements for cranes.</p>

4.3 Public Submissions

A total of six public submissions were received during the exhibition of the applications, all of which raised objections to the proposals. The issues raised in the public objections are summarised in **Table 5**.

Table 5: Summary of key issues raised in public submissions

Issue	Number of submissions
Impact on views	2
Too dense/ overcrowding of the site	2
Unacceptable height/ adverse visual impact	2
Out of character with urban environment of Darling Harbour and the city	1
Increased pedestrian and vehicular traffic	1
Insufficient infrastructure in the area	1
Unattractive and unimaginative architecture	1
Transport and infrastructure needs of increased population cannot be provided in this location	1
Construction noise and vibration	1

4.4 Response to Submissions

On 24 February 2017, the Applicant lodged its RTS for each of the proposals, including revised and supplementary architectural plans. Each RTS responded to the issues raised and provided the following additional information:

- supplementary Design Report;
- addendum to Wind Report;
- Solar and Daylight Access Study;
- Accessibility Report;
- Building Code of Australia (BCA) Report; and
- Crime Prevention Through Environmental Design (CPTED) Report.

In combination, the RTS included the following changes to the design of the buildings:

- an overall 53 m² reduction in GFA as follows:
 - Building R4A: 16 m² reduction in residential GFA and 173 m² reduction in retail GFA (189 m² total GFA reduction); and
 - Building R4B: 113 m² increase in residential GFA and 1 m² increase in retail GFA (114 m² total GFA increase).
- an overall reduction of 34 car parking spaces as follows:
 - Building R4A: reduction of 20 residential parking spaces to 378; and
 - Building R4B: reduction of 14 residential parking spaces to 301.
- revisions to unit layouts;
- deletion of retail mezzanine levels; and
- various minor design refinements.

The Department placed copies of each RTS on its website. Each RTS was referred to Council for comment as Council had made substantial submission to the EIS exhibition. The submission from Council to both of the RTS are summarised in **Table 6** below.

Table 6: Summary of RTS Council submission

Council
<p>Council maintains its objection to the proposals for the following reasons:</p> <ul style="list-style-type: none"> • lodgement of the applications is premature as the applications are not coordinated with surrounding land particularly:

- the design and intent of the adjacent Hickson Park remains unknown including location of amenities, large tree planting, deep soil zones, paths of travel etc. and how the buildings will interface with the park cannot be determined;
 - pedestrian connection and desire lines from these buildings to the Barangaroo Metro Station through Hickson Park are not determined;
 - environmental impacts are not coordinated; and
 - each building must mitigate the unacceptable wind impacts they create within their own site boundary and not rely on future questionable tree planting to create a habitable space.
- lack of podium forms;
 - tree planting recommended by the wind report has not been included in the proposed landscaping scheme;
 - awnings should be provided to the podium communal gardens in lieu of trees to protect from 'down washed' winds and to improve useability;
 - the design of the Strada creates a wind tunnel effect requiring doors at either end which will privatise the public domain between the two buildings. The proposed canopy should be deleted and replaced by awnings. Increased building separation to reduce wind impacts should also be considered;
 - the link bridge between the buildings is not supported;
 - variations to ADG guidelines in relation to building separation/ privacy, solar access, cross ventilation, lack of study windows and private open space are not supported;
 - the number of car parking spaces should be further reduced to comply with rates within SLEP 2012 and car share parking should be provided;
 - lack of information regarding resident bicycle storage areas;
 - visitor bicycle parking should be provided;
 - most of the available space in the Strada and along Barangaroo Avenue is proposed to be used for outdoor dining at ground level leading to concerns for constricted pedestrian circulation given the number of residents;
 - the proposed closure of the Strada at night for safety/ security reasons is not supported by evidence;
 - mail box location and security information should be provided;
 - submitted plans should include BASIX commitments; and
 - further information is required to demonstrate how non-BASIX affected parts of the buildings will satisfy high performance energy efficiency commitments.

5. ASSESSMENT

5.1 Section 79C Evaluation

Table 7 identifies the matters for consideration under section 79C of the EP&A Act that apply to SSD. Both EIS have been prepared by the Applicant to consider these matters and those matters detailed in the SEARs.

Table 7: Section 79C(1) Matters for Consideration

Section 79C(1) Evaluation	Consideration
(a)(i) any environmental planning instrument	Both satisfactorily comply – see Section 3.4 and Appendix D of this report.
(a)(ii) any proposed instrument	Not applicable.
(a)(iii) any development control plan (not applicable to SSD)	Whilst Development Control Plans (DCPs) do not apply to SSD applications, consideration has been given to the Sydney Harbour Foreshores & Waterways DCP in Appendix D of this report.
(a)(iiia) any planning agreement	Not applicable.
(a)(iv) the regulations	Both comply – see Section 3.8 of this report. The applications satisfactorily meet the relevant requirements of the EP&A Regulation, including the procedures relating to development applications, public participation procedures for SSDs, and Schedule 2 of the Regulation relating to EIS.
(a)(v) any coastal zone management plan	Not applicable.
(b) the likely impacts of that development	Impacts of the development have been considered in Section 5 of this report.

(c) the suitability of the site for the development	The suitability of the site has been considered in Section 1 of this report.
(d) any submissions	Consideration has been given to submissions received during the exhibition period in Section 4 of this report. Key issues raised in submissions have been considered further in Section 5 of this report.
(e) the public interest.	The public interest of the developments have been considered in Section 5 of this report.
Biodiversity values exempt if:	
(a) On biodiversity certified land?	Not applicable
(b) Biobanking Statement exists?	Not applicable

5.2 Key Assessment Issues

The Department has considered the comments raised in submissions and the Applicant's response to these in the assessment of the applications in **Section 5** of this report and/or by way of recommended conditions in the attached instruments of consent at **Appendix A**.

The Department considers the key environmental assessment issues related to the application include:

- built form;
- residential amenity;
- landscaping and public domain; and
- traffic and parking.

Each of these key issues is discussed in the following sections of the report. **Section 5.7** of the report discusses other issues taken into consideration in the assessment of the applications.

5.3 Built Form

The proposals seek to construct two substantial buildings within Barangaroo South. Building R4A will be the tallest residential building in the Sydney CBD and will be visible for significant distances. Public submissions raised concerns with the height of the proposed buildings, whether the buildings will be out of character with the area, adverse impacts on views and increased overshadowing.

The Department has considered the proposals, the issues raised in the submissions, and the Applicant's justification and considers key issues in relation to built form include:

- consistency with the Concept Plan;
- views; and
- overshadowing.

5.3.1 Consistency with the Concept Plan

The Concept Plan establishes the desired future character of the Barangaroo area, including the subject site, and includes provisions to ensure design excellence and detailed built form outcomes. The consistency of the applications with these requirements is considered below.

Concept Plan – Built Form Context

Council originally objected to the applications on the grounds they should not be considered in advance of the outcome of an appeal to the Land and Environment Court against the Commission's decision to approve MOD 8. The appeal has since been dismissed and changes to the Concept Plan approved under MOD 8 represent the current built form context in which the proposals are to be considered. The detailed planning history of the Concept Plan is provided at **Appendix C**.

The Department is satisfied each of the proposed buildings are consistent with the height and GFA maximums defined in the Concept Plan. A summary of the consistency for each building is provided in **Table 8** below.

Table 8: Consistency with Block 4A Barangaroo Concept Plan building height and GFA maximums

Component	Concept Plan Block 4A Controls	Proposal	Consistent
Building Height			
Tower	Maximum RL 250 (maximum 248 m above existing ground level)	Building R4A: RL 250 (246.5 m) Building R4B: RL 210 (206.5 m)	Yes Yes
GFA			
Residential maximum	86,166 m ²	Building R4A: 47,564 m ² Building R4B: 38,602 m ² Total: 86,166 m ²	Yes
Total maximum	86,979 m ²	Building R4A: 47,996 m ² Building R4B: 38,896 m ² Total: 86,892 m ²	Yes

Design Controls

The Concept Plan requires future applications to demonstrate compliance with the Design Controls prepared by Rogers, Stirk, Harbour and Partners. These guidelines are a supplement to the Concept Plan and set out broad objectives and standards to guide the design and built form of future developments within Barangaroo South.

The objectives and standards contained in the Design Controls include building mass, separation and location, street wall heights, articulation requirements, public realm accessibility, rooftop and façade design, active streetfronts and signage.

A comprehensive assessment of compliance with the Design Controls is provided at **Appendix E** of this report. In summary, the Department considers the proposed buildings comply with these controls. The key building separation and podium controls are however considered in greater detail below.

Building Separation

The building mass and location diagram contained in control 1 for Block 4A and 4B is provided as **Figure 7**.

The location of the proposed buildings (including Building R5) are consistent with the controls in the diagram, including maximum heights, buildings ascending in height from east to west and a minimum 30 m height differential between Buildings R4A and R4B. **Table 9** demonstrates the consistency of the proposed buildings with the Design Controls minimum building separation requirements.

Table 9: Consistency with Design Controls: Block 4A and Block 4B minimum building separation requirements

Buildings	Minimum separation required	Minimum separation proposed	Consistent
R4A and R4B	9 m	13 m	Yes
R4B and R5	18 m	18 m	Yes
R4A and Crown Sydney Hotel Resort	27 m	27 m	Yes

Podiums

Table 10 details the proposed podiums in relation to the relevant controls contained in the Design Controls.

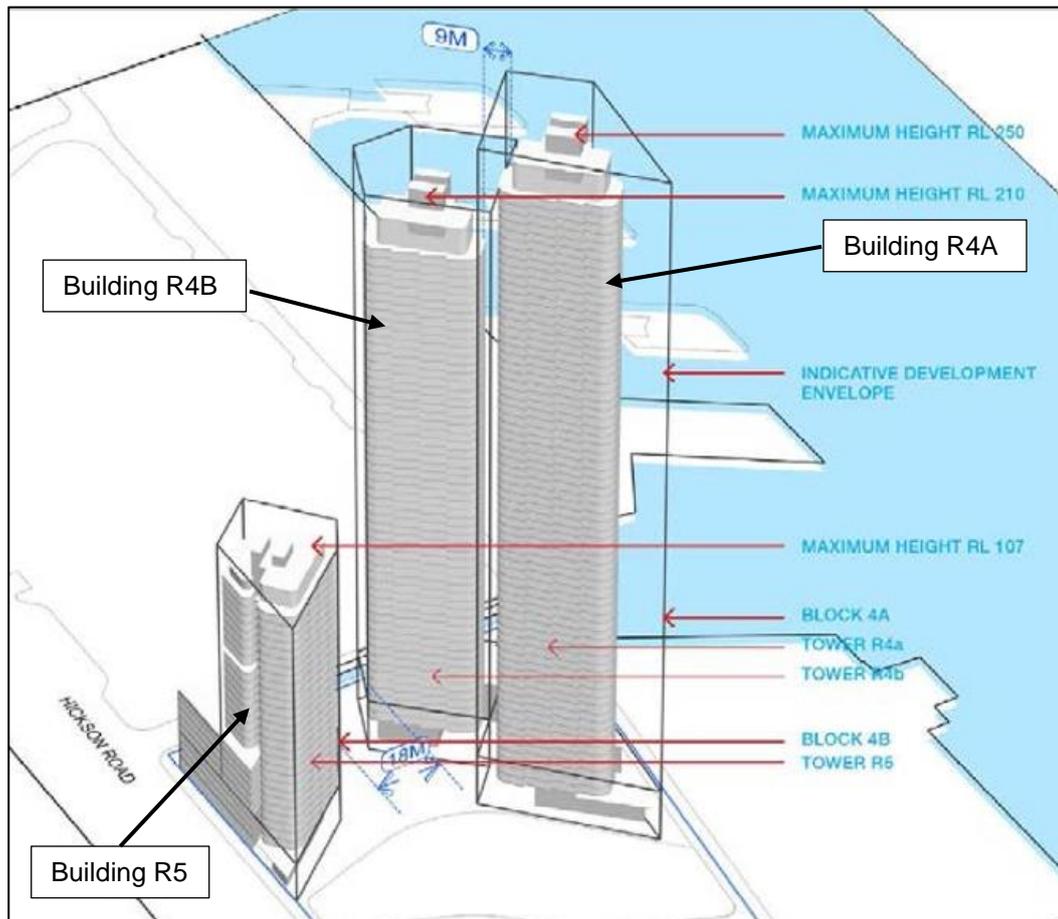


Figure 7: Building Mass and Location Diagram (Base source: Design Controls)

Table 10: Consistency with Design Controls: Block 4A and Block 4B podium controls

Control	Building R4A	Building R4B
Maximum podium height of RL 22	Podium height RL 15 (10.6 m)	Podium height RL 15 (10.6 m)
All predominant tower mass shall be setback from Watermans Quay by a minimum of 2 m	N/A (fronts Barangaroo Avenue)	Tower mass setback minimum of 2 m from Watermans Quay
Podiums may be built to the edge of the envelope on Watermans Quay	Podium does not extend to edge of envelope at the intersection of Watermans Quay and Barangaroo Avenue to create 12 m wide Strada between Buildings R4A and R4B	Podium does not extend to edge of envelope at the intersection of Watermans Quay and Barangaroo Avenue to create 12 m wide Strada between Buildings R4A and R4B
Minimum streetwall height of one storey for most of the public accessible ground floor façade.	Two-storey podium fronting Barangaroo Avenue with communal open space located on podium roof	Two-storey podium fronting Watermans Quay with communal open space located on podium roof
All podium streetwalls define Watermans Quay.	N/A (fronts Barangaroo Avenue)	Podium streetwall provided to Watermans Quay
The tower form on the park side is to come to ground and be dominant through any lower levels of the building.	The tower form extends to ground level on the northern side fronting the future Hickson Park	The tower form extends to ground level on the northern side fronting the future Hickson Park

Figure 8 illustrates the proposed building podiums and Strada viewed from the intersection of Watermans Quay and Barangaroo Avenue looking north-east towards the future Hickson Park.



Figure 8: Proposed Strada viewed from corner of Watermans Quay and Barangaroo Avenue looking north-east (Source: EIS)

Council has objected to the proposed lack of podiums stating this is contrary to the principles of human scale, breaking down building bulk and mass, and wind mitigation strategies.

The Department acknowledges Council's concerns, however considers the proposed podium for each building complies with the Design Controls, will be appropriate within the streetscape and will be consistent with other developments within Barangaroo South.

The provision of tower forms extending to ground level at the future Hickson Park frontage of each building, in-lieu of podiums, is also consistent with the controls. The relationship of the proposed development to the future Hickson Park is considered in **Section 5.5.1**.

The Department considers the proposed Strada to be a positive urban design outcome that will provide a useable and attractive through-site link between the intersection of Barangaroo Avenue/Watermans Quay and the future Hickson Park. This is consistent with the Concept Plan which requires the provision of a generous through-site link through the podium of Buildings R4A and R4B. The proposed Strada is considered in more detail in **Section 5.5.2**.

The Department further considers the proposed canopy over the Strada will provide an effective human scale to the development when viewed from the Strada and negates any need for podium setbacks above. Wind impacts of the proposal on the public domain and proposed Strada are considered in **Section 5.5.3**.

Overall, the Department concludes the proposed buildings are consistent with the Design Controls.

Design Excellence

To ensure design excellence is achieved, the SSP SEPP contains provisions requiring an Applicant to undertake an architectural design competition if a building is higher than RL 57 m, or the area of the site on which the building is to be erected is more than 1,500 m². It also provides the requirement for a design competition does not apply if the Secretary certifies in writing that the development exhibits design excellence and is satisfied that:

- the architect responsible for the design has an outstanding reputation in architecture; and

- necessary arrangements have been made to ensure the proposed design is carried through to completion of the development.

The Concept Plan also has the same competitive design requirements that may be waived in the same circumstances as specified in the SSP SEPP.

The Applicant has submitted a formal waiver request which notes the Applicant previously held an international design competition to select the architect for the combined development (including Building R5). The Department acknowledges the design competition was undertaken in collaboration with the Barangaroo Development Authority (BDA) but was not carried out strictly in accordance with the requirements of the SSP SEPP or the Concept Plan.

However, the proposed development has been designed by the winning architect, Renzo Piano Building Workshop (RPBW). The Department notes RPBW has a significant international reputation in the field of architecture and whose quality of work has been recognised with over 70 design awards. The Applicant has confirmed RPBW will have direct involvement in the design documentation phase to ensure continuity between the design process and the completed building. The Department is therefore satisfied the requirement for a design competition can be waived as the RPBW has an outstanding reputation in architecture and necessary arrangements have been made to ensure the design is carried through to the completion of the development.

The Department has considered the design excellence criteria in the SSP SEPP and Concept Plan and considers that the proposed buildings exhibit design excellence because:

- the proposed 'crystal' inspired towers reflect the planning framework established for the site and respect the Concept Plan layout, heights and setbacks and the built form controls contained in the Design Controls;
- the tower and podium elements of each building are subtly articulated and are composed of high quality materials and finishes which are appropriate to the function and location of the buildings;
- the residential units will satisfy or exceed the majority of the ADG design criteria and will achieve a high level of amenity for all unit types;
- the form and appearance of the buildings will provide new views and vistas within Barangaroo South and will improve the quality and amenity of the public domain including the provision of a pedestrian Strada between the buildings which will provide additional connectivity and activation through Block 4A from Watermans Quay to Hickson Park;
- the designs minimise wind and reflectivity impacts within the public domain, provide a high degree of passive surveillance over the public domain via the provision of retail tenancies at ground floor level and will achieve a 5 star Green Star energy rating; and
- the buildings will have no adverse impacts on view corridors, particularly from public spaces and streets, beyond those assessed as part of the Concept Plan.

Given the above, the Department considers it reasonable that the Secretary's delegate (as per the delegations set out in **Section 3.3**), form the view the proposed buildings exhibit design excellence, and waive the requirement in the SSP SEPP and the Concept Plan for the Applicant to undertake a design excellence competition (**Appendix F**).

5.3.2 Views

In its assessment of the Concept Plan, the Department carefully considered the impact of the proposed building envelopes in relation to view loss. The Department's assessment concluded the view affectation associated with the envelopes was acceptable.

The submission from OEH acknowledged the proposed buildings comply with the approved building envelopes and the heritage impacts of the proposals are the same as previously assessed for the Concept Plan. Notwithstanding, OEH remains concerned the height, form and location of the buildings (together with the approved Crown Sydney Hotel Resort) will result in prominent

elements in the visual setting of State Heritage items and conservation areas, including the interruption of western views from Sydney Observatory/ Observatory Hill.

Two public submissions to the applications also raised concerns about the view impacts caused by the proposed buildings from the public domain and from a private property located in Kent Street.

Notwithstanding this issue was carefully considered as part of the Department's assessment of the Concept Plan, the current applications include a view and visual impact analysis which indicate the likely impact on public domain views, view corridors and private views. The analysis includes consideration of 22 public domain views and views from four residential buildings within the vicinity of the site. Images illustrating the view impacts resulting from the Concept Plan and the proposed developments from these locations have been provided.

Public domain views

Of the 22 public domain views analysed, based on criteria of distance, extent of view, number of viewers and period of view, four locations (Hickson Road, High Street, Sydney Observatory Hill and Darling Harbour) were identified as having high or medium/ high view impacts. Images comparing the view impacts of the Barangaroo Concept Plan building envelopes with the proposed buildings from each of these locations are provided in **Figures 9 to 12**.



Figure 9: Comparison of view impact between Concept Plan building envelopes (left) and proposed buildings (right) from pedestrian bridge over Hickson Road (Source: Applicant's View and Visual Impact Analysis)



Figure 10: Comparison of view impact between Concept Plan building envelopes (left) and proposed buildings (right) from High Street (Source: Applicant's View and Visual Impact Analysis)

While the proposed buildings will result in varying view impacts from numerous public locations, the Department considers a high degree of change to existing public views is inevitable with the redevelopment of a significant vacant urban renewal site such as Barangaroo.

Analysis of each view however, demonstrates the view impacts of the proposed buildings will be fully contained within the parameters set by the Concept Plan Block 4A envelope.

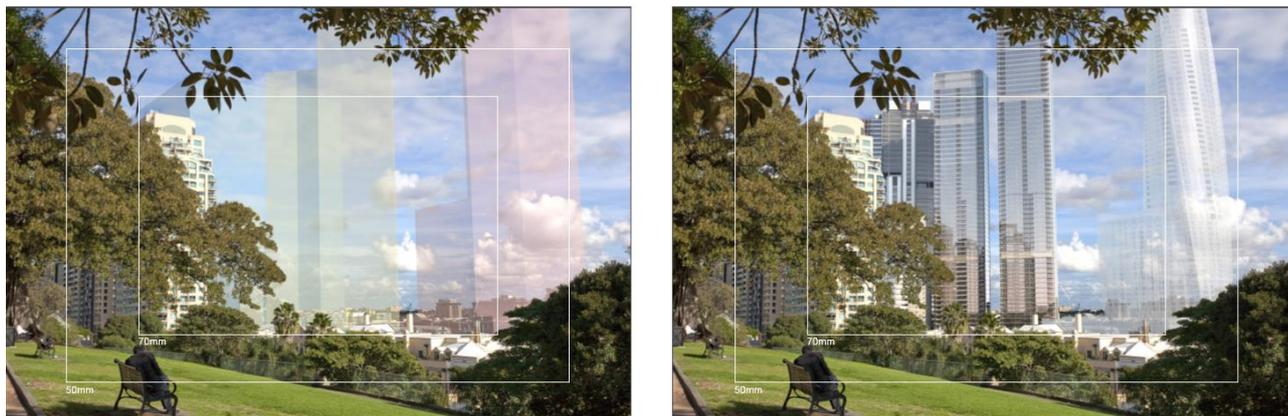


Figure 11: Comparison of view impact between Concept Plan building envelopes (left) and proposed buildings (right) from Sydney Observatory Hill (Source: View and Visual Impact Analysis)

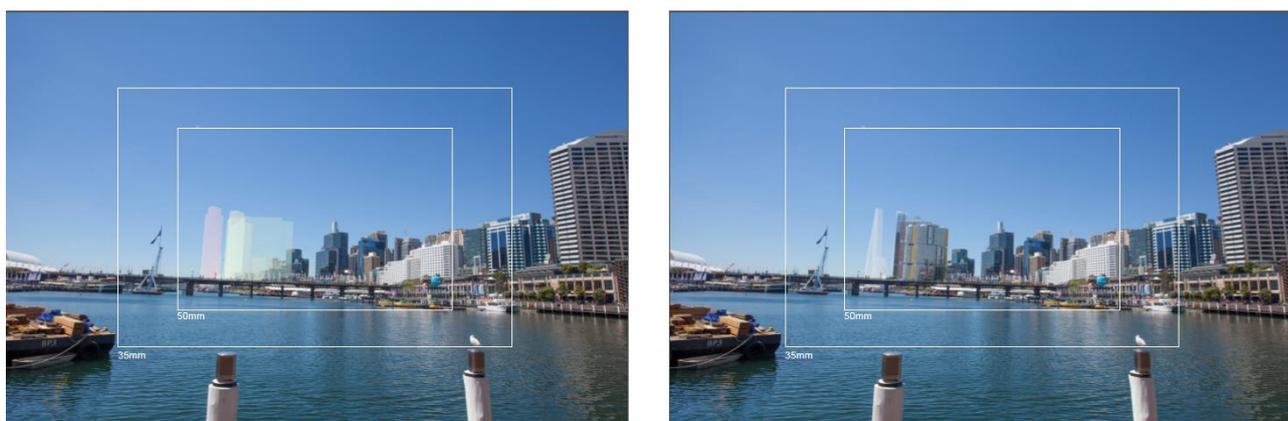


Figure 12: Comparison of view impact between Concept Plan building envelopes (left) and proposed buildings (right) from Darling Harbour (Source: View and Visual Impact Analysis)

With specific regard to Sydney Observatory, the Department notes the proposed buildings will result in some potential sky view loss. An analysis of the sky view impacts was prepared as part of the Concept Plan proposal. The Department concluded the potential impacts to be acceptable, noting sky targets around the area obstructed by the proposed buildings would be poor on most nights due to glare from nearby brightly lit objects (i.e. Harbour Bridge and other city buildings).

As the proposed buildings are consistent with the heights and locations established under the Concept Plan, the Department considers there will be no further impact to Sydney Observatory beyond that already assessed as acceptable. The Department further notes the design incorporates a number of design measures, such as fitting luminaries with light shields and minimising brightly lit surfaces, to minimise the amount of light directed upwards which will further minimise any potential light spill impacts.

Private views

The view and visual impact analysis considers the view impact of the proposed buildings on the four most affected residential apartment buildings, these being Highgate, Georgia, Stamford Marque and Stamford on Kent. These apartment buildings are located on Kent Street to the east of the site with varying views over the site to the west or south-west.

Images comparing the view impacts of the Concept Plan building envelopes compared to the proposed buildings from each of these residential buildings are provided in **Figures 13 to 20**.



Figure 13: Highgate: View impact of Barangaroo Concept Plan building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 14: Highgate: View impact of proposed building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 15: Georgia: View impact of Barangaroo Concept Plan building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 16: Georgia: View impact of proposed building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 17: Stamford Marquee: View impact of Barangaroo Concept Plan building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 18: Stamford Marquee: View impact of proposed building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 19: Stamford on Kent: View impact of Barangaroo Concept Plan building envelopes (Source: Applicant's View and Visual Impact Analysis)



Figure 20: Stamford on Kent: View impact of proposed building envelopes (Source: Applicant's View and Visual Impact Analysis)

Table 11 summarises the comparative difference in the size of view corridors between the Concept Plan building envelopes compared to the proposed buildings. The view corridors are located between the proposed buildings R4A and R4B, proposed Building R5, existing Commercial Building C3 and the approved Crown Sydney Hotel Resort. An example of how the existing and proposed view corridor angles have been calculated is provided in **Figures 21** and **22**.

Table 11: View angle comparison

Residential building	Total Concept Plan view angle	approved Plan view angle	Total proposed view angle	Difference between Concept Plan and proposed view angles
Highgate	91°		92°	+1°
Georgia	85°		87°	+2°
Stamford Marque	79°		80°	+1°
Stamford on Kent *	67°		61°	-6°

* Note: Although the view angle decreases to units within Stamford on Kent compared to the Concept Plan, this results from the relationship between proposed Building R5 and existing Commercial Building C3. No reduction occurs from proposed buildings R4A and R4B.

