

Environmental Impact Statement

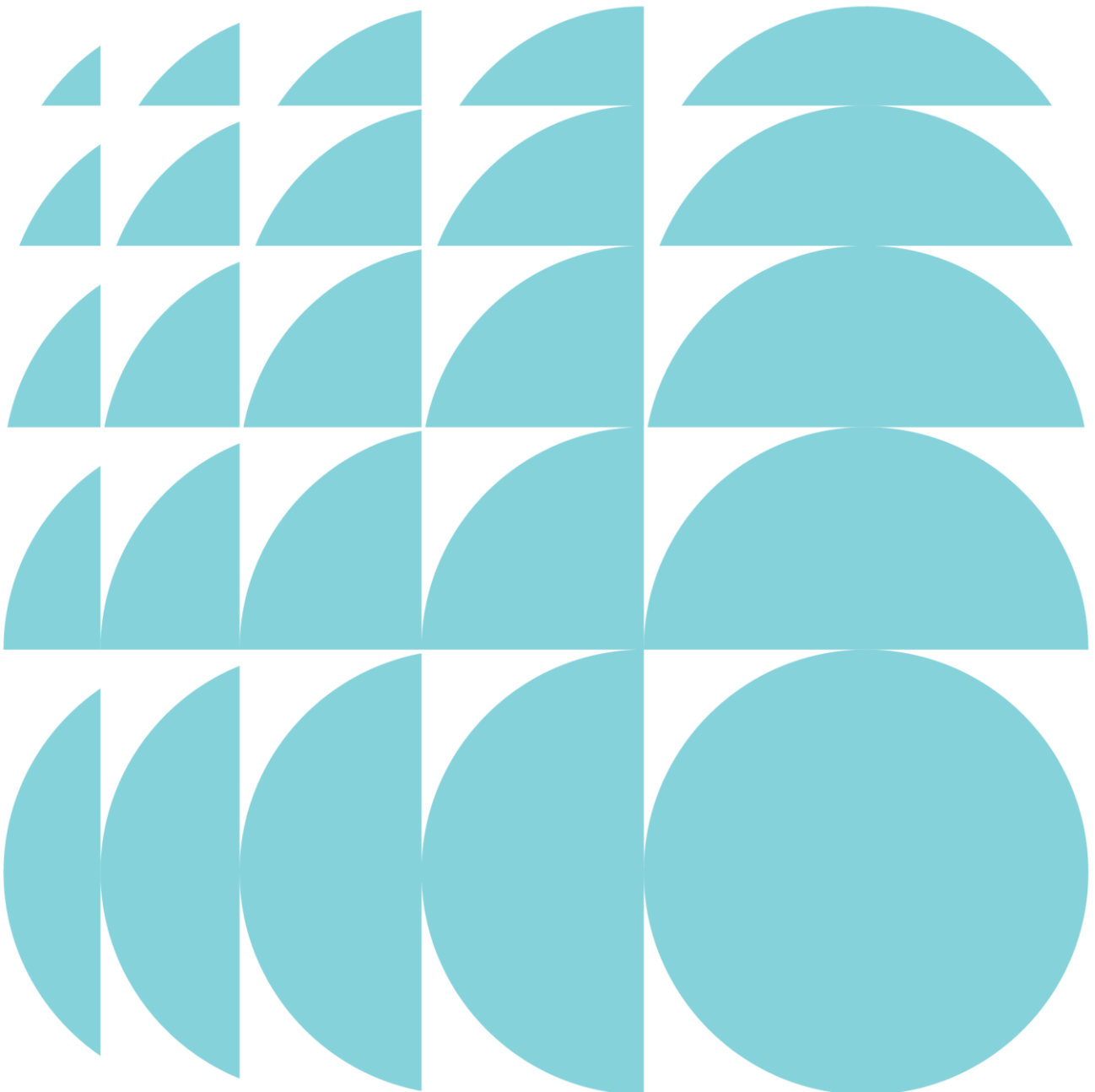
Building R4B, One Sydney Harbour
Barangaroo South

Amending State Significant Development
Application (SSD-8892218)

Submitted to Department of Planning, Industry
and Environment

On behalf of Lend Lease (Millers Point) Pty Ltd

12 November 2020 | 2190721



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VERSION NO.

DATE OF ISSUE

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	<i>Lendlease Building</i>

Statement of Validity

Development Application Details	
Applicant name	Lendlease (Millers Point) Pty Ltd
Applicant address	Level 14, Tower Three, International Towers Sydney Exchange Place, 300 Barangaroo Avenue, Barangaroo NSW 2000
Land to be developed	Building R4B, One Sydney Harbour, Barangaroo
Proposed development	Amendment to approved building development, including 8 additional storeys as described in Section 5.0 of this Environmental Impact Statement
Prepared by	
Name	Brendan Hoskins
Qualifications	BPlan (Hons), GradDipEnvMgt, MPIA
Address	173 Sussex Street, Sydney
In respect of	State Significant Development – Amending Development Application for Building R4B
Certification	

I certify that I have prepared the content of this EIS and to the best of my knowledge:

it is in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000;

all available information that is relevant to the environmental assessment of the development to which the statement relates; and

the information contained in the statement is neither false nor misleading.

Signature



Name

Brendan Hoskins

Date

12/11/2020

Executive Summary

Purpose of this Report

This submission is made to the Department of Planning, Industry and Environment (the Department) and comprises an Environmental Impact Statement (EIS) for an 'amending' State Significant Development (SSD) Development Application (DA) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This amending SSD DA seeks approval for eight additional storeys and 5,650m² of gross floor area (GFA), amongst other items, to Residential Building R4B approved under SSD 6965. This amending SSD DA proposes to amend the approved 60-storey Residential Building R4B development (SSD 6965) by way of condition(s) requiring the modification of SSD 6965.

SSD 6965 was approved in September 2017, and included consent for the construction, fit out and use of a 60 storey mixed-use building in Barangaroo South, including residential apartments, retail floor space, public domain works and car parking. This application has been modified once, and another modification is currently under assessment, to reconfigure internal layouts to respond to changing residential markets and the broader construction of Barangaroo South.

Since approval for this SSD DA, the Barangaroo Concept Plan (Concept Plan (Mod 10)) has been modified. For Building R4B, Concept Plan (Mod 10) resulted in an increase of 5,650m² of GFA and a corresponding increase of eight storeys in height (from RL 210 to a maximum of RL 235). Therefore, this amending SSD DA seeks approval to include eight additional storeys within Building R4B to implement the changes approved through the Concept Plan (Mod 10).

This application is lodged as an amending SSD DA allowing the current consent for Building R4B (SSD 6965) to be retained, while amending a component of the approved development through this approval as a separate consent. An amending SSD DA is a SSD DA that grants consent to new development while concurrently using the power under Section 4.17 of the EP&A Act to impose condition(s) that modifies another existing development consent. As such, it is requested that a condition be imposed on any approval of this amending SSD DA pursuant to Section 4.17(1)(b) and (c) of the EP&A Act, requiring the modification of the SSD 6965 development consent and the approved Building R4B development under SSD 6965.

In effect, the approval of this amending SSD DA will provide conditions to amend Building R4B development approved under SSD 6965 as well as the SSD 6965 development consent.

Overview of the Project

The proposed amending SSD DA broadly seeks approval for eight additional levels, 32 additional apartments, and an allocation of seven (7) additional car parking spaces associated with Residential Building R4B. More specifically, the amending SSD DA proposes to amend the approved Residential Building R4B development, through:

- An increase in the overall building height of Building R4B from RL208.23 up to RL235, comprising the addition of eight levels.
- Refinement of the upper levels of the approved Building R4B to accommodate the addition of eight levels, including:
 - Elevation of the two approved sky home levels at Levels 56-57 to Levels 64-65.
 - Addition of eight additional upper floor plate levels from Levels 56-63.
- Amendment of the floor to ceiling heights of Levels 48 and 49 to 2,700mm from 3,000mm.
- An increase in the overall number of apartments from 290 to 322 and associated revision to the dwelling mix.
- An increase in the number of car parking spaces from 324 to 331.

The Site

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

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Central and Barangaroo South. The Building R4B site is located within Barangaroo South, and more specifically on land generally known and identified in the approved Concept Plan (Mod 10) as Block 4A.

Background

Barangaroo South Concept Plan (as modified)

The approved Barangaroo South Concept Plan (MP06_0162) was modified (Mod 10) in September 2020 to include an increased amount of residential GFA, as well as increase the maximum permissible height for Building R4B. This amending SSD DA seeks to implement the maximum GFA and additional height approved under the Concept Plan (Mod 10) for Building R4B. The proposed development will result in a building generally consistent with the Concept Plan (Mod 10).

Building R4B - Development consent SSD 6965

Development consent SSD 6965 was granted by the NSW Minister for Planning on 7 September 2017 for Building R4B, comprising a 60-storey mixed use building, with 297 residential units and retail floor space at ground level. This included a total GFA of 38,896m², 38,602m² of which was approved for residential floor space, and the remaining 294m² approved for retail floor space. Consent was also provided for associated building public domain works, fit out and use of the basement, a link bridge connecting to Building R4A and associated building identification signage.

On 7 February, 2020, development consent SSD 6965 was amended to account for a range of design changes, including an increase in total GFA from 38,896m² to 38,911m², comprising an increase in retail GFA from 294m² to 309m², and a reduction in the number of apartments to 283.

A second application to modify development consent SSD 6965 has been submitted to the Department and is currently under assessment. The amendments in the modification application relate to the following changes:

- Increase the number of apartments from 283 to 290.
- Revised dwelling mix and internal layout changes.
- Changes to the landscaped podium layout.
- Changes to the number of car spaces from 320 to 324.

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

Planning Context

Section 6.0 of this EIS considers all applicable legislation in detail. The proposal is consistent with the requirements of all relevant State Environmental Planning Policies. The site is zoned B4 Mixed Use under Appendix 9 of the SSP SEPP, and the proposal is permissible with consent and meets the objectives of the zone.

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by Lendlease (Millers Point) Pty Ltd to manage and minimise potential impacts arising from the development. All identified impacts are addressed in this EIS and are capable of being ameliorated through the implementation of appropriate mitigation measures as outlined in **Sections 6.0** and **Section 7.0**.

Conclusion and Justification

The compilation of mitigation measures has been prepared to inform the ongoing management of the amending SSD DA throughout the detailed design, construction phase and operational phase. This EIS fulfils the requirements of the EP&A Act and addresses the project specific SEARs dated 11 September 2020. Overall, the EIS demonstrates that the impacts of the amended Building R4B development can be satisfactorily managed. In light of the above, and the significant benefits of the proposal, we recommend that development consent to the proposed development be granted.

1.0 Introduction

This submission to the Department of Planning, Industry and Environment (the Department) comprises an Environmental Impact Statement (EIS) for an amending State Significant Development (SSD) Development Application (DA) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This 'amending' SSD DA seeks approval for eight additional storeys and 5,650m² of gross floor area (GFA), amongst other items, to Residential Building R4B approved under SSD 6965. This SSD DA proposes to amend the approved 60-storey Residential Building R4B development (SSD 6965) by way of condition(s) requiring the modification of the SSD 6965 development consent and modification of approved development under SSD 6965 pursuant to subsections 4.17(1)(b) and (c), respectively, of the EP&A Act.

Building R4B (SSD 6965) was approved in September 2017, and included consent for the construction, fit out and use of a 60 storey mixed-use building in Barangaroo South, including residential apartments, retail floor space, public domain works and car parking. This consent has been modified twice to reconfigure internal layouts to respond to changing residential markets and the broader construction of Barangaroo South.

Since the granting of consent for SSD 6965, the Barangaroo Concept Plan (Concept Plan (Mod 10)) has been modified to allow for increased floor area and building height in Blocks 4A and 4B. For Building R4B, this results in an increase of 5,650m² of floor space and a corresponding increase of eight storeys in height. Therefore, this application seeks approval to include eight additional floors within Building R4B to implement the changes approved through the Concept Plan (Mod 10).

This application is lodged as an amending SSD DA, allowing the current development consent for Building R4B (SSD 6965) to be retained, while amending a component of the development approved under that consent by way of a separate consent.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was sought on 7 August 2020, and the SEARs were issued on 11 September 2020. This EIS is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the matters raised in the SEARs.

This EIS has been prepared by Ethos Urban on behalf of Lendlease (Millers Point) Pty Ltd, and is based on the Architectural Drawings provided by Renzo Piano Building Workshop (RPBW) and PTW Architects (refer to **Appendix A**) and other supporting technical information appended to the report (refer to the Table of Contents).

The EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the SEARs prescribed for the preparation of the EIS, which are included at **Appendix C**. This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

1.1 Overview of the Proposal

The proposed amending SSD DA broadly seeks approval for eight additional levels, 32 additional apartments, and an allocation of seven (7) additional car parking spaces associated with Residential Building R4B. More specifically, the amending SSD DA proposes to amend the approved Residential Building R4B development, through:

- An increase in the overall building height of Building R4B from RL208.23 up to RL235, comprising the addition of eight levels.
- Refinement of the upper levels of the approved Building R4B to accommodate the addition of eight levels, including:
 - Elevation of the two approved sky home levels at Levels 56-57 to Levels 64-65.
 - Addition of eight additional upper floor plate levels from Levels 56-63.
- Amendment of the floor to ceiling heights of Levels 48 and 49 to 2,700mm from 3,000mm.
- An increase in the overall number of apartments from 290 to 322 and associated revision to the dwelling mix.
- An increase in the number of car parking spaces from 324 to 331.

An amending SSD DA is a SSD DA that grants consent to new development while concurrently using the power available under Section 4.17 of the EP&A Act to impose condition(s) that may lawfully modify another existing development consent and development. Subsections 4.17(1)(b) and (c) of the EP&A Act prescribe that a condition of a development consent may be imposed requiring the modification of another development consent relating to the same land and the modification of a development on land, respectively.

Furthermore section 4.17(5) of the EP&A Act provides:

“If a consent authority imposes (as referred to in subsection (1) (b)) a condition requiring the modification or surrender of a consent granted under this Act ... the consent ... may be modified .. subject to and in accordance with the regulations.”

It is therefore requested through that condition(s) be imposed on any consent to the subject amending SSD DA pursuant to Subsection 4.17(1)(b) and (c) of the EP&A Act, requiring the modification of the SSD 6965 development consent and the modification of the approved Building R4B development, respectively.

1.2 Background

Barangaroo South Concept Plan (as modified)

The approved Barangaroo South Concept Plan (MP06_0162) (as modified through Modification 10), includes approval for the following:

- A mixed use development involving a maximum of 602,354m² gross floor area (GFA), comprised of:
 - a maximum of 191,031m² of residential GFA of which a maximum of 162,031m² will be in Barangaroo South;
 - a maximum of 76,000m² of GFA for tourist uses of which a maximum of 59,000m² will be in Barangaroo South;
 - a maximum of 34,000m² of GFA for retail uses of which a maximum of 30,000m² will be in Barangaroo South;
 - a maximum of 5,000m² of GFA for active uses in the Public Recreation zone of which 3,500 will be in Barangaroo South; and
 - a minimum of 12,000m² GFA for community uses.
- Approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including an approximate 2.2km public foreshore promenade.
- Built form design principles, maximum building heights and GFA for each development block within the mixed use zone.
- Public domain landscape concept, including parks, streets and pedestrian connections.
- Alteration of the existing seawalls and creation of a partial new shoreline to the harbour.
- Construction, operation and maintenance of a concrete batching plant to supply concrete for construction of future development under this Concept Plan at Barangaroo South.
- No approval is granted or implied for the future use of a heliport and/or a helipad.

The proposed amending SSD DA seeks to implement the GFA and building height for Building R4B approved through the latest modification to the Concept Plan (Mod 10). Any consent to this amending SSD DA will be generally consistent with the terms of approval of the Concept Plan (Mod 10).

Building R4B - Development Consent SSD 6965

Development consent SSD 6965 was granted by the NSW Minister for Planning on 7 September 2017 for Building R4B, comprising a 60-storey mixed use building, with 297 residential units and retail floor space at ground level. This included a total gross floor area (GFA) of 38,896m², 38,602m² of which was approved for residential floor space, and the remaining 294m² was approved for retail floor space. Consent was also provided for associated building public domain works, fit-out and use of the basement, a link bridge connecting to Building R4A and associated building identification signage.

On 7 February, 2020, development consent SSD 6965 was amended to account for a range of design changes, including an increase in total GFA from 38,896m² to 38,911m², comprising an increase in retail GFA from 294m² to 309m², and a reduction in the number of apartments to 283.

A second application to modify development consent SSD 6965 has been submitted to the Department and is currently under assessment. The amendments contained within the modification application broadly relate to the following changes:

- Increase the number of apartments from 283 to 290.
- Revised dwelling mix and internal layout changes.
- Changes to the landscaped podium layout.
- Changes to the number of car spaces from 320 to 324.

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

1.3 Objectives of the Development

This amending SSD DA has been prepared to incorporate the modifications approved under the Concept Plan (Mod 10), ultimately realising the vision and potential of the precinct. The objectives of the development are to:

- Maximise the land use opportunities associated with the potential Sydney Metro Station within Central Barangaroo, supporting additional activity in the Sydney CBD and driving a high level of patronage on the new metro rail.
- Deliver additional height and density within the maximum height set by the *State Environmental Planning Policy (State Significant Precincts) 2005* without creating any additional adverse environmental or urban design impacts.
- Establish an articulated, well-proportioned building mass and ensure that the podium and towers in Block 4A and 4B continue to be considered as a holistic composition.
- To provide permeability and accessibility through Barangaroo South.
- Build on the City of Sydney Council's *Sustainable Sydney 2030* strategy, to enhance Barangaroo as a premier commercial and residential location on the western edge of the city, that will bring many more residents, workers and visitors into the city.
- Provide a building that achieves design excellence and is generally consistent with the approved Concept Plan (Mod 10).
- Create a residential building with the most desirable premium apartments ever built in Sydney and Australia.
- Provide apartments with a high level of residential amenity.
- Achieve best practice sustainability outcomes.
- Manage the western sun exposure of the Barangaroo Site while maximising views to the Harbour.
- Ensure that any environmental impacts associated with the construction and operation of the building are appropriately mitigated.

1.4 Analysis of Alternatives

Strategic need for the proposal

The redevelopment of the Barangaroo site is the result of a long-term strategic planning process which culminated in February 2007 when the NSW Minister for Planning approved a concept plan to guide the urban renewal of Barangaroo. Barangaroo South is the southern 7.5 hectares of the Barangaroo site which is destined to become the most advanced financial district and the first large scale, carbon neutral precinct in Australia. The majority of Barangaroo South has now been completed and is operational, and on full completion, it will comprise a mix of land uses, including commercial, residential, retail and dining along with a new landmark hotel.

The success of Barangaroo relies heavily on the comprehensive delivery of a new urban form and land uses as envisaged under the Concept Plan (Mod 10). While the delivery of the majority of the precinct has brought significant success, the completion of the remainder of the precinct is crucial to achieving the overall vision and aspirations of the Barangaroo site.

Specifically, the Building R4B site has the important strategic role under the Concept Plan (Mod 10) of forming part of a group of residential towers designed by Renzo Piano Building Workshop (together with Buildings R4A and R5) known as One Sydney Harbour that will:

- Continue a built form dialogue with the adjoining areas of Barangaroo South and Central Sydney.
- Reinforced the stepped height principle of the Concept Plan from the Crown Sydney Hotel and Resort which is nearing completion.
- Complete the city frame and book-end the city's north western edge in connection with the Crown Sydney Hotel and Resort.

Alternative Options

Three options are available to Lendlease (Millers Point) Pty Ltd in responding to the changes outlined in Concept Plan (Mod 10).

Option 1: Do Nothing

Choosing not to provide the additional levels and corresponding floor space in Building R4B approved under the Concept Plan (Mod 10) would not be an appropriate outcome for such a strategic site with the importance of Barangaroo South. Concept approval for additional height and floor space in Building R4B has been approved in the Concept Plan (Mod 10) and development of that scale was assessed and determined to be appropriate in approving that modification. Furthermore, the 'do nothing' option would result in the many benefits of the proposal not being delivered, particularly new high-quality housing in a highly accessible location, with a range of services and transport modes close by.

Option 2: The Proposal

Option 2 involves providing the amended development as proposed through this SSD DA (as described in **Section 4.0**). The proposal will ensure that a high-quality building is delivered on the site that responds to the strategic need identified above, and fulfills the aspirations and development parameters of the approved Concept Plan (Mod 10). As this proposal involves amendments to the already approved Building R4B, it is considered that this option is the most efficient and effective way of fulfilling the development envisaged by Concept Plan (Mod 10) and unlocking the strategic benefits of the site.

Option 3: Alternative Designs

An international design excellence architectural selection process was conducted for the original design of Building R4B (SSD 6965) in accordance with the Barangaroo Design Excellence Strategy. The selection process included alternative designs submitted by both Australian and international eminent architects including FJMT, Christian de Portzamparc and WOHA. The Renzo Piano Building Workshop (RPBW) design was selected as the winner of the process as it resulted in the best outcome for the site when considering the alternatives, particularly in terms of achieving the primary objectives referred to above under **Section 1.3**.

This proposal relates to amendments involving additional height and corresponding floor space to be included within the approved design of Building R4B. Importantly, the key design features of the approved building will not be altered, and the additional height and floor space will comprise an extension of the approved form. As such, it is not considered appropriate to explore further revised or alternative designs, with the most suitable option being to maintain the existing design approach of the building in the additional levels.

1.5 Secretary's Requirements and Supporting Technical Studies

In accordance with section 4.39 of the EP&A Act, the Secretary of the Department of Planning, Industry and Environment issued requirements for the preparation of the EIS on 11 September 2020. A copy of the SEARs is included at **Appendix C**.

Table 1 provides a detailed summary of the individual matters listed in the SEARs and identifies where each of these requirements has been addressed in this EIS and the accompanying technical studies that supports the proposal. The EIS should be read with the accompanying technical studies.