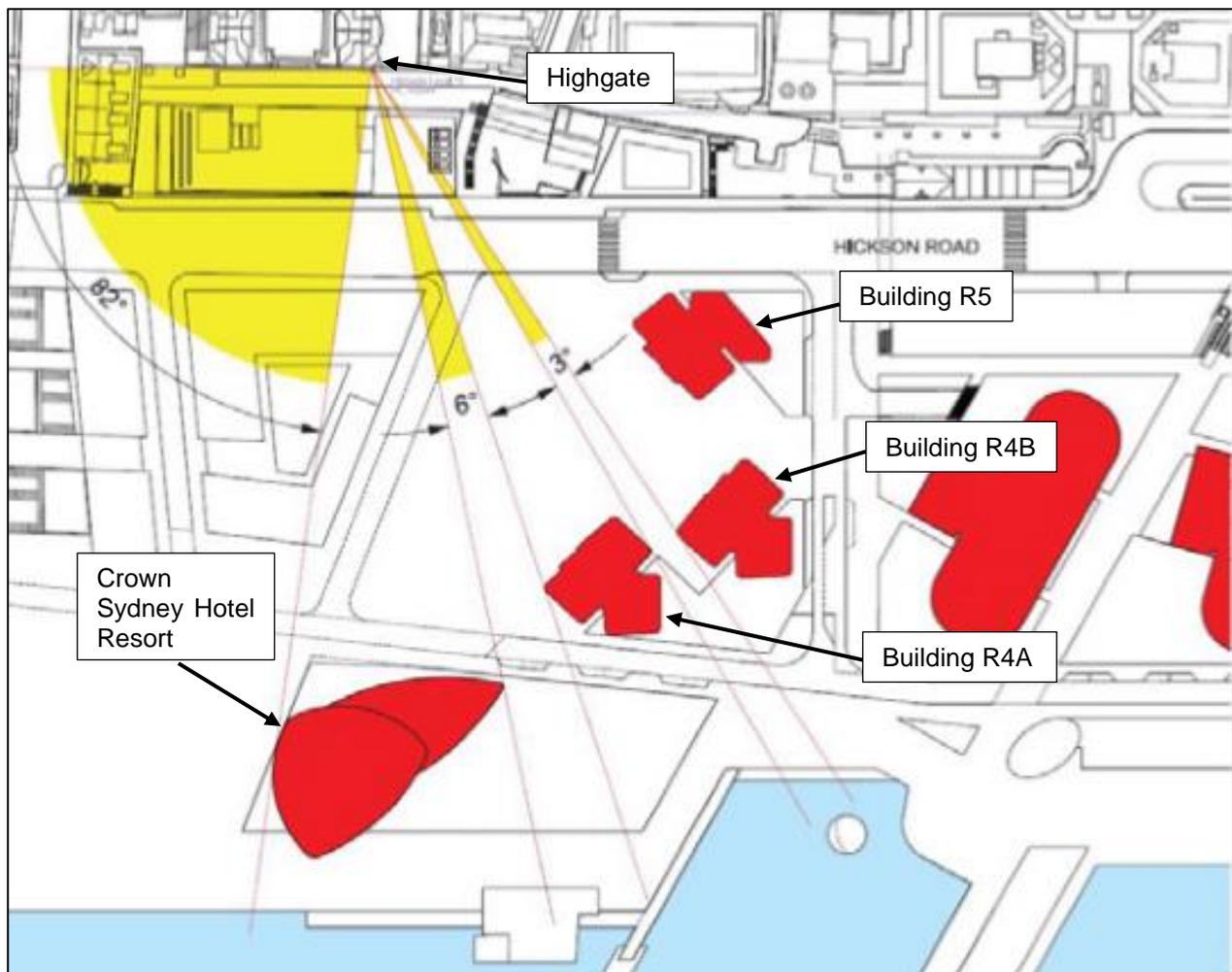


Figure 21: Highgate example of view angle calculation of Concept Plan building envelopes (Base Source: Applicant's View and Visual Impact Analysis)

The Department considers the submitted analysis demonstrates the view impacts of the proposed buildings will be fully contained within the parameters set by the Concept Plan Block 4A envelope. Furthermore, the Department notes the proposed buildings R4A and R4B will allow for slightly improved view corridors from the existing residential buildings compared to the Concept Plan building envelopes.



Figure 22: Highgate example of view angle calculation of proposed building envelopes (Base Source: Applicant's View and Visual Impact Analysis)

Conclusion

The Department has reviewed the view loss analysis from public and private locations as well as issues raised in submissions and is satisfied the photomontages accurately depict the impact of the developments. The Department concludes the view impacts from the public domain or private residences resulting from the proposed buildings are acceptable because:

- residential properties, public domain areas and Sydney Observatory/ Observatory Hill will not experience any further loss of view than envisaged by the Concept Plan, particularly given the proposed buildings will not fill the approved building envelopes; and
- the principle of view sharing will be achieved by providing taller more slender buildings with large spaces in between which enables improved view corridors and more oblique views to be achieved from residential properties in Kent Street.

5.3.3 Overshadowing

In its assessment of the Concept Plan, the Department considered the impact of the proposed building envelopes and the resulting location and extent of overshadowing. The Department's assessment concluded the level of overshadowing associated with the envelopes was acceptable.

The current applications include shadow diagrams which indicate the likely overshadowing impacts of the proposed buildings on surrounding areas. The shadow analysis for each building demonstrates overshadowing will be contained within the parameters as set by the Concept Plan.

The Department further notes the proposed buildings will not fill the approved building envelopes and the extent of overshadowing will therefore be less than the level of overshadowing considered acceptable under the Concept Plan.

Figure 23 illustrates the extent of shadowing resulting from the approved building envelopes (outlined in red) and the proposed built form (shown yellow).

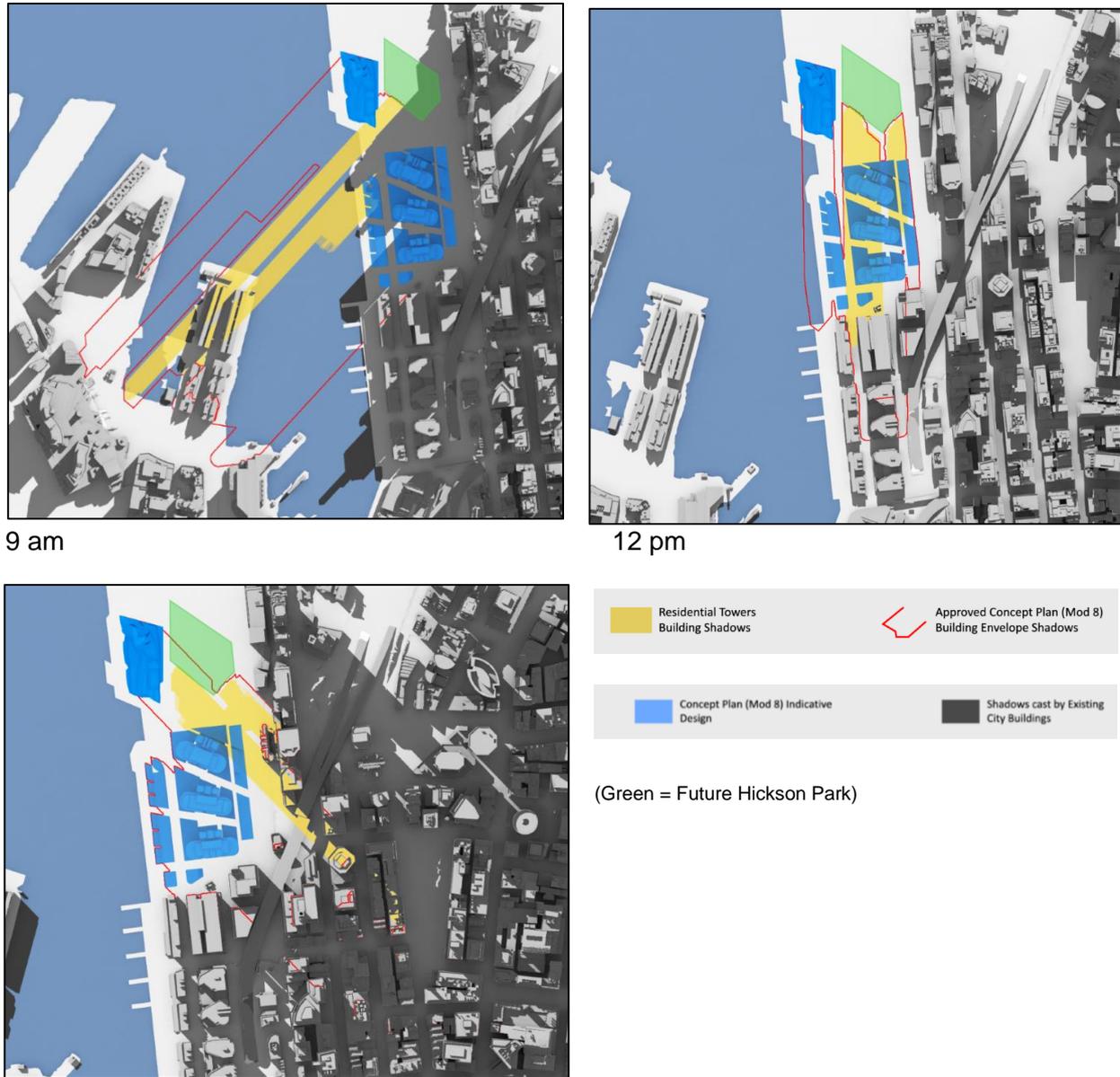


Figure 23: Midwinter (21 June) shadow diagrams (Source: EIS)

The following midwinter shadow impacts would occur (within the Concept Plan building envelope shadows):

- 9 am: Overshadowing of Sydney Wharf and Pyrmont Bay, although the shadows will be fast moving with no overshadowing occurring by 10 am and no overshadowing of these locations would occur at the equinox.
- 10 am & 11 am: Overshadowing of harbour.
- 12 pm: Overshadowing to Barangaroo South.
- 1 pm to 3 pm: Shadows would predominantly fall within shadows cast by existing buildings with some increased overshadowing to western elevations of buildings within the CBD.

The Department concludes the level of overshadowing from the proposed buildings is acceptable because it will be less than the overshadowing considered under the Concept Plan.

5.4 Residential Amenity

SEPP 65 contains nine design principles to ensure high quality residential apartment development. SEPP 65 also requires consideration of the ADG which supports the nine design quality principles by giving greater detail as to how those principles might be achieved. **Appendix D** provides an assessment of the proposal against the SEPP 65 design principles and relevant design criteria in the ADG. The Department's assessment of the proposal against the ADG provisions has identified a number of matters that require more detailed consideration. These matters are considered below.

Council has raised concerns that non-compliances with ADG provisions, specifically in relation to building separation/ privacy, solar access, cross ventilation and habitable rooms (studies) without windows, is the result of an excessive number of proposed units. These matters are also considered below.

5.4.1 Communal and public open space

To enhance residential amenity and to provide opportunities for landscaping, the ADG recommends an area at least equal to 25% of the site area, to be provided as communal open space. The ADG also recommends at least 50% of the communal open space receives at least two hours of direct sunlight between 9 am and 3 pm in midwinter.

Although the expectation of the ADG is for communal open space to be located at ground level and co-located with deep soil zones (see **Section 5.4.2**), it notes developments located in dense urban areas can alternatively provide the following:

- communal landscaped podium/ roof top terraces or a common room;
- provide larger balconies or increased private open space; and
- demonstrate good proximity to public open space.

Barangaroo South constitutes a dense urban location and with the exception of the Strada, the footprint of the buildings occupy the entire site. As such, the Department considers it is not reasonably viable to provide communal open space at ground level. In response, the proposed building designs provide a combination of podium rooftop gardens, indoor and outdoor swimming pools, a gymnasium and a resident's lounge. Access to all the proposed facilities will be shared between the residents of both proposed buildings.

Table 12 details the size and internal/ external division of the communal open space and how these areas relate to the ADG design criteria. All proposed communal open space is provided at podium level, therefore the figures in the table relate to the overall area of communal open space (as a proportion of the site areas) as opposed to areas of open space provided at ground level.

The total communal open space provision is 53.4% of the site area which provides for an additional 1,124 m² of communal open space compared to the minimum 25% recommended by the ADG. The Department considers this total area and variety of spaces will provide significant amenity benefits to future residents.

However, only 24.3% (514.4 m²) of the total communal open space will receive at least two hours solar access between 9 am and 3 pm in midwinter compared to the ADG recommended minimum of 50%. A breakdown of solar access received by the proposed internal and external communal open space areas within each building is provided in the ADG assessment in **Appendix D**.

Table 12: Communal open space provision (all at podium level)

	ADG design criteria	Building R4A (site area 2,046 m ²)	Building R4B (site area 1,916 m ²)	Combined Total (site area 3,962 m ²)	Consistent
External communal open space	-	290 m ²	559 m ² (includes pool)	849 m ²	N/A
Internal communal open space	-	410 m ² (includes pool)	855m ² (includes gymnasium and resident's lounge)	1,265 m ²	N/A
Total communal open space	25% of site area (990 m ² for combined site area)	34.2% (700 m ²)	73.8% (1,414 m ²)	53.4% (2,114 m ²)	Yes
Solar access	50% of principle useable part of communal open space receiving at least two hours direct solar access between 9 am and 3 pm in midwinter	26.9% (188 m ²) of total communal open space	23.1% (326.4 m ²) of total communal open space	24.3% (514.4 m ²) of total communal open space	No (see consideration below)

Of the 514.4 m² of communal open space receiving at least two hours solar access, this is predominantly received by internal open space areas. Only 10 m² of external open space (located on the landscaped podium of Building R4B) achieves at least two hours. In terms of areas receiving at least one hour solar access in midwinter, this equates to 47% (995.2 m²) of the total communal areas of which 24.4% (243 m²) is external open space.

The Department notes the following in relation to communal open space solar access:

- solar access is very limited in midwinter, with no external open space of Building R4A receiving any solar access and only 10 m² of the external open space of Building R4B receiving greater than two hours solar access;
- given the location and design of Buildings R4A and R4B and surrounding approved buildings, it is difficult to increase the levels of solar access to the podiums;
- the area of communal open space provided for the combined buildings is more than double what the ADG requires and it would therefore be unreasonable to require 50% of this space to have at least two hours of direct solar access;
- the purpose of the indoor communal spaces is varied with enjoyment of use not dependant on solar access;
- use of the outdoor swimming pool is likely to be more desirable during warmer months as opposed to midwinter particularly given use of an indoor swimming pool is also available;
- all one and two bedroom units within the proposed buildings are provided with oversized private open space with the majority receiving solar access (see **Section 5.4.2**); and
- residents will have direct access to the future Hickson Park (11,000 m²) which will receive a significant amount of sunlight throughout the year. The future Central Barangaroo Park (23,000 m² and located directly north of the approved Crown resort) and the completed Headland Park (57,000 m²) are also within close walking distance the site.

The Department concludes the proposed areas of communal open space suitably respond to the site conditions (which are substantially set by the Concept Plan) and provide a variety of internal

and external areas of communal space that will enhance residential amenity and allow for landscaping.

5.4.2 Solar access

The ADG objectives include optimising the number of units receiving sunlight to habitable rooms and private open space. To satisfy this objective, the design criteria recommend at least 70% of these areas of units receive at least two hours direct sunlight between 9 am and 3 pm at midwinter. Furthermore, a maximum of 15% of units in a building should receive no direct sunlight between 9 am and 3 pm at midwinter.

Table 13 demonstrates how the proposed buildings respond to these criteria. The table also includes information regarding extended hours of solar access (9 am to 5 pm) in midwinter given many western facing units will receive solar access between 3 pm and 5 pm.

Table 13: ADG solar access design criteria

Building	Units with no solar access (ADG maximum 15%)	Two hour solar access 9 am to 3 pm midwinter (ADG minimum 70%)	Two hour solar access 9 am to 5 pm midwinter
R4A (327 units)	0%	65% (16 units below 70%)	96% (314 units)
R4B (297 units)	9.4% (28 units)	64% (18 units below 70%)	80% (238 units)
Overall (624 units)	4.5% (28 units)	64.5% (34 units below 70%)	88.5% (552 units)

No south facing units are proposed and all units within Building R4A and 91% of units within Building R4B will receive some direct sunlight in midwinter. Regarding the minimum 70% two hour solar access recommendation between 9 am and 3 pm, the proposed levels of 65% and 64% for buildings R4A and R4B respectively, equate to a total of 34 units of a combined total of 624 units.

Council has objected to the proposed levels of solar access noting the proposed extended time scenario after 3 pm is not envisioned by the ADG and the minimum standard should be achieved given the proposed buildings face north.

The Applicant has provided a Solar and Daylight Access Study to 5 pm in midwinter and has justified the use of this criteria due to the location of the site near to the western harbour edge which results in more units receiving direct sunlight after 3 pm. Overall, this extended timeframe means a total of 88.5% of units (an additional 150 units) will receive two hours of direct solar access compared to the ADG timeframe of 9 am to 3 pm.

In addition to the above, the judgement in the matter of *Botany Development Pty Ltd. v Botany Council [2013] NSW LEC 10360*, notes the 9 am to 3 pm time span nominated in the ADG may be extended in some cases. This includes where the analysis clearly demonstrates solar access before and after those times can be obtained, and high quality design considerations and orientation of buildings would maximise solar access.

The proposed buildings are located within the Sydney CBD and accordingly will be in close proximity to other tall buildings. This inevitably creates solar access constraints. In particular, Building R4A will overshadow the north-western elevation of Building R4B from approximately 11 am to after 3 pm in midwinter. The approved Crown Sydney Hotel Resort also results in the overshadowing of the north-western and western elevations of Building R4A from approximately 1.30 pm until after 3 pm in midwinter. **Figure 24** contains 'view from the sun' diagrams illustrating the above (yellow indicates areas of the buildings receiving direct sunlight).

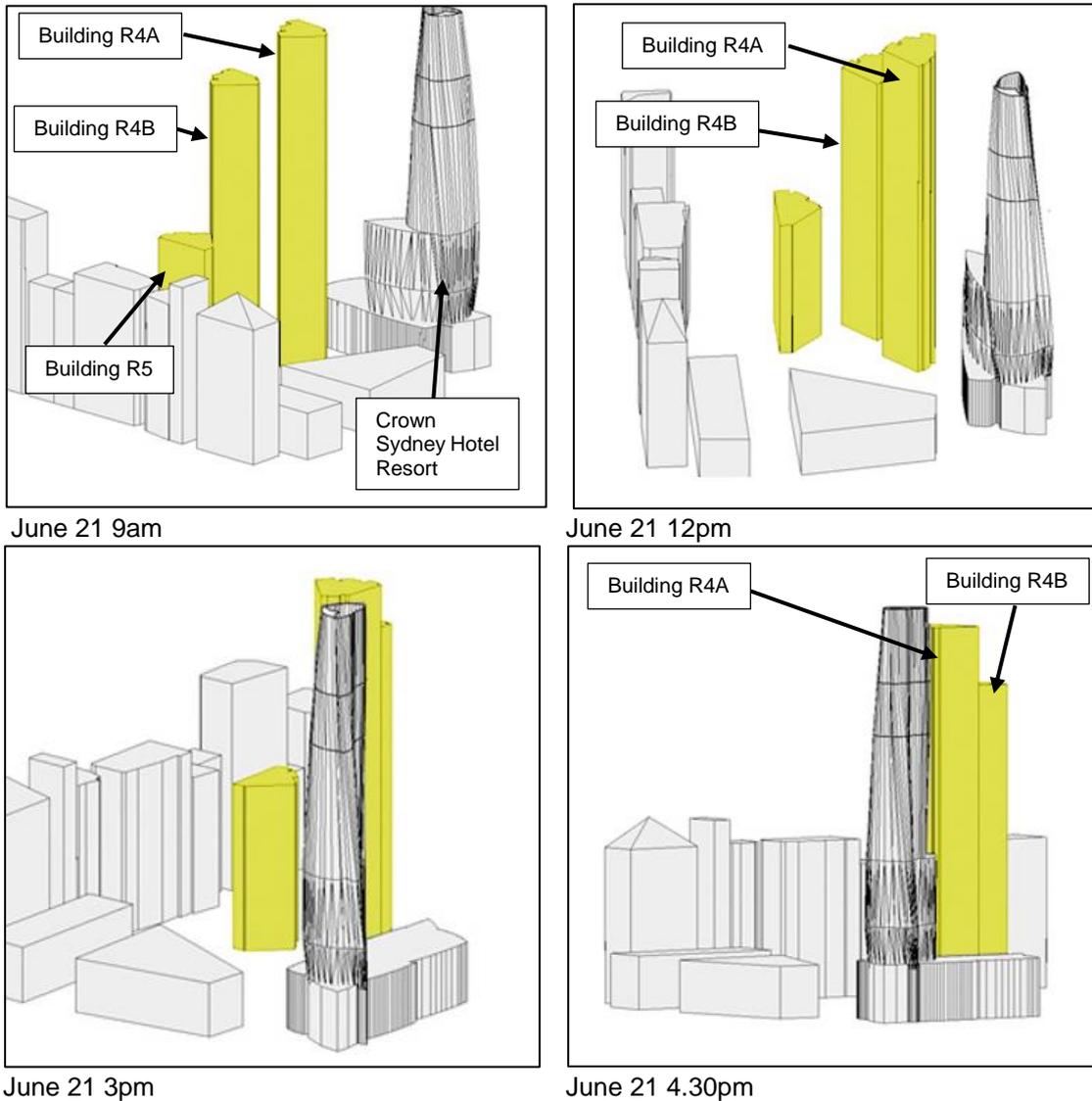


Figure 24: Midwinter (21 June) solar access diagrams (Source: RTS)

Of the 34 units not achieving two hours solar access between 9 am and 3 pm in midwinter, the Department notes all other ADG design criteria are achieved for these units (with the exception, in some instances, of a window not being provided to a study and a small proportion of the required storage volume not being provided internally within the unit).

While Council has suggested the lack of solar access demonstrates too many units are proposed, the Department considers the proposed mix of five or six units per floor is not excessive as all units exceed the minimum ADG unit size design criteria (see **Section 5.4.6**). As such, the Department considers a reduction in the number of units on some floors to allow for technical compliance with the ADG solar access requirements is unwarranted as a high level of amenity will nevertheless be achieved by these units.

The Department further notes the following key matters in relation to solar access:

- the proposed designs maximise the available north aspect;
- solar access and amenity is maximised as no south facing units are proposed;
- west facing units will generally receive less solar access than other units but these units will benefit from significant harbour views and will generally receive solar access after 3 pm;
- although the sun is lower after 3 pm, due to the location of the proposed buildings close to the eastern side of the harbour, west facing units will receive sunlight after 3 pm in midwinter which is unlikely to be impeded by future development;

- the proposed façade design will allow high light transmission glass to be used with a minimum glazing height of 2.7 m;
- the internal layouts of units are open plan allowing the penetration of natural light through the units to be maximised;
- levels of daylight will be high given the immediate location of the future Hickson Park to the north and the harbour to the west;
- midwinter represents a worst-case scenario with increased levels of solar access at other times of the year;
- twenty-eight units (4.5%) will receive no solar access between 9 am and 3 pm in midwinter which is well below the maximum 94 (15%) allowed by the ADG; and
- five to six units are proposed per floor and all exceed the minimum ADG unit size requirements (see **Section 5.4.6**). While reducing the number of units per floor could achieve numerical solar access compliance and would respond to Council's concern regarding non-compliances resulting from too many units, the benefit of this is minor given all proposed unit types will achieve acceptable levels of amenity (see **Section 5.4.9**).

The ADG acknowledges achieving the solar access design criteria may not be possible on all sites. The Department considers the proposed design has maximised potential solar access to units. Furthermore, given the site's quite unique opportunities (i.e. significant western foreshore outlook), the Department considers the Applicant's alternative method for assessing solar access i.e. 9 am to 5 pm in midwinter is reasonable as it assists in demonstrating the overall level of amenity that will be achieved outside of the ADG design criteria. Importantly, the overall amenity achieved by the various unit layouts will be acceptable.

The Department concludes, on balance, the design of the proposed buildings will achieve an acceptable level of sunlight access for future residents and the proposals will provide opportunities for significant views and internal comfort factors such as generous unit sizes, private open space and open plan living for future residents.

5.4.3 Deep soil zones

The ADG recommends deep soil zones be provided on sites to allow for, and support, healthy plant and tree growth. Deep soil zones are areas of soil, of sufficient volume to sustain tree planting, not covered by buildings. This normally also excludes areas above basement car parks.

As the area of each of the subject sites exceed 1,500 m², the ADG requirement is for 7% of the site area, with minimum dimensions of 6 m, to be provided as a deep soil zone. No deep soil zones are proposed.

The proposed developments cannot satisfy the ADG recommendation as both buildings are located entirely above the approved Stage 1B basement car park. In such instances, the ADG suggests acceptable stormwater management should be achieved and alternative forms of planting should be provided such as on the structure.

The proposed landscape scheme for the developments includes shrubs and turf located on each of the podium roof tops with stone paving proposed within the respective site boundaries and Strada. The applications do not include any tree planting as this forms part of the proposed Stage 1B public domain works (see **Section 5.5.3**).

The Department considers the proposed landscaping acceptable and notes the sites directly adjoin the future 11, 000 m² Hickson Park which, as currently proposed, will contain 49 trees with maximum mature heights between 8 m and 15 m over the approved basement car park.

The Department further notes the approved Stage 1B basement which extends below the future Hickson Park, includes a requirement to provide a minimum deep soil zone area of 2,000 m² with a minimum depth of 3 m to support large mature trees. A condition of consent requires the location

of the deep soil zone reflect the final location of large mature trees in Hickson Park as determined by the Stage 1B public domain works.

A range of sustainable stormwater management solutions are also proposed. These include use of filter media in tree pits to treat stormwater, gross pollutant traps to remove litter, and the use of a proprietary stormwater filtration system. The Department considers the proposed stormwater management methods acceptable.

The Department concludes the intent of the ADG for sites which cannot provide deep soil zones has been achieved.

5.4.4 Building separation/ visual privacy

To achieve adequate visual building separation and reasonable levels of visual privacy, the ADG design criteria recommends minimum building separation distances which increase proportionally to the height of the building (**Table 14**).

Table 14: ADG minimum building separation design criteria

Building height	Minimum separation distance*	Proposed	Consistent
Up to 12 m (4 storeys)	12 m	Minimum 13 m between units	Yes
Up to 25 m (5 to 8 storeys)	18 m	13 m between Buildings R4A and R4B 18 m between Buildings R4B and R5	No Yes
Over 25 m (9+ storeys)	24 m	13 m between Buildings R4A and R4B 18 m between Buildings R4B and R5	No No

* Note: stated separation distance applies for the proposed buildings due to location of habitable room windows and wintergardens.

A minimum separation distance of 13 m is proposed between units in Buildings R4A and R4B with 18 m proposed between units in Buildings R4B and R5. This does not satisfy the minimum applicable ADG recommendation of 18 m (up to eight storeys) and 24 m (nine storeys and above).

However, the proposed building separation distances satisfy the requirements contained in the Design Controls approved under the Concept Plan.

To ensure appropriate visual privacy is provided between units in the buildings, the developments incorporate several design measures, including utilisation of opaque façades, floor plan layout and the staggered arrangements of the proposed towers. **Figure 25** illustrates how the general siting of each building (including Building R5) allows for primary views to be achieved without providing direct views to the adjacent buildings. The specific separation distances and design measures for each building are considered below.

Building R4A and Building R4B

A minimum separation distance of 13 m is proposed between habitable rooms/balconies in Buildings R4A and R4B. To maintain privacy between units in each building, the developments have been designed to prevent direct sightlines through the arrangement of the floor layout of each building (i.e. main living areas do not directly face one other), use of architectural elements such as opaque façades and overlapping façade wings, and orientation of views to the north and north-east. In particular, an opaque façade and privacy screen to the north-west side of the living area and balcony of units in Building R4B will prevent views to south-east facing bedroom windows in Building R4A (**Figure 26**).

The Department considers the proposed floor layout, design features and architectural elements of each building will provide acceptable privacy for future residents.

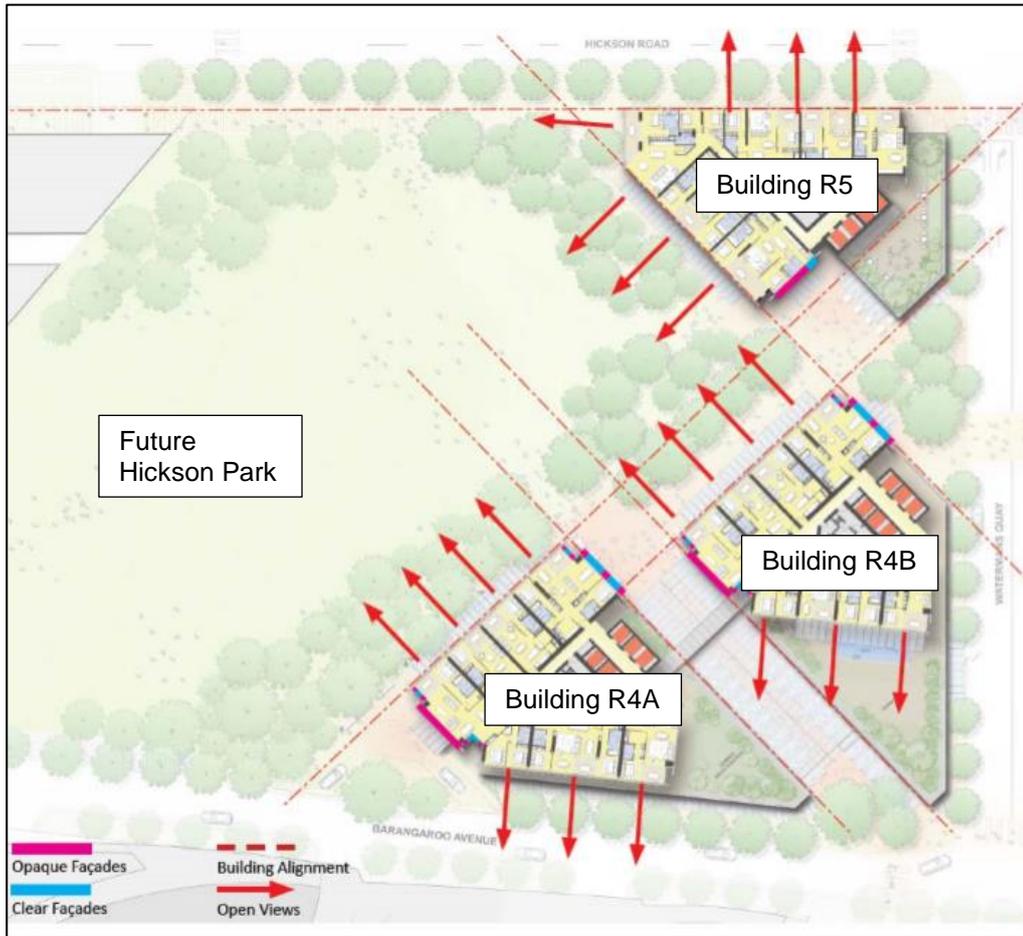


Figure 25: Orientation of buildings to primary views (Base source: RTS)

Building R4B and Building R5

A minimum separation distance of 18 m is proposed between habitable rooms/ balconies in Buildings R4B and R5. As with Buildings R4A and R4B, to prevent loss of privacy between units in each building, the developments have been designed to maintain privacy between buildings through the arrangement of the floor layout of each building (i.e. main living areas do not directly face one other), use of architectural elements such as opaque façades and overlapping façade wings and orientation of views. These specifically include an opaque façade and privacy screen to the south-west side of the bedroom windows and balconies/ wintergardens of units in Building R5 to prevent views to north-east facing living room windows and balconies/ wintergardens in Building R4B (**Figure 27**).

The Department considers the proposed floor layout, design features and architectural elements of each building will provide acceptable privacy for future residents.

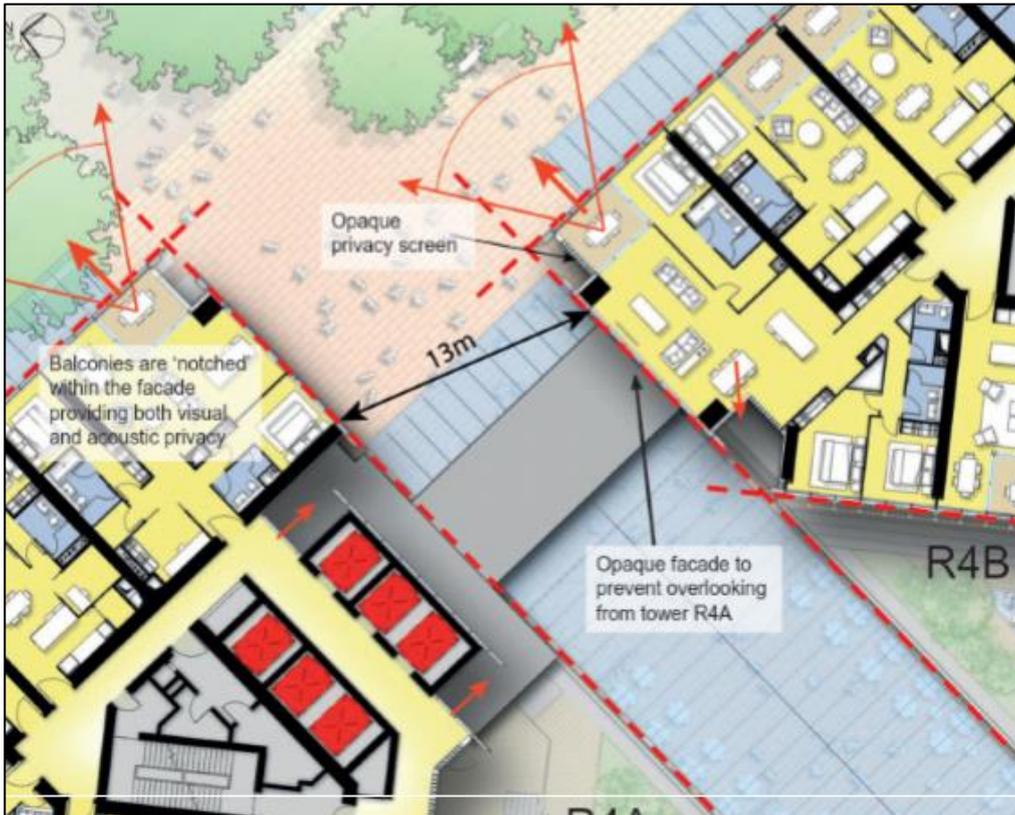


Figure 26: Separation between R4A and R4B demonstrating orientation of views and proposed privacy mitigation design measures (Source: Design Statement)

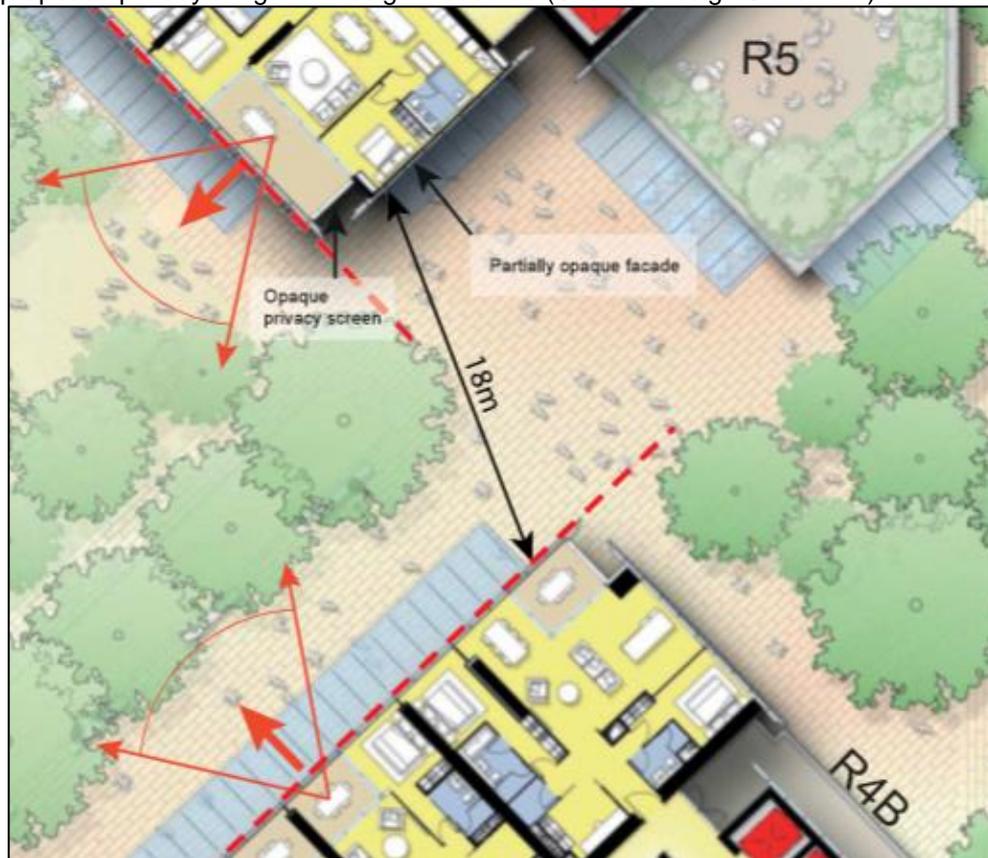


Figure 27: Separation between R4A and R5 demonstrating orientation of views and proposed privacy mitigation design measures (Source: Design Statement)

5.4.5 Natural ventilation

To maximise units with natural cross ventilation, the ADG recommends at least 60% of units in the first nine storeys of a building to be naturally cross ventilated. Units at 10 storeys or greater are deemed to be cross ventilated where balconies/wintergardens cannot be fully enclosed.

The proposed buildings comply with the design criteria for units at 10 storeys or greater as the wintergarden glazing system has a minimum fixed opening of 150 mm and cannot be fully enclosed. Of the 54 units in the first nine storeys of each building, 27 (50%) or three units per floor will be naturally cross ventilated (**Figure 28**).

The Applicant has also proposed a ducting system to provide a form of cross ventilation to a further unit in the first nine storeys (**Figure 28**). The proposed ducting system is intended to facilitate air circulation by gaining air intake from an adjacent façade, carrying it through a ceiling duct and dispersing it into the unit. The submitted wind report confirms this arrangement will provide suitable air flow within the unit and will thus achieve the intent of the ADG.

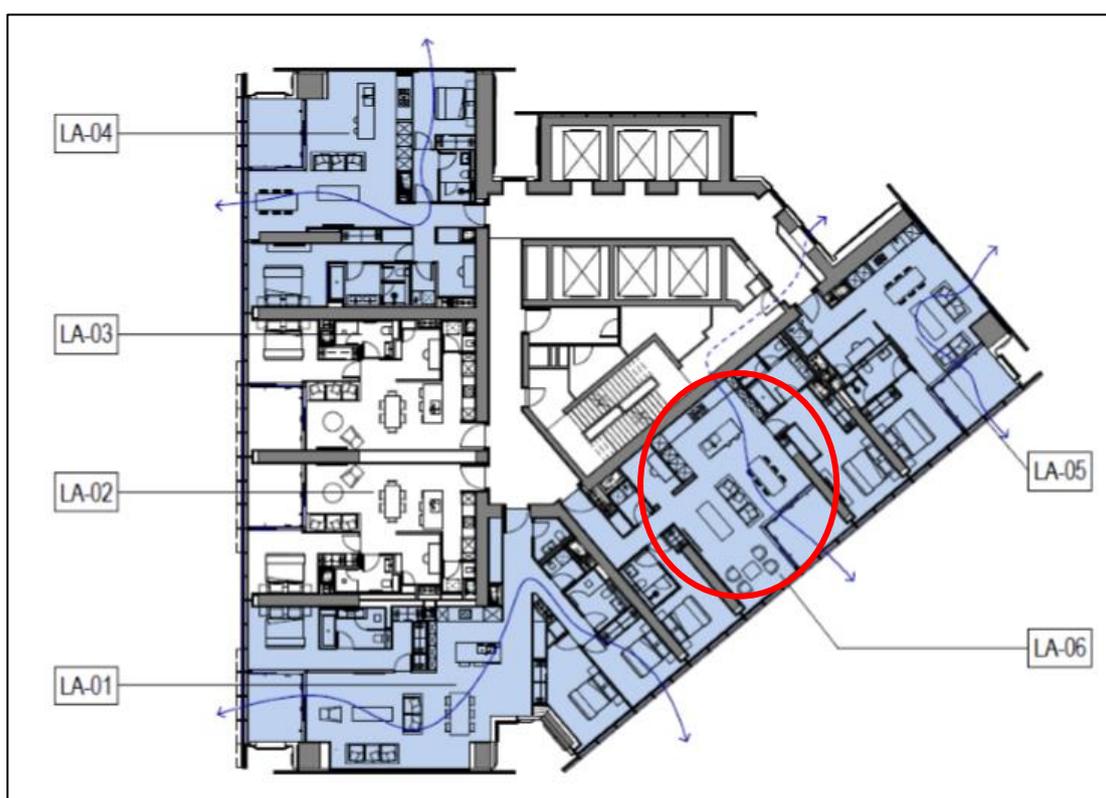


Figure 28: Units with cross ventilation shaded blue, while the proposed cross ventilation for one unit per floor over first nine levels of each building is circled in red (Base Source: RTS)

Council has objected to the proposed ducting arrangement as the ADG states the use of plenums/ducting are generally not considered suitable for cross ventilation and the proposed 50% cross-ventilation over the first nine levels is therefore unacceptable.

Whilst not technically achieving natural cross ventilation, the Department considers the proposed ducting system provides a form of hybrid cross ventilation insofar as the proposed system will provide one unit per floor with a direct connection to fresh air shafts via fire isolated ducts. The Department further considers hybrid cross ventilation should be applied to the other two non-cross ventilated units on each of the first nine levels of each building to provide for a more superior design and amenity outcome that is consistent with the expected design excellence outcome required by the Concept Plan. The Applicant has advised this is difficult to achieve due to structural limitations and potential BCA issues. While the Department appreciates the structural and BCA issues that may arise from the requirement, it remains unclear whether all potential design options have been

thoroughly reviewed and considered to provide an effective design solution which maintains a reasonable level of amenity. The condition that recommends this design modification has therefore remained unchanged.

The Department concludes the proposed level of cross ventilation within each building is acceptable because:

- units at level 10 and above are deemed cross ventilated as each unit is provided with a wintergarden that cannot be fully enclosed;
- of the 54 units below level ten in each building, 50% (three units per floor) will achieve natural cross-ventilation while the remaining three units per floor will be provided with a form of hybrid cross ventilation (subject to a recommended condition requiring an additional two units per floor);
- the proposed method of hybrid cross ventilation relates to only 27 units within each building, including the Department's recommended increase, and is a satisfactory design outcome to improve the amenity of these units;
- the proposed method of hybrid cross ventilation has previously been adopted in other high density inner city developments (for example the Carlton United Brewery redevelopment); and
- all units have been designed to have living areas with large windows opening onto generously sized wintergardens which will assist the movement of air.

5.4.6 Apartment size and layout

The ADG includes objectives to ensure the layout of units are functional, well organised, provide a high level of amenity, maximise environmental performance and to accommodate a variety of household activities and needs.

To achieve these objectives, design criteria include minimum unit sizes, an external window to be provided to all habitable rooms, maximum habitable room depth and minimum widths of living rooms. Each of these criteria are addressed below.

Unit size

Table 15 demonstrates the proposed unit sizes for each building significantly exceed the minimum ADG internal area recommendation.

Table 15: ADG minimum unit size design criteria

Unit size	Minimum internal area*	Proposed unit size range	Consistent
One bedroom	50 m ²	R4A: 65.8 m ² to 70.7 m ² R4B: 58.4 m ² to 70.5 m ²	Yes Yes
Two bedroom	70 m ²	R4A: 112.1m ² to 127.1 m ² R4B: 111.3 m ² to 123.7 m ²	Yes Yes
Three bedroom	90 m ²	R4A: 158.4m ² to 198.9 m ² R4B: 157.3 m ² to 200 m ²	Yes Yes
Four bedroom	102 m ²	R4A: 214 m ² to 285 m ² R4B: N/A	Yes N/A

* Includes one bathroom. Minimum area increased by 5 m² per additional bathroom. All proposed units exceed the minimum area.

Habitable room windows

The ADG recommends all habitable rooms be provided with an external window. The proposed layouts include 433 units with studies (212 in Building R4A and 221 in R4B) that are not provided with an external window. This equates to 69% of the total units proposed. Council has objected to the lack of external windows in the proposed studies.

The Applicant considers the proposed layouts achieve the intent of the ADG as all studies will be provided with a line of sight to a window and will provide residents with enhanced flexibility and amenity. **Figure 29** illustrates the lower floor layout of Building R4A with the proposed studies (five per floor) and line of site to windows highlighted blue. Identical study locations are proposed on the

upper floors above units 04, 05 and 06 (three studies per floor). The study layouts for Building R4B are virtually identical.

In Building R4A, two of the proposed study positions on all floors (in units LA-05 and LA-06) are adjacent to the main living area. In Building R4B, one of the study positions (in unit LB-05) is adjacent to the main living area. Subject to a condition to widen the entrance to these studies i.e. to form study nooks within the main living area as opposed to more separate rooms, the Department considers this arrangement acceptable and compatible with the intent of the ADG.

For the remaining units, the proposed line of sight from the study is across a corridor and through a bedroom. This arrangement is proposed for a total of 280 units (112 units in R4A and 168 units in R4B) which equates to 45% of the total units.

While this arrangement is not consistent with the ADG design criteria, the overall objective of this section of the ADG is to ensure the layout of units are functional, provide a high level of amenity, maximise environmental performance and accommodate a variety of household activities and needs. The Department particularly notes the size of the units significantly exceed the minimum ADG recommendation and the layout of the units are well designed to provide open plan, flexible living arrangements. As such, the Department considers the proposed study provision acceptable as future occupants of these units will nevertheless receive a high level of amenity.

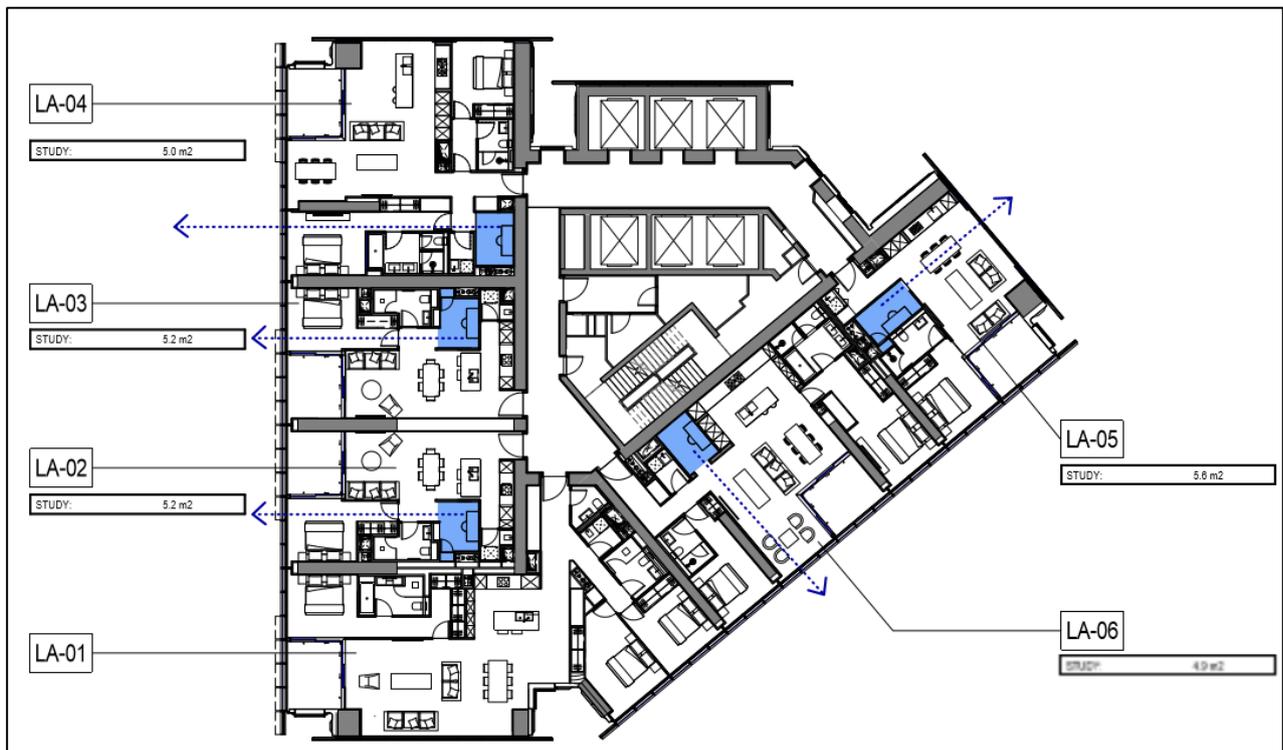


Figure 29: Proposed study locations shaded blue with line of sight arrows (Building R4A lower levels) (Base Source: RTS)

Maximum depth

A total of 180 units (29%) within the proposed buildings have open plan living areas which extend to a depth of 8.6 m measured from the window to the furthest wall of the kitchen/ living area. This is an additional 600 mm compared to the ADG recommended maximum depth of 8 m (a 7.5% variation). All other units are compliant.

The Applicant considers the additional room depth nevertheless achieves the objective of the control to maximise environmental performance as follows:

- most of the kitchen area is within 8 m of a window;

- windows are floor to ceiling which will allow large amounts light to reach the back of the habitable space; and
- the living areas and kitchen are open plan with no obstructions to impede internal access to light and ventilation.

The Department considers the proposed unit depth variation is relatively minor and the size of the living areas and adjacent large windows/ glazed doors will provide acceptable light and amenity to these units.

Minimum living room width

The ADG design criteria include a minimum living room width recommendation of 3.6 m for one bedroom units and 4 m for two and three bedroom units. All units are consistent with the design criteria except for 124 one bedroom units (62 per building and 55% of total one bedroom units) which have living rooms measuring 3.4 m in width, a 200 mm (5.5%) variation.

Council has objected to the proposed width of these units and recommends all minimum dimensions should comply with the ADG design criteria.

The Applicant considers the variation to be minor and one not perceived by future residents who benefit from the overall amenity provided by the generous size of each unit and the flexible, open plan layout.

The Department considers the proposed 200 mm variation to be negligible and will not adversely impact the amenity of the subject one bedroom units. All one bedroom units notably exceed the minimum overall unit size design criteria and adequate space will be provided for functional furniture layouts.

Conclusion

The Department concludes the proposed units are of an acceptable size and the proposed layouts will provide for an acceptable standard of amenity for future occupants. All units exceed minimum size recommendations and incorporate regular shaped rooms allowing for flexible furniture arrangement, habitable rooms with external windows (except for some studies) and acceptable rooms widths and unit depths.

5.4.7 Private open space and balconies

An objective of the ADG is to provide appropriately sized private open space to enhance residential amenity. The design criteria include a minimum area and depth of private open space based on the number of bedrooms within a unit (**Table 16**).

Table 16: ADG minimum private open space design criteria

Unit size	Minimum area	Proposed	Minimum depth	Proposed
One bedroom	8 m ²	10.8 m ² minimum	2 m	2.7 m
Two bedroom	10 m ²	11 m ² minimum	2 m	2.7 m
Three bedroom	12 m ²	11 m ² minimum	2.4 m	2.7 m

Fifty of the 60 three bedroom units within Building R4A and all 54 three bedroom units within Building R4B have 11 m² wintergardens which is 1 m² below the 12 m² minimum area recommendation for three bedroom units.

Council has objected to the proposed shortfall in private open space for these three bedroom units, noting that while it is not a significant departure, new buildings should satisfy the ADG criteria.

The Department notes the depth of all proposed wintergardens within each building is 2.7 m. The depth of the three bedroom units wintergardens therefore exceeds the ADG minimum recommendation by 300 mm (and one and two bedroom units by 1 m).

The Department considers the proposed three bedroom unit wintergardens will be highly useable and will provide an acceptable area of private open space for these units. In addition, all residents will have access to significant areas of communal open space and the adjacent future Hickson Park. The Department further notes that all one and two bedroom units within the proposed buildings are provided with oversized wintergardens with minimum areas of 10.8 m² for one bedroom units and 11 m² for two bedroom units.

The Department concludes the proposed variation for three bedroom units to be minor and the private open space for each unit will provide a high standard of amenity to future residents thus achieving the objective of the ADG.

5.4.8 Storage

The ADG recommends a minimum volume of storage to be provided for each unit. The minimum volume increases dependant on the number of bedrooms i.e. one bedroom units require 6 m³, two bedrooms 8 m³ and three bedrooms 10 m³. The ADG also recommends 50% of the minimum volume to be provided within the unit itself (rather than in the basement for example).

Each unit will be provided with the overall required minimum storage volume. However, a total of 242 units (127 in R4A and 115 in R4B) will not achieve the minimum 50% internal storage volume. This equates to 45% of all units across both developments. The shortfall amounts to 0.4 m³ for 15 three bedroom units (all in R4A) and between 1 m³ and 1.3 m³ for 227 one bedroom units (112 in R4A and 115 in R4B). Storage space for all these units is also proposed within the individual basement storage cage for each unit to ensure compliance with the overall storage volume requirement.