Table 1 Secretary's Requirements

Requirement	Location in Environmental Assessment	
General		
The Environmental Impact Statement (EIS) must address the <i>Environmental Planning and Assessment Act 1979</i> and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000.	Throughout.	
The EIS must be accompanied by a report from a qualified quantity surveyor providing: a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the EP&A Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV;	Provided under separate cover	
an estimate of the jobs that will be created by the development (construction and operation)	Provided under separate cover	
certification that the information provided is accurate at the date of preparation	Statement of Validity (refer to Page 1)	
Key Issues	Report / EIS	Technical Study
1. Statutory and Strategic Context Address all relevant Environmental Planning Instruments, plans, policies and guidelines, including (but not limited to those) outlined below.	Section 5.2	-
Environmental Planning and Assessment Act 1979	Section 5.2	-
Protection of the Environment Operations Act 1997	Section 5.2	-
Protection of the Environment Operations (Clean Air) Regulation 2010	Section 5.2	-
State Environmental Planning Policy (State and Regional Development) 2011	Section 5.2	-
State Environmental Planning Policy (State Significant Precincts) 2005;	Section 5.2	-
State Environmental Planning Policy 55 – Remediation of Land	Section 5.2	-
State Environmental Planning Policy (Infrastructure) 2007	Section 5.2	-
State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development	Section 5.2	Appendix K
State Environmental Planning Policy (Building Sustainability Index – BASIX) 2004	Section 5.2, Section 5.20	Appendix t
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	Section 5.2	-
NSW State Priorities	Section 5.2	-

Requirement	Location in Environmental Assessment	
- Future Transport Strategy 2056 and supporting plans	Section 5.2	Appendix F
- Better Placed – an integrated design policy for the built environment of NSW 2017	Section 5.2	-
- NSW Planning Guidelines for Walking and Cycling	Section 5.2	Appendix F
- Sydney City Centre Access Strategy	Section 5.2	Appendix F
- Apartment Design Guide	Section 5.2	Appendix K
- Barangaroo Integrated Transport Plan	Section 5.2	Appendix F
- Barangaroo Housing Strategy	Section 5.2	-
- Barangaroo Transport Management and Accessibility Plan	Section 5.2	Appendix F
- Guide to Traffic Generating Developments (RMS)	Section 5.2	-
- Standards Australia AS 2890.3 (Bicycle Facilities)	N/A	Appendix F
- Development near Rail Corridors and Busy Roads – Interim Guidelines	Appendix G	Appendix F
- Cycling Aspects of Austroads Guides	N/A	Appendix F
- EIS Guidelines – Road and Related Facilities (DoPI)	N/A	N/A
- Guide to Traffic Management – Part 12: Traffic Impacts of Development (AUSTROADS)		Appendix F
- NSW Industrial Noise Policy 2000 (EPA) and application notes 2013 (EPA)		Appendix P
- Interim Construction Noise Guideline 2009 (DECC)		Appendix P
- Assessing Vibration: A Technical Guideline 2006 (DECC)		Appendix P
- NSW Road Noise Policy (DECCW 2001) and application notes 2013 (EPA)		Appendix P
- The Approved Methods for the Modelling and Assessment of Air Pollutants (August 2005) (DEC)		Appendix X
- The Approved Methods for the Sampling and Analysis of Air Pollutants (January 2007) (DEC)		Appendix X
- Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards (2012) (Department of Health)		Appendix X
- Assessment and Management of Odour from Stationary Sources in NSW: Technical Framework (DEC, 2006) and Technical Notes (DEC 2006)		Appendix X
- Managing Urban Stormwater – Soils and Construction 4 th Edition (Landcom)		Appendix H
- Waste Classification Guidelines Part 1: Classifying Waste 2014 (EPA)		Appendix Z
- Waste Classification Guidelines Part 4: Acid Sulfate Soils 2014 (EPA)		Appendix E
- Acid Sulfate Soils Manual 1996 (ASSMAC)		Appendix E
- Waste Avoidance and Resource Recovery Act 2001		Appendix Z
- City of Sydney Guidelines for waste management in new developments		Appendix Z
- Sustainable Sydney 2030	Section 5.2	-
• Detail the nature and extent of any prohibitions that apply to the development	N/A	N/A
• Identify compliance with the development standards applying to the site and provide a detailed justification for any non-compliances	Section 5.2	-

Requirement	Location in Environmental Assessment	
Demonstrate how the proposal is consistent with the Concept Plan MP06_0162 (as modified), including any relevant Statement of Commitments.	Section 5.3	-
2. Amending Development Application		
The EIS shall illustrate and describe the amendments sought to the existing Development Approval (SSD 6965), including a comparative analysis of the building height, design, visual/view impact, GFA, car parking, floor spaces, uses and any other relevant amendment.	Section 4.0	-
The EIS shall confirm any proposed change to relevant conditions of consent between the existing Development Approval and the proposed amending DA.	Section 4.9	-
3. Land Use and GFA		
Provide a table identifying the building's different land uses, including a floor by floor breakdown of GFA, total GFA and site coverage.	Section 4.5	-
4. Design Excellence, Built Form and Urban Design		
Outline the design process leading to the proposal and demonstrate that the amended development achieves design excellence with specific consideration of the site's character, layout, setbacks, architectural design, materials, articulation and detailing, amenity, views and vistas, open spaces and public domain, connectivity and street activation.	Section 4.0, Section 5.4	Appendix A, Appendix B
Address the height, bulk and scale of the proposal development within the context of the locality and its surrounds.	Section 4.0, Section 5.5	Appendix A, Appendix B
5. Visual and View Impacts		
Identify important sight lines and visual connectivity to and through the site.	Section 5.6	Appendix L
- A visual impact assessment is to be provided to identify the visual changes and impacts on the site and its surrounds when viewed from key vantage points, including: - Hickson Road, Kent Street, Lime Street, High Street, Sydney Observatory, Sydney Observatory Park, Clyne Reserve, Munn Reserve, Sydney Harbour Bridge, Pyrmont Bridge, Ballart Park Darling Island, Jones Bay Wharf Pyrmont, East Balmain, Darling Harbour, Blues Point, Millers Point, Sydney Opera House, and Cremorne Point.	Section 5.6	Appendix L
6. Prescribed Airspace for Sydney Airport and Sydney Observatory Impacts		
Identify any impacts of the proposed amended development on the prescribed airspace for Sydney Airport.	Section 5.7	Appendix W
Undertake an analysis and resultant impacts on the functioning of the Sydney Observatory telescopes and astronomical sightlines considering night-sky view loss and light spill.	Section 5.7	Appendix S
7. Amenity		
Outline and address the proposed amended development's impacts in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, and safety and security.	Section 5.8	Appendix K
Outline and address the provision of communal open space for the amended development.	Section 5.8	Appendix K
8. Ecologically Sustainable Development		
Detail how ESD principles (as defined in clause 7(4) Schedule 2 of the EP&A Regulation 2000) will be incorporated in the design, construction and ongoing phases of the development.	Section 5.12	Appendix G
Outline resource, energy and water efficiency initiatives, including the use of sustainable technologies and or/renewable energy.	Section 5.12	Appendix G

Requirement	Location in Environmental Assessment	
Provide an integrated Water Management Plan including alternative water supply, proposed end uses of potable and non-potable water, water sensitive urban design and water conservation measures.	Section 5.12	Appendix I, Appendix Y
9. Public Domain and Public Access		
Identify any changes/improvements to approved open space, public domain and linkages with and between other public domain spaces, including Hickson Road, other streets and lanes, and the Harbour foreshore.	N/A	N/A
10. Transport, Traffic, Car Parking and Accessibility		
- The EIS shall include a Traffic and Transport Impact Assessment that assesses any additional impacts of the proposed amending DA on the traffic and transport network and pedestrian and cyclist safety adjacent to the site which compared to the existing development approval. This should include: - current daily and peak hour vehicle, public transport, pedestrian and bicycle movements and existing traffic and transport facilities provided on the road network; - daily and peak traffic movements likely to be generated by the proposed amended development, including peak traffic movements; - assessment of the existing and future performance of key intersections providing access to the site, and any upgrades (road/intersections) required as a result of the proposed amended development. The assessment of the existing and future road network operations needs to consider the cumulative impacts of traffic volumes and focus on intersections in the north-west quadrant of the CBD in the vicinity of Barangaroo. The assessment needs to be supported by appropriate modelling and analysis to the satisfaction of TfNSW; - details of proposed car parking for the proposed amended development, consistent with the Concept Approval. Details and assessment of any changes to - pedestrian and cycle connections/circulation - approved loading, servicing or access arrangements for residents, workers and visitors - car parking and bicycle storage provision, having regard to relevant codes - public transport services and opportunities for greater usage for residents, workers and visitors; - sustainable travel initiatives for residents, workers and visitors - access arrangements for emergency and service vehicles - construction traffic impacts and how any additional impacts will be mitigated.	Section 5.13	Appendix F
The EIS shall include an assessment of the impact of the proposed amended development on the operation of the Barangaroo Ferry Hub including environmental impacts on the ferry hub and ferry customers such as shadow impacts. This should also consider lighting design and any potential impact on navigational safety.	Section 5.13.3	Appendix F
The EIS shall address pedestrian and traffic management during construction, in particular the cumulative impacts of other construction activities, including the Sydney Metro City and Southwest and other surrounding developments in Barangaroo.	Section 5.13	Appendix F
11. Interim rail corridor		
The EIS shall detail the likely effect of the proposal on the Sydney Metro Corridor and Sydney Metro Barangaroo Station.	5.13.3	-
12. Heritage		
The EIS must include an assessment of the likely impacts of the proposed amended development on any heritage and archaeological items and outline mitigation and conservation measures.	Section 5.14	Appendix Q

Requirement	Location in Environmental Assessment	
13. Contamination		
Demonstrate compliance with the requirements of SEPP 55.	Section 5.15	Appendix E
14. Construction		
- The applicant must include updated reports that consider any additional potential impacts (beyond the original approval) and outline proposed management and mitigation measures. Updated reports should include (but not be limited to): - noise - air quality - water, drainage, stormwater and groundwater - sediment, erosion and dust control - waste - Building Code of Australia - environmental, construction and site management - infrastructure provision - staging	Section 5.16	Appendix DD
15. Water Related Infrastructure Requirements		
The EIS shall address Sydney Water requirements and demonstrate that satisfactory arrangements for drinking water, wastewater, and if required, recycled water services have been made for the amended development.	N/A	Appendix Y
16. Biodiversity		
The EIS shall provide an assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted.	N/A BDAR Waiver granted	N/A BDAR Waiver granted
Consultation		
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular, you must consult with: - City of Sydney Council - Sydney Coordination Office within Transport for NSW - Sydney Metro - Government Architect NSW - Sydney Observatory - Local Aboriginal Land Council and stakeholders, if relevant - Local heritage groups, if relevant.	Section 3.0	N/A
The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	Section 3.0	N/A
Plans and Documents	Report	Technical Study
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.	N/A	Appendix A, Appendix B
In addition, the EIS must include the following: high quality files of maps and figures of the subject site and proposal	N/A	Appendix A
site survey plan, showing existing levels, location and height of existing and adjacent structures/buildings	N/A	Appendix D

Requirement	Location in Environmental Assessment	
• site analysis plan	N/A	Appendix A
• architectural drawings	N/A	Appendix A
• landscape plan	N/A	N/A
• urban design report	N/A	Appendix B
• visual and view impact assessment including a visual assessment methodology and providing an analysis from visual catchment locations	Section 5.6	Appendix L
• heritage impact statement	Section 5.14	Appendix Q
• shadow diagrams and overshadowing analysis providing an analysis of solar access at the summer solstice (Dec 21), winter solstice (June 21) and the equinox (March 21 and September 21) between 9am and 3pm	Section 5.9	Appendix N
• schedule of materials and finishes (if required)	N/A	Appendix A
• noise impact assessment	Section 5.17	Appendix P
• access impact assessment	Section 5.20	Appendix BB
• ESD report	Section 5.12	Appendix G
• Building Code of Australia report	Section 5.20	Appendix AA
• consultation summary report	Section 3.0	N/A
• traffic and transport impact assessment	Section 5.13	Appendix F
• preliminary construction management plan, inclusive of a construction and pedestrian traffic management plan	Section 5.16	Appendix DD
• stormwater management plan	N/A	Appendix H
• floor risk assessment	N/A	Appendix V
• sediment and erosion control plan	N/A	Appendix H
• geotechnical and structural report	N/A	Appendix V
• contamination assessment, including remedial action plan and site audit statement (if required)	Section 5.15	Appendix E
• integrated water management plan including water sensitive urban design strategy	Section 5.20	Appendix Y
• servicing and operational waste management plan in accordance with Council guidelines.	Section 5.20	Appendix H
• design verification statement	Section 5.8	Appendix K
• light spill analysis	Section 5.7	Appendix S
• 3D modelling and a physical model in accordance with Council requirements	N/A	N/A

2.0 Site Analysis

2.1 Site Location and Context

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

The 22 hectare Barangaroo site is generally rectangular in shape and has a 1.4 kilometre Harbour foreshore frontage, with an eastern street frontage to Hickson Road. The locational context of the Barangaroo site is shown in **Figure 1**.



Figure 1 Locality Plan

Source: Ethos Urban, Nearmap (26TH September)

2.2 Barangaroo Site Description

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south), comprising the Barangaroo Reserve, Central Barangaroo and Barangaroo South (refer to **Figure 1**), and has been subject to multiple investigations that detail the physical and natural characteristics of the site.

For the purposes of overall staging, Barangaroo South has been divided into three areas, referred to as Stage 1A, Stage 1B and Stage 1C (refer to **Figure 2**). Stage 1A refers to the land generally south of Watermans Quay, while Stage 1B refers to the portion of the Barangaroo South site generally north of Watermans Quay, with the exception of the area being developed by Crown Resorts, which is referred to as Stage 1C. Stage 1B is generally known and identified in Concept Plan (Mod 10) as Blocks 4A and 4B, and also include the future Hickson Park, Watermans Cove and areas of Wulugul Walk. Stage 1B also includes a large single basement, which will service Residential buildings R4A, R4B and R5.

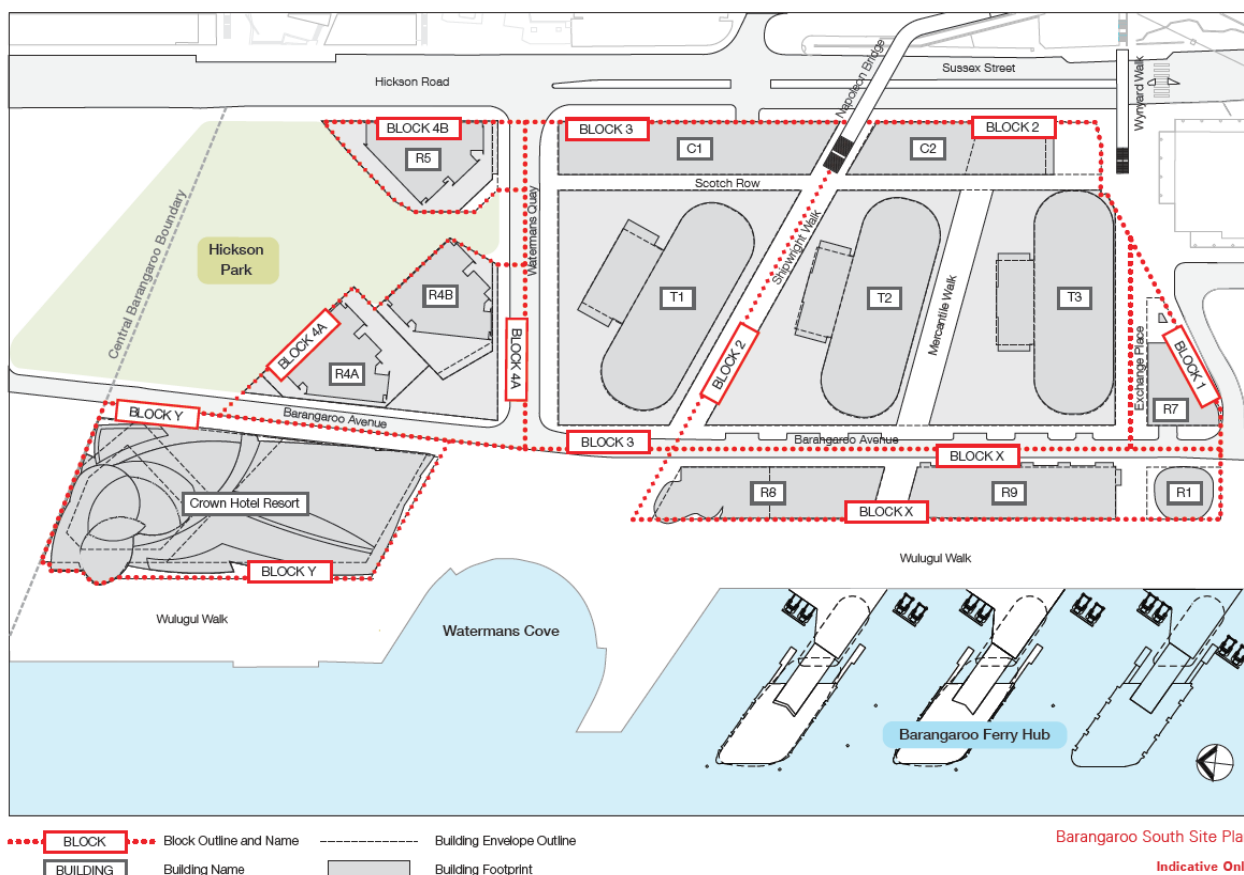


Figure 2 Block 4A in relation to Barangaroo South

Source: Lendlease

2.3 Building R4B Site Description

The proposal the subject of this amending SSD DA is located within Block 4A. The subject development site is bounded by Watermans Quay to the south, Block 4B (Building R5) to the east, the future Hickson Park to the north and Building R4A to the west.

The site's area is approximately 2,187m² and it is irregular in shape, as shown in the aerial photo of the site at **Figure 3**. A Site Survey Plan is located at **Appendix D**.

The Building R4B site is currently unoccupied, however construction work is currently underway for the development of the lower Building R4B approved under the Stage 1B Basement (SSD 6960). The remaining Stage 1B Basement and Building R4A (SSD 6964) are also currently under construction in the directly surrounding area.

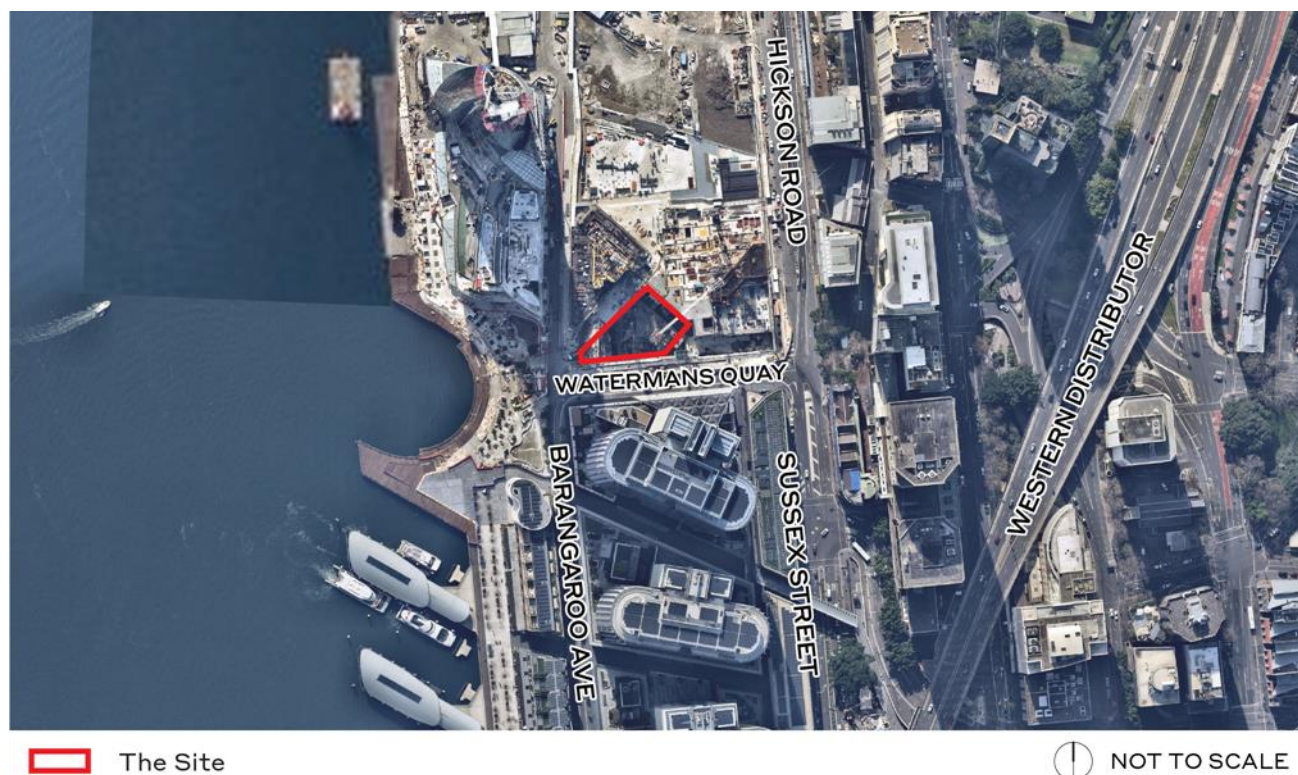


Figure 3 Aerial of the site

Source: Nearmap, Ethos Urban

Land Ownership and Legal Description

A Site Survey Plan prepared by Geostrata is included at **Appendix D**.

Infrastructure New South Wales (Infrastructure NSW) owns the majority of Barangaroo, however small areas of the Barangaroo site are owned by other Government agencies including the Marine Ministerial Holding Corporation, the Roads and Maritime Services and the Crown.

The site that is the subject of this amending SSD DA comprises Lot 500, DP 1264241. Infrastructure NSW is the owner of the site, and have issued landowner's consent to the making of this amending SSD DA.

2.4 Traffic and Transport

2.4.1 Vehicular Access

Hickson Road connects into Sussex Street south of Napoleon Street and is the north-south access road for Barangaroo South. Local road access to the Barangaroo site is provided:

- Via Napoleon Street and Margaret Street from the eastern CBD from Millers Point via Dalgety Road.
- Via George Street from the north east.
- Via Harbour Street, Wheat Road (through King Street Wharf) to Shelley Street from the south via Sussex Street/Kent Street/Napoleon Street from the southern CBD.

Building R4B fronts the Watermans Quay to the south. Watermans Quay connects to Hickson Road in the east, and Barangaroo Avenue in the west, which connects through to the King Street Wharf precinct to the south. A temporary access road, known as Barton Street, will connect to Hickson Road in the east, and Barangaroo Avenue in the west and is to be in place until the extension of Barangaroo Avenue through Central Barangaroo is completed.