As confirmed by the Applicant, the proposed basement storage cage for each unit will also include a further 1.1 m³ for bicycle storage i.e. each unit will be provided with a bicycle storage space in addition to the minimum ADG required storage volume.

The Department considers the proposed storage volume shortfall located within the relevant units to be relatively minor and the provision of additional storage volume within the basement storage area, together with additional storage for a bicycle, will ensure adequate storage for each unit is provided (particularly given all units exceed minimum ADG size recommendations thus providing additional internal storage opportunities).

5.4.9 Unit type amenity

The intent of the ADG is to help achieve better design and planning for residential apartment buildings including improving liveability through enhanced internal and external residential amenity.

Although the Department considers the proposed designs are acceptable regarding each of the key ADG residential amenity design criteria, the Department also considers it appropriate to determine how each unit type responds to a combination of the key criteria to ensure all proposed unit types achieve an overall acceptable level of amenity.

An analysis has been undertaken for each proposed unit type (excluding penthouses) based on 14 ADG design criteria specific to individual units (see **Appendix D**). For each unit type, the unit located at the lowest level of the building was reviewed to provide a conservative assessment.

The unit types achieving the least number of overall design criteria are LA/B-02 and LA/B-03 (one bedroom units). These units achieve 75% of the 14 ADG design criteria assessed and are located between levels 01 and 32 of each building. As the units meeting the fewest ADG design criteria, the criteria not achieved for these specific unit types (a total of 124 units) are reviewed in **Table 17**.

Table 17: Review of design criteria not achieved for units LA-02, LA-03, LB-02 and LB-03

Design criteria not achieved	Variance	Department comment
Cross ventilation (note: ADG allows 40% of units to not be naturally cross-ventilated)	Not naturally cross-ventilated	Only 36 (29%) of the 124 units are not naturally cross-ventilated as 88 units are located above level 9 and are deemed to comply under the ADG (see Section 5.4.5).
Living room width (3.6 m)	200 mm (3.4 m proposed)	Negligible variation that will not adversely impact the amenity or future furniture layouts of the units (see Section 5.4.6).
Window required to all habitable rooms	Window not provided to study	Will not adversely impact amenity of unit, particularly given unit size significantly exceeds the minimum by 20 m ² (see Section 5.4.6).
Storage (50% of required storage volume to be provided within the unit)	1 m ³ to 1.3 m ³	Balance of required storage volume provided in basement (see Section 5.4.8). Notably studies could also be utilised for additional internal storage.

In reviewing the overall design of these unit types in relation to the intent of the ADG, the Department notes the following beneficial design aspects:

- all units exceed the ADG minimum unit size requirement by 20 m²;
- all balconies/ wintergardens exceed the minimum size requirement by between 1.9 m² and 2.9 m² and exceed the minimum depth requirement of 2 m;
- all units receive more than two hours solar access in midwinter;
- all units face north-east and will have desirable views across the future Hickson Park with higher level units provided with more significant views; and
- the layout of the units are well organised with minimised wasted circulation space and a rectangular open plan living area allowing flexibility in future furniture layouts.

On 29 June 2017, the Planning Circular '*Using the Apartment Design Guide*' was issued by the Department. The Circular emphasised the ADG is not intended to be applied as a set of strict development standards and where it is not possible to satisfy the design criteria, the consent authority is to consider how, through good design, the objective can be achieved. The Circular supports the Department's approach to assessing the residential amenity of the proposed development in that all proposed 624 units cannot reasonably achieve every amenity design criteria in the ADG and that the ADG notably does not require this.

Overall, the Department considers all unit types within each building will achieve an acceptable level of amenity with most units receiving a high level of amenity. As such, the Department concludes the proposed buildings satisfy the intent of the ADG and are acceptable in relation to residential amenity.

5.5 Landscaping and Public Domain

The Department considers the key landscaping and public domain considerations are:

- landscaping/public domain works around the site including integration with the future Hickson Park;
- the proposed pedestrian through-site link (Strada), including canopy and link bridge; and
- wind impacts.

An assessment of these key considerations is provided below.

5.5.1 Landscaping/ public domain works

The proposed developments incorporate the following landscaping and public domain works:

- landscaped communal gardens on podium level two of each building comprising lawn and hard paved areas, swimming pool (Building R4B only), garden beds and raised planters containing substantial shrub planting;

- stone paving around the perimeter of each building to match Council paving as implemented for Stage 1A of Barangaroo South. This will complement and integrate with the broader Stage 1B public domain paving; and
- provision of a stone paved, publicly accessible, Strada between the proposed buildings (considered separately below) linking the future Hickson Park with Watermans Cove.

Each building has been designed to provide active frontages at ground level with glazed façades opening onto the paved perimeter of the buildings. Awnings at ground level are proposed over each building façade (except for the covered Strada). **Figure 30** illustrates the relationship of the proposed buildings (including Building R5) to the public domain and future Hickson Park.

Council has objected to the potential lack of integration of the proposed landscaping/ public domain works and the future Hickson Park. Council's concern is the proposed buildings should be considered in tandem with the landscape proposal for the surrounding Stage 1B public domain works (SSD 7944) to ensure suitable integration and desired public benefit is achieved.

Since Council's submission, the Applicant has submitted the separate SSD 7944 application which the Department has now exhibited. **Figure 31** illustrates the proposed public domain for the areas within and surrounding the proposed buildings, namely Hickson Park, Barangaroo Avenue and Watermans Quay. **Figure 32** provides a perspective of the future Hickson Park viewed from Building R4B looking north.

The Stage 1B public domain application proposes public domain treatments for the entire Stage 1B area, including Hickson Park located adjacent to the northern side of the proposed buildings. The Concept Plan requires all public domain works, including Hickson Park, to be completed prior to the occupation of either proposed building. As such, although interim ground level tree planting initially formed part of each application, given the Stage 1B public domain works include permanent tree planting in these locations, the Applicant has confirmed interim tree planting is no longer proposed.



Figure 30: Illustration of relationship of proposed buildings (and Building R5) to the public domain and Hickson Park (Base Source: RTS)



Figure 31: Stage 1B public domain plan (Base Source: SSD 7944 EIS)



Figure 32: Future Hickson Park perspective looking north from Building R4B (Source: SSD 7944 EIS)

The Department has reviewed the relationship between the landscaping/ public domain works for the proposed buildings and the future Hickson Park and surrounding public domain. The Department is satisfied the proposed works are suitably integrated with an acceptable transition provided between the park and the proposed buildings and Strada. Although Council has raised concerns regarding a likely desire line from the Strada to the future Metro station located on the opposite side of the park, this will be considered as part of the assessment for SSD 7944 and any further proposal to amend the Concept Plan to facilitate the station location.

Overall, the Department concludes the proposed public domain works and landscaping are consistent with the works undertaken as part of Stage 1A of Barangaroo South and will integrate with the proposed public domain works for the wider Stage 1B public domain area.

5.5.2 Strada, Canopy and Link Bridge

A publicly accessible Strada is proposed between Buildings R4A and R4B to provide pedestrian access between the future Hickson Park and Watermans Cove (**Figures 33** and **34**). A glazed canopy and pedestrian-link bridge (for residents only) are proposed above the Strada. Each element is considered separately below.

Strada

The Concept Plan requires a generous through-site link be provided to promote visual and physical permeability through the podium of Buildings R4A and R4B connecting Hickson Park to Watermans Cove at the intersection of Barangaroo Avenue and Watermans Quay. It also requires activation of the through-site link and to maximise active interfaces.

The proposal for Building R4A includes a 12 m wide publicly accessible Strada with retail/ food tenancies and associated outdoor dining areas located on either side. In order to mitigate wind impacts and ensure comfort to pedestrians and diners, a pair of bi-fold doors and a pair of 3 m wide, 3.6 m high glazed wind baffles are proposed at each end of the Strada (see **Section 5.5.3**). An additional nine 3 m wide, 1.1 m high glazed wind baffles will also be installed within the Strada. The Applicant seeks to utilise the bi-fold doors to close the Strada at night (from 11 pm to 7 am), seven-days-per week, for security purposes and during strong wind events.



Figure 33: Proposed Strada, canopy and link bridge viewed from Hickson Park looking south-west (Source: RTS)

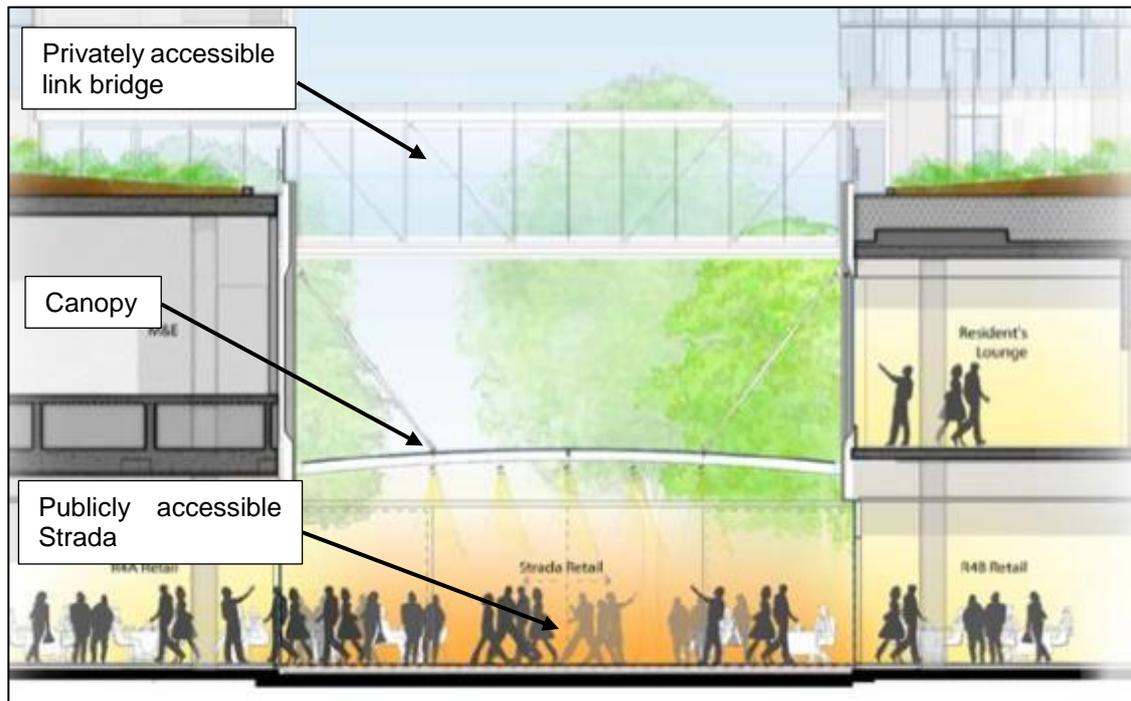


Figure 34: Illustration of proposed Strada, canopy and pedestrian bridge looking north-east (Base source: RTS)

The closure of the Strada at night is recommended in the Applicant's Crime Prevention Through Environmental Design (CPTED) report to address security issues. This would not allow any visual or physical permeability in the late evening and early morning periods. The Applicant states this arrangement is consistent with previous approvals for through-site links within the International Towers in Barangaroo South.

Council has raised concerns in relation to the areas of outdoor dining within the Strada potentially constricting pedestrian circulation and the privatisation of this space. Council also objects to the closure of the Strada at night on the grounds this is not supported by evidence.

In principle, the Department considers the proposed 12 m wide Strada will provide a suitably wide and direct public link between the podiums of the proposed buildings and will promote physical and visual permeability between Watermans Cove and Hickson Park consistent with the Concept Plan. The Department also supports the proposed activation of the Strada through outdoor dining/ retail uses, and it is noted outdoor dining areas will be the subject of separate development applications.

However, the Department recognises the 3 m wide wind baffles on each side of the Strada will reduce the unencumbered width of the Strada by 50% from 12 m to 6 m. The use of the bi-fold doors during strong wind events would further reduce the unencumbered width of the Strada, although the extent of the reduction has not been provided.

While the Department accepts the need for some wind mitigation within the Strada (see **Section 5.5.3**), it is considered the proposed wind measures (wind baffles and bi-fold doors) in combination with security measures (closure of the Strada between 11 pm and 7 am) will compromise the visual and physical permeable link required by the Concept Plan.

The Department does not accept the Applicant's reference to the pedestrian linkages within International Towers as precedent for the proposed closure of the Strada. The Department's view is not persuaded by this point given the use and characteristics of internal lobbies within the three commercial buildings (International Towers) are significantly different to a through-site link specifically required by the Concept Plan to provide an important visual and physical connection between Watermans Cove and the future Hickson Park.

The Department agrees with Council that the CPTED report does not provide sufficient evidence or justification for the closure of the Strada on security grounds. The CPTED report also highlights the Strada will be an important natural surveillance precinct, therefore its closure at night contradicts the report's findings and would reduce site-wide ground level natural surveillance provided to all other parts of Barangaroo South.

The provision of a generous visual and physically permeable through-site link between the future Hickson Park and Watermans Cove is required by the Concept Plan. The Concept Plan requirements also state internal public domain activity should not occur at the expense of the primacy of pedestrian activity and use.

The Department therefore considers the closure of the Strada at night unnecessary and contrary to the requirements of the Concept Plan. A condition requiring public access throughout the length of the Strada to be available 24-hours-a-day, seven-days-per-week is recommended accordingly.

While the Department accepts some design treatments to mitigate wind impacts may be reasonably necessary, this needs to be balanced with the requirement to design a space that remains accessible to the public and provides visual and physical permeability through the site. However, limited design information has been provided for the wind baffles and bi-fold doors. To ensure the visual and physical permeable link required by the Concept Plan is maintained, a condition is recommended requiring further design details of the wind baffles and bi-fold doors, whose designs are underpinned by the principles of access, openness and transparency.

A further condition is also recommended requiring the Applicant to prepare a Strada Access Management Plan for the approval of the Secretary prior to the issue of any Occupation Certificate. This will include the operation of wind mitigation measures to ensure the use of bi-fold doors do not unreasonably restrict the use of the Strada for pedestrians.

Canopy

A transparent steel and glass canopy is proposed over the length of the Strada (4.9 m above ground) to provide protection from rain and downwashed winds.

Council has objected to the proposed canopy as it is perceived as privatising the public domain contrary to the Concept Plan and is not supported from an urban design perspective.

The proposed glazed canopy will provide a human scale at street level and weather protection for diners and pedestrians. The Department considers these benefits outweigh minor visual impact and will achieve an acceptable balance between the provision of a publicly accessible pedestrian through-site link and an activated, vibrant environment for retail customers/ diners. Deletion of the canopy would also have negative implications in relation to increased wind levels within the Strada (see **Section 5.5.3**). A condition is recommended requiring approval of further design details of the canopy.

Link Bridge

A predominantly glazed link bridge, 2.8 m wide and 3 m high, is proposed over the northern end of the Strada (9.4 m above ground). The bridge connects podium level two of each of the proposed buildings and is intended to provide a link for residents between the communal facilities within each building.

Council has objected to the proposed link bridge as upper level links are discouraged to encourage pedestrians to traverse the street at ground level to enliven city life.

The Department considers the proposed footbridge a relatively minor visual element that will have a negligible impact on the visual permeability of the through-site link. Although Council encourages pedestrians to move between buildings at ground level, the proposed bridge will be available to residents of the proposed buildings (and Building R5). This will enable residents to move between

different communal facilities located within the proposed buildings without needing to proceed through the ground level public domain. The Department considers this justification reasonable.

5.5.3 Wind Impacts

A Wind Impact Assessment (WIA) for the proposed buildings considers the wind impacts of each building individually and collectively with other nearby developments i.e. Building R5 and the Crown Sydney Hotel Resort plus the future Hickson Park. The WIA notes the exposure of the site to prevailing westerly winds due to the location of the site adjacent to Darling Harbour and the funnelling of southerly winds along the eastern and western aspects of the site due to the street alignment of the CBD.

The results of the WIA study indicate treatments are necessary at certain locations to mitigate wind speeds to achieve desired pedestrian safety and comfort levels. These treatments are:

- the inclusion of densely foliating trees at ground level around the site capable of growing to 7 m to 10 m in height with a canopy diameter of 3 m to 6 m;
- the inclusion of portable café screening on the north-eastern side of both proposed buildings to be operated during adverse wind conditions;
- a canopy over the Strada together with additional tree planting at the south-western end (corner of Barangaroo Avenue and Watermans Quay);
- nine 1.1 m high wind baffles throughout the Strada between areas of outdoor seating;
- four 3m wide, 3.6 m high glass wind baffles at either end of the Strada; and
- two sets of 3 m high bi-fold doors at either end of the Strada that can be utilised during strong south-westerly and north-easterly wind events.

Figures 35 and **36** illustrate the recommended wind mitigation measures around the proposed buildings and within the proposed Strada respectively.

Council has objected to the potential wind impacts of the proposed buildings on the public domain and the communal podium areas. Specifically, Council is concerned the WIA makes recommendations that rely on the design of Hickson Park, the application for which had not been submitted at that time.

In addition, Council notes the tree planting recommended in the WIA is not reflected in the submitted landscape plans, do not reflect a well-designed landscape and could compromise the success of the ground level retail tenancies and Hickson Park itself. Council also objected to the proposed Strada canopy and bi-fold doors due to the perceived privatisation of the public domain and suggests generous awnings replace the proposed canopy and increased building separation should also be considered to reduce down-washed winds.

As detailed in **Section 5.5.1**, tree planting around the site is proposed as part of the broader Stage 1B public domain works which covers the entire Stage 1B area including the future Hickson Park. The Department has therefore reviewed the WIA recommendations in conjunction with the submitted Stage 1B public domain works (SSD 7944) landscaping plans which have now been exhibited. The Department considers the proposed Stage 1B landscape plans suitably reflect the tree planting locations and size requirements recommended in the WIA as follows:

- *Elaeocarpus eumundi* (up to 7 m high and 4 m wide canopy) proposed on the Watermans Quay street frontage;
- *Harpullia pendula* (up to 9 m high and 5 m wide canopy) proposed on the Barangaroo Avenue frontage; and
- *Tristaniaopsis laurina* (up to 8 m high and 5 m wide canopy) together with other larger trees (up to 15 m in height and 6 m wide canopy) located between the proposed buildings and the future Hickson Park.

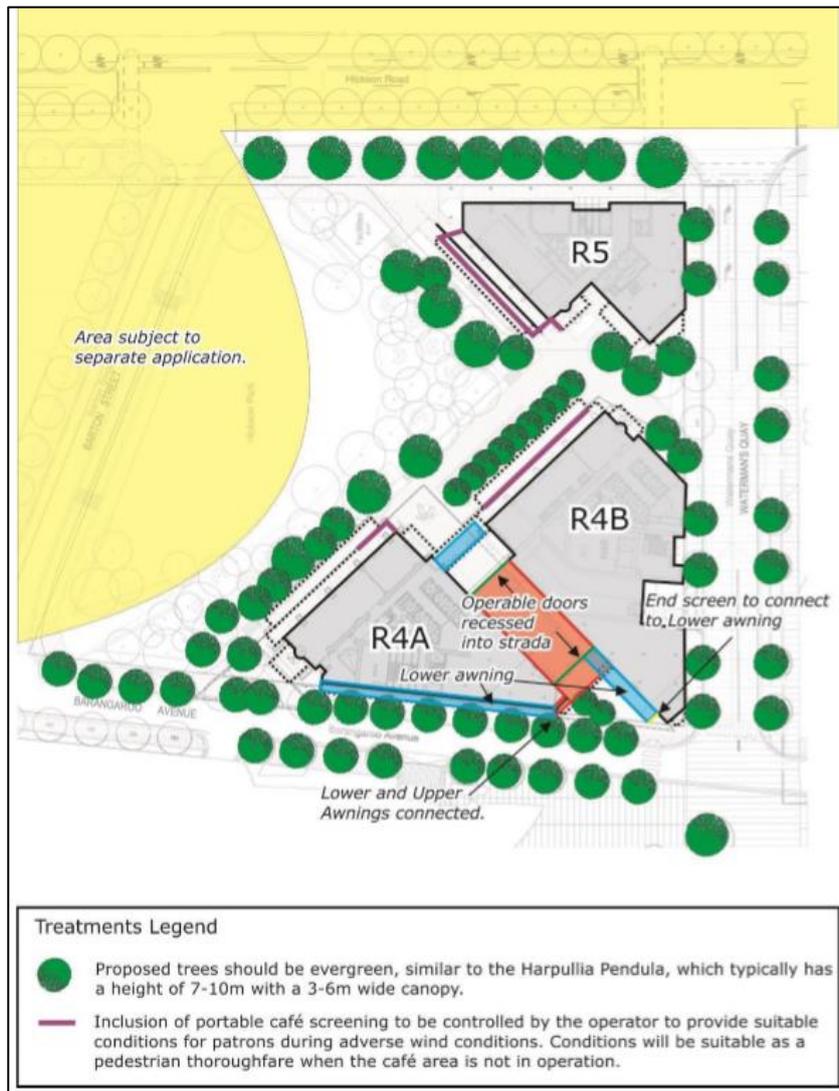


Figure 35: Recommended ground level wind mitigation treatments (Source: WIA)

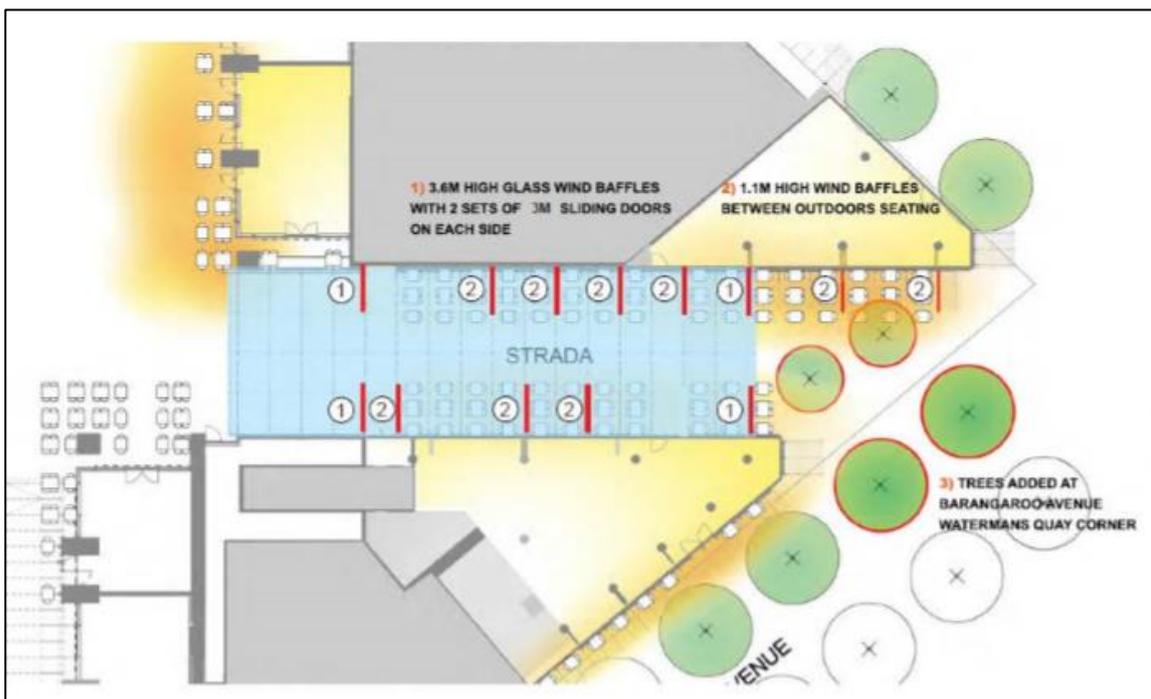


Figure 36: Strada wind mitigation measures diagram (Source: WIA)

Furthermore, the proposed Stage 1B public domain tree planting along the southern boundary of the future Hickson Park adjacent to the proposed buildings will provide shade to the public domain areas to the immediate north-east of the proposed buildings, will assist in breaking up the north-eastern façade of the proposed buildings and will provide an attractive outlook for future users of the Strada and Hickson Park. As such, although the trees are required for wind mitigation purposes, they are not considered to impair the overall landscape strategy for Hickson Park or the interrelationship between the park and the proposed retail tenancies or the Strada/ through-site link.

The Department considers the proposed canopy over the Strada acceptable because, in addition to providing wind protection, it will provide an overall comfortable environment for pedestrians and diners and will have a negligible visual impact.

However, the proposed wind mitigation measures within the Strada would potentially prejudice the provision of a generous visual and physically permeable through-site link. The WIA recommends the bi-fold doors be closed, or partially closed, during stronger wind events. Yet, the WIA provides no information as to what constitutes a 'stronger wind event', how this would be measured and who would determine whether the doors needed to be partially or fully closed. Without such information, the Department is concerned the doors may be regularly closed, thus inhibiting public access and privatising the public domain.

The Department considers wind protection and comfort levels provided by the canopy and other wind mitigation measures could potentially allow for active interfaces within the Strada to be maximised without prejudicing the provision of a generous, physically and visually permeable through-site link. Nevertheless, the Department considers the current level of design and wind information provided does not demonstrate that an acceptable balance between these requirements has been achieved.

Accordingly, as previously stated, the Department recommends conditions be imposed requiring the submission of further design information for wind mitigation measures within the Strada and the preparation of a Strada Access Management Plan for the approval of the Secretary prior to issue of any Occupation Certificate. This will include the operation of wind mitigation measures to ensure the use of bi-fold doors do not unreasonably restrict the use of the Strada for pedestrians.

5.6 Traffic, Access and Parking

5.6.1 Traffic and Access

The proposed buildings will jointly utilise the approved Stage 1B basement car park which will be accessed from the western end of Watermans Quay. The primary traffic access route into and out of the car park will be via Watermans Quay, Hickson Road and Sussex Street. A porte cochere is also proposed for Building R4A which will be accessed from Barangaroo Avenue via Watermans Quay. Traffic signals will be installed at the Hickson Road/ Watermans Quay intersection as part of the Stage 1B development to improve traffic circulation and efficiency (**Figure 37**). Detailed design of the intersection, including phasing and lane arrangements, will be subject to further consultation with RMS.

Council and one public submission object to the proposal in relation to traffic generation arising from the proposed developments. Council's submission particularly questions the traffic modelling undertaken and the impact of the proposed developments on the performance of the Hickson Road and Watermans Quay intersection.