2.4.2 Public Transport

The Barangaroo site is served by the following public transport modes:

- **Rail:** Wynyard, Martin Place, Town Hall and Circular Quay railway stations are within walking distance of the Barangaroo site and provide frequent services throughout the day. In June 2015 the NSW Government announced a new underground railway station at Barangaroo will be part of the plans for the new Sydney Metro. The new Metro Station is currently under construction in Central Barangaroo, and is expected to open in 2024. The Station is approximately 400 metres walk to the site.
- **Bus:** There is a major bus interchange located at Wynyard Station for buses servicing the Hills District, Northern Beaches and the North Shore areas. These services all utilise the bus lane on the Harbour Bridge to access Wynyard. Stops for services to other locations are provided through the CBD including along George, Park, Elizabeth and Castlereagh Streets. A number of bus routes terminate in the vicinity of the Barangaroo site, King Street Wharf and Circular Quay.
- **Ferry:** Commuter ferry services arrive and depart from the wharves currently located at Barangaroo. This includes services to Parramatta and Watsons Bay, as well as linking services to Circular Quay.

Further information on existing and known planned public transport in the vicinity of the Barangaroo site is provided in the Transport Management and Accessibility Plan prepared by JMT Consulting at **Appendix F**.

2.4.3 Pedestrians and Cyclists

Pedestrian Access

There are a number of existing and recently completed pedestrian access routes in Barangaroo. Completed in 2016, Wynyard Walk provides a high level of access to public transport for the growing western corridor of the CBD, including Barangaroo and King Street Wharf. This assists in accommodating the additional commuters who are expected to use this route to access the Barangaroo site. Lendlease has also provided a second pedestrian bridge, known as Napoleon Bridge, which connects Wynyard Walk near Kent Street to the site between the Hickson Road Buildings C1 (Daramu House) and C2 (international House Sydney).

Pedestrian access is also provided across the site, with all local roads lined with pedestrian footpaths on either side. Pedestrian access to the Barangaroo Foreshore is also provided on Wulugul Walk, which has recently been extended toward the Crown Sydney Hotel and Resort site.

Bicycles

A marked bicycle lane exists along part of Hickson Road and forms part of a cycleway between Circular Quay and Napoleon Street which is utilised by both commuter and recreational cyclists. Cycling connections to the site have been improved through the construction of separated cycleways along King Street and Kent Street by City of Sydney Council (Council). An on-road bicycle lane has recently been installed for eastbound riders (uphill), with a mixed traffic environment in the westbound direction.

The Sydney City Centre Access Strategy (Strategy) outlines the future city centre cycleway network to encourage growth in cycling and reduce pressure on the public transport system. The Strategy's strategic cycleway network map indicates future cycleway connections into Barangaroo will be via the Pyrmont Bridge cycleway and the Harbour Bridge cycleway. These new links are yet to be determined.

2.5 Contamination

A number of site history studies and environmental site investigations have been undertaken to assess the extent and nature of contaminants within the Barangaroo site as a whole, as well as within the Barangaroo South area which includes the site. Investigations revealed that both the soil and groundwater was contaminated, and that the extent of the contaminated materials varied across the Barangaroo site.

Concentrations of lead, total petroleum hydrocarbons (TPHs), benzene, xylenes and polycyclic aromatic hydrocarbons (PAHs) in the soil variably exceeded applicable guideline criteria. The contamination was largely associated with the operation of a former gasworks (which was located to the north-east of Stage 1A of the site), and from the importation of materials historically used to fill the Barangaroo site.

In May 2009, the Department of Environment, Climate Change and Water (DECCW) (now the NSW EPA) declared part of the Barangaroo site (part of Blocks 4A, 4B and 5) and immediately adjacent land within the Hickson Road reservation to be a "remediation site" under the *Contaminated Land Management Act, 1997* (Declaration No. 21122) (known as the 'Declaration Area').

In November 2014, approval for SSD 5897 was for the remediation of contaminated land within part of the EPA Declaration Area known as Block 4 (Block 4 is also now known as Stage 1B, including the Building R4B site). The approved remediation works and the actions set out in these RAPs have largely been completed, and the EPA has ended the declaration of significantly contaminated land on both Blocks 4 and 5.

2.6 Heritage and Archaeology

The Heritage Impact Statement prepared for the Barangaroo site by City Plan Heritage in 2007 (refer to Demolition Project Application MP07_0077) confirms the Barangaroo South site is not of heritage significance and does not exhibit heritage values (including existing buildings and structures).

Indigenous and Non-Indigenous Archaeology

A Non-Indigenous Archaeological Assessment undertaken by Casey & Lowe and was submitted to the Department as part of the Block 4 Remediation EIS (refer to Appendix S of SSD 5897). That assessment indicated that the development site contains a significant archaeological resource associated with Australia's first gasworks and nineteenth-century shipbuilding, reclamation and wharfage. However, the nature of the contamination makes it difficult to realise the significance of this resource.

A search of the OEH's Aboriginal Heritage Information Management System (AHIMS) indicates that no known Aboriginal sites have been previously recorded within or in the vicinity of the Barangaroo site or the broader Barangaroo site. An Aboriginal Archaeological and Cultural Heritage Assessment was prepared by Comber Consultants for the Block 4 remediation application (SSD 5897). That Assessment suggests that, the site has no Aboriginal archaeological or cultural heritage potential and that the remediation proposed under SSD 5897, including excavation of the development site area, can proceed without any further Aboriginal archaeological assessment, excavation or testing.

During 2011 and 2012 Casey & Lowe and Comber Consultants undertook a ten-month archaeological program of excavation and recording. Following completion of the program there is no indication of any surviving significant archaeological remains within the site. No archaeological issues were identified in the area to the west of the eastern 40m of Barangaroo South. The Building R4B site is considered to have no archaeological potential or significance, and as described above, works are already underway on the site for the construction of the approved building.

Built Heritage

There are a number of heritage items in the vicinity of the site. The former warehouses known as the 'MSB Store', located on Hickson Road are of local heritage significance, as well as the various terraces identified as being of heritage importance in the Millers Point Conservation Area. As discussed in **Section 5.14**, the proposed amendments will not have any impact on the siting or heritage importance of these items.

2.7 Surrounding Development

A description of the existing development and future proposed development envisaged under the proposed Concept Plan (Mod 10) is outlined below. An envelope plan of the Barangaroo South site noting the subject site of this amending SSD DA is shown at **Figure 4** for further context.

To the north

Directly to the north-west of Building R4B will be Building R4A. The buildings have been designed to complement each other, along with Building R5 on Hickson Road. Also directly adjoining is the future Hickson Park. This will provide public open space, with the One Sydney Harbour development providing a dramatic backdrop.

Further to the north of this is Central Barangaroo, comprised of Blocks 5, 6 and 7 under the Concept Plan (Mod 10). Within Central Barangaroo, a total of 59,225m² of mixed-use gross floor area is approved under the Concept Plan (Mod 10), and block specific heights of RL 34 (Block 5), RL 29 (Block 6) and RL 35 (Block 7) are also approved. Accompanying the Central Barangaroo blocks is public open space, including a waterfront civic park to the west of Central Barangaroo. At present, these blocks have only been used as a construction compound and a remediation compound. No building applications have been submitted for Central Barangaroo.

Beyond Central Barangaroo is the proposed Barangaroo Metro Station, which when approved will have the capacity to accommodate a train every two minutes in both directions. To the north of the Metro Station is the Barangaroo Headland Park (Barangaroo Reserve), which was completed and opened to the public in 2015.

To the east

Directly to the east of the site is Block 4B. Block 4B is to be occupied by approved Building R5, which has been designed to sit in tangent with Building R4A and Building R4B. Building R5 has been approved as a 30 storey residential building with a gross floor area of 18,158m².

Beyond Building R5 is Hickson Road, Millers Point and the Sydney CBD.

To the south

To the south of the site is the remainder of Barangaroo South, which is largely complete. The buildings that are now occupied in Barangaroo South include:

- Buildings R8 and R9, which accommodate ground floor restaurants, retail and public amenities with residential apartments above.
- Commercial Buildings C3, C4 and C5, now known as the International Towers, designed by Rogers Stirk Harbour + Partners (RSH+P) and which accommodate retail, food and drink premises, child care, recreational facilities, health services facilities and commercial floor space.
- Buildings R1 (Barangaroo House) and R7, which accommodate retail, food and drink premises, commercial floor space, indoor recreational facilities, public amenities and health services facilities.
- Buildings C1 (Daramu House) and C2 (International House Sydney), which provide commercial floor space and retail in a cross laminated timber format.
- The Stage 1A Basement, providing parking, loading and shared services area and end-of-trip facilities.
- The general Stage 1A public domain areas and the Barangaroo ferry wharves.

To the west

Directly to the west of Building R4B is the Crown Sydney Hotel and Resort, which is currently under construction and is expected to be completed in December 2020. This accommodates a 75 storey mixed use building on the waterfront. Beyond this is Cockle Bay, and Pyrmont.

Further to the west is Watermans Cove and Wulugul Walk, providing a public domain edge to the Harbour.

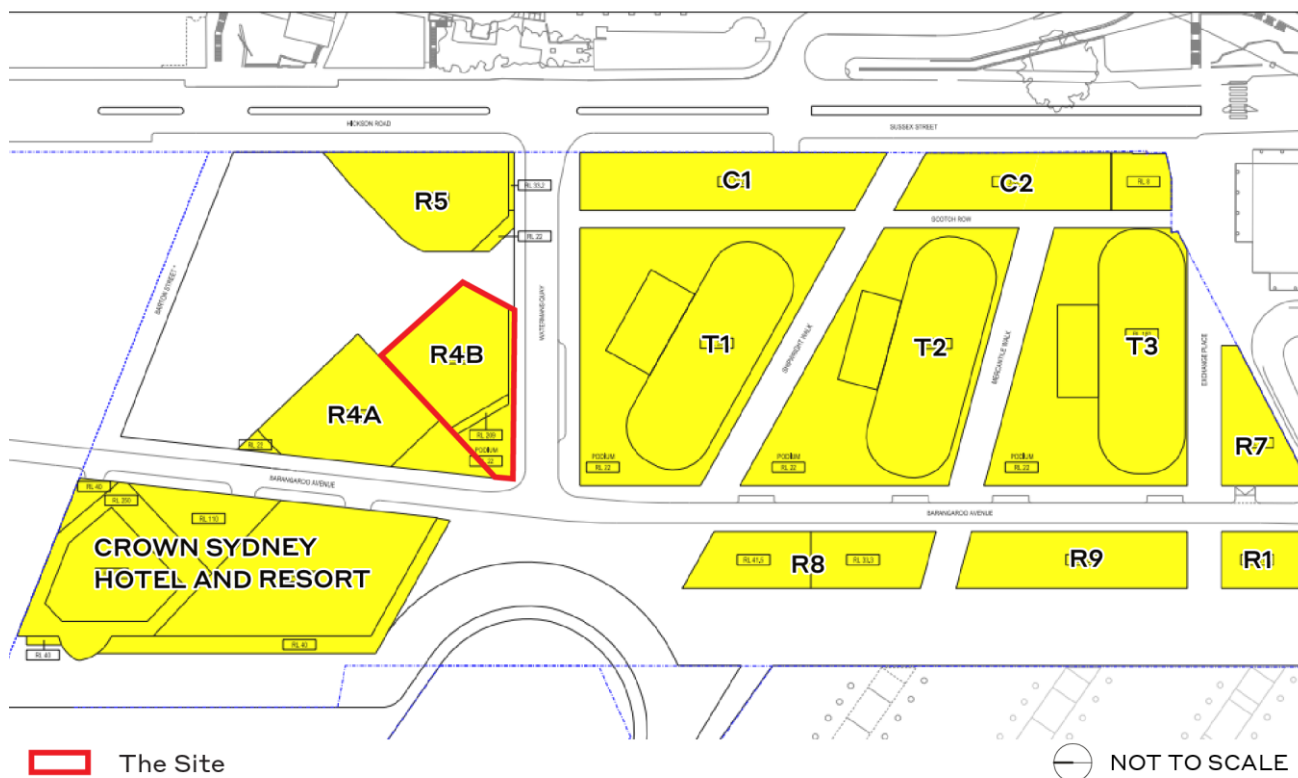


Figure 4 The subject site in relation to the Barangaroo Concept Plan envelopes

Source: Lendlease

3.0 Consultation

In accordance with the SEARs issued for this SSD DA, consultation was undertaken with relevant public authorities, the community and Council. A summary of the consultation undertaken to-date with Council, the community and relevant agencies is provided in **Table 2** below. Several consultants have also undertaken additional consultation with relevant parties and authorities during the preparation of their reports.

Table 2 Summary of Issues Raised and Response

Stakeholder	Consultation Method	Date	Comments
Local Authorities			
City of Sydney Council	Meeting via MS Teams	Meeting: 1/10/2020	Summary: The proposal is in response to the approved Concept Plan (Mod 10).
	Key Issues		Response
	How does the western glass façade manage heat impacts in the apartments?		The façade is predominately a triple glazed system with an open cavity façade which is designed to reduce heat impacts on the apartments. The development is targeting a 5-star Green Star Design and As Built rating as a minimum. ESD information and reports will be included in the planning application.
	The car parking rates are greater than the City of Sydney rates. Is there a strategy to deal with residential car parking spaces being leased?		The resident by-laws will prohibit the leasing of car parking spaces.
	Is there a percentage change in the amount of Key Worker Housing due to the Modification 10 Concept Approval?		There is an increase in Key Worker Housing GFA as a result of the Modification 10, which will result in some 2 additional apartments being provided, from 48 apartments to 50 apartments in R5. This does not form part of this planning application and will form part of a planning application concerning R5 to be lodged separately. Off-site provision of Key Worker Housing will occur in accordance with the requirements of the Concept Plan (Mod 10).
	How is the parking re-allocated?		Each residential tower development consent provides the number of car parking spaces. The number of car spaces in Building R4A will be reduced to increase the number of car spaces for Building R4B. All towers will remain below the maximum allowed under the Concept Plan parking rates. The reallocation of parking in Building R4A will be dealt with under a separate planning application.
	Query regarding impacts on Sydney Observatory		Reports on both light spill and sky view impacts on the Observatory are provided in the planning application.
State Authorities			
Sydney Coordination Office within Transport for NSW	Meeting via MS Teams	Meeting: 29/09/2020	Summary: Traffic impacts of the proposal are considered low, and TfNSW have no objection.
	Key Issues		Response
	Is parking proposed to be 375 or 331 spaces		SEARs noted maximum 375 spaces, however through design development, the parking number has been revised to 331 spaces, and this is provided in the planning application. The Concept Plan (Mod 10) allows 375 spaces in response to the proposal, therefore the proposed 331 spaces is within the maximum under the Concept Plan (Mod 10) parking rates.
	Traffic impacts of additional parking and apartments		The rate applied is approximately 0.1 vehicles per additional dwelling during peak hours. 32 additional dwellings are proposed. Based on this, it is expected no more than 3-4 additional traffic movements per hour with most movement impact being in the morning and evening peaks.
	How will the 7 additional spaces be allocated		Spaces will be reallocated from Building R4A via a separate planning application to Building R4B. No significant increase in car parking spaces are proposed within the framework of the basement, rather re-allocation across the residential buildings.

Stakeholder	Consultation Method	Date	Comments
	Will the loading dock spaces/bays need to be increased		The proposal is not likely to trigger a requirement for additional spaces within the loading dock.
	TfNSW does not support the signalisation of Watermans Quay. Please confirm that the traffic modelling is not based on signals.		The proposal is not reliant on traffic signals being in place at Watermans Quay.
	No additional items to the SEARs is required to support the assessment.		Noted.
Sydney Metro	Cover letter and communication pack via email	Email: 29/09/2020	Summary: No comment on the proposal. Response from Sydney Metro via email: <i>"...Any comprehensive engineering comments will be provided subject to the DA lodgement stage. However, a quick review indicates that Building R4B (understood as the subject of this application) is located away from Hickson Road and would be outside of the Sydney Metro protection reserves. Additionally, given the proposal does not involve any excavation greater than 2m below ground level, Clause 86 of the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) is not triggered.</i> <i>Considering the above, Sydney Metro generally has no comments on this application."</i>
Government Architect NSW	Cover letter and communication pack via email	Email: 9/10/2020	At the time of writing, no comments had been received, but Lendlease will continue to make efforts to engage with the Government Architect NSW Office throughout the assessment period.
Service Providers			
Podium Asset Services (formerly Living Utilities)	Cover letter and communication pack via email	Email: 29/09/2020	Summary: Servicing is adequate for the proposed development. Response from Podium Asset Services via email: <i>"...On behalf of Lendlease Embedded Network (Barangaroo South) Pty Limited (LLEN) & Lendlease Recycled Water (Barangaroo South) Pty Limited (LLRW), being the utility providing (water, power, recycled water, sewer) service to Barangaroo South, we have been advised of the proposed increase in size of R2 (R4B) residential tower and have reviewed the requirements.</i> <i>Based on information provided by the Developer, the infrastructure has the capacity to service the development as proposed, and draft commercial terms are in place to allow the servicing to proceed."</i>
Community Groups			
Walsh Bay Precinct Committee	Email 1: Overview of Amending DA sent Email 2: Follow up email and communication pack	Email 1: 24/09/2020 Email 2: 29/09/2020	No comment received.
Millers Point Community Resident Action Group	Email 1: Overview of Amending DA sent Email 2: Follow up email and communication pack	Email 1: 24/09/2020 Email 2: 29/09/2020	Summary: No feedback provided on the proposal. Key issue: Concern from the Group that they do not believe there is a <i>'real opportunity to have meaningful input'</i> and instead requested Lendlease provide information updates on submissions in the community forums regularly attended by the Group.

Stakeholder	Consultation Method	Date	Comments
Metropolitan Land Council	Cover letter and communication package via email	Email: 29/09/2020	No comment received.
Affected Landowners			
Sydney Observatory	Cover letter and communication pack via email with Light spill report + Sky view report	Email: 06/10/2020	Two potential areas of impact raised comprising Sky View Loss and Light Spill. <i>Sky view loss: The increase in the height of Building R4B will reduce opportunities for viewing of celestial objects of interest from Sydney Observatory.</i> Response: The proposed amendments to Building R4B are consistent with the approved parameters of Concept Plan (Mod 10). Furthermore, Building R4B will not obstruct the globular cluster Omega Centauri, and the obstruction of the Jewel Box Cluster, Southern Cross and Pointers of Centaurus have been already detailed (refer to Section 5.7 for further discussion). <i>Light spill: The cumulative effect of sky glow from surrounding developments is an issue of great concern for Sydney Observatory as it impacts on the ability to conduct its core function as a public observatory.</i> Response: Due to the variety of other factors, including the impact of the wider CBD and Harbour Bridge light spill, events such as Vivid and fireworks in Darling Harbour, smog and atmospheric patterns, the visibility of many of these sky objects is already limited, and therefore the proposed amendments are considered to have minimal impact.
38 Hickson Road Executive Committee	Email 1: Overview of amending SSD DA sent	Email 1: 24/09/2020	Summary: 38 Hickson Road Executive Committee (EC) expressed concerns about the additional parking. However once advised that 331 spaces (not the maximum permissible 375 spaces) was proposed, it alleviated such concern around additional traffic in the area post construction. In addition, the EC noted that the increased height is unlikely to have a significant impact on their building beyond the current approval
	Email 2: Follow up email and communication package	Email 2: 29/09/2020	
	Meeting with Executive Committee	Meeting with Executive Committee 06/10/2020	
	Key Issues		Response
	Confirmation on proposed parking spaces		The Barangaroo Concept Plan allows for 375, however through design development, the parking number under the proposal will be 331 which falls within the maximum Concept Plan cap. Post Meeting note provided: Traffic impacts of additional parking and apartments: The rate applied is approximately 0.1 vehicles per additional dwelling during peak hours. 32 additional dwellings are proposed. Based on this, it is expected no more than 3-4 additional traffic movements per hour with most movement impact being in the morning and evening peaks.
How will the 7 additional spaces be allocated		Spaces will be shifted from Building R4A, via a separate planning application. No significant increase in car parking spaces is proposed within the framework of the basement, rather a re-allocation across the buildings will occur.	
Confirmation of the carpark entrance and exit location for Building R4B		The entrance and exit to the site are from Watermans Quay.	

Stakeholder	Consultation Method	Date	Comments
	Confirmation of proposed height increase		The proposed increase is eight floors (maximum RL 235). In relation to the height/scale of other buildings in close proximity (Crown, R4A, R4B and R5) RL (Reduced Level): • Crown 275m • R4A 250m • R4B 235m • R5 107m
	Apartment mix – request for breakdown		Proposed 322 Apartments breakdown: • 107 – 1 bed • 136 – 2 bed • 77 – 3 bed • 2 – penthouse
	Shadowing		Lendlease explained the shadowing diagrams at 9am, 12pm and 3pm, noting no substantial impact. (There is some additional overshadowing on Sydney Wharf and Pyrmont Bay between 9am to 10am and all shadows are within the Concept Plan Modification Envelope).
	Timing		R4A underway, completion late 2023/early 2024. R4B building construction to start next year, completion 2024 – subject to approvals and construction commencement. R5 building construction TBC, completion 2024 – subject to approvals and construction commencement
R8/R9 Barangaroo Executive Committee	Email 1: Overview of amending SSD DA sent and communication pack	Email: 29/09/2020	Resident: Concern that increase in number of apartments is disproportional to the increase of parking spaces that will create a further shortage of parking in the area. Suggestion that this is offset by the increase in the public (paid) parking space in close proximity to the modified building or in the building itself. Response: No significant increase in car parking spaces is proposed within the framework of the basement, rather a re-allocation across the buildings will occur, ensuring the proposal remains consistent with the approved Concept Plan (Mod 10) rates.
Local Residents - General	Received communication via a local community group	Email: 29/09/2020	Resident (source unknown): <i>“The approved height of the building so far is already at odds with the existing buildings and destroys the amenity of the waterfront. I am opposed to any further increase in height.”</i> Response: The building height sought to be achieved with the additional eight levels is consistent with the approved Concept Plan (Mod 10) parameters for Building R4B. Furthermore, the building continues to implement the principles of the approved RSHP masterplan as outlined in Section 5.5 of this EIS. Resident (source unknown): Comments sent regarding Lendlease and its management, no focus on content of the proposal. Response: These comments did not relate to the content of the proposed amending SSD DA, therefore no further comment is required.