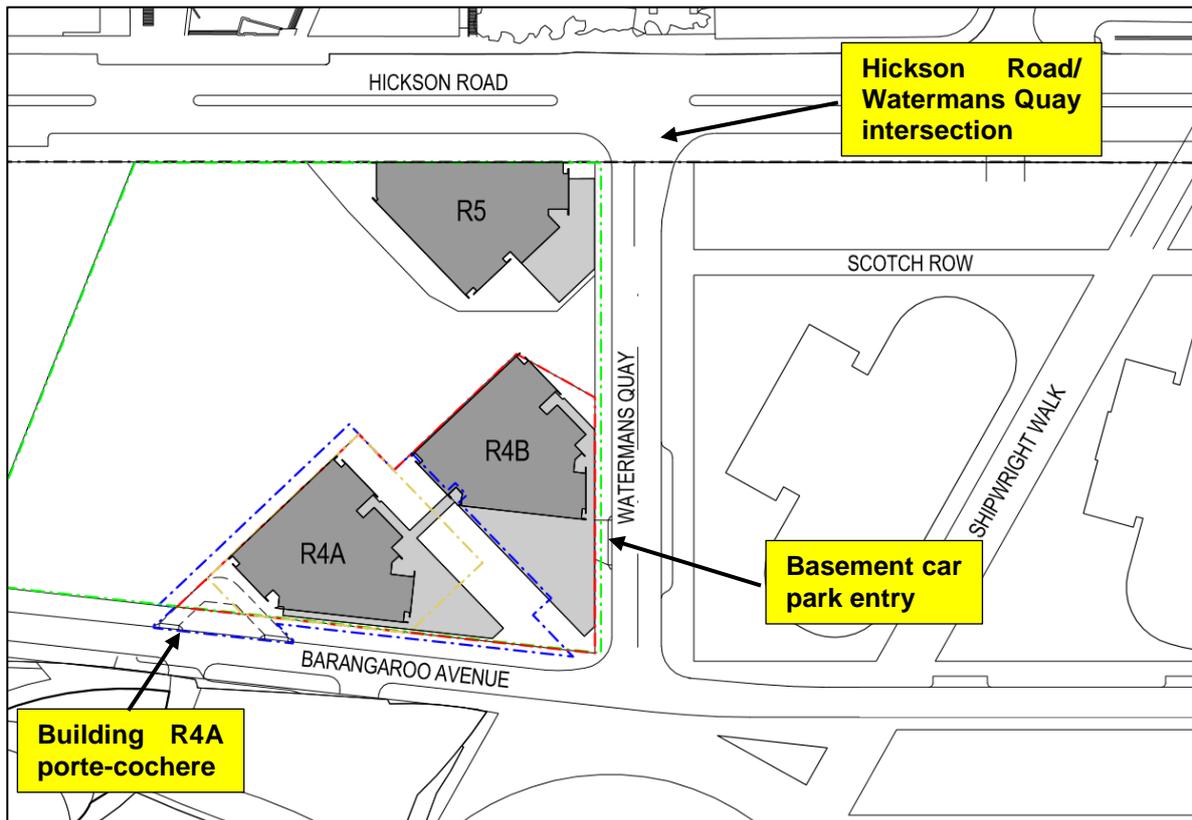


Figure 37: Intersection Site Plan (Base source: Architectural plans)

The submitted Transport Management and Accessibility Plan (TMAP) calculates the proposed developments will generate a total of 89 vehicle movements in the AM peak hour (47 from Building R4A and 42 from Building R4B) and 58 vehicle movements in the PM peak hour (30 from Building R4A and 28 from Building R4B).

Consistent with the findings of the traffic modelling previously undertaken for the Concept Plan, the modelling for the current TMAP indicates the transport network in the Barangaroo precinct could accommodate the increased traffic movements arising from the proposed development. The TMAP concludes there will be minimal changes in the operation of the local road network as a result of the proposed developments (including traffic generated by Building R5).

In response to Council's comments, the RTS states the following:

- as recommended by TfNSW and RMS, a survey was undertaken to obtain the likely traffic generation rate for the site. Based on these surveys, a traffic generation rate of 0.14 trips per dwelling was adopted. This is lower than 0.19 trips outlined in the RMS *'Guide to Traffic Generating Development'* due to the location of the site within the CBD and in close proximity to public transport; and
- traffic modelling considers the cumulative impacts of the Barangaroo Precinct in addition to existing development in the area and forecasts the Hickson Road and Watermans Quay intersection will operate at an acceptable level of service (level B) with an average queue length of three to four vehicles during peak periods.

The Department notes the traffic impacts of the proposed developments were previously considered as part of the assessment the Concept Plan. The proposed developments are consistent with the Concept Plan and the updated modelling concludes the increased traffic movements generated by the developments will have minimal impact on the local road network.

The Department also notes the number of parking spaces proposed is less than the maximum allowed under the Concept Plan (see **Section 5.6.2**) which will result in fewer traffic movements

than previously anticipated from the developments. Furthermore, neither TfNSW or RMS have raised any objections to the proposed developments.

The Department concludes the existing road network will have sufficient capacity to accommodate the additional traffic movements generated by the proposed developments. Nevertheless, to encourage use of more sustainable transport modes i.e. through introduction of a car sharing scheme, a condition is recommended requiring the implementation of an updated Travel Demand Management Plan for Barangaroo South prior to the commencement of use.

5.6.2 Parking and loading

The Concept Plan specifies maximum parking rates for residential buildings. The Concept Plan requires maximum retail rates to be consistent with Council's requirements.

Council object to the number of car parking spaces proposed for each proposed building and that the level of parking should be restricted to comply with rates within SLEP 2012. Council also raised concerns regarding the lack of information regarding bicycle parking and end of trip facilities and the lack of loading dock service spaces.

Car parking

Tables 18 and 19 detail the maximum permitted number of parking spaces for each building within the approved Stage 1B basement based on residential rates in the Concept Plan and retail rates in SLEP 2012.

Table 18: Building R4A: Concept Plan maximum residential parking rate and Council retail rate

Unit type	No. of proposed units / retail GFA	Approved parking rate	Total parking spaces permitted
1 bed	112	0.5 spaces/ unit	56
2 bed	119	1.2 spaces/ unit	143
3+ bed	96	2.0 spaces/ unit	192
Retail	440 m ²	As per Council requirements	1
Total	327 units plus 432 m ² retail GFA		392

Table 19: Building R4B: Concept Plan maximum residential parking rate and Council retail rate

Unit type	No. of proposed units	Approved parking rate	Total parking spaces permitted
1 bed	115	0.5 spaces/ unit	58
2 bed	128	1.2 spaces/ unit	154
3+ bed	54	2.0 spaces/ unit	108
Retail	294 m ²	As per Council requirements	1
Total	297 units plus 294 m ² retail GFA		321

A total of 378 parking spaces for Building R4A are proposed (377 residential and one retail). The development therefore complies with the maximum residential parking rates in the Concept Plan and retail rates in SLEP 2012. The Department considers the proposed parking allocation for Building R4A acceptable.

A total of 301 parking spaces for Building R4B are proposed (300 residential and one retail). The development therefore complies with the maximum residential parking rates in the Concept Plan and retail rates in SLEP 2012. The Department considers the proposed parking allocation for Building R4B acceptable.

Overall, the proposals provide 34 car parking spaces less than the maximum permitted under the Concept Plan (**Table 20**) and is therefore considered acceptable.

Table 20: Comparison between maximum permitted car parking spaces and proposed parking spaces

Proposed Building	Maximum permitted car parking spaces	Proposed car parking spaces	Difference
R4A	392	378	-14
R4B	321	301	-20
Total	713	679	-34

Bicycle parking

Bicycle parking for each residential unit is provided within an individual storage cage of sufficient size to provide a bicycle parking space in addition to satisfying minimum ADG storage requirements. End-of-trip facilities and bicycle parking spaces for retail employee use are provided within the basement.

One hundred visitor bicycle parking spaces, comprising bicycle racks and spaces mounted on smart poles, will be provided within the Stage 1B public domain. The proposed number of spaces is based on 4% of expected visitors to the Barangaroo South precinct arriving by bicycle as identified in the TMAP. This requires a total of 240 spaces (including 103 within the Stage 1A public domain and 37 in vicinity of the Crown Sydney Hotel Resort).

The Department considers the proposed bicycle parking and end-of-trip facilities to be suitable.

Loading

The Applicant states the proposed four service vehicle spaces for the three buildings are consolidated within the single basement for efficiency and will satisfy the likely demand for service vehicle parking. As required by Council, the loading dock has been designed to cater for a 9.25 m rigid vehicle and includes a turntable to allow vehicles to enter and leave in a forward direction.

The Department considers the consolidated nature of the service spaces together with future building management will ensure a satisfactory level of servicing for the proposed buildings (including Building R5). As recommended by TfNSW, a condition is recommended by the Department requiring approval of a Loading Dock Management Plan prior to occupation of either building.

5.7 Other Issues

Other relevant matters for consideration are addressed in **Table 21**.

Table 21: Other matters for consideration

Issue	Consideration	Recommendation
Construction noise/ construction hours	<ul style="list-style-type: none"> The following construction hours are proposed: <ul style="list-style-type: none"> - 7 am to 6 pm Monday to Friday; and - 7 am to 5 pm on Saturdays. Approval is also sought for various works to be undertaken outside of these hours including: <ul style="list-style-type: none"> - concrete pours; - service installation works; - crane and hoist installation; and - works behind a façade (i.e. plastering). One public submission has been received in relation to construction noise and vibration impacts. The submission requests construction hours are limited to 7 am to 9 pm Monday to Friday and 7 am to 5 pm on Saturdays with only emergency works to be undertaken outside these hours. The EIS includes a Construction and Operational Noise Report which provides a detailed 	<ul style="list-style-type: none"> The Department considers the applications acceptable in relation to construction noise and vibration subject to conditions being imposed in relation to compliance with the recommendations of the Construction and Operational Noise Report. These include the requirement for the existing Construction Noise and Vibration Management Sub-Plan for Barangaroo South to be updated with the specific noise and vibration control measures

Issue	Consideration	Recommendation
	<p>assessment and recommendations for managing/mitigating noise impacts on surrounding residents, child care centres and retail tenancies.</p> <ul style="list-style-type: none"> The report states the proposed exceedances are not considered excessive by construction standards and can be managed by existing construction management procedures. The report notes the proposed hours are consistent with previous Barangaroo approvals for remediation of the declaration area and the Stage 1B basement. The report also notes that a Construction Noise and Vibration Management Sub-Plan titled '<i>Noise & Vibration Management Sub-Plan Barangaroo South Document No:H010106LLC004</i>' has been prepared for Lend Lease for the entire Barangaroo South site. It is intended the plan be a 'live document' whereby project specific noise and vibration mitigation measures are incorporated into the Sub-Plan. These measures are consistent with previous developments within Barangaroo. 	<p>for the proposed developments.</p> <ul style="list-style-type: none"> The Department also considers the proposed construction hours acceptable as these are consistent with previous approvals in Barangaroo South. Council has not raised any concerns with the proposed hours. However, the recommended construction hours condition only allows emergency work to occur outside of the approved hours. Any proposal to vary the construction hours will need to be approved by the Secretary (or her delegate).
Construction Traffic	<ul style="list-style-type: none"> The submitted TMAP profile of existing construction traffic activity in Barangaroo demonstrates the majority of movements occur outside the AM and PM peak hours of 8 am to 9 am and 5 pm to 6 pm with a significant decrease in activity after 3 pm (5% of the total volume). During the AM peak hour when construction vehicles are more likely to access the site, the TMAP states the local road network operates satisfactorily and the additional construction traffic will have a negligible impact on its operation. The TMAP estimates the number of construction vehicles per hour to be 16 for each building. The TMAP concludes construction activity from the developments will have a relatively minor impact on the operation of nearby intersections during the critical peak periods and no further works are required to accommodate the anticipated levels of construction traffic. The implementation of a range of mitigation measures are also recommended to appropriately manage construction vehicle movements. TfNSW have raised no concerns regarding construction traffic but recommended a condition requiring a Construction Pedestrian and Traffic Management Plan (CPTMP) be prepared and approved (by TfNSW) prior to commencement of any work. 	<ul style="list-style-type: none"> The Department considers the applications acceptable in relation to construction traffic movements and potential impacts subject to a condition being imposed requiring approval of a CPTMP prior to the commencement of any work.
Operational noise	<ul style="list-style-type: none"> Operational noise from the developments will occur predominantly from mechanical plant located on the roof of each building. Future uses of the retail tenancies will be subject to separate approvals. 	<ul style="list-style-type: none"> The Department recommends a condition be imposed to limit noise emissions for mechanical plant and ensure compliance with the NSW Industrial Noise Policy with details to be approved prior to issue of any construction certificate for the buildings.

Issue	Consideration	Recommendation
		<ul style="list-style-type: none"> Noise impacts from future retail uses will be assessed at the future development application stage for the respective tenancies.
Reflectivity	<ul style="list-style-type: none"> A Reflectivity report has been submitted with each application which assesses the impact of solar reflections on pedestrians and road traffic in the area. The reflectivity impacts of the developments were modelled and the report concludes the potential glare affecting drivers and cyclists on surrounding streets is not expected to exceed the adopted 'Hassall methodology' as long as the external normal specular reflectance of glazing and cladding is kept within 28%. Given pedestrians can easily adjust their vision and are travelling at much slower speed compared to a vehicle, the report concludes the reflectivity of the proposed buildings will be safe for pedestrians. 	<ul style="list-style-type: none"> The Department is satisfied the reflectively impacts of the proposed buildings are acceptable subject to a condition requiring the reflectivity of the proposed external materials and glazing to not exceed 28%.
Signage	<ul style="list-style-type: none"> Each application seeks consent for a single building identification signage zone measuring 1.5 m in height and 7 m in length (10.5 m²) as follows: <ul style="list-style-type: none"> R4A: north-west elevation fronting Barangaroo Avenue; and R4B: south-east elevation fronting Watermans Quay. The signage zones are located over the residential lobby entrances to each building, 3 m above ground level. Control 9 in the Design Controls stipulates signage is to be limited to one sign per frontage at podium level and are not to exceed 15 m² per sign. The proposed signage zones comply with these controls. A SEPP 64 compliance schedule has been submitted with each of the applications which indicates that the proposed signage zones are consistent, and the future signs within the proposed signage zones are capable of being consistent, with the design and siting criteria of SEPP 64. 	<ul style="list-style-type: none"> The Department is satisfied the proposed building identification signage zones comply with the Design Controls and are proportionate to the scale of the development. The Department considers the proposed signage zones acceptable and is satisfied they meet the key assessment criteria in SEPP 64 (refer to Appendix D). A condition requires a future signage strategy for the all signage across the precinct (including wayfinding and under awning signage). This is consistent with previous approvals within Barangaroo South.

5.8 Consideration of key issues raised in submissions from Council and the public

Table 22 presents the key issues raised in the public and Council submissions (as summarised in **Section 4**), and how the Department has considered each issue.

Table 22: Consideration of key issues raised in submissions from Council and the public

Concerns raised	Department's comments
<ul style="list-style-type: none"> Lodgement of the applications is premature as they are not coordinated with surrounding land particularly the future Hickson Park. <p>(Council submission)</p>	<p>The Department concludes the applications are not premature because:</p> <ul style="list-style-type: none"> the Applicant has since lodged the separate SSD application for the Stage 1B public domain works including the future Hickson Park; the Department has reviewed the relationship between the proposed buildings and surrounding Stage 1B public domain works and is satisfied the works are suitably coordinated and integrated; and the Concept Plan requires all public domain works to be completed prior to any occupation of the proposed buildings.

Concerns raised	Department's comments
<ul style="list-style-type: none"> • Design should be amended to provide podiums to reduce wind impacts and lessen the scale of the buildings when viewed from the public domain. • The design of the Strada creates a wind tunnel requiring doors at either end which will privatise the public domain between the buildings. • Tree planting recommended by the Applicant's Wind Impact Assessment (WIA) is not proposed. <p>(Council submission)</p>	<p>The Department concludes the wind impacts of the developments have been appropriately considered and suitable mitigation measures are proposed. In particular, the Department considers:</p> <ul style="list-style-type: none"> • the proposed podium location and design of each building is consistent with the Barangaroo South Design Controls; • the location and orientation of the proposed Strada is consistent with the Concept Plan and Design Controls which require the provision of a publicly accessible through-site link between the proposed buildings connecting Hickson Park to Watermans Cove; • the Department accepts wind mitigation measures are required but consideration of these measures has been balanced against the provision of a visually and physically accessible public link and avoidance of any privatisation of the public domain between the buildings; • the Department considers the Applicant has provided insufficient detail regarding the design and operation of the wind mitigation measures including the doors located at each end of the Strada. The Department has therefore recommended conditions be imposed requiring further design details and a Strada Access Management Plan be submitted for the Secretary's approval; and • tree planting recommended by the WIA is proposed as part of the Stage 1B public domain works. The Department has reviewed the exhibited Stage 1B public domain plans (SSD 7944) and considers the recommended WIA tree planting has been incorporated satisfactorily into the design. The Department further notes the Concept Plan requires all public domain works to be completed prior to any occupation of the proposed buildings.
<ul style="list-style-type: none"> • Closure of the Strada at night is not supported. <p>(Council submission)</p>	<ul style="list-style-type: none"> • The Department agrees with Council and considers closure of the Strada at night is not consistent with the Concept Plan. The security justifications supporting night-time closure are not accepted. The Department therefore recommends a condition be imposed requiring 24-hours-a-day, seven-day-per-week public access throughout the length of the Strada
<ul style="list-style-type: none"> • Non-compliances with the ADG are not supported. <p>(Council submission)</p>	<p>Following a detailed review of the ADG design criteria, the Department concludes:</p> <ul style="list-style-type: none"> • the non-compliances are minor and will not impede the objectives of the ADG to achieve better design including improving liveability through enhanced internal and external residential amenity; • all proposed residential units will achieve acceptable levels of amenity with most units achieving high levels of amenity and the intent of the ADG has been satisfied.
<ul style="list-style-type: none"> • The number of car parking spaces should be reduced to comply with rates within SLEP 2012. <p>(Council submission)</p>	<ul style="list-style-type: none"> • SLEP 2012 residential car parking rates are not applicable to the developments as the Concept Plan determines maximum car parking rates for residential apartments; • the number of residential parking spaces proposed is 34 spaces less than the maximum permitted by the parking rates stipulated in the Concept Plan; and • the Concept Plan requires retail parking rates to be consistent with Council rates. One retail parking space per building has been provided consistent with SLEP 2012 rates.
<ul style="list-style-type: none"> • Adverse impact on views. • Unacceptable height and adverse visual impact. • Overcrowding of the site. <p>(Public submission)</p>	<ul style="list-style-type: none"> • The Department notes the location, density and height of the proposed buildings are consistent with the Concept Plan and Design Controls; • potential visual and view impacts were carefully considered as part of the assessment of the Concept Plan; and • the proposed buildings are consistent with the Concept Plan envelopes and the Department considers the visual and view impacts from public and private locations are therefore acceptable.

5.9 Public Interest

The Department considers the applications are in the public interest because they will:

- facilitate the delivery of Barangaroo as part of Global Sydney through construction of residential development and associated improved housing choice and diversity within Barangaroo South in accordance with *NSW 2012, A Plan for Growing Sydney*, the *Draft Towards our Greater Sydney 2056* and the *Draft Central District Plan*; and
- create approximately 1,215 full time equivalent jobs during construction and 55 full time jobs during operation which is consistent with the objectives of the State Plan.

6. CONCLUSION

The Department has fully considered all relevant matters under section 79C of the EP&A Act, the objects of the EP&A Act and the principles of ecologically sustainable development. The Department has reviewed the EIS and RTS and duly considered advice from public authorities. Issues raised in submissions have been considered and all relevant environmental issues associated with the proposal have been thoroughly assessed.

The proposed buildings R4A and R4B are consistent with the strategic intent for Barangaroo South and the Concept Plan and related Design Controls. The proposed buildings have been designed by a world renowned architectural firm. The Department is satisfied the buildings will exhibit design excellence and will contribute positively to the character of Barangaroo and the wider CBD skyline. Accordingly, the Department recommends the Secretary (or her delegate) grants the waiver to undertake a design competition for the proposed buildings.

The location, height and floor space of the proposed buildings is consistent with the Concept Plan. Given the proposed buildings do not fill the Concept Plan envelopes, the extent of overshadowing and view impacts have been reduced from the levels previously approved by the Concept Plan.

Consistent with the '*Using the Apartment Design Guide*' Planning Circular, the Department has not applied the ADG as a set of strict development standards but has reviewed each proposed unit type against the objectives of the design criteria. The Department concludes from this review that all future residents will be provided with a high level of amenity, consistent with the intent of the ADG.

The proposed buildings will sit comfortably within the surrounding public domain, including the overall future Stage 1B public domain works, and will contribute positively to the vibrancy of Barangaroo South. In particular, the provision of a publicly accessible Strada between the proposed buildings will provide an important active link between the intersection of Barangaroo Avenue/Watermans Quay and the future Hickson Park and will accommodate a weather protected outdoor dining area which will add further to the vitality of the area.

The number of car parking spaces proposed is less than the maximum permitted under the Concept Plan and the local road network has sufficient capacity to accommodate the increase in traffic movements consistent with the previous Concept Plan assessment of this issue.

All key issues associated with the proposals have been assessed, and appropriate conditions recommended, where necessary. Key recommended conditions of consent would require the Applicant to:

- prepare a Construction and Pedestrian Traffic Management Plan;
- prepare a Noise and Vibration Management Plan;
- prepare a Travel Demand Management Plan;
- ensure the Strada is publicly accessible, 24-hours-per-day, seven-days-per-week; and
- preparation of a Strada Access Management Plan.

The Department is satisfied the proposals are consistent with the strategic objectives for the area, as outlined in *NSW 2012, A Plan for Growing Sydney*, the *Draft Towards our Greater Sydney 2056* and the *Draft Central District Plan*. The proposals will result in a wide range of positive social and economic impacts including increased housing availability and choice near the CBD and public transport, increased employment opportunities and improved public domain outcomes which will benefit residents, workers and visitors.

The Department concludes the developments are in the public interest and are capable of being approved, subject to the recommended conditions.

7. RECOMMENDATION

It is recommended that the Acting Executive Director, Regions as delegate of the Secretary:

- (a) **consider** the findings and recommendations of this report;
- (b) **waive** the requirement to undertake a design competition for Building R4A and Building R4B in accordance with Schedule 3, Part 12, clause 19(4) of the SSP SEPP and Modification C2(7)(a) of the Barangaroo Concept Plan; and
- (c) **sign** the attached waiver at **Appendix F**.

It is recommended that the Commission, as delegate of the Minister for Planning:

- (a) **consider** the findings and recommendations of this report, noting the Department considers the applications are approvable, subject to conditions and the signed waiver at **Appendix F**; and
- (b) if the Commission determines to grant consent to the applications, **signs** each of the attached development consents.

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Endorsed by:

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APPENDIX A INSTRUMENTS OF CONSENT

APPENDIX B RELEVANT SUPPORTING INFORMATION

The following supporting documents and information to this assessment report can be found on the Department of Planning and Environment's website as follows:

- 1 Environmental Impact Statement (R4A)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6964

Environmental Impact Statement (R4B)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6965
- 2 Submissions (R4A)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6964

Submissions (R4B)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6965
- 3 Applicant's Response to Submissions (R4A)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6964

Applicant's Response to Submissions (R4B)
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6965

APPENDIX C BARANGAROO CONCEPT PLAN – PLANNING HISTORY

Barangaroo Concept Plan (MP 06_0162)

The then Minister for Planning approved the Barangaroo Concept Plan (MP 06_0162) (Concept Plan) on 9 February 2007.

The Concept Plan allowed for:

- mixed use development involving a maximum of 388,300 m² of gross floor area (GFA) contained within eight blocks on a total site area of 22 hectares (ha);
- approximately 11 ha of new public open space/ public domain, including a 1.4 kilometre (km) public foreshore promenade;
- a maximum of 8,500 m² GFA for a passenger terminal and a maximum of 3,000 m² GFA for active uses that support the public domain within the public recreation zone;
- built form design principles, maximum building heights and maximum GFA for each development block within the mixed use zone;
- alteration of the existing seawalls and creation of a partial new shoreline to the Harbour;
- retention of the existing Sydney Ports Corporation Port Safety Operations and Harbour Tower Control Operations including employee parking; and
- an underground car park beneath the northern headland park, containing approximately 300 car parking spaces.

The capital investment value of the approved Concept Plan was \$1.5 billion with the generation of up to 16,000 operational jobs

The following outlines the subsequent seven modification approvals to the Concept Plan:

MP 06_0162 MOD 1

On 25 September 2007, the then Executive Director, Strategic Sites and Urban Renewal, as delegate of the Minister for Planning, approved a minor modification to the Concept Plan to correct minor typographical errors and re-wording of the design excellence terms. This modification did not alter the maximum GFA or mix of uses.

MP 06_0162 MOD 2

On 16 February 2009, the then Minister for Planning approved a second modification to the Concept Plan to increase the GFA of commercial uses by 120,000 m² in Blocks 2, 3, 4 and 5, to a total overall GFA of 438,000 m². The modification increased the total maximum GFA for Barangaroo to 508,300 m² (an increase of 120,000 m² or 31 per cent over the whole site).

MP 06_0162 MOD 3

On 11 November 2009, the then Minister for Planning approved a third modification to the approved Concept Plan, generally meeting the requirements of the Concept Plan approval relating to the northern headland and northern cove, with other changes as follows:

- the reinstatement of a headland at the northern end of the site with a naturalised shape and form including a build-up of height and a landscaped connection to physically link Clyne Reserve to allow direct pedestrian access from Argyle Place;
- an enlargement of the northern cove to achieve a greater naturalised shape, form and edges (note this modification and the one above were required modifications in the terms of the original Concept Plan, contained in Modification B1 and B2, and following recommendations made in the jury report regarding the original winning competition scheme);
- the consequential re-alignment of Globe Street to turn right towards Hickson Road immediately south of the enlarged cove, rather than continuing north around the headland;
- the consequential removal of development Block 8 and part of Block 7 and redistribution of the associated land use mix;
- the demolition of three heritage items being the Sandstone Seawall; the Sydney Ports Harbour Control Tower; and the MWS & DB Sewage Pumping Station; and

- amendments to the Statement of Commitments relating to the preparation of relevant plans and strategies so that work can commence in stages.

This modification slightly reduced the approved GFA and mix of uses, with a resulting total GFA of 501,000 m².

MP 06_0162 MOD 4

On 16 December 2010, the then Minister for Planning approved a fourth modification to the Concept Plan. The modified Concept Plan provides for the following:

- a maximum of 563,965 m² mixed uses GFA, including residential, commercial and retail uses which includes:
 - a maximum of 128,763 m² of residential uses
 - a maximum of 50,000 m² of tourist uses GFA; and
 - a maximum of 39,000 m² of retail GFA.
- a maximum of 4,500 m² of active uses GFA (3,000 m² of which will be in Barangaroo South);
- a minimum of 12,000 m² of community uses GFA (10,000 m² of which will be in Barangaroo South);
- approximately 11 ha of new public open space/ public domain, with a range of formal and informal open space serving separate recreational functions and includes a 2.2 km public foreshore promenade;
- built form 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; and
- alteration of the existing seawalls and creation of a portion of the new shoreline to the Harbour.