The proposal will be placed on public exhibition for 30 days in accordance with clause 83 of the *Environmental Planning and Assessment Regulation 2000*. During the public exhibition period Council, State agencies and the general public will have an opportunity to make submissions on this SSD DA.

4.0 Description of the Proposed Amendments

This chapter of the report provides a detailed description of the proposed development, making reference where relevant to the approved Building R4B development (SSD 6965) and how this amending SSD DA seeks approval for development which will be implemented through amendments to the approved building.

Architectural drawings illustrating the proposed amendments are included at **Appendix A**. Except for the set of Architectural drawings identified as “For Approval”, all plans provided at **Appendix A** are illustrative and provided to support this application for information purposes only. A further description of the proposed amendments is provided in the Architectural Design Statement prepared by RPBW at **Appendix B**.

This amending SSD DA broadly seeks approval for eight additional levels, 32 additional apartments, and an allocation of seven (7) additional car parking spaces associated with Residential Building R4B. The amending SSD DA seeks to amend the approved Building R4B development (SSD 6965), through:

- An increase in the overall building height of Building R4B from RL208.23 up to RL235, comprising the addition of eight levels.
- Refinement of the upper levels of the approved Building R4B to accommodate the addition of eight levels, including:
 - Elevation of the two approved sky home levels at Levels 56-57 to Levels 64-65.
 - Addition of eight additional upper floor plate levels from Levels 56-63.
- Amendment of the floor to ceiling heights of Levels 48 and 49 to 2,700mm from 3,000mm.
- An increase in the overall number of apartments from 290 to 322 and associated revision to the dwelling mix.
- An increase in the number of car parking spaces from 324 to 331.

A photomontage of the Barangaroo South development including the proposed amendments to Building R4B is illustrated in **Figure 5**.



Figure 5 Photomontage of Barangaroo South when completed (including amended Building R4B)

Source: RPBW

4.1 Numerical Overview

As required by the SEARs, the key numerical development information of the proposed amending SSD DA is summarised in **Table 3**.

Table 3 Key development information

Component	Approved Building R4B	Proposed amending SSD DA	Increase from approved Building R4B (as amended)
Site area	2,187m ²	2,187m ²	N/A
GFA	Total GFA of 38,911m ² , comprising: 38,602m² of residential GFA. 309m² of non-residential GFA.	Total GFA of 44,561m ² , comprising: 44,252m² of residential GFA. 309m² of non-residential GFA.	Total GFA (+5,650m ²), comprising: +5,650m² of residential GFA. - No change to non-residential GFA.
Maximum Height	RL 208.230	RL 235	+26.77m
Apartments	290	322	+32
Car spaces	324	331	+7

4.2 Building Height

An additional eight levels are proposed to Building R4B as part of the amending SSD DA. The approved Building R4B maximum height of RL 208.230 is proposed to be increased by an additional eight levels to an uppermost height of up to RL 235. It is noted that the precise height of the proposal is RL 233.485, as expressed on the Architectural Plans (refer to **Appendix A**). However, a maximum of RL 235 is sought to align the proposal with the maximum height permitted under the Concept Plan (as modified).

This proposed amendment represents a height increase of up to 26.77 metres. The additional height sought to be provided on approved Building R4B is illustrated through clouding on the elevations and sections within the Architectural Drawings at **Appendix A** and diagrammatically in **Figure 6** in the context of Buildings R4A and R5.

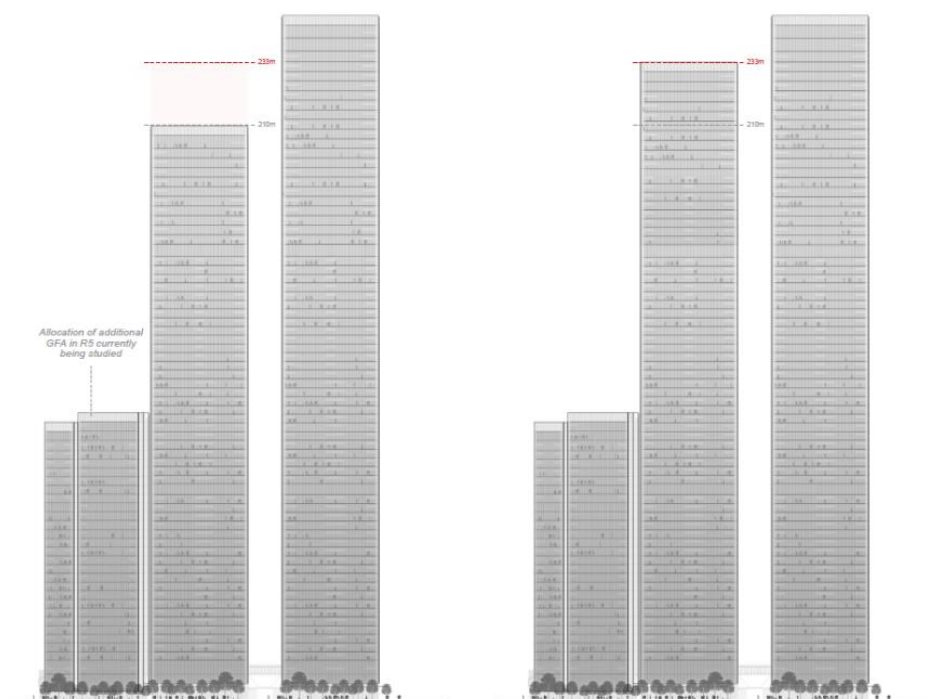


Figure 6 Height comparison between approved Building R4B (left) and proposed Building R4B height (right)

Source: RPBW

4.3 Floor Plate Typologies and Levels

Four separate floor plate typologies have been approved in Building R4B under development consent SSD 6965, reflecting the varying height, context and outlook at different levels of the building. These floor plate typologies comprise the lower plate, mid plate, upper plate and sky homes; each including a different layout and mix of apartments. The four separate typologies are to be retained, but amendments are proposed through this amending SSD DA to the upper floor plate and sky home levels. To accommodate the additional eight levels, the following amendments are proposed comprising:

- Elevation of the two approved sky home levels at Levels 56-57 to Levels 64-65.
- Addition of eight additional upper floor plate levels from Levels 56-63.

A comparison between the approved Building R4B typologies and corresponding levels against the proposed typologies and levels is provided in **Table 4**. **Figure 7** provides a visual representation of the amended floor plate typology levels in Building R4B.

Table 4 Floor Plate Mix

Floor Plate Type	Approved Building R4B	Proposed
Lower floor plate	Level 1-19 and Level 21-32	Level 1-19 and Level 21-32
Mid floor plate	Level 33-46	Level 33-46
Upper floor plate	Level 48-55	Level 48-63
Sky home	Level 56-57	Level 64-65

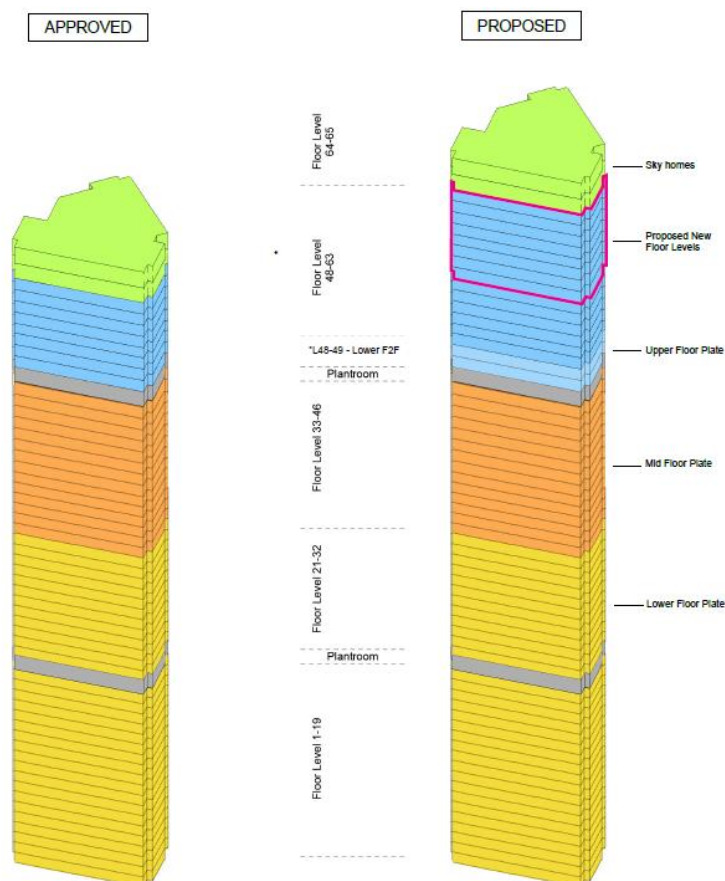


Figure 7 Addition 8 levels, with the relocation of the skyhomes above and the corresponding adjustment of the floor plates below between the approved R4B (left) and the proposed R4B (right)

Source: RPBW

4.4 Floor to Ceiling Height

Upper Floor Plate: Levels 48-49

To enable the continued alignment of the Level 47 plant level in both Building R4A and Building R4B, and to ensure the maximum height for Building R4B under the approved Concept Plan (Mod 10) is respected, the floor to ceiling height of the two initial upper floor plate levels (Levels 48 and 49) is proposed to be amended.

The floor to ceiling height on these two levels will be reduced to match the lower and mid floor plate typologies, providing for a total floor to ceiling height of 2,700mm. The remainder of the upper floor plate levels will be provided with a floor to ceiling height of 3,000mm, including the eight additional upper level floor plate levels proposed.

Sky Homes: Levels 64-65

The approved sky home levels under SSD 6965 are provided with a floor to ceiling height of between 4,400mm to 4,600mm. To respect the maximum height for Building R4B under the approved Concept Plan (Mod 10), the floor to ceiling height of the amended sky home levels at Levels 64-65 is proposed to be 3,000mm.

4.5 Land Use and Gross Floor Area

Building R4B is defined under the standard instrument as 'shop top' housing, comprising retail uses at the ground level with significant residential uses above. No amendment is proposed to the nature of Building R4B shop top housing, with retail uses to be retained at the ground level and residential uses above. The proposed eight additional levels will be used for residential uses. A total of 5,650m² of additional residential GFA is proposed in this amending SSD DA. This residential GFA will be provided through the eight additional levels. A summary of the land uses, including a floor by floor breakdown of GFA, resulting from the proposed amendments to Building R4B, is provided at **Table 5**.

Table 5 Summary of GFA

Level	Use	Approved GFA (m ²)	Proposed GFA (m ²)	Wintergarden GFA (max 15% of apartment area)
Basement 1	Parking, Storage, Plant	-	-	-
Basement 0	Parking, Storage, Plant	-	-	-
Ground	Retail and Residential Lobby	366.6	366.6	-
Podium 1	Retail and Residential Amenity	507.2	507.2	-
Podium 2	Residential Amenity and Residential Plant	539.4	539.4	-
Level 1-19	Residential	669.8	669.8	59.2
Level 20	Plant	-	-	-
Level 21-32	Residential	669.8	669.8	59.2
Level 33-46	Residential	687.8	687.8	50.0
Level 47	Plant	-	-	-
Level 48-55	Residential	699.7	699.7	35.3
Level 56-63	Residential (new levels)	N/A – new levels	699.7	35.3
Level 64	Residential	707.7	707.7	41.2 (30.9m ² over 15% of apartment area)
Level 65	Residential	458.7	458.7	207 (54.6m ² over 15% of apartment area)

4.6 Dwelling Mix

An increase of 32 apartments associated with the additional eight levels is proposed for Building R4B. This will result in a total of 322 apartments in Building R4B. The amended dwelling mix is outlined in **Table 6**.

Table 6 Proposed dwelling mix

Apartment type	Existing (R4B Mod 2)	Proposed Amendments	Difference
One bedroom	107	107	0
Two bedroom	120	136	+16
Three bedroom	61	77	+16
Four bedroom	N/A		
Five bedroom	2	2	0
Total	290	322	32

4.7 Basement Amendments and Car Parking Allocation

Amendments are proposed to the basement levels to account for a reallocation of car parking spaces to Building R4B and an increase in storage cages to service the additional apartments.

An increase of seven car parking spaces to be allocated to Building R4B is proposed as part of this amending SSD DA. The construction of the Stage 1B Basement car park is currently underway and is the subject of the approved Stage 1B Basement development consent (SSD 6960). The number of additional car parking spaces proposed within the basement to be allocated to Building R4B has been determined having regard to the approved car parking rates in Concept Plan (Mod 10).

4.8 Building Services and Infrastructure

All infrastructure provision to Building R4B, including water, gas, electricity and communications, will be provided as part of the approved Stage 1B Basement DA (SSD 6960). A number of services and infrastructure provisions have been approved in Building R4B under development consent SSD 6965. These services and infrastructure will be extended in association with the additional levels sought as part of this proposed amending SSD DA. A Services and Infrastructure Report prepared by Cardno provides further description of the proposed servicing strategy (refer to **Appendix H**).

4.9 Amendment of SSD 6965

As outlined in **Section 1.0**, it is requested that a condition be imposed on any approval of the subject amending SSD DA pursuant to Section 4.17(1)(b) of the EP&A Act, requiring the modification of approved Building R4B (SSD 6965).

In particular, it is requested that the following Architectural Drawings are approved in place of the corresponding plans under development consent SSD 6965.

Drawing Number	Title	Date and Revision
BR4B _ASD_ PA2_1001	Setout Plan Basement Level B4	15 September 2020, Rev 1
BR4B _ASD_ PA2_1002	Setout Plan Basement Level B3	15 September 2020, Rev 1
BR4B _ASD_ PA2_1003	Setout Plan Basement Level B2	15 September 2020, Rev 1
BR4B _ASD_ PA2_1004	Setout Plan Basement Level B1	15 September 2020, Rev 1
BR4B _ASD_ PA2_1005	Setout Plan Basement Level B0	15 September 2020, Rev 1
BR4B _ASD_ PA2_3048	Plan Upper Plate Level 48-63	31 August 2020, Rev 1
BR4B _ASD_ PA2_3064	Plan Skyhomes Level 64	31 August 2020, Rev 1
BR4B _ASD_ PA2_3065	Plan Skyhomes Level 65	31 August 2020, Rev 1
BR4B _ASD_ PA2_3066	Plan Roof Level	31 August 2020, Rev 1

Drawing Number	Title	Date and Revision
BR4B _ASD_ PA2_4001	Elevation North-East (Park)	31 August 2020, Rev 1
BR4B _ASD_ PA2_4002	Elevation West (Barangaroo Ave)	31 August 2020, Rev 1
BR4B _ASD_ PA2_4003	Elevation South-East (Lift Lobby)	31 August 2020, Rev 1
BR4B _ASD_ PA2_4004	Elevation South (Watermans Quay)	31 August 2020, Rev 1
BR4B _ASD_ PA2_4007	North-East Enlarged Elevation (Park)	31 August 2020, Rev 1
BR4B _ASD_ PA2_4010	West Enlarged Elevation (Barangaroo Ave)	31 August 2020, Rev 1
BR4B _ASD_ PA2_5001	Overall Section AA	31 August 2020, Rev 1
BR4B _ASD_ PA2_5002	Overall Section BB	31 August 2020, Rev 1
BR4B _ASD_ PA2_6003	Skyhome North East Façade Details – Wintergardens	31 August 2020, Rev 1
BR4B _ASD_ PA2_6004	Skyhome West Façade Details – Open Cavity Façade	31 August 2020, Rev 1
BR4B _ASD_ PA2_6005	Skyhome West Façade Details	31 August 2020, Rev 1
BR4B _ASD_ PA2_9000	GFA Calculation	31 August 2020, Rev 1
BR4B _ASD_ PA2_9005	GFA Calculation – Sheet 5	31 August 2020, Rev 1
BR4B _ASD_ PA2_9006	GFA Calculation – Sheet 6	31 August 2020, Rev 1

Specific conditions are also recommended to amend the following condition under development consent SSD 6965:

Schedule 1

- Schedule 1 – Approved Development
- Schedule 1 – Definitions

Schedule 2

- Part A – Administrative Conditions – Condition A2 (Terms of Consent)
- Part B – Prior to Issue of Construction Certificate – Condition B3 (Maximum Height)
- Part B – Prior to Issue of Construction Certificate – Condition B4 (Gross Floor Area (GFA Certification))
- Part B – Prior to Issue of Construction Certificate – Condition B12 (BASIX Certification)
- Part B – Prior to Issue of Construction Certificate – Condition B20 (Number of car parking space)
- Part B – Prior to Issue of Construction Certificate – Condition B21 (Number of bicycle parking space)
- Part E – Prior to Occupation or Commencement of Use – Condition E2 (GFA and Height Certification)
- Part E – Prior to Occupation or Commencement of Use – Condition E16 (Environmental Performance)

5.0 Environmental Assessment

This chapter of the EIS contains our assessment of the environmental effects of the proposed amendments as described in the preceding chapters of this report.

Under Section 4.15(1) of the EP&A Act, in determining a development application the consent authority must take into account a range of matters relevant to the development, including the provisions of environmental planning instruments, impacts of the built and natural environment, the social and economic impacts of the development, the suitability of the site and whether the public interest would be served by the development

The assessment includes only those key matters under Section 4.15(1) that are relevant to the proposal. The key planning issues associated with the proposed concept proposal are listed in **Table 7** below.

Table 7 Assessment of key matters

Planning Issues	Assessment	Technical Study
Secretary's Environmental Assessment Requirements	-	-
Environmental Planning and Assessment Act 1979	Section 4.2	-
Compliance with Strategic Planning Framework	Section 4.2	-
Compliance with Legislation and Environmental Planning Instruments	Section 4.2	-
Design Excellence	Section 4.4	Appendix B
Built Form	Section 4.5	Appendix A and Appendix B
View Analysis	Section 4.6	Appendix L
Residential Amenity	Section 4.8	Appendix B
Ecologically Sustainable Development	Section 4.12	Appendix G
Accessibility	Section 4.20	Appendix BB
Transport, Traffic and Parking	Section 4.13	Appendix F
Heritage	Section 4.14	Appendix Q
Contamination	Section 4.15	Appendix E
Construction	Section 4.16	Appendix DD
Biodiversity	Section 6.0	-
Public Benefits	Section 4.22	-
Social and Economic Effects	Section 4.22	-
Other Matters	Section 4.20	Multiple
Site Suitability	Section 4.21	-
Public Interest	Section 4.22	-

5.1 Secretary's Environmental Assessment Requirements

Table 1 in **Section 1.5** of this EIS provides a summary of the individual matters listed in the SEARs and identifies where each of these requirements have been addressed in this report and the accompanying technical studies.

5.2 Relevant EPIs, Policies and Guidelines

The relevant environmental planning instruments as set out in the SEARs are addressed in **Table 8**.

Table 8 Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW State Priorities	The NSW Government identifies NSW as leading the nation on key economic indicators, while also acknowledging that more can be done to make NSW a better place to live and work. Relevant to the proposal, the priorities seek to create a stronger economy and well-connected communities with quality environments. The proposed amending SSD DA meets this Premier's Priority by increasing the proportion of housing within 10 minutes' walk of high-quality green, open and public space, directly contributing to a well-connected community in a quality environment. This amending SSD DA seeks approval for an additional 32 apartments across eight levels, creating additional homes within close proximity of the extensive open space delivered, and to be delivered, under the Barangaroo Concept Plan (Mod 10). This open space includes the Wulugul Walk waterfront, Hickson Park, Waterman's Cove and the Public Pier. These additional apartments will further support the creation of a stronger economy. Therefore, this amending SSD DA supports the relevant Premier's Priority.
Sustainable Sydney 2030	Sustainable Sydney 2030 is one of the principal strategic planning document within the City of Sydney Local Government Area, setting out 10 strategic directions to guide the sustainable development of Sydney to 2030. The Proposal is consistent with the key objectives of the Plan in that it will: - Increases the number of dwellings in the City. - Grow a more internationally competitive City. - Enhance the City's ability to attract tourists with high-quality built form and contributing to the City's fabric. - Provide housing within a 3-minute walk of continuous green links. - Provide housing with access to public transport, including a new Metro Station currently under construction at Barangaroo.
Future Transport Strategy 2056 and supporting plans	The <i>Future Transport Strategy 2056</i> is the 2017 update of the NSW Long Term Transport Master Plan and supersedes the Master Plan. It is a 40-year vision for mobility in NSW, developed with the Greater Sydney Commission, the Department, and Infrastructure NSW. The Strategy sets out six state-wide outcomes to guide investment, policy and reform, and the provision of services. While a number of these outcomes relate to integrating technological advancements with services and providing regional connections, the proposal does support the need to connect centres that drive economic growth and the development of a transport system that supports NSW as the country's first 'trillion-dollar state economy'. This amendment seeks to deliver additional housing within proximity of the new Barangaroo Metro Station, which will be completed in 2024. The new Metro Station will have trains arriving every two minutes and will provide access to North Sydney in three minutes, and Central Station in six minutes.
Better Placed – an integrated design policy for the built environment of NSW 2017	The design excellence process for the Barangaroo Concept Plan (Mod 10) was developed with reference to the NSW Government Architect's (OGA) integrated design policy <i>Better Placed</i>, which recognises that large-scale urban renewal projects are complex and often involve multiple projects being undertaken across stages. The Concept Approval established the framework for design review and included a Design Excellence Framework. In addition to this, the architects Renzo Piano Building Workshop, in collaboration with PTW Architects, won an international design excellence process carried out for the One Sydney Harbour development based on their design, which exhibited design excellence. The design merits of the approved building are not proposed to change through this amending SSD DA.
NSW Planning Guidelines for Walking and Cycling	This amending SSD DA does not seek to change any of the public domain treatments at ground level for Building R4B. Nevertheless, this application is providing additional dwellings in close proximity of a significant network of walking and cycling paths, including the Wulugul Walk, Barangaroo Headland pathway and the extensive network of bicycle paths throughout the CBD.