In order to accommodate the changes made to the Concept Plan, Schedule 3 of Part 12 of the Major Development SEPP was concurrently amended. The amendment rezoned parts of the Barangaroo site and the adjoining areas from 'RE1 Public Recreation' and 'W1 Maritime Waters and Transport' to 'B4 Mixed Use' and 'RE1 Public Recreation'. Modifications to the distribution of GFA and building heights were also included in the amendment.

MP 06_0162 MOD 5

This modification was lodged in February 2011, and proposed modifications to clarify the outcomes with respect to the distribution of community uses GFA across the Barangaroo site, and to correct a number of minor typographical errors. This application was subsequently withdrawn on 22 March 2011.

MP06_0162 MOD 6

This modification application proposed to modify the approved Concept Plan for Barangaroo South. The proposed modifications, as publicly exhibited, sought approval for the following:

- the realignment of the development block boundaries for Blocks 3, 4A and 4B;
- revisions to the Urban Design Controls to reflect the changes to the Block boundaries for Blocks 3, 4A and 4B;
- change the requirement for a 'minimum' of 12,000 m² of community uses GFA to be delivered to a 'maximum';
- allow architectural roof elements and building management units to be excluded from the maximum height limit definition; and
- specify the car parking rates for 'other' uses thus removing the requirement to comply with City of Sydney Council's current car parking rates.

On 25 March 2014, the Commission approved the application.

MP06_0162 MOD 7

On 11 April 2014, the then Minister for Planning and Infrastructure approved a seventh modification to the Concept Plan to allow the construction, operation and maintenance of a concrete batching

plant to supply concrete for the construction of future development under this Concept Plan at Barangaroo South.

MP06_0162 MOD 8

On the 28 June 2016, the Commission approved an eighth modification to the Concept Plan, providing for the following modifications:

- increase in the maximum GFA from 563,965 m² to 594,354 m², and increase in maximum GFA contained in the development blocks from 549,465 to 579,354 m²;
- increase in height from RL 170 m to RL 275 m and GFA from 33,000 m² to 77,500 m² for Block Y; increase in height from RL 41.5 m to RL 250 m and GFA from 8,150 m² to 86,979 m² for Block 4A;
- decrease in height from RL 175 m to RL 107 m and GFA from 29,900 m² to 19,158 m² for Block 4B; decrease in height from RL 80 m to RL 25 m and GFA from 9,400 m² to 1,927 m² for Block 1; and deletion of Block 4C;
- decrease in GFA from 209,213 m² to 197,280 m² for Block 2, and decrease in GFA from 142,669 m² to 129,934 m² for Block 3;
- amend development block configurations for Block Y and Blocks 4A and 4B;
- increase GFA outside of blocks from 14,500 m² to 15,000 m²;
- amend GFA allocated for various land uses (residential, tourist, retail, active);
- amendment of Barangaroo site boundary, relocation of pier and reduction in the Southern Cove (now Watermans Cove); and
- amendment of Built Form Principles and Urban Design Controls.

Court case

- On 29 July 2016, the Environmental Defenders Office, acting on behalf of Millers Point Fund Incorporated, lodged an appeal in the Land and Environment Court against the Commission's decision to approve MOD 8 and Crown Sydney Hotel Resort.
- On 23 December 2016, the Court dismissed the appeal, finding the Commission had not failed to exercise its powers, duties and functions, did not take into account irrelevant considerations and no error of law had been made.

APPENDIX D CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENT(S) AND DCP(S)

Relevant EPIs and DCPs:

- State Environmental Planning Policy (State and Regional Development) 2011;
- State Environmental Planning Policy (State Significant Precincts) 2005;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004;
- State Environmental Planning Policy No.55 – Remediation of Land;
- State Environmental Planning Policy No.64 – Advertising and Signage;
- State Environmental Planning Policy No.65 – Design Quality of Residential Apartment Development;
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005; and
- Sydney Harbour Foreshores and Waterway Area Development Control Plan 2005.

Note: Clauses within the above EPIs and DCPs that are not relevant to the application or have been considered in Section 5 of this report have been omitted from the below assessment.

<p>State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)</p> <p>The proposed buildings are State significant developments under clause 3 of Schedule 2 of the SRD SEPP, as they are developments at Barangaroo with a CIV in excess of \$10 million.</p>
<p>State Environmental Planning Policy (State Significant Precincts) 2005 (SSP SEPP)</p> <p>The Barangaroo site is listed as a State Significant Precinct under Part 12 of Schedule 3 of the SSP SEPP. The SSP SEPP zones each of the application sites 'B4 Mixed Use'. The proposed developments, comprising ground level retail with residential above, are permissible with consent in the B4 zone.</p> <p>The proposed developments also comply with maximum building height (RL 250), maximum GFA across Block 4A (86,979 m²) and design excellence requirement provisions contained in the SSP SEPP. Further details regarding compliance with these provisions is contained in Section 5 of this report.</p>
<p>State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)</p> <p>The ISEPP aims to facilitate the effective delivery of infrastructure across the State by improving regulatory certainty and efficiency, identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and providing for consultation with relevant public authorities about certain development during the assessment process.</p> <p>The EIS for each application includes transport management and accessibility plans and construction traffic management plans which appropriately address key access and traffic management issues.</p> <p>Barangaroo South is located at the western edge of the CBD, adjacent to existing commercial development, and can rely upon existing and proposed access to bus, rail and ferry public transport services, including the new Metro station and Barangaroo ferry hub. This will provide for the efficient movement of people to and from the site. The approved Concept Plan has considered pedestrian links to the development site and a pedestrian link from Wynyard station, known as Wynyard Walk, was completed in 2016.</p> <p>Parking spaces for the proposed buildings are located within the approved Stage 1B basement located directly beneath the buildings. The basement will also provide parking for Building R5. The number of spaces provided is less than the maximum allowed under parking rates specified in the Concept Plan. This reduces car travel demands compared to the previously assessed Concept Plan. In addition, bicycle parking for each unit is to be provided.</p> <p>Traffic safety and road congestion issues in relation to the vehicular access to the development site were considered with the Concept Plan and with the separate approval for the Stage 1B basement excavation and car park (SSD 6960).</p>

Pursuant to Schedule 3, the proposals are traffic generating development as they involve more than 300 residential units. RMS was consulted during the public exhibition but no comments were received.

The proposal was also referred to Transport for NSW (TfNSW) for comment in accordance with the ISEPP and their comments are summarised in **Section 4** of this report. The Department considers the proposal to be consistent with the ISEPP given the consultation and consideration of the issues raised by TfNSW has been undertaken in the Department's assessment in **Section 5** of this report.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

A BASIX Certificate for each building has been submitted demonstrating that the proposed developments satisfy all relevant building sustainability requirements.

State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55)

Clause 7 of SEPP 55 prevents a consent authority from issuing development consent unless it has considered:

- whether the subject site is contaminated;
- whether a contaminated site is suitable for its proposed use in its current state, or will be suitable following remediation; and
- whether it is satisfied that the site will be remediated before the land is used for the purpose proposed under the application.

As detailed in **Section 1.2.3** of this report, the majority of the Stage 1B construction area is currently being remediated as part of the approved Block 4 remediation works (SSD 5897) and the subject applications do not include remediation works.

The remedial strategy set out in the Stage 1B Remedial Action Plan (RAP) contemplated residential uses within Block 4A. The proposed residential uses are consistent with the approved Stage 1B RAP and the Department is satisfied the applications are acceptable with regard to the provisions of SEPP 55.

State Environmental Planning Policy No.64 – Advertising and Signage

State Environmental Planning Policy No 64- Advertising and Signage (SEPP 64) applies to all signage that under an EPI can be displayed with or without development consent and is visible from any public place or public reserve.

Under clause 8 of SEPP 64, consent must not be granted for any signage application unless the proposal is consistent with the objectives of the SEPP and with the assessment criteria which are contained in Schedule 1. The table below demonstrates the consistency of the proposed signage with these assessment criteria (future signs with the proposed signage zones will be subject to separate future planning applications).

SEPP 64 Compliance Table

Assessment Criteria	Comments	Compliance
1 Character of the area		
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The proposed signage zone for each building is appropriately located and integrated into the design and appearance of the building. The inclusion of building and business identification signage is common for tower buildings/ developments.	Yes
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	The proposed signage zone for each building follow a consistent theme throughout Barangaroo.	Yes
2 Special areas		
Does the proposal detract from the amenity or visual quality of any environmentally sensitive	The proposed signage zone for each building is located 3 m above ground level over the residential lobby entry. Future signage would not detract from the amenity or visual quality of the surrounding area.	Yes

areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?		
3 Views and vistas		
Does the proposal obscure or compromise important views?	The proposed signage zones are within the building envelope and are integrated with the proposed buildings. Future signage within these zones would not result in any obstruction of views.	Yes
Does the proposal dominate the skyline and reduce the quality of vistas?	The proposed signage zones are below podium level and future signage will not impact on the skyline or reduce the quality of vistas.	Yes
Does the proposal respect the viewing rights of other advertisers?	The proposed signage zones do not impact upon the viewing rights of other advertisers.	Yes
4 Streetscape, setting or landscape		
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	The scale, proportion and form of the proposed signage zones are minor in relation to the scale of the buildings.	Yes
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	The proposed signage zones would contribute to the visual interest of the buildings by contributing to the identification and recognition of site.	Yes
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	The proposed signs are considered sympathetic to the architectural treatment of the buildings.	Yes
Does the proposal screen unsightliness?	The signage zones form part of the building façade.	Yes
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	The signage zones do not protrude beyond the building envelopes.	Yes
Does the proposal require ongoing vegetation management?	The signs would not require ongoing vegetation management.	Yes
5 Site and building		
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	The signage zones have been designed to be fully compatible with the design and architecture of the proposed buildings.	Yes
Does the proposal respect important features of the site or building, or both?	The signage zones are in the most architecturally appropriate locations to assist in place identification and wayfinding.	Yes
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The proposed signage zones have been fully integrated with the building architecture.	Yes
6 Associated devices and logos with advertisements and advertising structures		
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	Specific signage details will be subject to future assessment.	N/A

7 Illumination		
Would illumination result in unacceptable glare? Would illumination affect safety for pedestrians, vehicles or aircraft?	Details of illumination will be subject to future assessment. Any future illumination however can be ensured to not result in unacceptable glare.	N/A
Would illumination detract from the amenity of any residence or other form of accommodation?	Details of illumination will be subject to future assessment. Any future illumination however can be ensured to not result in adverse impacts on residential uses.	N/A
Can the intensity of the illumination be adjusted, if necessary? Is the illumination subject to a curfew?	Details of illumination will be subject to future assessment. If required, conditions can be imposed on future signage to ensure illumination can be adjusted.	N/A
8 Safety		
Would the proposal reduce safety for pedestrians, particularly children, by obscuring sightlines from public areas?	The location of the signage zones would not obscure sightlines to or from public areas.	Yes
Would the proposal reduce safety for any public road?	The location and size of future signs would not reduce safety for any public road.	Yes

State Environmental Planning Policy No.65 – Design Quality of Residential Apartment Development (SEPP65)

SEPP 65 seeks to improve the design quality of residential developments and encourage innovative design. The Apartment Design Guide (ADG) is closely linked to the principles of SEPP 65 and sets out best practice design principles for residential developments. The Department has assessed the proposals against the aims and objectives of SEPP 65 below:

SEPP 65	Department's Response
Proposed Principle	
1. Context and Neighbourhood Character	The proposed buildings are part of a larger concept plan approval which approved the renewal of greater Barangaroo, an area undergoing significant change. The buildings are consistent with the use and built form requirements of the Concept Plan and with the existing and desired future character of the area. The proposal will have acceptable impacts on the amenity of existing and future adjoining development. The high density of the buildings and their architectural design (clear glass façade) is broadly consistent with the surrounding residential, commercial and mixed-use development, in particular, the approved Crown Sydney Hotel Resort.
2. Built Form and Scale	The proposed buildings are consistent with the building envelope parameters set by the Concept Plan and the height and general scale of the developments are appropriate within their city edge locality. The scale of the developments are compatible with existing developments adjoining the site and the other buildings within the Barangaroo precinct. The development is of a high standard of architectural design and appearance and achieves design excellence as discussed in Section 5.3 . The developments also and seek to activate street frontages through retail and residential uses fronting the future Hickson Park, Barangaroo Avenue and the proposed pedestrian Strada.
3. Density	The buildings are of an appropriate density and scale and are consistent with the GFA controls of the Concept Plan. All units exceed the minimum internal areas nominated by the ADG, providing a high level of residential amenity.
4. Sustainability	The proposed development benefits from Barangaroo South's precinct sustainability initiatives, including the district cooling plant, on-site renewables and generation strategy and precinct recycled water plant. Barangaroo South has a number of sustainability targets including a carbon neutral precinct, positive water impact through the use of potable water, zero net waste to landfill by 2020, 20% reduction in embodied carbon (cradle to gate), on site renewables to offset public realm and

	<p>recycled water treatment plant energy use, Green Star Multi Unit Residential Design and As-Built ratings for all eligible buildings.</p> <p>A BASIX certificate was provided for each proposed building which demonstrate the proposed developments meet the BASIX water, thermal and energy efficiency targets.</p>
5. Landscape	The proposals include landscaped podium roofs and public domain improvements and landscape planting (see Section 5.5). The landscaped design will provide a high level of amenity for residents, employees and visitors and ties into the overall landscaping of the Barangaroo precinct.
6. Amenity	The proposed buildings comply with the principles of SEPP 65 and satisfy the intent of the ADG in terms of achieving a high level of residential amenity for future residents (see Section 5.4 and the ADG assessment table below).
7. Safety	<p>The buildings have been designed to provide passive and active surveillance of the surrounding public domain. Various security measures are proposed including:</p> <ul style="list-style-type: none"> the building and basement will have standalone access control, intruder detection and CCTV services; and building entry points will be provided with Internet Protocol based video intercom call stations which will allow communication to individual apartments. <p>The referred to ability to close the Strada at night however is not supported by the Department (see Section 5.5.2).</p> <p>An Independent Crime Prevention Consultancy report submitted with the applications concludes the drawings reflect architectural understanding and application of 'Crime Prevention Through Environmental Design' (CPTED) in the design of ground levels, podia and shared basement.</p>
8. Housing Diversity and Social Interaction	A range of 1, 2, 3 and 4 bedroom apartments are provided in a range of sizes and types designed to suit the future social mix in the area. The buildings do not include affordable housing. However, key worker housing is proposed within Building R5 consistent with the Concept Plan.
9. Aesthetics	<p>The proposed buildings are of a slender design with a glass façade which focuses on views towards the harbour and iconic buildings near the harbour. The buildings are of a consistent and complimentary design.</p> <p>Overall, the proposed buildings demonstrate a high standard of architectural design that achieve design excellence. The proposals also include an effective palette of materials and finishes that appropriately articulate the building form. The architectural detail responds appropriately to the site's opportunities and constraints and relates suitably to the adjacent areas of public domain.</p>

An assessment of the proposal against the ADG best practice design principles is provided below:

ADG – Relevant Criteria	Proposal	Consistency?
3B Orientation		
<ul style="list-style-type: none"> Building type/layouts respond to streetscape, optimising solar access. Overshadowing of neighbouring properties is minimised. 	<ul style="list-style-type: none"> The proposed buildings are consistent with the Concept Plan. The shadow analysis indicates that all shadows cast by the proposed buildings are consistent with what was considered under the Concept Plan (refer to Section 5.3.3). 	Yes
3C Public Domain Interface		
<ul style="list-style-type: none"> Transition between public/private without compromising security. Amenity of public domain is retained and enhanced. 	<ul style="list-style-type: none"> The buildings have been designed to provide active frontages at street level and to facilitate pedestrian movements in and around the buildings. A public domain will exist around the perimeter of the buildings and at the interface of the buildings with Hickson Park, enhancing the amenity of the public domain. 	Yes

	<ul style="list-style-type: none"> The public will be able to access the ground level retail spaces and the covered Strada between Buildings R4A and R4B 24-hours-per-day, seven-days-per-week. Residential lobbies will be easily identifiable. Access to the lift lobbies will be access controlled. 		
3D Communal and Public Open Space			
<ul style="list-style-type: none"> Minimum 25% of the site. Minimum 50% direct sunlight to principal usable part of the communal open space for a minimum of 2 hours in mid-winter. Public open space should be well connected with nearby parks and other landscape elements. 	<ul style="list-style-type: none"> 53.4% of the combined site area will be available to residents of both buildings as communal open space in the form of landscaped podium areas, indoor and outdoor swimming pools and internal spaces including a gym 24.3% of the principle useable part of the communal open space will receive two hours of direct sunlight in mid-winter. The proposed Strada and public spaces around the buildings will be well connected with the proposed Stage 1B public domain including the future Hickson Park. A breakdown of the level of midwinter solar access received by the various areas of communal open space is provided in the table below. 	No Refer to Section 5.4.1	
Communal open space midwinter solar access			
Communal Open Space Solar Access – June 21st 9 am to 3 pm			
	% of area receiving more than one hour solar access	% of area receiving more than two hours solar access	Consistent
R4A indoor pool	60%	45.8%	1h=Yes 2h=No
R4A outdoor landscaped area	11.5%	0%	No
R4B indoor gymnasium	51%	36.6%	1h=Yes 2h=No
R4B indoor resident's lounge	8.2%	0.4%	No
R4B outdoor landscaped area and pool	37.5%	1.8%	No
Total indoor	R4A: 60% (246 m ²) R4B: 59.2% (506.2 m ²)	R4A: 45.8% (188 m ²) R4B: 37% (316.4 m ²)	R4A: 1h=Yes 2h=No R4B: 1h=Yes 2h=No
Total outdoor	R4A: 11.5% (33.4 m ²) R4B: 37.5% (209.6 m ²)	R4A: 0% R4B: 1.8% (10 m ²)	R4A: 1h=No 2h=No R4B: 1h=No 2h=No
Total indoor + outdoor	R4A: 40% (279.4 m ²) R4B: 50.6% (715.8 m ²) Total: 47% (995.2 m ²)	R4A: 26.9% (188 m ²) R4B: 23.1% (326.4 m ²) Total: 24.3% (514.4 m ²)	R4A: 1h=No 2h=No R4B: 1h=Yes 2h: No
3E Deep Soil Zones			
<ul style="list-style-type: none"> For sites greater than 1,500 m², a minimum of 7% of the site with a minimum dimension of 6 m should provide for deep soil zone(s). 	<ul style="list-style-type: none"> No deep soil area is provided as both buildings are located entirely above the approved Stage 1B basement car park consistent with the Concept Plan. The ADG recognises achieving this design criteria may not be possible in the CBD, in high density areas, where there is 100% site coverage or where non-residential uses are at the ground floor. 	No Refer to Section 5.4.3	
3F Visual Privacy			
<ul style="list-style-type: none"> Minimum separation distance from building to side and rear boundaries: 	<ul style="list-style-type: none"> Minimum 27 m separation between Building R4A and Crown Resort. Minimum 13 m separation between Building R4A and Building R4B. 	No Refer to Section 5.4.4	

Height	Habitable rooms and balconies	Non-habitable rooms	<ul style="list-style-type: none"> • Minimum 18 m separation between Building R4B and Building R5. • Condition B5 of the Concept Plan requires compliance with the Barangaroo South Design Controls (Design Controls). As detailed in Section 5.3.1, the proposed building separation distances comply with the requirements contained in the Design Controls. 	
Up to 12m (4 storeys)	6m	3m		
Up to 25m (5-8 storeys)	9m	4.5m		
Over 25m (9+ storeys)	12m	6m		
<ul style="list-style-type: none"> • Separation distances between buildings on the same site should combine required. A minimum 18 m separation is therefore required between the proposed towers up to eight storeys and a minimum 24 m separation is required above nine storeys. 				
3G Pedestrian Access to Entries				
<ul style="list-style-type: none"> • Building entries and pedestrian access connects to and addresses the public domain. • Access, entries and pathways are accessible and easy to identify. • Large sites provide pedestrian links for access to streets and connection to destinations. 			<ul style="list-style-type: none"> • Entries and pedestrian access connect to and address the public domain. • Entries are well located, designed and easily identifiable. • The proposals include a pedestrian Strada between the podium of each building connecting the future Hickson Park with the intersection of Barangaroo Avenue and Watermans Quay. 	Yes
3H Vehicle Access				
<ul style="list-style-type: none"> • Vehicle access points are to be designed to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes. 			<ul style="list-style-type: none"> • A single vehicle access from Watermans Quay to the Stage 1B car park was approved under SSD 6960. The use of a common basement for the proposed buildings (and Building R5) enables a single vehicular access which minimises the potential for pedestrian/vehicular conflicts. • Appropriate sight lines are achieved. • The car park entry is well designed and integrated into the design of the Building R4B podium. • Paving is provided to enable accessible paths from the basement exit to the adjoining roads. 	Yes
3J Bicycle and Car Parking				
<ul style="list-style-type: none"> • Minimum parking requirement as set out in the Guide to Traffic Generating Developments or local Council requirement, whichever is the less. • Parking is available for other modes of transport. • Car parking design access is safe and secure. • Visual and environmental impacts of underground, at grade or above ground car parking are minimised. 			<ul style="list-style-type: none"> • 679 car parking spaces provided, comprising: <ul style="list-style-type: none"> ○ 676 residential spaces; and ○ 3 non-residential spaces. • This figure complies with the approved Concept Plan (as modified) maximum parking rate but exceeds the SLEP 2012 maximum parking rate. • No above ground car parking provided. • Bicycle parking spaces, comprising: <ul style="list-style-type: none"> ○ 624 secure residential spaces; and ○ 100 visitor spaces in the public domain (as part of the Stage 1B public domain application). 	No Refer to Section 5.6.2

4A Solar and Daylight Access		
<ul style="list-style-type: none"> • Minimum of 70% of apartments' living rooms and private open spaces receive 2hrs direct sunlight between 9am-3pm in mid-winter in the Sydney Metropolitan Area. • Maximum of 15% of apartments have no direct sunlight between 9am-3pm in mid-winter. 	<ul style="list-style-type: none"> • Building R4A: 65% of apartment living areas and private open spaces achieve 2 hours of direct sunlight between 9am and 3pm in mid-winter. • Building R4A: 64% of unit living areas and private open spaces achieve two hours direct sunlight between 9am and 3pm in mid-winter. • If the timeframe is extended from 3 pm until 4.45pm, 96% of units in Building R4A and 80% of units in Building R4B would receive two hours solar access, as many units would benefit from solar access even when the sun is at a lower angle. • All units within Building R4A will receive solar access between 9am and 3pm. • 9% of units within Building R4B will receive no solar access between 9am and 3pm. 	<p>No Refer to Sections 5.4.2 and 5.4.9</p>
4B Natural Ventilation		
<ul style="list-style-type: none"> • At least 60% of apartments are cross ventilated in the first nine storeys (apartments 10 storeys or greater are deemed to be cross ventilated only if any enclosure at these levels allows adequate natural ventilation and cannot be fully enclosed). 	<ul style="list-style-type: none"> • Of the 54 units over the first nine storeys of each building, 27 (50%) will be naturally cross ventilated with a further unit provided with ventilation ducting to achieve cross-ventilation. • For levels above the first nine storeys, the wintergarden glazing system has a minimum fixed opening of 150 mm so the wintergardens can never be fully enclosed and ensures that cross ventilation is maximised by capturing breezes from Sydney Harbour and Hickson Park below. 	<p>No Refer to Section 5.4.5</p>
4C Ceiling Heights		
<p>Measured from finished floor level to finished ceiling level, minimum ceiling heights are:</p> <ul style="list-style-type: none"> - Habitable rooms 2.7 m - Non-habitable rooms 2.4 m 	<ul style="list-style-type: none"> • Ceiling heights meet or exceed the recommended minimums. 	<p>Yes</p>
4D Apartment Size and Layout		
<ul style="list-style-type: none"> • Minimum apartment sizes <ul style="list-style-type: none"> - Studio 35 m² - 1 bedroom 50 m² - 2 bedroom 70 m² - 3 bedroom 90 m² • Every habitable room must have a window in an external wall with a total glass area of not less than 10% of the floor area. Daylight and air may not be borrowed from other rooms. • Habitable room depths are limited to 2.5 x the ceiling height. • In open plan layouts the maximum habitable room depth is 8 m from a window. • Master bedroom have a minimum area of 10 m² and other bedrooms have 9 m². • Bedrooms have a minimum dimension of 3 m (excluding wardrobes). • Living rooms have a minimum width of: <ul style="list-style-type: none"> - 3.6 m for studio and one bed - 4 m for 2 and 3 bed 	<ul style="list-style-type: none"> • All units exceed the minimum design criteria. • All bedrooms exceed the maximum areas required. • Study rooms have been provided to 433 units (69%). None of the study rooms are provided with a window although 280 (45%) will have direct site lines to windows through the open plan living areas. • 180 units (29%) have open plan living areas which extend to a depth of 8.6 m measured from the window to the back wall of the living area. This is an additional 600 mm compared to the ADG maximum depth of 8 m (a 7.5% non-compliance). • 124 one bedroom units (62 per building and 20% of overall units) have living rooms measuring 3.4 m in width, a 200 mm (5.5%) non-compliance with the ADG. 	<p>No Refer to Section 5.4.6</p>