Instrument/Strategy	Comments
Sydney City Centre Access Strategy	The proposed development is consistent with the Sydney City Access Strategy, encouraging the use of existing and future public transport linkages in close proximity to the site. The Strategy seeks to connect Barangaroo to the city centre and Sydney transport network through the following infrastructure: • Wynyard Walk, which provides a direct, accessible pedestrian connection between Barangaroo and the Wynyard Station interchange precinct. • New bus routes serving Barangaroo and Walsh Bay. • The new Barangaroo ferry hub and new routes providing more opportunities to access Barangaroo and the mid-town precinct by public transport. The proposal is consistent with the Strategy, providing housing in a location highly accessible to existing and planned public transport and employment.
Apartment Design Guide	The Apartment Design Guide (ADG) is assessed in detail at Section 4.8 of this EIS. The assessment of SEPP 65 and the ADG has determined that the additional apartments proposed in this amending SSD DA achieve the relevant design objectives of the ADG.
Barangaroo Integrated Transport Plan	The Barangaroo Integrated Transport Plan outlines the strategy for public transport, walking and cycling in Barangaroo. This includes enabling pedestrian connections between Barangaroo and the City Centre through projects such as Wynyard Walk (completed), providing additional cycling infrastructure by extending the City of Sydney's bicycle network, as well as additional public transport routes. This amending SSD DA does not propose to alter any of the ground floor treatments already approved around Building R4B, nor does it seek to change any of the approved public domain walkways, cycle paths or public transport links. The transport links and services approved to date are adequate to accommodate the additional dwellings proposed in this amending SSD DA.
Barangaroo Housing Strategy	The Barangaroo Housing Strategy requires 2.3% of residential GFA on site at Barangaroo South to be provided as Key Worker Housing, as well as 0.7% of the GFA, or its equivalent development value (but comprising a minimum residential GFA of 1,740m²) to be delivered off site within 5km of the site. This amending SSD DA will deliver an additional 5,650m² of residential GFA on the Barangaroo South site, and therefore a commensurate increase of key worker housing GFA will be delivered. Building R5 has been approved with a proportion of key worker housing GFA, and a future modification will be submitted to increase the amount of key worker housing GFA within Building R5 to comply with the Barangaroo Housing Strategy and requirements of the Concept Plan (Mod 10). The required 0.7% of the GFA, or its equivalent development value (but comprising a minimum residential GFA of 1,740m²), to be provided off-site will also continue to be delivered.
Barangaroo Transport Management and Accessibility Plan	The Transport Management and Accessibility Plan (TMAP) approved with Concept Plan (Mod 10) considered the additional 5,650m² of GFA proposed in this amending SSD DA. The assessment found that despite the small increase in traffic associated with the additional residential GFA (3 traffic movements in the AM peak hour and 2 traffic movements in the PM peak hour), this will be significantly offset by a reduction in overall bus numbers on Hickson Road and traffic generation from residential uses due to the introduction of a metro station at Barangaroo (which was not considered in the earlier versions of the TMAP). An additional Traffic Assessment has been prepared by JMT and is provided at Appendix F.
Guide to Traffic Generating Developments (RMS)	Schedule 3 of <i>State Environmental Planning Policy (Infrastructure) 2007</i> establishes development that should be referred to the RMS as a Traffic Generating Development. As the development facilitated by the proposed amendments only relates to 32 new apartments, the proposal does not qualify as Traffic Generating Development and therefore does not need to be referred to RMS. A discussion of the traffic and transport implications of the additional dwellings in the precinct has been provided at Section 4.13 and Appendix F.
Development near Rail Corridors and Busy Roads – Interim Guideline	Due to Building R4Bs lack of proximity to a rail corridor, and no immediate adjacency to a busy road, these guidelines do not generally apply to the proposal. Nevertheless, the Noise and Vibration Report at Appendix P assesses the impact of noise and vibration on the additional dwellings proposed in this application, as well as the impact on surrounding sensitive receivers during construction.

Instrument/Strategy	Comments																																		
EIS Guidelines – Road and Related Facilities	The definition of road and related facilities identified in the EIS Guidelines – Road and Related Facilities does not include the proposed development in this amending SSD DA. Therefore, this guideline is not relevant and further consideration is not deemed necessary.																																		
Legislation																																			
Environmental Planning and Assessment Act 1979	The proposed development is consistent with the objects of the EP&A Act for the following reasons: - it reflects the proper development of the site for the purpose of promoting the social and economic welfare of the community and a better environment. - it will ensure the promotion and co-ordination of the orderly and economic use and development of land, providing additional dwellings in close proximity to a new Metro Station and a range of other public transport options, and with immediate access to the established services, facilities and employment opportunities in the precinct. The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons: - the proposal has been declared to be of State Significance. - the development is not prohibited by an environmental planning instrument. - the development has been evaluated and assessed against the relevant heads of consideration under section 4.15. This amending SSD DA seeks to utilise the power under Section 4.17(1)(b) and 4.17(1)(c) of the EP&A Act for condition(s) to be imposed requiring the modification of a separate consent (SSD 6965) and the modification of development approved under SSD 6965.																																		
EP&A Regulations	This EIS has addressed the specification criteria within clause 6 and clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (refer to Section 6.0). As required by clause 7(1)(d)(v) of Schedule 2, no additional approvals will be required in order to permit the proposed development to occur. <table> <tr> <th>Act</th><th>Approval Required</th></tr> <tr> <td colspan="2">Legislation that does not apply to State Significant Development</td></tr> <tr> <td>Coastal Protection Act 1979</td><td>N/A</td></tr> <tr> <td>Fisheries Management Act 1994</td><td>N/A</td></tr> <tr> <td>Heritage Act 1977</td><td>N/A</td></tr> <tr> <td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr> <tr> <td>Native Vegetation Act 2003</td><td>N/A</td></tr> <tr> <td>Rural Fires Act 1997</td><td>N/A</td></tr> <tr> <td>Water Management Act 2000</td><td>N/A</td></tr> <tr> <td colspan="2">Legislation that must be applied consistently</td></tr> <tr> <td>Fisheries Management Act 1994</td><td>No</td></tr> <tr> <td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr> <tr> <td>Mining Act 1992</td><td>No</td></tr> <tr> <td>Petroleum (Onshore) Act 1991</td><td>No</td></tr> <tr> <td>Protection of the Environment Operations Act 1997</td><td>No</td></tr> <tr> <td>Roads Act 1993</td><td>No</td></tr> <tr> <td>Pipelines Act 1967</td><td>No</td></tr> </table>	Act	Approval Required	Legislation that does not apply to State Significant Development		Coastal Protection Act 1979	N/A	Fisheries Management Act 1994	N/A	Heritage Act 1977	N/A	National Parks and Wildlife Act 1974	N/A	Native Vegetation Act 2003	N/A	Rural Fires Act 1997	N/A	Water Management Act 2000	N/A	Legislation that must be applied consistently		Fisheries Management Act 1994	No	Mine Subsidence Compensation Act 1961	No	Mining Act 1992	No	Petroleum (Onshore) Act 1991	No	Protection of the Environment Operations Act 1997	No	Roads Act 1993	No	Pipelines Act 1967	No
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Roads Act 1993	No																																		
Pipelines Act 1967	No																																		

Instrument/Strategy	Comments								
Protection of the Environment Operations Act 1997	The <i>Protection of the Environment Operations Act 1997</i> seeks to ensure that development does not detrimentally affect the environment through pollution, harmful waste, and other environmental impacts. As outlined in this EIS, the potential environmental impacts resulting from the proposed amendments are offset through appropriate mitigation measures. In addition to this, the proposal meets the objectives of this Act, due to the following: - Relevant agencies have been consulted with, and their comments taken into account, ensuring that preliminary involvement in relation to environmental protection has been undertaken. - Waste, ecologically sustainable development, noise and vibration and contamination considerations have all been taken into account to reduce the potential environmental impact (refer to Sections 4.5, 4.12, 4.17, and 4.19). Therefore, the objectives and relevant provisions of this Act have been met.								
Protection of the Environment Operations (Clean Air) Regulation 2010	The <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> seeks to ensure that no air pollution will result from development or operations. As this amending SSD DA only seeks to include an additional eight levels in Building R4B, it is not anticipated that these changes will result in any air pollution, and therefore the proposal can be deemed acceptable as per the initial approval.								
State Environmental Planning Policies									
State Environmental Planning Policy (State and Regional Development) 2011	Development that has a capital investment value (CIV) of more than \$10 million on land identified as being within a State Significant Development Site is State Significant Development under Schedule 2 of <i>State Environmental Planning Policy (State and Regional Development) 2011</i> (State and Regional Development SEPP). Accordingly, as the development has a CIV in excess of \$10 million, and Building R4B is located on the Barangaroo Site, the proposal is categorised as State Significant Development.								
State Environmental Planning Policy (State Significant Precincts) 2005	The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the SSP SEPP. The following is an assessment of the proposal's compliance against the SSP SEPP. <table> <tr> <td>Clause 8 - Zone B4 Mixed Use</td><td>The proposed residential apartments across the new eight levels are part of a shop top housing building, comprising ground level retail with residential uses above. Shop top housing is permissible in the B4 Mixed Use zone and the proposal is consistent with the objectives of the zone.</td></tr> <tr> <td>Clause 17 - Height of buildings (Maximum RL 250)</td><td>The prescribed maximum height of Building R4B is RL 235. The proposal seeks approval for amendments to increase the height of Building R4B up to RL 235, therefore within the maximum height established for Block 4A.</td></tr> <tr> <td>Clause 18 - Gross Floor Area Restrictions - Maximum 92,629m² (across Block 4A)</td><td>An additional 5,650m² of GFA is proposed through this amending SSD DA, resulting in a total GFA of 92,563m² on Block 4A. Therefore, the Block 4A GFA is consistent with the maximum GFA restriction under clause 18.</td></tr> <tr> <td>Clause 19 - Design Excellence</td><td>The proposed development demonstrates Design Excellence in accordance with Clause 19. Refer to further discussion in Section 4.4.</td></tr> </table>	Clause 8 - Zone B4 Mixed Use	The proposed residential apartments across the new eight levels are part of a shop top housing building, comprising ground level retail with residential uses above. Shop top housing is permissible in the B4 Mixed Use zone and the proposal is consistent with the objectives of the zone.	Clause 17 - Height of buildings (Maximum RL 250)	The prescribed maximum height of Building R4B is RL 235. The proposal seeks approval for amendments to increase the height of Building R4B up to RL 235, therefore within the maximum height established for Block 4A.	Clause 18 - Gross Floor Area Restrictions - Maximum 92,629m ² (across Block 4A)	An additional 5,650m ² of GFA is proposed through this amending SSD DA, resulting in a total GFA of 92,563m ² on Block 4A. Therefore, the Block 4A GFA is consistent with the maximum GFA restriction under clause 18.	Clause 19 - Design Excellence	The proposed development demonstrates Design Excellence in accordance with Clause 19. Refer to further discussion in Section 4.4 .
Clause 8 - Zone B4 Mixed Use	The proposed residential apartments across the new eight levels are part of a shop top housing building, comprising ground level retail with residential uses above. Shop top housing is permissible in the B4 Mixed Use zone and the proposal is consistent with the objectives of the zone.								
Clause 17 - Height of buildings (Maximum RL 250)	The prescribed maximum height of Building R4B is RL 235. The proposal seeks approval for amendments to increase the height of Building R4B up to RL 235, therefore within the maximum height established for Block 4A.								
Clause 18 - Gross Floor Area Restrictions - Maximum 92,629m ² (across Block 4A)	An additional 5,650m ² of GFA is proposed through this amending SSD DA, resulting in a total GFA of 92,563m ² on Block 4A. Therefore, the Block 4A GFA is consistent with the maximum GFA restriction under clause 18.								
Clause 19 - Design Excellence	The proposed development demonstrates Design Excellence in accordance with Clause 19. Refer to further discussion in Section 4.4 .								
State Environmental Planning Policy 55 – Remediation	All remediation of the site has been approved and works completed as set out in Section 4.5 of this EIS and as discussed in Appendix E. AECOM has confirmed that - the proposed use is consistent with the land uses detailed in the VMP/Block 4 RAP; and - completion of the Block 4 Development Remediation Works validation works (reporting currently being finalised) in accordance with the VMP/Block 4 RAP, will enable the relevant consent authority to comply with Clause 7 of SEPP 55.								
State Environmental Planning Policy (Infrastructure) 2007	The relevant matter for consideration within SEPP Infrastructure is the referral requirements for Traffic Generating Development (Schedule 3). Residential apartments and flat buildings with more than 300 dwellings require referral to the RMS. This amending SSD DA for Building R4B proposes an additional 32 apartments, and therefore may not be referred to the RMS for comment. RMS provided comment on the original Building R4B SSD DA (SSD 6965).								

Instrument/Strategy	Comments	
State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development	A Design Verification Statement has been provided at Appendix K . The Statement demonstrates that the proposal is consistent with the nine design quality principles of SEPP 65. An assessment of the proposal against the design criteria and design objectives of the ADG is provided in Section 4.8 and Appendix K . The assessment provided in this EIS demonstrates that the proposal is consistent with the objectives of the ADG and will achieve a high level of residential amenity.	
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	Clause 20 General	The matters referred to in Division 2 are addressed below.
	Clause 21 Biodiversity, ecology and environment protection	The proposed mitigation measures set out in Section 5.0 will ensure the development will not have any adverse impact on the Harbour's biodiversity, ecology or environment.
	Clause 22 Public access to, and use of foreshores and waterways	The development is consistent with the Concept Plan (Mod 10) which provides improved pedestrian access within Barangaroo and the foreshore, and the proposal is therefore considered consistent with Clause 22.
	Clause 23 Maintenance of a working harbour	The proposed amendments to Building R4B form part of the comprehensive redevelopment of the Barangaroo site for a mix of uses consistent with the approved Concept Plan (Mod 10) which was deemed consistent with clause 23.
	Clause 24 Interrelationship of water and foreshore uses	The proposed development will not have any adverse impacts on the use of waterways for maritime functions. The development is located away from the foreshore, and the proposal related to eight additional levels at the upper levels of Building R4B.
	Clause 25 Foreshore and waterways scenic quality	This application seeks to amend Building R4B while maintaining the design quality and approved principles that have been deemed to contribute to the scenic quality of the waterway.
	Clause 26 Maintenance, protection and enhancement of views	The proposed development is consistent with the Concept Plan (Mod 10). The amendments proposed will continue to provide views to the harbour. A View and Visual Impact Assessment is provided at Appendix L and is discussed further at Section 4.6 .
	Clause 27 Boat storage facilities	No boat storage facilities are proposed, therefore this clause is not applicable.

5.3 Barangaroo Concept Plan

An assessment of the proposed amending SSD DA against the numeric controls of the Barangaroo Concept Plan (Mod 10) is provided in **Table 9**. This assessment demonstrates that the proposed development is generally consistent with the approved Concept Plan (Mod 10) and the relevant Built Form and Urban Design Controls.

Table 9 Assessment against the Barangaroo Concept Plan numeric controls

Barangaroo Concept Plan				
Concept Plan (MOD 10) Control – Block 4A (Building R4A and R4B)	Building R4A (not subject to this application)	Building R4B (As proposed to be Amended)	Total	Assessment
Maximum Residential GFA – 91,816m ²	47,564m ² (no change)	44,252m ²	91,816	✓
Other uses GFA – 813m ²	438m ² (no change)	309m ² (no change)	747m ²	✓
Total GFA – 92,629m ²	48,002m ²	44,561m ²	92,563m ²	✓
Maximum height – RL 250	-	RL 235 (Precise height 233.485)	RL 235 (Precise height 233.485)	✓
Tower setbacks – setbacks are generally in accordance with the Building Envelope Plan in the Concept Plan. Predominant tower mass is set back from Globe Street by a minimum of 2m.	-	No change	-	✓

The Concept Plan (Mod 10) requires future applications to demonstrate consistency with the Built Form and Urban Design Controls. The Urban Design Controls provide an integrated performance framework in which to consider each application on its merits.

An assessment against each of the relevant sections of the Urban Design Controls is provided in **Table 10**.

Table 10 Consistency with Urban Design Controls

Concept Plan (Mod 10) Blocks 4A and 4B Controls	Building R4B – Amending Design	Comment
Control 1 Building Mass and Location		
Objectives		
The orientation and location of the buildings relate to the fan principle	There will be no change to the orientation and location of Building R4B as a result of the proposed amending SSD DA.	Consistent
To ensure building mass is appropriate within the envelope.	The proposed amendments to the building height are within the existing envelope approved under the Concept Plan (Mod 10).	Consistent
The podium shall be low to allow sunlight penetration through the buildings to the public domain.	No changes to the podium are proposed as a result of the proposed amending SSD DA.	Consistent
Building placement to consider existing view corridors from Kent Street buildings.	There are no changes proposed to the approved building placement.	Consistent
To ensure the vertical massing form is an integral part of the composition of towers in block 4A.	The vertical massing of the building is emphasised by the slender tower form, and separation between the towers which provides for sky views is not proposed to be amended. The additional height proposed further accentuates this vertical massing.	Consistent
Ensure clear views to the sky between all towers from key vantage points.	Clear sky views have been maintained between Building R4A, Building R4B and Building R5.	Consistent
Allow balconies on towers including residential and/or tourist and visitor accommodation GFA to be partially enclosed without the need to include balcony floor areas as GFA.	The existing balcony typologies approved for Building R4B under SSD 6965 include partially enclosed balconies ('winter gardens'). This amending SSD DA does not seek to alter this balcony typology.	Consistent
Standard		
The height of the towers within the block shall be varied and ascend in height from east to west.	The towers ascend in height from east (Building R5 at RL 105.89) to west (Building R4A at a maximum of RL 250). This amending SSD DA does not seek to change the established hierarchy.	Consistent
Towers in Block 4A shall have a minimum of 15m variation in height.	There is a height difference of at least 15 metres between the height of Building R4A and Building R4B. This amending SSD DA does not seek to change the established hierarchy of height variation between towers.	Consistent
Towers proposed in Block 4A should be separated by a minimum of 9m.	The minimum separation between Building R4A and Building R4B is not proposed to be amended.	Consistent
All predominant tower massing shall provide a minimum of 27m separation from the Block Y tower massing.	A separation of 27m is provided between the Crown Sydney Hotel and Resort on Block Y, and the nearest residential building - Building R4A. This amending SSD DA does not seek to change this aspect of the development.	Consistent
All predominant tower mass shall be set back from Watermans Quay by a minimum of 2m.	The tower mass of Building R4B is setback over 4m from Watermans Quay. This amending SSD DA does not seek to change this aspect of the development.	Consistent
Block 4A podium buildings are to have a maximum height of RL 22.	The podium is limited to a maximum height of RL 17.83m, which is approximately 14.3m above the future ground plane. This amending SSD DA does not seek to change this aspect of the development.	Consistent
Podiums may be built to the edge of the envelope on Watermans Quay.	This amending SSD DA only relates to the additional eight levels and corresponding GFA being added to building R4B and does not seek to change any of the details of the approved podium.	Consistent

Concept Plan (Mod 10) Blocks 4A and 4B Controls		Building R4B – Amending Design	Comment
For residential and tourist and visitor accommodation development within a building with a height of 30 metres or more; the maximum private external balcony area must not exceed 15% of the GFA of the apartment or tourist and visitor accommodation room to which the balcony is not connected; and the bulk of the building is no greater than it would be if the balconies were not partially enclosed.		Building R4B is greater than 30m in height. All balconies are less than 15% of the GFA of the adjoining apartment. The enclosure of the balconies has not resulted in any changes to the built form, and the building continues to be contained within the envelope approved under Concept Plan (Mod 10).	Consistent
Streetwall Establishment			
Objectives			
Ensure that the Street Wall defines Barangaroo Avenue.		The amending SSD DA does not relate to the street wall, and therefore the street wall remains as approved under SSD 6965.	Consistent
Ensure a human scale streetscape.		The approved podium and Strada creates human scale at the street level. The proposed amending SSD DA does not relate to the podium or Strada, and therefore, this human scale will not be altered.	Consistent
Podium height is to foster a coordinated streetscape and appropriate street level environment.		The approved podium height of RL 17.83m is within the maximum podium height of RL 22m. The approved podium will create an appropriate pedestrian environment at street level, while still defining the street edge. The proposed amending SSD DA will not impact the approved podium height.	Consistent
Standard			
Building form to create a street wall with a one storey minimum height for most of the public accessible ground floor façade.		The approved building form comprises a three storey podium with a tower above. The proposed amending SSD DA will not impact the approved street wall building form.	Consistent
All podium streetwalls define Watermans Quay and Hickson Road.		The proposed amending SSD DA will not impact the approved podium.	Consistent
Hickson Road Street Wall will continue the colonnade form existing on Blocks 2 and 3.		Building R4B does not interface with Hickson Road.	N/A
Building Articulation			
Objectives			
To establish an articulated, well-proportioned building mass.		Building R4B represents a well-proportioned and articulated building mass, consistent with its role in providing a transition between existing buildings along Hickson Road, and the Crown Sydney Hotel and Resort at the water's edge. The additional height sought through this amending SSD DA will contribute to the proportions of the building mass.	Consistent
To reduce the impact of the building's mass.		Building R4B has been designed as a slender and elegant tower. To further reduce the perceived mass of the building, a range of design mechanisms have been adopted into the design of the façade which are not proposed to be amended.	Consistent
To ensure the podium towers in Block 4A and 4B are considered a holistic composition.		The residential towers on Blocks 4A and 4B have been conceived by RPBW as three 'crystals', which will increase in scale from east to west as they move from the mid-rise scale of buildings along Hickson Road towards the Crown Sydney Hotel and Resort at the water's edge. The towers form part of a holistic composition, with the staggered roof profiles and slim proportions of the three towers creating a dynamic arrangement and completing the city frame at its north-western edge. This application does not seek to change the overall siting or orientation of the three buildings, and the additional height sought for Building R4B will continue to achieve the objective of the holistic composition.	Consistent

Concept Plan (Mod 10) Blocks 4A and 4B Controls		Building R4B – Amending Design	Comment
Standard			
The building envelopes and floor plates are to be articulated.	Building R4B has a triangular geometry which articulates the building form. The triangular building footprint is emphasised through the continuation of the façade beyond the internal floorplate to create a feathering effect at the edges of the building. The additional proposed levels will continue to adopt this typology of floorplate articulation.	Consistent	
Tower Form is to express sustainability features e.g. Access to natural light, ventilation and solar shading.	The triangular form enables the apartments to achieve good access to natural light, ventilation and views, avoids apartments looking onto each other and limits south facing apartments. The additional proposed levels will continue to adopt this triangular form.	Consistent	
To establish a complementary relationship between the towers in Blocks 4A and 4B such as a common chassis.	The towers have been designed as three 'crystal' forms, with a common design language and the same structural design carried across all three buildings. The proposed amending SSD DA will not impact the complementary relationship between the towers.	Consistent	
Vertical articulation and breaks are encouraged to minimise the perceived building mass.	The streamlined, 'crystal' form of Building R4B was a key feature of the winning RPBW scheme. The verticality of the building is enhanced by the slender form and narrow pattern of fenestration and 'notches' described above. These features, and the sky views between the buildings, enhance the vertical articulation of the buildings, and minimising the perceived mass. The additional proposed levels will continue to contribute to this vertical articulation.	Consistent	
Horizontal articulation and breaks are encouraged to reduce the impact of the building mass.	While a key feature of the building is its slender, vertical form, horizontal articulation has also been considered in the design of Building R4B. The approved building incorporates wind and sun shading devices which will assist in reducing the impact of the building mass. These features are continued across the additional levels proposed.	Consistent	
Ensure a highly transparent and visually permeable frontage to the park edge. The tower form on the park side is to come to ground and be dominant through any lower levels of the building.	This application does not seek to amend the approved frontage to the park edge. Building R4B will continue to have a transparent and visually permeable frontage to the park edge.	Consistent	
Building Legibility			
Objective			
Constituent elements of the building need to be legible.	While Building R4B will read as a cohesive whole, the constituent elements will remain legible. This includes the reading of the separate uses, as well as the various elements of the building's composition – glazed facades, wintergardens, balconies, shading devices and wind deflectors, etc. The proposed changes to Building R4B will not impact these legibility features.	Consistent	
To ensure that building elements and structure are legible at the base.	The proposed amending SSD DA does not relate to the building base.	Consistent	
To ensure that towers in Block 4A and 4B are complimentary and read as a cohesive composition	As described above, the buildings have been designed as a cohesive composition of three crystal forms. The proposed amending SSD DA does not alter the reading of the buildings as a cohesive composition.	Consistent	
Standard			
Express facade elements including balconies/ wintergardens shading and wind amelioration.	The façade incorporates various elements including wind deflectors to balconies and integrated metal nosing which will contribute to the faceted appearance of the architecture, while supporting functionality and occupant comfort by providing solar and wind amelioration. The additional levels proposed in this amending SSD DA will continue this façade design.	Consistent	

Concept Plan (Mod 10) Blocks 4A and 4B Controls		Building R4B – Amending Design	Comment
Consider a common architecture expression to ensure towers in Block 4A and 4B are complementary to each other yet have their own unique identity	The three towers display a consistent architecture, however, each building has been scaled and modulated to ensure each tower is unique. The additional levels proposed in this amending SSD DA will continue this scale and modulation for Building R4B.		Consistent
Ensure visual permeability of the tower lobbies on the park to allow the structure to be legible at the base.	This amending SSD DA does not seek to amend the approved lobby. Building R4B will continue to have a transparent and visually permeable frontage to the park edge.		Consistent
Ground Floor Permeability and Accessibility of Public Realm			
Objective			
To provide permeability and accessibility through Barangaroo South	The proposal does not seek to alter the approved pedestrianised Strada between Building R4A and Building R4B, which will facilitate permeability and pedestrian access across the site.		Consistent
Standard			
Public access around the Block is to be maintained on all edges	Public access is maintained along all edges.		Consistent
Provide two north to south primary connections across the block including the Hickson Road colonnade and Barangaroo Avenue.	The proposed amending SSD DA does not seek to alter the approved connections.		Consistent
One north-south secondary connection is to be provided in Block 4A.	The proposed amending SSD DA does not seek to alter the approved connections.		Consistent
Watermans Quay retail and podium buildings should consider the address to Scotch Row view.	Scotch Row is not in the immediate vicinity of Building R4B.		N/A
Ground floor retail and residential lobbies should consider a relationship to the northern parkland public space.	The proposed amending SSD DA does not seek to alter the approved ground floor retail and residential lobbies.		Consistent
Canopies to be located at the park edge.	All three buildings in Blocks 4A and 4B incorporate canopies along the Hickson Park edge. The proposed amending SSD DA does not seek to alter these canopies.		Consistent
Consider lobby street address on Barangaroo Avenue for tower R4a, Watermans Quay for tower R4b and Hickson Road for tower R5 off the plaza.	The proposed amending SSD DA does not seek to alter the approved residential lobbies.		Consistent
A generous through site link to promote visual and physical permeability is to be provided through Block 4A.	The proposed amending SSD DA does not seek to alter the approved connections through Block 4A.		Consistent
Ensuring Quality of Rooftops			
Objectives			
To ensure that the mass of the rooftop is articulated and legible.	The roof form of Building R4B has been articulated with the inclusion of a glazed 'fringe', which is an extension of the main curtain walls. This feature is maintained through the proposed amendments.		Consistent
Standard			
Roof forms to be designed, coordinated, remain sympathetic to its adjacent context, use good quality materials and incorporate architectural treatment of exposed elements such as lift shafts, overruns control rooms and any sustainability features, however, exposed mechanical equipment is to be avoided.	The three buildings in Blocks 4A and 4B have been designed to read as a collection of three 'crystal' forms. For consistency, the roof form of each building comprises a glazed 'fringe', which is an extension of the main curtain walls. The proposed roof features conceals roof plant, and assists in unifying the three buildings. This feature is maintained through the proposed amendments.		Consistent
Roof design may integrate sustainable features, such as photovoltaics.	The roof is capable of incorporating PV cells.		Consistent

Concept Plan (Mod 10) Blocks 4A and 4B Controls		Building R4B – Amending Design	Comment
Consistency in the roof form between towers in Block 4A is encouraged.	As discussed above, all buildings across Block 4A and 4B have included a consistent curtain fringe which is to be maintained through the proposed amendments.		Consistent
Facades			
Objectives			
To ensure the architectural quality of the facades.	The facade has been designed using quality materials and finishes, and has been detailed to a high standard. These materials have suitable longevity, durability and flexibility. The proposed amending SSD DA does not alter the approved façade, with the approved façade continuing on the additional eight levels.		Consistent
To articulate the building's functions and massing with appropriate facade design and detailing.	The additional levels proposed in this amending SSD DA have been designed to match the approved façade of the approved building.		Consistent
To ensure the facades contribute to the building's articulation and mass.	While the façade is predominantly glazed, as outlined above, a number of design treatments have been utilised to articulate and animate the building, and enhance the verticality of its massing. The proposed amending SSD DA does not alter the approved façade, with the approved façade continuing on the additional eight levels.		Consistent
To contribute to the "carbon neutral" aims for Barangaroo South.	The proposed amending SSD DA does not impact Building R4B from being consistent with the 'carbon neutral' aims for Barangaroo South.		Consistent
Enable the partial enclosure of balconies to provide private open space that is useable and has a high level of amenity.	The proposed balconies on the additional eight levels are partially enclosed wintergardens to ensure useability and amenity, consistent with the approved approach on Building R4B.		Consistent
Standard			
The choice of appropriate materiality for longevity, durability and flexibility. Materials such as steel, glass, concrete, timber and aluminium shall be considered.	The facade has been designed using quality materials and finishes, with glazing being the predominant material. These materials have suitable longevity, durability and flexibility. The amendments proposed in this amending SSD DA do not alter the approved façade, with the approved façade continuing on the additional eight levels.		Consistent
Environmentally sustainable design is to be incorporated on all facades.	The approved façade of Building R4B was designed to incorporate the principles of environmentally sustainable design. It is proposed that the additional eight levels maintain this façade design, therefore ensuring ESD continuity in the façade.		Consistent
Depth and layering of facades is to be achieved through relief and protrusions.	The approved façade of the building incorporates a number of techniques to provide relief in the building form. It is proposed that the additional eight levels maintain this similar façade design, therefore providing relief and protrusions.		Consistent
Facade components such as external shading shall be used to provide light and shade to the building	The use of open cavity facades, balconies and wintergardens allow high visible light transmittance to the apartments in winter and when sun is not on the façade. During warmer periods of direct sunlight, blinds within the open cavity facades and wintergardens will allow the solar loads to be reflected outward prior to reaching the inner most glazing, providing a high degree of solar control. It is proposed that the additional eight levels maintain this similar façade design.		Consistent
The glass wind screen enclosing a balcony must be designed so that 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.	As discussed above, the open cavity façades are operable and provide significant natural ventilation. It is proposed that the additional eight levels maintain this similar façade design.		Consistent

Concept Plan (Mod 10) Blocks 4A and 4B Controls		Building R4B – Amending Design	Comment
Active Street Fronts			
Objectives			
To ensure an activated public domain at street level.	The proposal does not seek to alter the approved ground level public domain, and therefore consistency with this objective remains unchanged for Building R4B.	Consistent	
Standard			
At least 60% of the Ground Level is to be active on the primary Street Wall facades.	The proposal does not seek to alter the approved ground level public domain, and therefore consistency with these standards remains unchanged for Building R4B.	N/A	
Building vehicle access, areas for service and egress shall not count towards the 60% requirement.		N/A	
Building service areas, parking entrances and loading docks may be accessed from Watermans Quay.		N/A	
The width of driveways shall be minimised.		N/A	
Signage			
Objectives			
To ensure that the location, size, appearance and the quality of the signage on the building is appropriate	The proposal does not seek to alter the approved signage zones, nor does it propose additional signage. Therefore, this provision does not apply.	N/A	
Standard			
Building identification signage is to be limited to one sign per frontage at podium level.	The proposal does not seek to alter the approved signage zones, nor does it propose additional signage. Therefore, this provision does not apply.	N/A	
Signage is not to exceed 15m2 per sign.		N/A	
Details of signage to be considered as part of the overall design of the building for the purposes of Design Excellence.		N/A	
Each new development application submitted for the erection of a new building/s is to include as a minimum a description and illustration of intended signage location/s and form. Where detailed signage proposals are not included in the works proposed in a Development Application for the erection of new buildings, actual sign approvals will be subject to separate Development Applications		N/A	

5.4 Design Excellence

A design competition was held for Buildings R4A, R4B and R5 in 2014, and included alternative designs submitted by a selection of locally and international renowned architects, including Renzo Piano Building Workshop (RPBW), WOHA, Denton Corker Marshall (DCM), FJMT and Christian De Portzamparc.

A judging panel comprising Lendlease team members and the former Barangaroo Delivery Authority (now Infrastructure NSW) selected RPBW over the other entrants due to the innovation shown in the design and the building's relationship to its context.

Following the completion of the design competition, the design for Building R4B underwent a rigorous process of design review, both internally by Lendlease and with the independent design experts.

Clause 19 of Part 3, Appendix 9 of the SSP SEPP relates to design excellence and requires that consent must not be granted for new buildings or external alterations to an existing building at Barangaroo unless the consent authority has considered whether the proposed building exhibits design excellence.

In considering whether the proposed building exhibits design excellence, the consent authority must have regard to the following matters:

- (a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,*
- (b) whether the form and external appearance of the building will improve the quality and amenity of the public domain,*
- (c) whether the building will meet sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency,*
- (d) if a design competition is required to be held in relation to the building, as referred to in subclause (3), the results of the competition.*

Clause 19(3) sets out situations where a design competition is to be undertaken:

- (3) Consent must not be granted to the following development unless a design competition has been held in relation to the proposed development—*
- (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 of greater than 1,500 square metres.*

The proposed amending SSD DA does not strictly constitute a 'new' building and is not an external alteration to an existing building. Despite this, it is noted that the proposed amendments do relate to Building R4B, which is a new building currently under construction, and therefore an opinion may be drawn that Clause 19(3) applies to the proposal. With this in mind, for completeness Lendlease (Millers Point) Pty Ltd is seeking the Secretary waive the requirement for a design competition consistent with clause 19(4) based on the same reasons outlined for the original Building R4B application (SSD 6965).

As the proposed amendments will be consistent with the approved Building R4B design, the proposal is capable of maintaining the design excellence deemed to be achieved in accordance with clause 19(1) and clause 19(4), and therefore the original reasons of the waiver remain relevant and applicable. The additional levels and GFA sought in this amending SSD DA will maintain the overall design approach of the approved building and the internationally acclaimed Renzo Piano Building Workshop will continue in their capacity as the project architect. As such, a request for a Design Competition Waiver is provided at **Appendix I**.

The design excellence exhibited in the original building is maintained throughout this application and through the amendments, and a Design competition waiver is appropriate, as:

- The building, including the proposed amendments, has been designed by the internationally renowned architect, RPBW.
- The building continues to provide the high standard of architectural design, materials and detailing in the additional levels, appropriate to the building type and location and family of One Sydney Harbour buildings.
- The building achieves an appropriate form, external appearance and the ground plane continues to provide for a high amenity environment and high quality public domain.
- Lendlease is committed to ensuring continuity in the design process and realisation of the submitted design in the completed building by ensuring that RPBW has direct involvement in the design documentation phase.
- The proposed scheme generally complies with the planning framework established for the site.
- The design will have no adverse impacts on view corridors, particularly from public spaces and streets, beyond those assessed as part of Concept Plan (Mod 10).
- The building continues to utilise Lendlease's skills and proven track record to deliver an exemplary residential building.
- The building implements innovative technical and sustainable solutions, contributing to cutting edge design excellence.

In light of the above, the amendments to Building R4B proposed through this amending SSD DA will continue the achievement of design excellence in the building, and a design competition waiver is appropriate in the circumstances. Importantly, this amending SSD DA does not seek to alter the key design excellence measures as acknowledged in the original approval (SSD 6965).

5.5 Height, Bulk and Scale

The approved Barangaroo Concept Plan (Mod 10) establishes a maximum height of RL 250 for Block 4A. The proposed amending SSD DA will result in a maximum height of up to RL 235, and therefore the proposal remains consistent with the maximum height control stipulated for Block 4A.

As set out in **Table 10** above, Building R4B as to be amended through this amending SSD DA is generally consistent with the Block 4A envelope controls under approved Concept Plan (Mod 10) and the Built Form Principles and Urban Design Controls for Barangaroo South. Building R4B is therefore appropriate for the future character of the site in terms of building form, bulk, scale and height.

Concept Plan (Mod 10) identifies the three One Sydney Harbour buildings as tall, slender forms with an emphasis on their vertical massing. The proposed changes to provide for an additional eight levels will not impact the overall intention of the built form of R4B, particularly when considering the principle of building heights ascending from south to north across Barangaroo South. The proposed increase in height to Building R4B will assist in better defining and emphasising the overall stepping envisaged in the Roger Stirk Harbour + Partners (RSH+P) Master Plan for Barangaroo South, as illustrated in **Figure 8**.

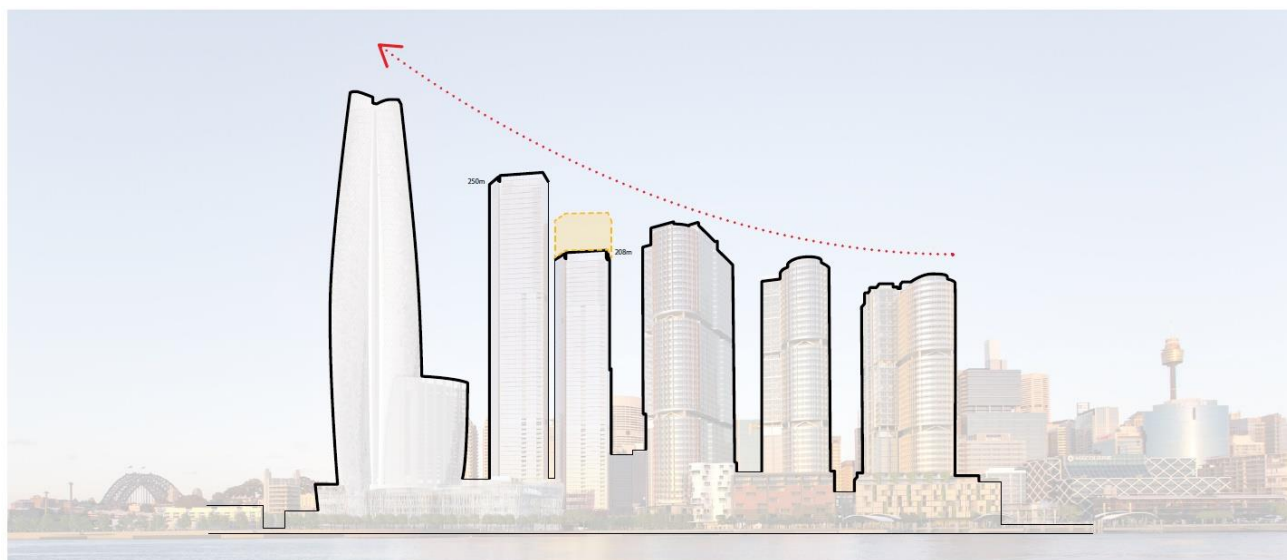


Figure 8 Photomontage of Barangaroo South, including R4B

Source: RPBW

RPBW also support the increased height of Building R4B as it will create a greater degree of architectural tension between the two 'sibling' towers and will allow them to be more readily understood as being a related architectural pair. Despite this greater legibility, RPBW is still comfortable that an appropriate hierarchy is created between the One Sydney Harbour buildings and a stepped relationship is maintained when viewing the buildings as a collection.

The additional height on Building R4B will also contribute to reinforcing and amplifying the slender and crystalline nature of the tower, with the materiality and façade treatments carried further up the building, mediating the scale of the tower and providing a perceived reduction in bulk for a more elegant form and slender presentation.

The proposed amendments also continue to provide a form for Building R4B which fulfills the fan principle set out in the RSH+P Master Plan for Barangaroo South, which is used to describe the distribution of built form and height across the site and enables the creation of view corridors from the east. RPBW have reinforced the notion that Building R4A and Building R4B are to be read as a singular composition of related forms. These two buildings share the same geometrical alignment, and in turn contribute to the achievement of the fan principle as illustrated in **Figure 9**. RPBW have confirmed that the additional height sought through this amending SSD DA will not have any impact on the achievement of the fan principle. The amendments sought in this application do not alter the overall building siting and therefore the fan principle remains achieved.

The proposed additional height will also support the design principle of 'framing Sydney' under the RSH+P Master Plan. The achievement of this design principle will occur through more closely aligning the heights between Building R4A and Building R4B, to create a paired composition of towers that enhances the Sydney skyline, and enhancing the dramatic spatial backdrop of the three residential towers (Building R4A, R4B and R5) to Hickson Park.

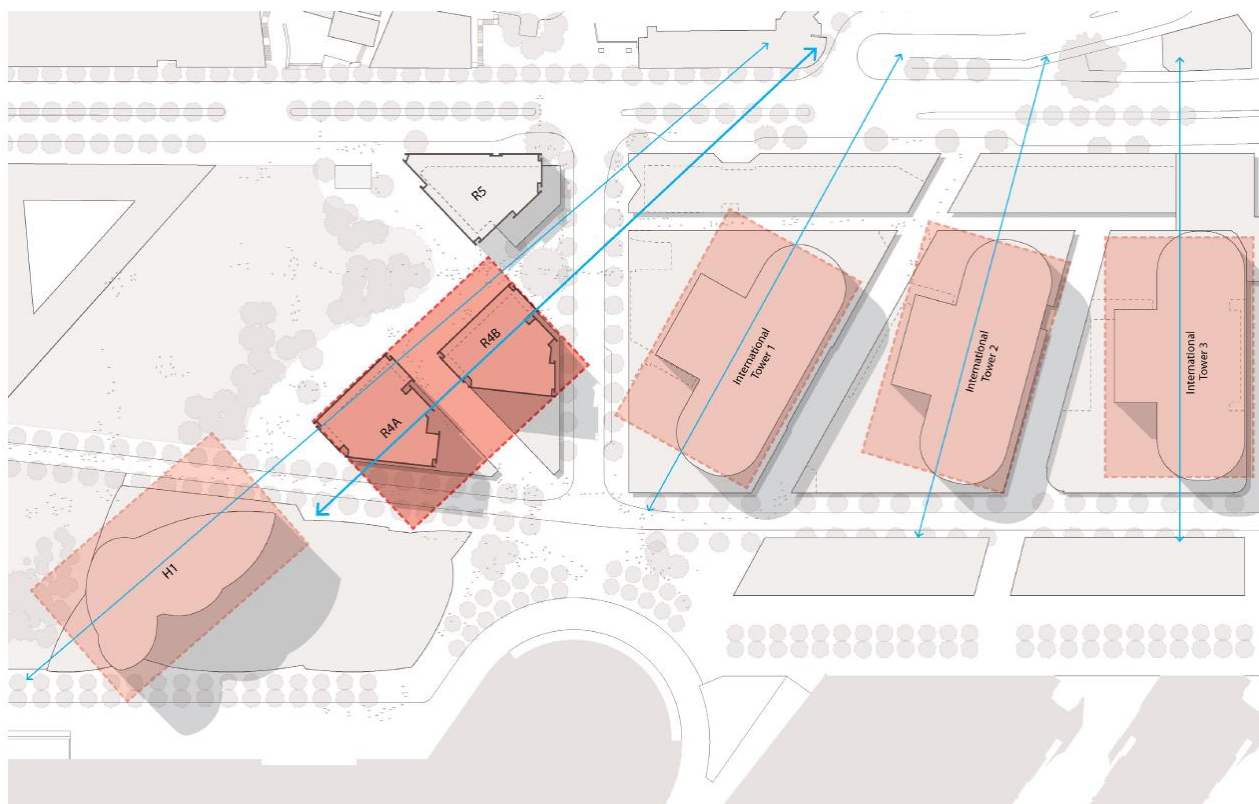


Figure 9 Continuation of the fan principle

Source: RPBW

5.6 View Loss and Visual Impact

A Visual and View Impact Analysis, undertaken in accordance with the SEARs has been prepared by Virtual Ideas in support of the proposed development and is included at **Appendix L**. This analysis builds on and provides further detail on the 'overarching' Visual and View Impact Analysis prepared and submitted in support of Concept Plan (Mod 10).

Photomontages have been prepared for a total of 21 public domain views and vantage points consistent with the locations assessed with the original Building R4B SSD DA (6965).

Four key buildings in the vicinity of the Building R4B site have been identified as being impacted or potentially impacted by the project in terms of private views. The key residential buildings are Highgate, Georgia, Stamford Marque, and Stamford on Kent.

Importantly, the detailed Building R4B design sits within the Concept Plan (Mod 10) Block 4A building envelope. The consideration of potential visual and view impacts associated with the proposal should be read in conjunction with the Visual and View Impact Analysis submitted in support of Concept Plan (Mod 10).

5.6.1 View Loss

The additional height of Building R4B will be visible in views from key public domain locations. However, it is in the context of surrounding tall tower forms, with view corridors in between buildings and across Barangaroo to the east. The additional height proposed for Building R4B will not impact the separation between Building R4B and Building R4A, as well as with Commercial Building C3 to the south. With this in mind, a large portion of views will be maintained through these towers as approved under SSD 6965 (and concurrently with R4A SSD 6964 and R5 SSD 6966).