<ul style="list-style-type: none"> The width of cross-over or cross-through apartments are at least 4 m internally. 		
<p>4E Private Open Space and Balconies</p>		
<ul style="list-style-type: none"> Primary balconies are provided to all apartments providing for: <ul style="list-style-type: none"> Studios apartments minimum area 4 m² 1 bedroom min area 8 m², minimum depth 2 m 2 bedroom min area 10 m², minimum depth 2 m 3 bedroom min area 12 m², minimum depth 2.5 m For apartments at ground floor level or similar, private open space must have a minimum area of 15 m² and depth of 3 m². Private open space and primary balconies are integrated into and contribute to the architectural form and detail of the building. Primary open space and balconies maximises safety. 	<ul style="list-style-type: none"> All wintergarden sizes meet or exceed the area and depth guidelines except for 104 three bedroom units which have an area of 11 m², a 1 m² (8.3%) non-compliance. There are no ground floor level apartments. All wintergardens are integrated into the architectural form/detail of the buildings. 	<p>No Refer to Section 5.4.7</p>
<p>4F Common Circulation and Spaces</p>		
<ul style="list-style-type: none"> Maximum number of apartments off a circulation core is eight – where this cannot be achieved, no more than 12 apartments should be provided off a single circulation core. For buildings 10 storeys and over, the maximum number of apartments sharing a single lift is 40. Natural ventilation is provided to all common circulation spaces where possible. Common circulation spaces provide for interaction between residents. Longer corridors are articulated. 	<ul style="list-style-type: none"> Between 5 and 6 units are proposed on each level (excluding penthouse level) to each circulation core. Six lifts within Building R4A will serve 327 units (1 lift per 55 units). Six lifts within Building R4B will serve 297 units (1 lift per 50 units). While the ADG nominates the tipping point from one to two passenger lifts, it does not nominate the minimum lift requirements for lifts in groups of two or more. The Applicant has submitted a Lift System and Performance Analysis which demonstrates the efficiencies achieved when multiple lifts act as a group. The analysis notes the ADG has been created for medium rise buildings of 10 to 20 storeys and the proposed buildings are therefore significantly taller than buildings the ADG design criteria is based upon. Based on more applicable international guides for vertical transportation design, the analysis concludes that the six lifts within each building will result in a high quality of service providing equal or better performance than international benchmarks for luxury apartment buildings. The corridors on each level face south to allow the maximum number of units to be north facing. The buildings benefit from the glass facades which will maximise sunlight to the corridors and allow for provision of natural ventilation. 	<p>No. However, the Department considers the Applicant has provided sufficient information to demonstrate six lifts will adequately service each building.</p>

	<ul style="list-style-type: none"> The residential lobbies and circulation spaces provide opportunities for interaction. The corridors are a suitable length and do not require articulation. 																													
4G Storage																														
<ul style="list-style-type: none"> The following storage is required (with at least 50% located within the apartment): <ul style="list-style-type: none"> Studio apartments 4 m³ 1 bedroom apartments 6 m³ 2 bedroom apartments 8 m³ 3 bedroom apartments 10 m³ 	<ul style="list-style-type: none"> 242 units (127 in Building R4A and 115 in Building R4B) will not achieve the minimum 50% internal storage volume. The internal shortfall ranges from 0.4 m³ to 1.3 m³. Where this occurs, the remainder is provided in basement storage cages. The total internal storage plus basement storage satisfies the total area requirements of the ADG. The basement storage cages include bicycle storage. The ADG requires the provision of secure undercover bicycle storage but does not specify the required dimensions for storage. The Australian Standards recommends 1.08m³ for bicycle storage. The Applicant has increased the minimum basement storage area for each unit to include the additional storage volume for a bicycle. 	No Refer to Section 5.4.8																												
4H Acoustic Privacy and 4J Noise and Pollution																														
<ul style="list-style-type: none"> Noise transfer is minimised through the siting of buildings and building layout and minimises external noise and pollution. Noise impacts are mitigated through internal apartment layout and acoustic treatments. 	<ul style="list-style-type: none"> Noise transfer is minimised through the appropriate layout of the buildings. Units are appropriately stacked and laid out to prevent noise transfer. 	Yes																												
4K Apartment Mix																														
<ul style="list-style-type: none"> Provision of a range of apartment types and sizes Apartment mix is distributed to suitable locations within the building. 	<ul style="list-style-type: none"> A variety of unit sizes and types are accommodated and appropriately located within the buildings as follows: <table border="1"> <thead> <tr> <th></th> <th>Building R4A</th> <th>Building R4B</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1 bed</td> <td>112</td> <td>115</td> <td>227</td> </tr> <tr> <td>2 bed</td> <td>119</td> <td>128</td> <td>247</td> </tr> <tr> <td>3 bed</td> <td>65</td> <td>53</td> <td>118</td> </tr> <tr> <td>4 bed</td> <td>30</td> <td>Nil</td> <td>30</td> </tr> <tr> <td>Penthouse</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>Total</td> <td>327</td> <td>297</td> <td>624</td> </tr> </tbody> </table>		Building R4A	Building R4B	Total	1 bed	112	115	227	2 bed	119	128	247	3 bed	65	53	118	4 bed	30	Nil	30	Penthouse	1	1	2	Total	327	297	624	Yes
	Building R4A	Building R4B	Total																											
1 bed	112	115	227																											
2 bed	119	128	247																											
3 bed	65	53	118																											
4 bed	30	Nil	30																											
Penthouse	1	1	2																											
Total	327	297	624																											
4L Ground Floor Apartments																														
<ul style="list-style-type: none"> Street frontage activity is maximised where ground floor apartments are located. Design of ground floor apartments delivers amenity and safety for residents. 	<ul style="list-style-type: none"> No ground floor units are proposed. 	N/A																												
4M Facades																														
<ul style="list-style-type: none"> Building facades provide visual interest along the street while respecting the character of the local area. Building functions are expressed by the façade. 	<ul style="list-style-type: none"> The proposal achieves a high standard of architectural design and will positively contribute to the Barangaroo precinct and City skyline. The outer design for each building comprises a highly glazed façade with an opaque façade used appropriately to 	Yes																												

	<p>address non-compliances with building separation distances (see image below).</p> <ul style="list-style-type: none"> The proposed façades also include notched windows (i.e. a 'pop out' window) at the corner of the tower forms which articulate the edges of the towers. 	
		
<p>(Source: RTS)</p>		
<p>4N Roof Design</p>		
<ul style="list-style-type: none"> Roof treatments are integrated into the building design and positively respond to the street. Opportunities to use roof space for accommodation and open. space is maximised Roof design includes sustainability features. 	<ul style="list-style-type: none"> The roof design of each building is architecturally expressed and visually interesting. The roof form of each building comprises a glazed 'fringe', which is an extension of the main curtain walls. The proposed roof features conceal roof plant and visually unifies the buildings. Residents have access to the landscaped podium roof area within both buildings. The drainage design proposes to capture and convey rainwater from roof and podium areas through conventional gutters, roof top drainage outlets and associated downpipes no physical impact on existing infrastructure as a result of the development 	<p>Yes</p>
<p>4O Landscape Design and 4P Planting on Structures</p>		
<ul style="list-style-type: none"> Landscape design is viable and sustainable. Landscape design contributes to streetscape and amenity. Appropriate soil profiles are provided and plant growth is maximised (selection/maintenance). Plant growth is optimised with appropriate selection and maintenance. Building design includes opportunity for planting on structure. 	<ul style="list-style-type: none"> Interim and permanent landscaping works, including pedestrian paving around the building, the Strada and podium level gardens are proposed. Landscaping includes a mixture of native and non-native shrubs. A permanent ground level landscape proposal will be subject to design development, having regard to the design of the adjacent Stage 1B public domain area (SSD 7944). Landscaping of the podium levels include exotic and native flowering plants and adequate soil for substantial shrub planting. 	<p>Yes</p>
<p>4Q Universal Design</p>		
<ul style="list-style-type: none"> Developments should achieve a benchmark of 20% of the apartments incorporating the Liveable Housing Guideline's silver level universal design features: 		<p>Yes</p>

Universal Design Guidelines (20% of apartments)		Proposal
Safe and continuous levelled path to entrances		Compliant
Accessible entry door with a minimum 820mm clear opening width and a step-free threshold		Compliant
Level landing area of 1200mm x 1200mm at the entrance door		Compliant
Internal doors with a minimum 820mm clear opening width and a step-free transition between surfaces		Compliant
Internal corridors with a minimum of 1000mm clear width.		Compliant
Step free shower recess		Compliant
Bathroom wall is reinforced for grab rails around the toilet, shower and basin		Compliant
A toilet is provided on the ground or entry level in multi-level apartments that provides: <ul style="list-style-type: none"> • minimum clear width of 900mm between walls • minimum clear circulation space forward of the toilet pan of 1200mm (excluding the door swing) 		Compliant
<ul style="list-style-type: none"> • A variety of apartments with adaptable designs are provided. • Apartments layouts are flexible and accommodate a range of lifestyle needs. 	<ul style="list-style-type: none"> • All apartments are of a size and layout that allows for flexible use and design and therefore can accommodate a range of lifestyle needs. 	
4S Mixed Use		
<ul style="list-style-type: none"> • Mixed use development are provided in appropriate locations and provide street activation and encourage pedestrian movement. • Residential levels are integrated within the development, safety and amenity is maximised. 	<ul style="list-style-type: none"> • The development appropriately addresses Barangaroo Avenue, Watermans Quay, the proposed Strada and the future Hickson Park with pedestrian thoroughfares and active frontages provided. • Residential circulation areas are clearly defined and access to communal open space is provided. 	Yes
4T Awning and Signage		
<ul style="list-style-type: none"> • Awnings are well located and complement and integrate with the building. • Signage responds to the context and design streetscape character. 	<ul style="list-style-type: none"> • Awnings are incorporated into the design of the buildings and appropriately located around the perimeter of the buildings together with a covered Strada. • Signage zones comply with SEPP 64. • Applications for future signage within the signage zones will be submitted. 	Yes
4U Energy Efficiency		
<ul style="list-style-type: none"> • Development incorporates passive environmental and solar design. • Adequate natural ventilation minimises the need for mechanical ventilation. 	<ul style="list-style-type: none"> • The proposed developments benefit from Barangaroo South's precinct sustainability initiatives, including the district cooling plant, on-site renewables and generation strategy and precinct recycled water plant. • Barangaroo South has a number of sustainability targets including a carbon neutral precinct, positive water impact through the use of potable water, zero net waste to landfill by 2020, 20% reduction in embodied carbon (cradle to gate), on site renewables to offset public realm and recycled water treatment plant energy use, Green Star Multi Unit Residential Design and As-Built ratings for all eligible buildings. • A BASIX certificate was provided, showing compliance with the Thermal Comfort target and exceeding the targets for Water and Energy. 	Yes

4V Water Management and Conservation					
<ul style="list-style-type: none"> • Potable water use is minimised • Urban stormwater is treated on site before being discharged to receiving waters. • Flood management systems are integrated into the site design. 	<ul style="list-style-type: none"> • The following water initiatives apply to the site: <ul style="list-style-type: none"> ○ potable water will be supplied via a new main within Stage 1B; ○ non-potable water will be supplied to Stage 1B via the Barangaroo South Recycled Water Treatment plant; ○ it is proposed to capture and convey rainwater from roof and podium areas through conventional gutters, roof top drainage outlets and associated downpipes; ○ Barangaroo South has a number of water-related sustainability targets including a water positive outcome, onsite wastewater treatment and water recycling, capacity to export recycled water and sewer mining to reduce demand. 	Yes			
4W Waste Management					
<ul style="list-style-type: none"> • Waste storage facilities are designed to minimise impacts on streetscape, building entry and residential amenity. • Domestic waste is minimised by providing safe and convenient source separation and recycling. 	<ul style="list-style-type: none"> • Residential and retail waste storage rooms are located at basement level one in convenient locations. • Separate waste and recycling containers will be provided. 	Yes			
4X Building Maintenance					
<ul style="list-style-type: none"> • Building design detail provides protection from weathering. • Systems and access enable ease of maintenance. • Material selection reduced ongoing maintenance cost. 	<ul style="list-style-type: none"> • The buildings have been appropriately designed to allow ease of maintenance. • The materials are robust. 	Yes			
Overall Unit Amenity					
<p>The intent of the ADG is to help achieve better design and planning for residential apartment buildings including improving liveability through enhanced internal and external residential amenity. As such, the Department considers it appropriate to assess how each unit type responds to a combination of the key criteria to ensure all proposed unit types achieve an overall acceptable level of amenity (see Section 5.4.9).</p> <p>An analysis has been undertaken for each proposed unit type (excluding penthouses) within each building based on 14 ADG design criteria specific to individual units (see Tables 1 and 2 below). For each unit type, the unit located at the lowest level of each building was reviewed to provide a conservative assessment. demonstrate the outcome of the analysis for each building.</p>					
Table 1: Building R4A: ADG unit type amenity analysis					
Unit Type	No. of units	Design Criteria Achieved*		Average %	
Four bedroom	UA-01	15	100%	14/14	100%
	UA-02	15	100%	14/14	
Three bedroom	LA-01	31	93%	13/14	92%
	MA-01	19	93%	13/14	
	UA-03	15	88%	12.5/14	
Two bedroom	LA-04	31	93%	13/14	92%
	LA-06	31	86%	12/14	
	MA-02	19	100%	14/14	
	MA-03	19	93%	13/14	
	MA-05	19	86%	12/14	
One bedroom	LA-02	31	75%	10.5/14	78%
	LA-03	31	75%	10.5/14	
	LA-05	31	82%	11.5/14	
	MA-04	19	82%	11.5/14	

Table 2: Building R4B: ADG unit type amenity analysis

Unit Type		No. of units	Design Criteria Achieved*		Average %
Three bedroom	LB-01	31	93%	13/14	93%
	MB-01	22	93%	13/14	
Two bedroom	LB-04	31	93%	13/14	89%
	LB-06	31	79%	11/14	
	MB-02	22	100%	14/14	
	MB-03	22	93%	13/14	
	MB-05	22	79%	11/14	
One bedroom	LB-02	31	75%	10.5/14	78%
	LB-03	31	75%	10.5/14	
	LB-05	31	82%	11.5/14	
	MB-04	22	82%	11.5/14	

* ADG design criteria reviewed: apartment size, private open space size, private open space depth, master bedroom size, secondary bedroom size, minimum bedroom dimensions, minimum habitable room depth, minimum living room width, storage, solar access (two hours in midwinter), solar access (any in midwinter), natural cross ventilation, floor to ceiling heights and windows to habitable rooms.

Note: Value of 0.5 allocated to units where internal storage volume is not met but overall volume achieved.

Planning Circular 'Using the Apartment Design Guide'

On 29 June 2017, the Planning Circular 'Using the Apartment Design Guide' was issued by the Department. The Circular emphasised the ADG is not intended to be applied as a set of strict development standards and where it is not possible to satisfy the design criteria, the consent authority is to consider how, through good design, the objective can be achieved.

The Circular supports the Department's approach to assessing the residential amenity of the proposed buildings in that all proposed 624 units cannot reasonably achieve every amenity design criteria in the ADG and that this is not the intention of the ADG. As demonstrated in the analysis above and in **Section 5.4**, the Department considers all unit types within each building will achieve an acceptable level of amenity with most units receiving a high level of amenity. As such, the Department concludes the proposed buildings satisfy the intent of the ADG and are acceptable in relation to residential amenity.

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP 2005)

SREP 2005 applies to all land within the Sydney Harbour Catchment, as shown on the Sydney Harbour Catchment Map. Barangaroo is within the defined Foreshores and Waterways Area. Consideration of the relevant clauses in the SREP are addressed in the table below.

Consideration of SREP 2005

SREP	Criteria	Department Comment / Assessment	Complies
Part 3, clause 20 Matters for Consideration	<ul style="list-style-type: none"> The matters referred to in Division 3 must be considered by the consent authority. 	<ul style="list-style-type: none"> The Department has considered the relevant matters below. 	Yes
Part 3, clause 21 Biodiversity, ecology & environmental protection	<ul style="list-style-type: none"> The consent authority must take into consideration biodiversity, ecology and environmental protection matters that are outlined in this clause. 	<ul style="list-style-type: none"> The proposed developments involve no excavation or decontamination works as these have been previously approved under SSD 7944 for the Stage 1B basement. Stormwater quality and quantity control measures have been incorporated into the design to ensure there are no adverse environmental impacts. 	Yes
Part 3, clause 22 Public access to, and use of, foreshores and waterways	<ul style="list-style-type: none"> The consent authority must take into consideration measures to maintain public access to foreshores and waterways. 	<ul style="list-style-type: none"> The developments are consistent with the Concept Plan which provides for improved public access within Barangaroo and along the foreshore. 	Yes

Part 3, clause 23 Maintenance of a working harbour	<ul style="list-style-type: none"> The consent authority must take into consideration measures to maintain maintenance of a working harbour. 	<ul style="list-style-type: none"> The developments will not impact on the ability to maintain a working harbour. 	Yes
Part 3, clause 24 Interrelationship of waterway and foreshore uses	<ul style="list-style-type: none"> The consent authority must take into consideration the interrelationship of waterway and foreshore uses. 	<ul style="list-style-type: none"> The developments are located away from the foreshore, do not propose any works in the waterway, and public access along the foreshore will be maintained. 	Yes
Part 3, clause 25 Foreshore and waterways scenic quality	<ul style="list-style-type: none"> The consent authority must take into consideration measures to maintain or enhance the scenic quality of foreshores and waterways. 	<ul style="list-style-type: none"> The proposed buildings are considered to achieve design excellence as discussed in Section 5.3.1. The scenic quality of foreshores and waterways will therefore be maintained. 	Yes
Part 3, clause 26 Maintenance, protection and enhancement of views	<ul style="list-style-type: none"> The consent authority must take into consideration measures to maintain or enhance views. 	<ul style="list-style-type: none"> The location, height and bulk of the proposed buildings are consistent with the Concept Plan. View impacts of the proposals have been discussed at Section 5.3.2 and are considered acceptable. 	Yes
Part 3, clause 27 Boat storage facilities	<ul style="list-style-type: none"> The consent authority must take into consideration the matters outlined in this clause in relation to boat storage facilities. 	<ul style="list-style-type: none"> No boat storage facilities are proposed as part of the development. 	N/A
Part 3, clause 29 Foreshores & Waterways Development Advisory Committee (FWDAC)	<ul style="list-style-type: none"> A consent authority must not grant consent to a DA unless it has considered any submission received from the FWDAC within 30 days of the referral. 	<ul style="list-style-type: none"> The proposals are of a type referred to in Schedule 2 of the SREP and were referred to the FWDAC. No objection or comments on the proposals were received. 	Yes
Part 3, clause 41 Strategic Foreshore Site	<ul style="list-style-type: none"> Development consent must not be granted for development on a strategic foreshore site unless there is a master plan for the site, and the consent authority has taken the master plan into consideration. 	<ul style="list-style-type: none"> The Department considers that the proposals are generally consistent with the relevant land use and general master planning provisions contained within the Concept Plan, as discussed at Section 5.3.1. 	Yes

Sydney Harbour Foreshores and Waterway Area DCP 2005 (DCP)

The Sydney Harbour Foreshore and Waterways Area Development Control Plan (the DCP) complements SREP 2005 and provides more detailed design parameters for development within the foreshore area of Sydney Harbour.

The site of the buildings is within the defined Foreshores and Waterways Area and is therefore subject to the controls in the DCP. The DCP includes aims and performance criteria in relation to ecological assessment, landscape assessment and design guidelines for development within the area.

The location of the buildings is not affected by any ecological or specific landscape character area and due to the existing Concept Approval, the design guidelines provisions are not relevant to this application. Additionally, as the developments are contained within the Barangaroo site and would be separated from the water's edge by the public foreshore boardwalk, it would not result in any significant impacts to the harbour foreshore.

The Department considers Buildings R4A and R4B to be generally consistent with the DCP regarding landscaping, access to waterways, built form and visual impacts.

APPENDIX E CONSISTENCY WITH THE CONCEPT APPROVAL

An assessment of the proposal against the relevant Concept Plan requirements, Modifications and Future Assessment Requirements of the Concept Approval is provided below.

CONCEPT APPROVAL	DEPARTMENT COMMENT
Term of Approval	
<p>A4 Determination of Future Applications Determination of future applications is to be generally consistent with the terms of Concept Plan MP06_0162</p>	The proposals are generally consistent with the terms of Concept Plan MP06_0162 (as modified by MOD 8).
Modifications to Concept Plan	
B4 Built Form	
<p>1. A mixed use development involving a maximum of 605,911 m² gross floor area (GFA), comprised of:</p> <ol style="list-style-type: none"> a maximum of 183,031 m² of residential GFA of which a maximum of 154,000 m² will be in Barangaroo South; a maximum of 76,000 m² of GFA for tourist uses of which a maximum of 59,000 m² will be in Barangaroo South; a maximum of 34,000 m² of GFA for retail uses of which a maximum of 30,000 m² will be in Barangaroo South; a maximum of 5,000 m² of GFA for active uses in the Public Recreation zone of which 3,500 m² will be in Barangaroo South; and a minimum of 12,000 m² GFA for community uses. <p>2. GFA requirements for Block 4A and 4B:</p> <ul style="list-style-type: none"> Block 4A shall not exceed a maximum of: <ol style="list-style-type: none"> Total GFA: 86,979 m² Residential GFA: 86,166 m² Height (Max AHD): RL 250 Height above existing ground level (m): 248 Block 4B shall not exceed a maximum of: <ol style="list-style-type: none"> Total GFA: 19,158 m² Residential GFA: 18,287 m² Height (Max AHD): RL 107 Height above existing ground level (m): 173 Total GFA of R4A and R4B shall not exceed 106,137 m² Total residential GFA of R4A and R4B shall not exceed 104,453 m² <p>3. Future development applications within Blocks 4A and 4B may accommodate a redistribution of GFA (but not in excess of the total GFA for those blocks) resulting from the Urban Design Controls identified in B9.</p> <p>4. Wintergardens may be excluded from the maximum residential and tourist GFA stipulated for Blocks 4A, 4B and Block Y subject to compliance with the revised Built Form Principles and Urban Design Controls.</p>	<p>1. The proposal complies with the maximum GFA requirements comprised of:</p> <ol style="list-style-type: none"> Total residential GFA of 86,166 m², made up of 47,564 m² (R4A) and 38,602 m² (R4B) N/A Total retail GFA: 726 m², made up of 432 m² (R4A) and 294 m² (R4B) N/A N/A <p>2. The proposal complies with the maximum GFA requirements comprised of:</p> <ul style="list-style-type: none"> Block R4A: <ol style="list-style-type: none"> Total GFA: 47,996 m² Residential GFA: 47,564 m² Height (AHD): RL 250 Height (m): 246.5 m Block R4B: <ol style="list-style-type: none"> Total GFA: 38,896 m² Residential GFA: 38,602 m² Height (AHD): RL 210 Height (m): 206.5 m Total GFA of R4A and R4B: 86,892m² Total residential GFA of R4A and R4B: 86,166 m² <p>3. No redistribution sought.</p> <p>4. Complies.</p>
<p>B5 Revised Design Principles Future applications in Barangaroo South are to demonstrate consistency with the Built Form Principles and Urban Design Controls.</p>	The proposals are consistent with the Built Form Principles and Urban Design Controls (Design Controls) as amended by MOD 8.

<p>B9 Envelope Amendments and Built Form Controls</p> <p>Barangaroo South</p> <ol style="list-style-type: none"> 1. The Built Form Principles and Urban Design Controls shall be modified in accordance with the requirements of the modifications B9(2) to B9(6). 2. The draft Barangaroo South Design Guidelines shall be reformatted and consolidated into the revised set of Built Form Principles and Urban Design Controls. <p>Envelope Amendments</p> <ol style="list-style-type: none"> 3. The urban design controls are to be amended as follows: <ol style="list-style-type: none"> b) Block 4A is to be modified to include generous through-site links to promote visual and physical permeability through the podium of the Residential R4A and R4B Buildings connecting Hickson Park to Watermans Cove. <p>Wintergardens</p> <ol style="list-style-type: none"> 4. The final consolidated Urban Design Controls are to include the following objectives and standards for wintergardens for Block 4A, 4B and Y: <ol style="list-style-type: none"> a) Allow balconies on towers including residential GFA to be partially enclosed without the need to include balcony floor area as GFA. b) For residential buildings with a height of 30 m or more; the maximum private external balcony area must not exceed 15% of the GFA of the apartment to which the balcony is connected; and the bulk of the building is no greater than if the balconies were not partially enclosed. c) Enable the partial enclosure of balconies to provide private open space that is useable and has a high level of amenity. d) The glass wind screen must be designed so the balcony remains external open space; and the wind screen design ensures permanent natural ventilation and cannot be fully enclosed or sealed from the weather. <p>Signage</p> <ol style="list-style-type: none"> 5. Each development application for the erection of a new building is to include a description and illustration of intended signage location/s and form. <p>Urban Design Controls - Figures</p> <ol style="list-style-type: none"> 6. All figures/diagrams shall be updated to incorporate the above modifications and incorporated into the revised set of Built Form Principles and Urban Design Controls. 	<p>The revised Design Controls have been modified in accordance with B9(2) to B9(6) and have been approved by the Department.</p>
<p>B11 Key worker housing</p> <p>Key worker housing for Barangaroo South shall be provided in accordance with Statement of Commitment 34 and comprise at least:</p> <ol style="list-style-type: none"> a) 2.3% of residential GFA onsite within Barangaroo South b) At least an addition 0.7% of the residential GFA of Barangaroo South, or its equivalent development value (but comprising at least a minimum of 1,740 m² of residential GFA) to be provided: <ol style="list-style-type: none"> i. Offsite, but within 5 km of the site, or elsewhere within the City of Sydney LGA; 	<p>Key worker housing will be delivered in Building R5 as well as off-site with an affordable housing provider.</p>

<ul style="list-style-type: none"> ii. Including at least 40% of the GFA allocated to dwellings comprising 2 or more bedrooms; iii. Prior to the issue of any Occupation Certificate for Blocks 4A, 4B or Y. 	
<p>B12 Staging</p> <p>Prior to the issue of any occupation certificate within Block 4A or 4B, the foreshore promenade, pier, Watermans Cove and Hickson Park shall be constructed, landscaped and publicly accessible</p>	<p>SSD 7944 has been submitted for the foreshore promenade, pier, Watermans Cove and Hickson Park. A condition of consent is recommended to ensure these works are completed and publicly accessible prior to the issue of any Occupation Certificate for the proposed buildings.</p>
<p>Future Assessment Requirements</p>	
<p>C2 Design Excellence</p> <ol style="list-style-type: none"> 1. This provision applies to the following development: <ol style="list-style-type: none"> a) The erection of a new building that will be greater than Reduced Level (RL) 57, b) The erection of a new building on a site greater than 1,500 square metres. 2. The Proponent shall hold a design excellence competition for all development identified at (1) above. 3. The design competition brief shall be approved by the Director General or his delegate. 4. The Director General shall establish a design review panel for the design excellence competition(s) that will consider whether the proposed development exhibits design excellence. 5. The design review panel shall also be utilised for any significant changes to the Concept Plan, as determined by the Director General. 6. For the purposes of this modification, a <i>design review panel</i> means a three to five member panel comprised of appropriately qualified design professionals, chaired by a registered architect. 7. Notwithstanding (2) above, the requirement for a design excellence competition may be waived if the Director General: <ol style="list-style-type: none"> a) certifies in writing that the development is one for which an architectural design competition is not required because of the excellence of the proposed design for the development concerned, and b) is satisfied that: <ol style="list-style-type: none"> i) the architect responsible for the proposed design has an outstanding reputation in architecture, and ii) necessary arrangements have been made to ensure that the proposed design is carried through to the completion of the development concerned. 	<ol style="list-style-type: none"> 1. The proposed buildings are taller than RL 57 and each occupy a site greater than 1,500 m². 2. The proposal has held a design excellence competition. However, it is not in accordance with the requirements of Future Assessment Requirement C2 (3) or (4) and (6). 7. Due to the design excellence of the proposed buildings, the Executive Director, Key Sites and Industry Assessments (as delegate of the Secretary) has waived the requirement for the Applicant to undertake a design excellence competition (see Appendix C).
<p>C4 Car Parking</p> <ol style="list-style-type: none"> 1. The following maximum car parking rates shall apply to future development within the site: <ol style="list-style-type: none"> a) Commercial:- 1 space/ 600 m² GFA b) Residential:- 1 bed/bedsit unit – 1 space/2 units <ul style="list-style-type: none"> - 2 bed unit – 1.2 spaces/unit - 3+ bed unit – 2 spaces/unit c) Other Uses: City of Sydney Council rates d) Hotel: City of Sydney Council rates or as 	<p>The proposal complies with the car parking controls and proposes:</p> <ol style="list-style-type: none"> a) Residential: 677 spaces; and b) Other Uses: 2 spaces (retail). <p>Overall, the proposed total of 679 car parking spaces is 34 spaces less than the maximum 713 permitted under the Concept Plan.</p>