The amendments to Building R4B constitute an extension of the approved design, which has been acknowledged as both elegant and high-quality. The additional height of Building R4B will add to the skyline of the western corridor of Sydney's CBD, which will be beneficial in defining the city edge and a reflection of the global status of Sydney. The revised, taller Building R4B proposal will continue to contribute to the world-class nature of Barangaroo and will offer a positive visual impact through extending the western edge of the CBD.

The architecture of Building R4B and its relationship to Building R4A and Building R5 in the family of One Sydney Harbour buildings remains striking, and the proposed changes outlined in this amending SSD DA will not impact this previous conclusion.

Overall, the changes proposed to Building R4B will not adversely affect the relevant and appropriate visual impact objectives previously approved under the Concept Plan (Mod 10). The accompanying analysis at **Appendix L** shows that the impacts of the proposal are generally consistent with those identified in Concept Plan (Mod 10), indicating that they are reasonable and justified.

5.6.2 Visual Impact

As outlined above, there are four key residential buildings located on Kent Street which may be impacted by the proposed amendments to R4B. The oblique view analysis provided at **Appendix L** demonstrates that the additional height proposed will not impact the approved visual impact as per the approved Concept Plan (Mod 10). The approved slender built form supports this, by continuing to provide view sharing between buildings. These views are also enhanced by the significant distances between the approved buildings and the residential units on Kent Street, which is not altered in this application. In summary:

- The additional height of the building as sought through this amending SSD DA does not significantly alter the approved visual impacts as per SSD 6965.
- The zone of potential view impact from the residential buildings on Kent Street principally affects the west facing elevation of the buildings only, relating solely to views to the west and south-west. Views to the north-west, north, east and south will be unaffected by Building R4B or the proposed amendments.
- The subject buildings of the assessment are generally located north of the alignment of Gas Lane, and therefore north of proposed development Blocks 4A and 5. Significant northerly views will be retained from both the lower and upper levels of these buildings.

As the Building R4B detailed design, including the proposed additional eight levels, is contained within the Block 4A building envelope, the visual and view impacts resulting from the proposed building are consistent with Concept Plan (Mod 10). The amendments proposed are therefore acceptable in terms of visual and view impacts and reasonable in the circumstances.

5.7 Prescribed Airspace for Sydney Airport and Sydney Observatory Impacts

5.7.1 Impacts on Prescribed Airspace for Sydney Airport

An assessment of the proposed additional height for Building R4B and the potential implications on the prescribed airspace for Sydney Airport has been prepared by Avlaw and is provided at **Appendix W**. A previous assessment was completed by Avlaw in relation to the approved height of RL 210 for Building R4B, where it was identified that due to Building R4B being in the same vicinity as the Crown Sydney Hotel and Resort and lower in height, the building would not impact upon the prescribed airspace.

Avlaw has confirmed that a similar rationale can be extended to the proposed height amendment to the Building R4B height. After completion, the overall height of Building R4B with the additional eight levels will sit below the Crown Sydney Hotel and Resort, not posing any additional extrusions into the prescribed airspace. However, due to the revised height proposed in this amending SSD DA for Building R4B, the tower crane to be used during construction will reach a maximum height of RL 304.821, which is taller than the height of the Crown Sydney Hotel and Resort. As a result, this crane will penetrate the Sydney Airport Obstacle Limitation Surfaces (OLS) by 137.495 metres.

Despite this protrusion, the proposed temporary construction cranes required to facilitate the construction of Building R4B will sit below both those used to construct the Crown Sydney Hotel and Resort, which has been approved and completed and those approved to construct Building R4A. Therefore, no additional risks to those already assessed in the original Crown Sydney Hotel and Resort approval have been identified by Avlaw in the assessment of the Building R4B crane up to a height of RL 304.821.

As such, Avlaw conclude that the temporary construction crane will not have an adverse impacts on the safety, regularity or efficiency of aircraft operation at Sydney Airport.

5.7.2 Impacts on Sydney Observatory

An assessment of the potential impact that Building R4B, including the additional height sought in this proposed amending SSD DA, will have on the Sydney Observatory through light spill impacts has been prepared by Electro Light and UNSW (refer to **Appendix S**).

The previous assessment undertaken in SSD 6965 to assess the potential impact of Building R4B determined that the four sky targets flagged by Sydney Observatory as being impacted by Building R4B (and Building R4A) are only obscured during a period of approximately one month in September. In addition to this, some of these sky targets are only obscured partially during an evening and can be viewed appropriately if viewing schedules are rearranged. It was also confirmed that light spill from other nearby bright sources such as the Sydney Harbour Bridge, as well as the moon and varying weather patterns result in viewing conditions that are far from ideal from the Sydney Observatory, regardless of the construction of Building R4B.

Similar to the above assessment for SSD 6965, the additional height proposed for R4B only obscures three key sky objects for part of the night from approximately mid-August to the beginning of October. No other well-known sky objects that may be of interest to the general public are obscured by the additional height to be provided on Building R4B. The assessment concludes that due to the existing light spill of the Sydney CBD and historic weather conditions, viable observing opportunities for Sydney Observatory are reduced by 40% regardless of Building R4B.

In addition to this, the proposed additional levels on Building R4B is consistent with the height established under Concept Plan (Mod 10), and there will be no further impacts on the viewing of sky targets beyond those assessed and determined acceptable under Concept Plan (Mod 10). In the Assessment Report for Concept Plan (Mod 10), the Department concluded in its assessment that *“the additional obstruction of the night sky as viewed from the Sydney Observatory is acceptable as it is for a limited time, the Observatory could schedule viewings to avoid obstruction and as light spill would be managed and mitigated by a Light Spill Strategy”*.

Therefore, the additional height proposed in this amending SSD DA, and the corresponding GFA increase, are not likely to cause any additional significant impacts to the Sydney Observatory.

5.8 Residential Amenity

The assessment provided in **Table 11** outlines the consistency of Building R4B with the ADG which is to be considered in association with the nine design quality principles of SEPP 65. Given the nature of the ADG objectives, a holistic assessment has been completed for Building R4B considering the inclusion of the additional eight levels and 32 apartments the subject of this amending SSD DA.

The assessment demonstrates that the proposed development is consistent with the objectives of the ADG and the proposal achieves the majority of the numeric design criteria. Consistent with the original Building R4B proposal, all apartments will achieve a very high standard of residential amenity, and generally achieve compliance with the ADG and its objectives.

Table 11 below lists the objectives and design criteria of the ADG, providing commentary on whether the project achieves the intent of those objectives. Where required, further discussion is provided below **Table 11** on the key objectives influencing residential amenity.

Table 11 Assessment against the Apartment Design Guide

Design Criteria			Comments												
Part 3 Siting the Development															
3D Communal and Public Open Space															
<i>Objective</i> An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping.			The proposed amendments to Building R4B do not impact the previously approved common open space provided. ✓												
<i>Design Criteria</i> Communal open space has a minimum area equal to 25% of the site.			The proposed amendments to Building R4B maintain adequate communal open space and do not impact upon the previously approved common open space provided which is based on site area. ✓												
Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)			The original SSD application was approved with minor variations to this provision. This amending SSD DA does not seek to vary the consistency of Building R4B any further, and therefore it achieves the intent of the original SSD DA approval.												
3E Deep Soil Zones															
<i>Objective</i> Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality.			The proposed amendments to Building R4B maintain the objectives relating to deep soil. ✓												
<i>Design Criteria</i> Deep soil zones are to met the following minimum requirements: <table><tr><th>Site Area</th><th>Minimum Dimensions</th><th>Deep Soil Zones (% of site area)</th></tr><tr><td>Less than 650m²⁺</td><td>-</td><td rowspan="4">7%</td></tr><tr><td>650m² – 1,500m²</td><td>3m</td></tr><tr><td>Greater than 1,500m²</td><td>6m</td></tr><tr><td>Greater than 1,500m² with significant existing tree cover</td><td>6m</td></tr></table>			Site Area	Minimum Dimensions	Deep Soil Zones (% of site area)	Less than 650m ²⁺	-	7%	650m ² – 1,500m ²	3m	Greater than 1,500m ²	6m	Greater than 1,500m ² with significant existing tree cover	6m	The original SSD application was approved with minor variations to these design criteria. This amending SSD DA does not seek to vary the consistency of Building R4B any further, and therefore it achieves the intent of the original SSD DA approval.
Site Area	Minimum Dimensions	Deep Soil Zones (% of site area)													
Less than 650m ²⁺	-	7%													
650m ² – 1,500m ²	3m														
Greater than 1,500m ²	6m														
Greater than 1,500m ² with significant existing tree cover	6m														
3F Visual Privacy															
<i>Objective</i> Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy.			The proposed amendments to Building R4B meets the visual privacy objectives. ✓												

Design Criteria		Comments												
<i>Design Criteria</i> Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to site and rear boundaries are as follows: <table border="1"> <thead> <tr> <th>Building Height</th><th>Habitable rooms and balconies</th><th>Non-habitable rooms</th></tr> </thead> <tbody> <tr> <td>Up to 12m (4 storeys)</td><td>6m</td><td>3m</td></tr> <tr> <td>Up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr> <tr> <td>Over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr> </tbody> </table>		Building Height	Habitable rooms and balconies	Non-habitable rooms	Up to 12m (4 storeys)	6m	3m	Up to 25m (5-8 storeys)	9m	4.5m	Over 25m (9+ storeys)	12m	6m	The original SSD application was approved with minor variations to these design criteria. This amending SSD DA does not seek to vary the consistency of Building R4B any further, and therefore it achieves the intent of the original SSD DA approval.
Building Height	Habitable rooms and balconies	Non-habitable rooms												
Up to 12m (4 storeys)	6m	3m												
Up to 25m (5-8 storeys)	9m	4.5m												
Over 25m (9+ storeys)	12m	6m												
3K Bicycle and Car Parking														
<i>Objective</i> Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas.		✓												
<i>Design Criteria</i> For development in the following locations: - On sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or - On land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre. The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less. The car parking needs for a development must be provided off street.		The proposed amendment to Building R4B complies with the bicycle and car parking requirements. ✓												
Part 4 Designing the Buildings														
4A Solar and Daylight Access														
<i>Objective</i> To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space.		The proposed amendments meet the solar and daylight access objectives. ✓												
<i>Design Criteria</i> Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas.		The original SSD application was approved with minor variations to this design criteria. The most recent modification to Building R4B (currently under assessment) included a total of 63% of apartments achieving this provision, while the subject amendments will result in 62% of apartments achieving the two hours of solar access. This variation is minor, and the principles of the original design and approach to amenity remains consistent through the proposed amendments. The additional apartments proposed through these amendments also benefit from high ceilings (predominately 3 metres), large internal areas (almost double the ADG minimum requirements), a high proportion of glazing and sweeping views. Further details regarding this minor variation are provided the Solar and Daylight Access Study provided at Attachment M and additional discussion is provided below.												

Design Criteria	Comments										
A maximum of 15% of apartments in a building receive no direct sunlight between 9am and 3pm at mid-winter.	The original SSD application was approved with 9% of apartments receiving no direct sunlight in mid-winter. The initial approved modification to the building increased this variation to 16% (previously misreported as 19%). The proposed amendments will slightly increase the number of apartments receiving no direct sunlight between 9:00am and 3:00pm in mid-winter to 19%. This represents a small number of additional apartments (4% or 13 apartments). Further details regarding this minor variation are provided the Solar and Daylight Access Study provided at Attachment M and additional discussion is provided below.										
4B Natural Ventilation											
<i>Objective</i> The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents.	The proposed amendments meet the natural ventilation objectives. ✓										
<i>Design Criteria</i> At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed.	Three one-bed apartments do not achieve cross ventilation as required, however this is currently being addressed in the modification to SSD 6965 under assessment, noting it relates to the first ten levels of the building. The amendments proposed in this amending SSD DA relate to the upper levels of the building, and therefore do not impact the consistency of the proposal with this design criteria.										
Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.	The proposed amendments to Building R4B are consistent with the cross-ventilation design criteria. ✓										
4C Ceiling Height											
<i>Objective</i> Ceiling height achieves sufficient natural ventilation and daylight access.	The amendments are consistent with the objectives of ceiling height. ✓										
<i>Design Criteria</i> Measured from finished floor level to finished ceiling level, minimum ceiling heights are: <table border="1"> <thead> <tr> <th colspan="2">Minimum ceiling height</th></tr> </thead> <tbody> <tr> <td>Habitable rooms</td><td>2.7m</td></tr> <tr> <td>Non-habitable rooms</td><td>2.4m</td></tr> <tr> <td>For 2 storey apartments</td><td>2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area</td></tr> <tr> <td>Attic spaces</td><td>1.8m at edge of room with a 30 degree minimum ceiling slope.</td></tr> </tbody> </table> These minimums do not preclude higher ceilings if desired.	Minimum ceiling height		Habitable rooms	2.7m	Non-habitable rooms	2.4m	For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area	Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope.	Minor variations to ceiling heights in the kitchens of some apartments have been approved previously in modifications to SSD 6965. The amendments proposed in this amending SSD DA do not result in floor to ceiling heights which are inconsistent with the specified design criteria. ✓
Minimum ceiling height											
Habitable rooms	2.7m										
Non-habitable rooms	2.4m										
For 2 storey apartments	2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area										
Attic spaces	1.8m at edge of room with a 30 degree minimum ceiling slope.										
4D Apartment Size and Layout											
<i>Objective</i> The layout of rooms within the apartment is functional, well organised and provides a high standard of amenity.	The Building R4B apartments meet the apartment size and layout objectives. ✓										

Design Criteria	Comments										
<i>Design Criteria</i> Apartments are required to have the following minimum internal areas: <table border="1"> <thead> <tr> <th>Apartment Type</th><th>Minimum internal area</th></tr> </thead> <tbody> <tr> <td>Studio</td><td>35m²+</td></tr> <tr> <td>1 bedroom</td><td>50m²</td></tr> <tr> <td>2 bedroom</td><td>70m²</td></tr> <tr> <td>3 bedroom</td><td>90m²</td></tr> </tbody> </table> These minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each. A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air must not be borrowed from other rooms.	Apartment Type	Minimum internal area	Studio	35m ² +	1 bedroom	50m ²	2 bedroom	70m ²	3 bedroom	90m ²	The Building R4B apartments are consistent with the apartment size and layout requirements. ✓
Apartment Type	Minimum internal area										
Studio	35m ² +										
1 bedroom	50m ²										
2 bedroom	70m ²										
3 bedroom	90m ²										
<i>Objective</i> Environmental performance of the apartment is maximised.	The Building R4B apartments meet the apartment size and layout objectives. ✓										
<i>Design Criteria</i> Habitable room depths are limited to a maximum of 2.5 x the ceiling height.	The Building R4B apartments are consistent with the habitable room depths.										
In open plan layouts (where living, dining and kitchen are combined), the maximum habitable room depth is 8m from a window.	The original SSD application was approved with minor variations to this provision. This amending SSD DA does not seek to vary the consistency of Building R4B any further, and therefore it achieves the intent of the original SSD DA approval. ✓										
<i>Objective</i> Apartment layouts are designed to accommodate a variety of household activities and needs.	The Building R4B apartments meet the design and apartment layout objectives. ✓										
<i>Design Criteria</i> Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space). Bedrooms have a minimum dimension of 3m (excluding wardrobe space).	The Building R4B apartments are consistent with the design criteria for master bedroom areas. ✓ The Building R4B apartments are consistent with the minimum bedroom dimension. ✓										
Living rooms for or combined living/dining rooms have a minimum with of: • 3.6m for studios and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments	The Building R4B apartments are consistent with the minimum living room dimension. ✓										
The width of cross over or cross through apartments are at least 4m internally to avoid dep narrow apartment layouts	The Building R4B apartments are consistent with the width of the cross-over design criteria. ✓										
4E Private Open Space and Balconies											
<i>Objectives</i> Apartments provide appropriately sized private open space and balconies to enhance residential amenity.	The Building R4B apartments provide appropriately sized open spaces. ✓										

Design Criteria			Comments															
<i>Design Criteria</i> All apartments are required to have primary balconies as follows: <table><tr><th>Dwelling Type</th><th>Minimum Area</th><th>Minimum Depth</th></tr><tr><td>Studio apartment</td><td>4m²</td><td>-</td></tr><tr><td>1 bedroom apartment</td><td>8m²</td><td>2m²</td></tr><tr><td>2 bedroom apartment</td><td>10m²</td><td>2m²</td></tr><tr><td>3+ bedroom apartment</td><td>12m²</td><td>2.4m²</td></tr></table> The minimum balcony depth to be counted as contributing to the balcony area is 1m. For apartments at ground level or on podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m² and a minimum depth of 3m.			Dwelling Type	Minimum Area	Minimum Depth	Studio apartment	4m ²	-	1 bedroom apartment	8m ²	2m ²	2 bedroom apartment	10m ²	2m ²	3+ bedroom apartment	12m ²	2.4m ²	The SSD modification application (MOD 2) currently under assessment with the Department seeks approval for minor variations to these design criteria at the upper levels. This amending SSD DA does not seek to vary the consistency of Building R4B any further, implementing the MOD 2 proposed design, and therefore it achieves the intent of the original SSD DA approval (subject to MOD 2). N/A
Dwelling Type	Minimum Area	Minimum Depth																
Studio apartment	4m ²	-																
1 bedroom apartment	8m ²	2m ²																
2 bedroom apartment	10m ²	2m ²																
3+ bedroom apartment	12m ²	2.4m ²																
4F Common Circulation and Spaces																		
<i>Objective</i> Common circulation spaces achieve good amenity and properly service the number of apartments.			The Building R4B apartments meet the common circulation and spaces objectives. ✓															
<i>Design Criteria</i> The maximum number of apartments off a circulation core on a single level is eight. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40.			The building has a maximum of six apartments per core. ✓ The original SSD application was approved with minor variations to this design criteria. This amending SSD DA does not seek to vary the consistency of Building R4B any further, and therefore it achieves the intent of the original SSD DA approval.															
4G Storage																		
<i>Objective</i> Adequate, well designed storage is provided in each apartment.			The storage provided in Building R4B meets the storage objectives. ✓															
<i>Design criteria</i> In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: <table><tr><th>Dwelling Type</th><th>Minimum Area</th></tr><tr><td>Studio apartment</td><td>4m³</td></tr><tr><td>1 bedroom apartment</td><td>6m³</td></tr><tr><td>2 bedroom apartment</td><td>8m³</td></tr><tr><td>3+ bedroom apartment</td><td>10m³</td></tr></table> At least 50% of the required storage is to be located within the apartment.			Dwelling Type	Minimum Area	Studio apartment	4m ³	1 bedroom apartment	6m ³	2 bedroom apartment	8m ³	3+ bedroom apartment	10m ³	The Building R4B apartments meet the storage objectives and design criteria. ✓					
Dwelling Type	Minimum Area																	
Studio apartment	4m ³																	
1 bedroom apartment	6m ³																	
2 bedroom apartment	8m ³																	
3+ bedroom apartment	10m ³																	
Adaptable and Silver Level Housing Objectives																		
<i>Objective 4Q-1</i> Universal design features are included in apartment design to promote flexible housing for all community members			All apartments include universal design characteristics to all for flexible use. ✓															
<i>Objective 4Q-2</i> A variety of apartments with adaptable designs are provided			All apartments are of a size and proportion that allow for flexible use and accommodate range of lifestyle needs. ✓															
<i>Objective 4Q-3</i> Apartment layouts are flexible and accommodate a range of lifestyle needs.			All apartments are of a size and proportion that allow for flexible use and accommodate range of lifestyle needs. ✓															

Solar Access

The original Building R4B SSD application (6965) was approved with minor variations to this design criteria related to Objective 4A Solar and Daylight Access, specifically the percentage of apartments receiving two hours of solar access in mid-winter during the specified control time and the percentage of apartments receiving no direct sunlight in mid-winter. Overall, the approved approach to the building and apartment design is not proposed to be amended.

Apartments receiving two hours of direct sunlight in mid-winter

In regard to the number of apartments receiving two hours of solar access in mid-winter, the most recent modification to Building R4B (currently under assessment) included a total of 63% of apartments achieving the two hours. With the addition of the proposed eight levels and 32 apartments, a total of 62% of apartments will achieve the two hours of solar access. This variation is minor, and the principles of the original design and approach to amenity remains consistent through the proposed amendments.

Building R4B, and in particular the additional eight levels, will continue to offer a range of amenity benefits afforded to the site including immediate access to open space, excellent views and recreational opportunities of the Barangaroo site and broader city context. This is particularly relevant for the new apartments associated with the proposed eight additional levels given their height and positioning in the building (i.e. over 60 storeys) benefitting from a significant outlook and daylight access. These apartments also benefit from higher floor to ceiling heights in habitable spaces, increasing the overall amenity of the apartments and access to natural daylight.

With an extended assessment period from 9:00am to 5:00pm on mid-winter, the number of apartments receiving two hours of direct sunlight increases to 79%, significantly exceeding the design criteria of 70%.

As such, this minor variation is considered acceptable, and a high level of amenity will be provided to the additional apartments sought through the proposed amendments.

Apartments receiving no direct sunlight in mid-winter

In regard to the design criteria of a maximum of 15% apartments not receiving any direct sunlight in mid-winter during the specified control time, the original Building R4B SSD application (6965) was approved with a total of 9% of apartments receiving no direct sunlight. In the initial approved modification to the building, this was increased to 16% (previously misreported as 19%) and is amended to 18% under the current modification to SSD 6965 (MOD 2). The proposed amendments within this amending SSD DA will slightly increase the number of apartments receiving no direct sunlight between 9:00am and 3:00pm in mid-winter to 19%. This represents a small number of additional apartments.

The subject apartments to be delivered in the additional eight levels are to be provided with significant amenity, including significant outlook and daylight access. These apartments, which will be located above Level 60, and will also benefit from higher ceiling heights in habitable spaces, increasing the overall amenity of the apartments and opportunity for natural daylight.

Additionally, the proposed façade typology continues to allow a high light transmission glass to be used, maximising natural light along with automated cavity blinds providing solar control and sustainability benefits consistent with the approved performance approach.

With an extended assessment period from 9:00am to 5:00pm on mid-winter, the number of apartments receiving no direct sunlight reduces to 1%, significantly below the maximum design criteria of 15%.

As such, this minor variation is considered acceptable, and a high level of amenity will be provided to the additional apartments sought through the proposed amendments.

5.9 Overshadowing

A Shadow Study for Building R4B is included at **Appendix N**. The shadowing analysis has been prepared for hourly intervals between 9:00am and 3:00pm at the winter solstice (June 21), the equinoxes (March 21 and September 21) and the summer solstice (December 21). The shadowing analysis compares the existing CBD context, Concept Plan (Mod 10) maximum development Block 4A envelope (shown in red), and the Building R4B including the proposed eight additional levels. The shadow cast by the proposed Building R4B, including the eight additional levels, is shown in yellow at **Appendix N**.

The shadow analysis indicates that Building R4B, including the eight additional levels, will result in some overshadowing of Sydney Wharf and Pyrmont Bay at 9:00am on June 21, and predominately on the roofs of buildings. The shadows over these locations, however, are fast moving, and by 10:00am, Sydney Wharf and Pyrmont Bay will be free of shadow (refer to **Figure 10**).

Between 10:00am and 11:00am on June 21, there will be some minor shadow cast over the harbour, however, there will be no overshadowing of the water by 12:00pm, ensuring that the harbour will continue to receive high levels of solar access throughout the rest of the day.

In summary, Building R4B, including the eight additional levels, will cast a shadow contained entirely within the approved Concept Plan (Mod 10) building envelope. As such, it is considered that the shadowing impacts of the amended development are acceptable as:

- The shadows created by Building R4B, including the eight additional levels, are consistent with those approved under Concept Plan (Mod 10).
- The water of Darling Harbour maintains significant direct sunlight during the middle of the day when recreational boating is most desired.
- Properties to the east and west will be unaffected by additional shadowing and are not expected to experience any more shadowing than envisaged by the Concept Plan (Mod 10).
- Amended Building R4B will not result in any significant overshadowing of public domain areas, including within Barangaroo South, beyond what has been approved under Concept Plan (Mod 10).

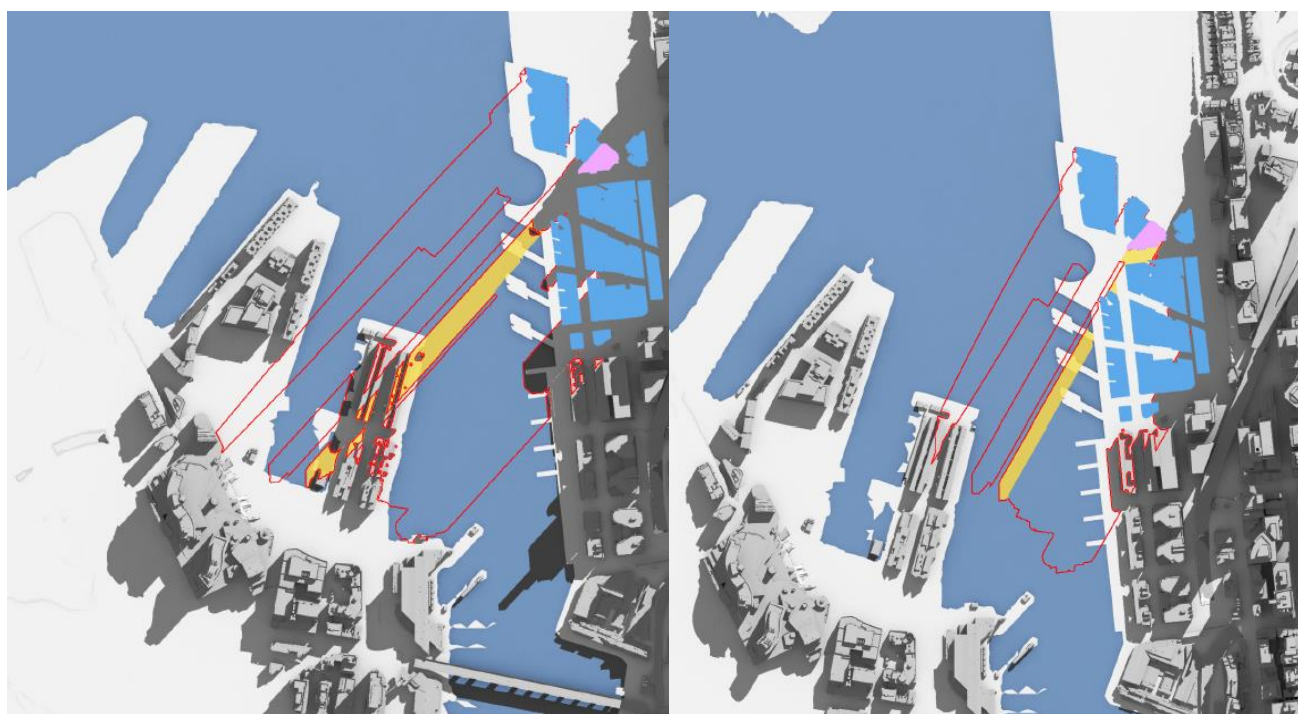


Figure 10 Shadow impacts of R4B (yellow) shown on June 21 at 9am (left) and 10am (right)

Source: Lendlease

5.10 Wind

A Wind Impact Assessment has been prepared by Windtech to support the proposed amendments to Building R4B (refer to **Appendix O**).

A previous assessment undertaken by Windtech for SSD 6965 modelled two scenarios, including one without any of the surrounding buildings, and one with the surrounding buildings of R4A, R5, the Crown Sydney Hotel and Resort and the strada between Building R4A and Building R4B. The results of the original wind tunnel assessment indicated that Building R4B had significant exposure to the three prevailing wind directions. Therefore, a number of recommended treatment strategies to ameliorate the adverse wind conditions were recommended, which Windtech have confirmed remain relevant to Building R4B considering the additional eight levels proposed through this amending SSD DA.

The Wind Impact Assessment concludes that the proposed additional levels will not significantly alter the outcomes of the previous wind assessment, and that no additional wind tunnel testing is required. The previously approved design treatments to address the wind impacts continue to apply and are included as mitigation measures in **Section 7.0** of this EIS.

5.11 Reflectivity

A Reflectivity Report has been prepared by ARUP and is provided at **Appendix R**. The report assesses the impact of solar reflections from the additional levels proposed to Building R4B as part of this amending SSD DA. Potential impacts on pedestrians and road traffic participants in the areas surrounding Building R4B have been the focus of the Reflectivity Report, consistent with the assessment approach adopted for SSD 6965.

ARUP prepared the assessment of reflectivity for the original SSD 6965, which determined that the approved glazed façade would have a reflectivity of 28%. The reflectivity implications of the proposed façade were assessed from 10 different locations in the vicinity of the site, and each was noted by ARUP to have performed well in relation to solar reflectivity. Specifically, the original assessment determined that the façade is not expected to exceed the constraints of acceptability in relation to drivers and cyclists on surrounding streets, as well as pedestrians who are able to avoid glare by changing direction much easier than drivers or cyclists.

A review of the original reflectivity assessment by ARUP in comparison to the amendments proposed through this application has determined that the overall performance of Building R4B as amended is expected to be unchanged. The proposed amendments to Building R4B perform well in terms of solar reflectivity, and the reflectivity amount is kept within 28%, as per the original application. Furthermore, the additional eight levels proposed as part of this amending SSD DA are located at the upper levels of Building R4B, resulting in minimised potential conflicts in the scope of vision for the majority of pedestrians and road traffic participants. As such, the amended Building R4B design is expected to have no impact on reflectivity in excess of those already considered and determined to be appropriate.

5.12 Ecologically Sustainable Development

Lendlease Integrated Solutions has prepared an Ecologically Sustainable Development (ESD) Report which is included at **Appendix G**.

The ESD Report approved with SSD 6965 identifies that the building is able to support the site wide sustainability requirements outlined in the Concept Plan Statement of Commitments.

The approved Building R4B targeted a 5 Star Green Star Multi-Unit Residential Design and As-Built rating using the Green Star – Multi Unit Residential v1 Tool, applying the following initiatives:

- A high level of environmental management during construction phase.
- Exceeding the 80% requirement for recycling of operational waste.
- Measures to achieve a high level of indoor environmental quality.
- Energy efficient façade, mechanical systems and building services.
- Bicycle facilities.

- Water efficient fixtures, fittings and rainwater capture and re-use.
- Use of sustainable and recycled materials and minimising the use of PVS.
- Emissions and pollution control measures.

These measures will continue to be applied throughout the building to ensure that the sustainability aspirations set for the Barangaroo South precinct and the broader Barangaroo site are met. The project will also benefit from the precinct wide sustainability initiatives such as the district cooling plant, on-site renewables strategy and precinct recycled water plant.

The proposed amendments sought as part of this amending SSD DA will not impact the achievement of the approved ESD targets, and the additional levels and corresponding GFA will continue to maintain the approved strategy which has been long-held for the Barangaroo South precinct.

5.13 Traffic, Transportation and Parking

A Transport Assessment has been prepared by JMT and is provided at **Appendix F**. The Transport Assessment provides a summary of the potential transport impacts from the proposed amendments to Building R4B, including operational and parking impacts.

5.13.1 Operational Traffic

Traffic Movements

The additional GFA proposed through the amending SSD DA is expected by JMT to generate an additional three traffic movements in the AM peak hour and two traffic movements in the PM peak hour when compared with the current development consent for SSD 6965. This increase is considered by JMT to be negligible and will not trigger any additional road infrastructure upgrades beyond those already contemplated for the precinct.

Vehicular Access and Parking

Vehicular access to the Stage 1B basement car park and loading dock is not proposed to be amended through this application. Access will continue to be provided via a single driveway entry/exit towards the western end of Watermans Quay.

The proposed change to the number of car parking spaces to be allocated to Building R4B is reflective of the increased apartments sought in this amending SSD DA and the resulting revised dwelling mix. The allocation of car parking spaces remains consistent with the parking rates approved under the Concept Plan (Mod 10). The maximum car parking permitted under the Concept Plan (Mod 10) approved rates and the proposed allocation resulting from this amending SSD DA are summarised in **Table 12**.

Table 12 Maximum Parking rates for R4B

Dwelling Type	No. of Units	Parking Rate	Total maximum spaces	Approved	Proposed
1 bed	107	0.5 spaces/unit	54		
2 bed	136	1.2 spaces / unit	163		
3+ bed	79	2.0 spaces/unit	158		
Total			375	324	331 (increase of 7)

Due to the integrated basement parking arrangement approved in the Stage 1B basement (SSD 6960), the overall number of 884 parking spaces approved under the Stage 1B basement is not proposed to be amended. Rather, the allocation to Building R4B is sought to be increased by seven car parking spaces to a maximum of 331 spaces. The allocation of parking for Building R4A and Building R5 will be readjusted to reflect the allocation of additional spaces to Building R4B, ensuring the overall number of spaces approved is respected. The changes to the allocation of parking to Building R4A and Building R5 will occur under separate planning application(s).

No changes to the approved loading and servicing operations are proposed as part of this amending SSD DA.

Pedestrian, Cycling and Public Transport Access

Access for pedestrians remains generally unchanged from that considered in the original transport assessment. Similarly, no changes to the cycling network are proposed as part of this amending SSD DA. A secure storage cage is to continue to be provided for every residential dwelling within Building R4B, which will have sufficient storage space to store a bicycle.

5.13.2 Construction Traffic Management

The Traffic Assessment identifies that the works associated with the proposed amendments will not result in any increased level of construction vehicle activity for Building R4B when compared to that considered as part of the originally approved project.

The key change with respect to construction traffic management is in relation to vehicle access and circulation around the site, which relates to the introduction of Barton Street as a temporary access road. This was subject to a Review of Environmental Factors determined by Infrastructure NSW in June 2020. The Barton Street temporary road provides an opportunity for construction vehicles to bypass Watermans Quay and avoid the need for large trucks to turn around within the Barangaroo South site. Instead, Barton Street allows vehicles to enter the site and travel in an anti-clockwise direction around Barangaroo South directly back onto the CBD street network.

Given the introduction of Barton Street, JMT has concluded that arrangements for construction vehicles servicing Building R4B have improved when compared with the assessment undertaken at the time of the original SSD (6965).

5.13.3 Impacts on Public Transport

The SEARs request that the EIS provide an assessment of the impact of the proposed amendments on the operation of the ferry hub at Barangaroo, as well as the Barangaroo Sydney Metro Stop and Corridor.

It is anticipated that the development will have a negligible environmental impact on the operation of the ferry at Barangaroo. In relation to overshadowing, the Shadow Studies at **Appendix N** identify that the amended building envelope does not result in significant additional overshadowing to the harbour, and will not impact solar access for the harbour during key usage periods from 11:00am till 3:00pm. Further to this, the additional height will not alter the approved lighting design or relationship between the building and navigational safety for ferries entering and existing the ferry hub in Barangaroo.

In relation to the Sydney Metro, the SEARs requests that this EIS address the impact on the metro corridor and the metro station. As the design of the amended proposal does not seek to alter any of the ground or basement levels, it is not anticipated that the changes will impact the Sydney Metro corridor in any way. In relation to the Barangaroo Metro Station, due to the regular services running, it is expected that the additional number of residents resulting from this application can be absorbed within the approved capacity of the station. None of the design changes proposed will have any impact of the operation or siting of the station.

5.14 Heritage

The Statement of Heritage Impact accompanying the Building R4B SSD DA (6965) identified that Barangaroo South does not contain any further items of heritage or archaeological significance, as outlined in **Section 2.6**. Furthermore, no items of heritage significance are located in the immediate vicinity of Building R4B, with the nearest conservation area being the Millers Point Conservation Area located approximately 300 metres to the north-east.

A further Statement of Heritage Impact has been prepared by Tanner Kibble Denton (refer to **Appendix Q**). The Statement of Heritage Impact confirms that the proposed amendments will have no physical impacts on the surrounding heritage items and conservation areas. In the opinion of Tanner Kibble Denton, the proposed amendments will impact marginally, if at all, upon the existing heritage and conservation areas curtilage, and will not affect their visual integrity and heritage significance.

In the opinion of Tanner Kibble Denton, the potential heritage impacts resulting from the proposed additional height to Building R4B are unchanged from the currently approved 60 storey building, and are as follows:

- There are no physical impacts on identified heritage items and conservation areas in the vicinity of the proposed development.
- The existing curtilage around heritage items and conservation areas is not unaffected, allowing ongoing appreciation of heritage significance and interpretations of the places and individual items. The proposed development will impact marginally, if at all, on the setting of several items and will not affect their visual integrity and heritage significance.
- The proposed additional height will have no impact on the setting of the Walsh Bay Wharfs Precinct because of the location of the subject site relative to the Precinct and the character of topography and development between the two locations.
- There will be little or no visual impacts from the proposed additional height to Building R4B on the heritage items and conservation areas in the immediate vicinity north and east of the site. There are or will be taller buildings near Building R4B, including Building R4A and the Crown Sydney Hotel and Resort, which will ameliorate any impacts arising from the proposed additional levels;
- Visual impacts on a number of heritage items and the Millers Point Conservation Area will be marginal and ameliorated by the location of the subject site relative to the heritage items and conservation areas;
- The additional height of Building R4B will have little additional impact views from the north to several heritage items and views to the south from these items including: the setting of Sydney Observatory, Observatory Park and items within it, and terraces at 3-9 High Street and 115-125 Kent Street. Similarly, there will be little or no impacts on Fort Street School, the Bureau of Meteorology and the National Trust Centre. Any impact will be mitigated by existing large-scale development to the south of these items.

Therefore, TKD conclude that the impacts of this development on the surrounding heritage are generally considered negligible and acceptable.

5.15 Contamination

A letter relating to contamination and addressing the requirements of *State Environmental Planning Policy No 55 – Remediation of Land* has been prepared by AECOM and is provided at **Appendix E**. This letter confirms a Remediation Action Plan (RAP) for Block 4 (containing R4A, R4B and R5) has previously been prepared to remediate the land, and works have been completed under this RAP. The reporting following the completion of works undertaken in accordance with the RAP is currently being finalised.

AECOM identify that the works proposed in this application are in line with the intended land use of the site identified in the existing RAP, described as incorporating a mixture of commercial, retail and high density residential and public open space uses. In addition, all relevant provisions of SEPP 55 were addressed in the original Block 4 RAP, and it is the opinion of AECOM that the land has been appropriately remediated to a standard reflective of the future land use on the site under this RAP.

Therefore, AECOM conclude that the proposed works outlined in this application are in line with the future land use approved on the site, and that the previously prepared RAP allows for the works to comply with SEPP 55.

5.16 Construction Impacts

A Construction Framework Environmental Management Plan (CFEMP) has been prepared by Lendlease Building Australia (refer to **Appendix DD**). The CFEMP includes the following sub-plans:

- Stormwater, Erosion and Sedimentation Management Sub-Plan.
- Acid Sulfate Soil Management Sub-Plan.
- Spoil and Waste Management Sub-Plan.
- Air Quality and Odour Management Sub-Plan.

These sub-plans will be supplemented or updated as appropriate to incorporate the mitigation and management measures described throughout this EIS, and in **Section 7.0**.

The CFEMP outlines how construction will be managed, including risk management and how to resolve conflicts with community stakeholders. The CFEMP does not identify any other risks or mitigation measures needed in association with the additional levels proposed as part of this amending SSD DA.

5.17 Noise and Vibration

A Construction and Operational Noise Report has been prepared by Wilkinson Murray and is provided at **Appendix P**. The assessment within the Construction and Operational Noise Report has been carried out in accordance with the *NSW Industrial Noise Policy 2000* (EPA), *Interim Construction Noise Guideline 2009* (DECC), *Assessing Vibration: A Technical Guide* (DECC) and *NSW Road Noise Policy* (DECC).

The Report concludes that the additional eight levels will not result in any increase to the approved noise levels identified under SSD 6965. No exceedance of noise management levels at surrounding receivers is predicted during normal weekday construction. An exceedance of up to 4dBA is predicted during intensive periods of construction on Saturdays, however this exceedance was identified under SSD 6965 and deemed appropriate. No additional noise exceedance is expected as a result of the proposed amendments outlined in this amending SSD DA.

Operational noise generation associated with operational traffic impacts or ambient noise as a result of the additional eight levels is also not expected to be a concern.

In light of the above, Wilkinson Murray conclude that the proposed increase of eight levels will not change the predictions or findings of the initial assessment provided and approved under SSD 6965.

5.18 Air Quality

An Air Quality Report has been prepared by AECOM (**Appendix X**) to assess the potential air quality implications that the proposed amendments may have on the surrounding environment. This report identifies:

- Potential pollutants of concern, including individual toxic air pollutants, dust and odours.
- All relevant fugitive and point source emissions, including cumulative impacts of the works in relation to other site activities.
- Air quality management and monitoring procedures.

As the amendments proposed to Building R4B relate only to extending the height of the building, additional earthworks are not required. In addition to this, the scale of the amendments to Building R4B are relatively minor in the context of the approved building, and therefore the works would not be expected to substantially increase air emissions or the cumulative impacts of works at the Barangaroo South site. Therefore, AECOM conclude that the proposed amendments to Building R4B do not require any additional assessment of the impacts on air quality or additional air quality management or monitoring procedures.

5.19 Waste Management

5.19.1 Construction Waste

Construction Waste is addressed in the CFEMP at **Appendix DD** and includes a Waste Management Sub-Plan. The Waste Management Sub-Plan and general principles related to the management of construction waste approved under SSD 6965 will continue to apply, and are appropriate for the development as amended.

5.19.2 Operational Waste

An Operational Waste Management Plan (WMP) has been prepared by Foresight Environmental and is provided at **Appendix Z**. Due to the additional levels and apartments proposed, revisions to the amount of waste expected to be generated has been revised in this report, increasing from 10,220 litres of rubbish day to 13,248 litres a day.

Despite the additional waste generated as a result of this application, this WMP proposes to remove the number of recycling bins and the general waste rotary compacter. Both of these changes have been made possible by the change in collection processes whereby all waste and recycling bins from Building R4B will be transferred to the main waste management zone under Building R4A, where it will then be consolidated into compactors and collected as per the determined frequency. Empty bins will then be returned to the Building R4B waste room for continued use under the chutes.

Foresight Environmental confirm that the principles and intent of the original WMP completed for SSD 6965 are still relevant to the amendments proposed through this amending SSD DA, and that any changes to the waste profile and waste quantities associated with the design changes outlined in this EIS have been addressed by the current waste storage facilities design, such that the operational waste management guidelines defined in the 2016 WMP remain in place, relevant and functional within the current design.

5.20 Other Issues

An assessment of the other matters of consideration for the development have been undertaken by the relevant specialist consultants and are appended to this EIS. A summary of these matters is provided in **Table 13**.

Table 13 Summary of other assessment matters

Consideration	Consultant	Summary	Reference
Infrastructure	Cardno	This report finds that the existing infrastructure strategy for Building R4B approved under SSD 6965 is capable of servicing the additional eight levels proposed as part of this EIS. Any potential impacts associated with construction of the proposed levels can be suitably mitigated through a range of measures, including temporary service provision where required.	Appendix H
Vertical Transport	Lendlease Integrated Solutions	Lendlease Integrated Solutions has provided a review of lift performance based on the revised design of Building R4B. This review highlights that the vertical transport for Building R4B is of luxury apartment standards. The 32 additional apartments proposed will not prevent the building meeting the required vertical transport standard, which will provide commensurate, and in some circumstances, greater lift performance than international benchmarks.	Appendix U
Structural Engineering	Robert Bird	A letter prepared by Robert Bird has been provided to assess the structural implications of the additional eight levels proposed in this amending SSD DA. The letter concludes that the amended building has sufficient structural capacity, and where fortification was required, additional structural elements are provided or modified.	Appendix V
Integrated Water Management	Lendlease Utilities and Infrastructure	Integrated Water Management at Barangaroo will include all facets of the water cycle to provide services that maximise, social, economic and environmental benefits. This report identifies that appropriate water management can be extended to the additional levels proposed in this EIS.	Appendix Y
Building Code of Australia (BCA)	McKenzie Group	A BCA report has been prepared by McKenzie Group to confirm that the proposed amendments to Building R4B comply with the relevant BCA requirements. The BCA Report concludes that the additional eight levels and revised levels proposed in this amending SSD DA are in line with the current approved design and layouts, therefore the currently approved findings, recommendations and compliances under SSD 96965 are unaffected by the proposal and still apply.	Appendix AA

Consideration	Consultant	Summary	Reference
Accessibility	Morris Goding Access Consultants	The Accessibility Report prepared by Morris Goding Access Consultants finds that the additional eight levels are readily capable of meeting the required accessibility requirements. This includes paths of travel throughout the building, common spaces, facilities and amenities