<p>otherwise approved by the relevant delegate of the Minister.</p>	
<p>C7 Pedestrian Linkages, Activation of Streets and Public Domain</p> <p>In developing detailed plans for the development blocks, “internal” or “through-site” links and internal public domain activity should not occur at the expense of achieving primacy in pedestrian activity and use. In addition, future applications shall comply with the following:</p> <p>b) generous through-site links and activation to promote visual and physical permeability through the podium of the Residential R4A and R4B buildings within Block 4A, connecting Hickson Park to Watermans Cove.</p> <p>c) future applications shall maximise active interfaces of buildings to streets, through site connections and public open space, to encourage diversity and public access.</p>	<p>A 12 m wide Strada is located between proposed buildings and will function as a generous through-site-link, physically and visually connecting the intersection of Barangaroo Avenue and Watermans Quay to the future Hickson Park. The Strada will provide additional permeability to Block 4 but will not impact on the primacy of Barangaroo Avenue and Watermans Quay as main thoroughfares within this section of Barangaroo South.</p> <p>Although the Strada is intended to include outside dining areas, the size and location of these areas will be subject to future development applications. However, the width of the Strada would be reduced to 6 m at either end by 3 m wide, 3.6 m high wind baffles. Limited design information has been provided in relation to the wind baffles and the bi-fold doors also proposed at either end of the Strada. As such, the Department considers further information is required to ensure the primacy of pedestrian activity and use within the Strada is retained.</p> <p>The Department further notes the proposed bi-fold doors at each end of the Strada are required to prevent adverse wind impacts during stronger wind events. The strength of such wind events is undefined and closure of the doors may limit public access and may appear to privatise the public domain between the two buildings.</p> <p>In response to the above, the Department recommends conditions be imposed which require the following matters be approved by the Secretary:</p> <ul style="list-style-type: none"> • further detailed design information of the proposed wind baffles and bi-fold doors; and • the submission of a Strada Management Plan to include operation of wind mitigation measures such as the bi-fold doors. <p>The proposed buildings include suitable landscaping and public domain works and provide active frontages to Barangaroo Avenue, Watermans Quay and the future Hickson Park in addition to the proposed Strada.</p>
<p>C11 Landscaped Areas</p> <p>Where landscaped areas involving the planting of trees are proposed above basement car parking, the Proponent must ensure there is adequate soil depth to support mature scale trees.</p>	<p>The proposals do not include the planting of any trees above the approved Stage 1B basement car park. All public domain trees within and around the site form part of the Stage 1B public domain application.</p>
<p>C12 Wind Assessment Report</p> <p>A wind assessment report is to accompany all future development application/s (for above-ground works)</p>	<p>A Wind Assessment Report was included with the applications and recommends mitigation</p>

and is to incorporate specific mitigation measures into the design of the building and public domain.	measures to address wind impacts (see Section 5.5.3).
<p>C13 Lighting Strategy</p> <p>A Preliminary Lighting Strategy is to be submitted for all future applications for above-ground works. The strategy is to:</p> <ol style="list-style-type: none"> be prepared in consultation with the Sydney Observatory; include, but not be limited to, an assessment of potential impact on the Sydney Observatory; and is to recommend relevant mitigation measures to minimise any adverse lighting impacts to neighbouring properties. 	<p>A Sky View Assessment was included with the applications. The assessment had regard to the potential impact on the Sydney Observatory and concludes the potential impacts to be acceptable, noting sky targets around the area obstructed by the proposed buildings would be under conditions far from ideal and the image quality would be poor on most nights. Light spill mitigation measures are included in the design including:</p> <ul style="list-style-type: none"> - minimising brightly lit surfaces; - fitting luminaries with light shields; and - minimising the amount of upward directional lighting.
<p>C15 Airspace</p> <p>The Proponent shall ensure that for all future development applications involving the erection of a building, all necessary approvals are obtained under the <i>Airports (Protection of Airspace) Regulations 1996</i>, where required.</p>	The required approvals have been obtained and relevant conditions are recommended.

Barangaroo Concept Plan Built Form Principles and Urban Design Controls

BUILT FORM PRINCIPLES	COMMENT	CONSISTENT
1. City's New Western Façade		
<ul style="list-style-type: none"> • To create an integrated new western frontage to the city centre, the slender ends of buildings (above podium level) are to be oriented to the waterfront. 	<ul style="list-style-type: none"> • The proposed buildings will create an integrated new western frontage to the City centre. The towers have been designed to maximise outlook to the park to the north and harbour to the west. 	<ul style="list-style-type: none"> • Yes
2. Hickson Road as a Boulevard		
<ul style="list-style-type: none"> • To promote the scale of Hickson Road as a grand boulevard, provide a consistent street wall and use materials that are complementary to the sandstone nature of the headland. 	<ul style="list-style-type: none"> • The proposed buildings front Barangaroo Avenue and Watermans Quay. 	<ul style="list-style-type: none"> • N/A
3. Buildings to Define Streets		
<ul style="list-style-type: none"> • To define the public space of the street, all building façades are to be set to the street alignment. 	<ul style="list-style-type: none"> • Both buildings are set to the street alignment. • The proposed Strada provides public space between the building and also connects to Barangaroo Avenue and Watermans Quay. The Strada helps to define the public space of these streets. 	<ul style="list-style-type: none"> • Yes
4. North South Pedestrian Connections		
<ul style="list-style-type: none"> • Provide greater pedestrian permeability through blocks, particularly north south connections between Block 2 to 4, Wulugul Walk and Barangaroo Avenue, and Scotch Row at ground level being not less than 6 m wide, 50% open to the sky and a minimum clear height of 2 storeys. Provide east-west links through Watermans Quay, Shipwright Walk, Mercantile Walk and Exchange Place. 	<ul style="list-style-type: none"> • The proposed buildings are suitably linked via open pedestrian pathways to Building R5, surrounding roads and the future Hickson Park. • A publicly accessible Strada is proposed between the podiums of the proposed buildings which will provide a 12 m wide covered pedestrian link between the future Hickson Park and the intersection of Barangaroo Avenue and 	<ul style="list-style-type: none"> • Yes

	Watermans Quay (see Section 5.5.2).	
5. Marking the City Frame		
<ul style="list-style-type: none"> To continue a built form dialogue with the adjoining city, building heights across the site are in keeping with the rest of the city, with the highest form at the north of the precinct. 	<ul style="list-style-type: none"> The proposed buildings comply with the Concept Plan height controls and are higher than the existing commercial buildings to the south. 	<ul style="list-style-type: none"> Yes
6. Open Space Within Blocks		
<ul style="list-style-type: none"> To create blocks permeated with laneways, courtyards, walkways and parklands around the edges of blocks. To provide open space at podium level between tower forms. 	<ul style="list-style-type: none"> Public domain works are proposed around the buildings which will integrate with the proposed Stage 1B public domain works (see Section 5.5). Open space, in the form of a pedestrian Strada, is proposed between the tower forms. Communal open space for residents is proposed at podium level. 	<ul style="list-style-type: none"> Yes
7. View Sharing		
<ul style="list-style-type: none"> To promote the equitable access to views towards the harbour, the built form is to be arranged to define the street corridors and to allow view corridors from the existing private buildings to the east. 	<ul style="list-style-type: none"> The proposed buildings comply with the Concept Plan building envelopes. As detailed in Section 5.3.2, the proposed buildings will preserve the view corridors permitted in the Concept Plan including to existing private buildings to the east. 	<ul style="list-style-type: none"> Yes
8. Orientation of Buildings		
<ul style="list-style-type: none"> To provide optimum orientation and transparency across the site and to create a silhouette of gaps between slender towers. Orientation of towers to relate to fanning principle. Long facades to face north and buildings facing Hickson Road and the waterfront to be oriented to the east and west to define road and promenade. 	<ul style="list-style-type: none"> The proposed buildings are slender and will create a silhouette of gaps between the towers. The orientation and siting of the buildings (together with R5) is consistent with the fan principle, aligning with the southern side of Hickson Park with orientation to the north-east and west. 	<ul style="list-style-type: none"> Yes

URBAN DESIGN CONTROLS (BLOCKS 4A AND 4B)		
1. Building Mass and Location		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> The orientation and location of the buildings relate to the fan principle. To ensure building mass is appropriate within the envelope. The podium shall be low to allow sunlight penetration through the buildings to the public domain. Building placement to consider existing view corridors from Kent Street buildings. To ensure the vertical massing form is an integral part of the composition of the towers in Block 4A. Ensure views to the sky between all towers from key vantage points. Allow balconies on towers to be partially enclosed and not count towards GFA 	<ul style="list-style-type: none"> The orientation and siting of the buildings (together with Building R5) is consistent with the fan principle, aligning with the southern side of Hickson Park. The buildings are within the envelopes of the Concept Plan. Each building has a three level podium which are limited to a maximum height of RL 17.83m (14.3m above ground). The buildings are positioned to the south of the future Hickson Park and will allow sufficient 	<ul style="list-style-type: none"> Yes

	<p>sunlight to the public domain.</p> <ul style="list-style-type: none"> The Concept Plan considered view corridors from Kent Street when determining the positioning of the buildings. Building R4A and R4B are positioned in accordance with the Concept Plan (see Section 5.3.1). Both buildings include balconies/ wintergardens which are partially enclosed and all have been excluded from GFA calculations. 	
CONTROLS	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> The height of towers within the block shall be varied and ascend in height from east to west. 	<ul style="list-style-type: none"> The height of the proposed towers (plus Building R5) ascend from east to west. Building R4A extends to RL 250, Building R4B extends to RL 210 and Building R5 extends to RL 105.9. There is a 40 m difference between the height of the proposed buildings. A minimum separation distance of 13 m is proposed between the buildings. A compliant minimum separation distance of 27 m is proposed between Building R4A (nearest residential building) and the approved Crown Resort (Block Y). In addition, an opaque façade is proposed on the north-western side of units to prevent any loss of privacy from the Resort. Building R4A fronts Barangaroo Avenue. Building R4B fronts Watermans Quay and is set back a minimum of 2 m. Both buildings have a maximum podium height of RL 15. The podium of Building R4B is not built to the edge of the envelope on Watermans Quay. A Strada is instead proposed between the 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> Towers proposed in Block 4A shall have a minimum 30 m variation in height. 		
<ul style="list-style-type: none"> Towers proposed in Block 4A should be separated by a minimum of 9 m. 		
<ul style="list-style-type: none"> All prominent tower massing shall provide a minimum of 27 m separation from the Block Y tower massing. 		
<ul style="list-style-type: none"> All prominent tower mass shall be set back from Watermans Quay by a minimum of 2 m. 		
<ul style="list-style-type: none"> Block 4A podium buildings are to have a maximum height of RL 22. 		
<ul style="list-style-type: none"> Podiums may be built on the edge of the envelope on Watermans Quay. 		
<ul style="list-style-type: none"> For residential and tourist accommodation with a height over 30m, the maximum external balcony area shall not exceed 15% of the GFA of the apartment or room to which it is not connected, and the bulk of the building is not greater than if the balconies were not partially enclosed. 		

	<p>two podiums to provide a north-south pedestrian through-site link as required by the Concept Plan and the Design Controls.</p> <ul style="list-style-type: none"> Both buildings are greater than 30 m in height and all balconies are less than 15% of the GFA of the adjoining apartment. The bulk of the building is no greater than it would be if balconies were not partially enclosed. 	
2. Street Wall Establishment		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> Ensure the street walls defines Barangaroo Avenue. 	<ul style="list-style-type: none"> Barangaroo Avenue is defined by a street wall apart from the intersection with Watermans Quay where a Strada is proposed between the two buildings. A human scale streetscape is created through the use of a 3 level podium for both buildings and a pedestrian Strada. The podium height of RL 15 is below the maximum RL 22 height. The podiums will create an appropriate street level environment through the retail uses and the connections to Hickson Park and Barangaroo Avenue (see Section 5.3.1). 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> Ensure a human scale streetscape. 		
<ul style="list-style-type: none"> Podium height to foster a coordinated streetscape and appropriate street level environment. 		
CONTROLS	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> Building form to create a street wall with a one storey minimum height for most of the public accessible ground floor façade. 	<ul style="list-style-type: none"> The proposed buildings create a street wall along most of Barangaroo Avenue and Watermans Quay which is three-storey in height. The podium street walls will define Watermans Quay. Although it is truncated at the intersection with Barangaroo Avenue, this is because of the pedestrian Strada between the buildings which achieves significant public domain and site permeability benefits subject to conditions (see 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> All podium street walls define Watermans Quay and Hickson Road. 		
<ul style="list-style-type: none"> Hickson Road street wall will continue the colonnade form existing on Blocks 2 and 3. 		

	<p>Sections 5.5.2 and 5.5.3).</p> <ul style="list-style-type: none"> The proposed buildings do not front Hickson Road. 	
<p>3. Building Articulation</p>		
<p>OBJECTIVES</p>	<p>COMMENT</p>	<p>COMPLIANCE</p>
<ul style="list-style-type: none"> To establish an articulated, well-proportioned building mass. To reduce the impact on the building's mass. To ensure the podium and towers in Blocks 4A and 4B are considered as a holistic composition. 	<ul style="list-style-type: none"> The proposed buildings are suitably articulated and provide a well-proportioned building mass. The proposed buildings have been designed as slender towers which set comfortably within the approved building envelopes. To further reduce the perceived mass of the buildings, a range of features have been incorporated into the façade design (see <i>Control 7 – Facades</i> below). The proposed towers (and Building R5) have been designed to form a holistic composition that increases in scale from east to west. The towers have been conceived as three 'crystals' with staggered roof profiles and slim proportions. 	<ul style="list-style-type: none"> Yes
<p>CONTROLS</p>	<p>COMMENT</p>	<p>COMPLIANCE</p>
<ul style="list-style-type: none"> The building envelopes and floor plates are to be articulated. Tower form is to express sustainability features e.g. access to natural light, ventilation and solar shading. Establish complimentary relationship between the tower Blocks in 4A and 4B such as common chassis. Vertical articulation and breaks are encouraged to minimise perceived building mass. Horizontal articulation and breaks are encouraged to reduce the impact of building mass. Ensure a transparent and visually permeable frontage to the park edge. The tower form on the park side is to come to ground and be dominant in the lower levels of the building. 	<ul style="list-style-type: none"> The proposed buildings have triangular geometry which articulates the built form. The triangular building footprint is emphasised through the continuation of the façade beyond the internal floor plates to create a feathering effect at the edges of the building. Inset 'notches' at each corner of the two main glazed façades further accentuates the triangular form and articulation of the buildings. The triangular form enables units to achieve high levels of access to natural light and ventilation. The buildings have been designed with a common design language and the 	<ul style="list-style-type: none"> Yes

	<p>same structural design (including Building R5).</p> <ul style="list-style-type: none"> ▪ The verticality of the buildings is enhanced by their slender form and narrow pattern of fenestration which together with other design features i.e. 'feathering' and corner 'notches' and sky views between the towers will assist in minimising the perceived mass. ▪ The buildings incorporate horizontal wind and sun shading elements to assist in reducing the impact of the building mass. ▪ The proposed tower forms extend to the ground on the future Hickson Park frontage through a more spaciouly framed glazed podium façade. This creates a highly transparent and visually permeable frontage to the park edge. 	
4. Building Legibility		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> ▪ Constituent elements of the building need to be legible. ▪ To ensure that building elements and structure are legible at the base. ▪ To ensure that towers in Block 4A and 4B are complimentary and read as a cohesive composition. 	<ul style="list-style-type: none"> ▪ Constituent elements of each building will be legible i.e. reading of the separate uses, glazed façades, wintergardens and shading devices. ▪ The proposed buildings have been design to align with Barangaroo Avenue, Watermans Quay and the future Hickson Park which will allow for legibility at the base. ▪ The proposed buildings (including Building R5) have been designed as a cohesive composition of three crystal forms. 	<ul style="list-style-type: none"> • Yes
CONTROLS		
<ul style="list-style-type: none"> • Express facade elements including balconies/ wintergardens shading and wind amelioration. • Consider common architecture expression to ensure towers in Block 4A and 4B are complimentary but still unique. • Ensure visual permeability of the tower lobbies on the park to allow the structure to be legible at the base. 	<ul style="list-style-type: none"> ▪ The proposed façades incorporate various elements including wind deflectors to balconies/ wintergardens and integrated metal nosing which will contribute to the faceted appearance. 	<ul style="list-style-type: none"> • Yes

	<ul style="list-style-type: none"> ▪ The proposed towers (including Building R5) display a consistent architecture but are scaled and modulated to ensure each tower is unique. 	
5. Ground Floor Permeability and Accessibility of Public Realm		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> • To provide permeability and accessibly through Barangaroo South. 	<ul style="list-style-type: none"> • Pedestrian accessibility is provided to each frontage of the proposed buildings • Through-site permeability is provided via a publicly accessible Strada located between the podiums. 	<ul style="list-style-type: none"> • Yes
CONTROLS		
<ul style="list-style-type: none"> • Public access around the block is to be maintained on all edges. • Provide two north to south primary connections across the block including the Hickson Road colonnade and Barangaroo Avenue. • One north-south secondary connection is to be provided in Block 4A. • Watermans Quay retail and podium buildings should consider the address to Scotch Row view. • Ground floor retail and residential lobbies should consider a relationship to the northern parkland public space. • Canopies to be located at the park edge. • Consider lobby address on Barangaroo Avenue for R4A, Watermans Quay for R4B and Hickson Road for R5 off the plaza. • Generous through-site link to be provided through Block 4A. 	<ul style="list-style-type: none"> ▪ Public access is maintained on all street edges. ▪ North-south pedestrian connections are provided by the proposed Strada and the future plaza located between Building R4B and Building R5. ▪ East-west connections are provided along Watermans Quay and the future Hickson Park to the immediate north of the buildings. ▪ Scotch Row is not located near the proposed buildings. ▪ The residential lobbies of each building and retail tenancies will front the future Hickson Park providing increased activation of the public domain and surveillance opportunities. ▪ Awnings/ canopies are provided along the future Hickson Park frontage of both buildings. ▪ Due to their respective locations at the southern corner of Building R4A and northern corner of Building R4B, the residential lobbies of each building will have a street address in addition to fronting the future Hickson Park. ▪ The proposed Strada will potentially provide a generous through site link through Block 4A (see 	<ul style="list-style-type: none"> • Yes (subject to conditions in relation to further wind mitigation design information and a Public Domain Management Plan).

	Sections 5.5.2 and 5.5.3).	
6. Ensuring Quality of Rooftops		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> To ensure that the mass of the rooftop is articulated and legible. 	<ul style="list-style-type: none"> The roof form of each building has been articulated with a glazed 'fringe' as an extension to the main curtain walls. 	<ul style="list-style-type: none"> Yes
CONTROLS		
<ul style="list-style-type: none"> Roofs forms should be sympathetic to its context, use good quality materials, incorporate architectural treatment of exposed elements and avoid exposure of mechanical equipment. Roof design may integrate sustainable features such a photovoltaics. Consistency between the roof forms of towers in Block 4A is encouraged. 	<ul style="list-style-type: none"> The three buildings forming Block 4A and 4B have been designed to read as a collection of three 'crystal' forms, each with a glazed 'fringe' above the main curtain walls. These will conceal roof plant and assist in visually unifying the three buildings. 	<ul style="list-style-type: none"> Yes
7. Facades		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> To ensure the architectural quality of the facades. To articulate the buildings functions and massing with appropriate façade design and detailing. To ensure the facades contribute to the buildings articulation and mass. To contribute to the carbon neutral aims for Barangaroo South. Enable the partial enclosure of balconies to provide private open space that is usable and has a high level of amenity. 	<ul style="list-style-type: none"> Both Buildings R4A and R4B have highly transparent glass facades extending from ground level to beyond the roof line. The facades are of high architectural quality. Both buildings contain a three storey podium from the ground level. Where required the opacity of the podium level facades of both buildings have been altered for service and fire escape stairs. The facades of both buildings incorporate several design elements such as wintergardens, balconies, roller blinds, wind deflectors to balconies and integrated metal nosing. These elements contribute to both buildings' articulation and mass. The buildings are consistent with the carbon neutral aims for Barangaroo South. 	<ul style="list-style-type: none"> Yes
CONTROLS		
<ul style="list-style-type: none"> Choice of materials for longevity, durability and flexibility (e.g. steel and glass). Environmentally sustainable design to be incorporated on all facades. Depth and layering of facades to be achieved through relief and protrusions. 	<ul style="list-style-type: none"> The glazed facades of both buildings are a high quality material and finish which have suitable longevity, durability and flexibility. 	<ul style="list-style-type: none"> Yes

<ul style="list-style-type: none"> • Façade components such as external shading to be used to provide light and shade to the building. • Glass wind screens enclosing balconies shall be designed to ensure the balcony remains external open space and wind screen design shall ensure permanent natural ventilation and cannot be fully enclosed or sealed from weather. 	<ul style="list-style-type: none"> ▪ The different design elements of the buildings such as open cavity facades, glazing, balconies and wintergardens, allow access to direct sunlight and light transmittance, provide thermal insulation and achieve natural ventilation. ▪ Both buildings achieve depth and layering through the incorporation of several façade elements and the use of notched windows (i.e. a 'pop out' window) at the corner of the tower forms which articulate the edges of the towers. ▪ From level ten, the wintergardens have a minimum fixed opening so they cannot be fully enclosed. 	
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8. Active Streetfronts

OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> • To ensure an activated public domain at street level. 	<ul style="list-style-type: none"> ▪ Retail uses and a lobby are proposed for the ground floor of both Building R4A and R4B. These uses also front future Hickson Park, Barangaroo Avenue and the proposed pedestrian Strada. ▪ These uses and areas will ensure an activated public domain at street level. 	<ul style="list-style-type: none"> • Yes
CONTROLS		
<ul style="list-style-type: none"> • At least 60% of the ground level is to be active on the primary street wall facades. • Building vehicle access, area for service and egress shall not count towards the 60%. • Building service areas, parking entrances and loading docks may be accessed from Watermans Quay. • The width of driveways shall be minimised. 	<ul style="list-style-type: none"> ▪ The proposed buildings do not provide a continuous street wall along Barangaroo Avenue (R4A) or Watermans Quay (R4B) due to the respective podiums being truncated to create the through-site pedestrian Strada. Building R4B also accommodates the Stage 1B basement entry which limits opportunities for an active frontage to Watermans Quay. ▪ Retail tenancies will however open onto both street frontages with 51% of the Building R4A 	<ul style="list-style-type: none"> • No but achieves objective of active public domain at street level.

	<p>Barangaroo Avenue frontage and 33% of the Building R4B Watermans Quay frontage activated in this way.</p> <ul style="list-style-type: none"> ▪ The proposed Strada provides activation between the two buildings and if the Strada was included in the ground level street wall activation calculations (i.e. an extension of the respective primary street frontages), it would achieve more than 60% activation. ▪ Vehicular entrances to the Stage 1B carpark are accessed from Watermans Quay and the driveway entry will form part of Building R4B. The driveway and associated infrastructure will be constructed under the Stage 1B Basement consent and integrated into the Building R4B structure when it is being constructed. ▪ The driveway entry does not form part of the Building R4A or R4B applications. 	
9. Signage		
OBJECTIVES	COMMENT	COMPLIANCE
<ul style="list-style-type: none"> • To ensure the location, size, appearance and quality of signage in the building is appropriate. 	<ul style="list-style-type: none"> ▪ A suitable primary signage zone is proposed for each building (see Section 5.7). ▪ Detailed signage will be submitted to the Secretary for approval prior to the issue of the relevant Construction Certificate. 	<ul style="list-style-type: none"> • Yes
CONTROLS		
<ul style="list-style-type: none"> • Building identification signage is to be limited to on sign per frontage at podium level. • Signage shall not exceed 15 m² per sign. • Details of signage are to be considered as part of the overall design of the building for the purposes of design excellence. • Each new application for the erection of a new building should include a minimum description of signage location and form. Separate applications may be required for signage not detailed in applications for new buildings. 	<ul style="list-style-type: none"> ▪ The applications include details of compliant signage zones. ▪ No detailed signage is proposed. Secondary building identification and retail tenant signage will form part of a future signage strategy to be approved by the Department pursuant to a recommended condition of consent. 	<ul style="list-style-type: none"> • Yes

APPENDIX F DESIGN EXCELLENCE WAIVER

Record of Secretary's Certification of Waiver ("Certification") of Architectural Design Competition Pursuant to State Environmental Planning Policy (State Significant Precincts) 2005 ("SSP SEPP"), Schedule 3, Part 12, Clause 19(4) and Barangaroo Concept Plan Approval MP_06 0162, Schedule 2, Part C – Future Applications C2(7).

I, Anthea Sargeant, delegate of the Secretary of the Development of Planning and Environment, certify that the development described in Schedule 1 of this Certification ('**Development**') is development for which an architectural design competition is not required pursuant to:

- Schedule 3, Part 12, Clause 19(4) of the SSP SEPP; and
- Schedule 2, Part C – Future Applications C2(7) of the Barangaroo Concept Plan.

For the purposes of the SSP SEPP and Barangaroo Concept Plan (noted above), I am satisfied that:

- the buildings exhibit design excellence; and
- the architects responsible for the proposed designs of the developments have outstanding reputations in architecture; and
- necessary arrangements have been made to ensure that the proposed designs are carried through to the completion of the developments concerned.

Schedule 1

Proposals for the construction, use and fit-out of a 72-storey building (RL 250 m) and a 60-storey building (RL 210 m), known respectively as Building R4A and Building R4B, at Barangaroo South, as described under SSD 6964 and SSD 6965.

Anthea Sargeant
**Acting Executive Director
Regions**

Date: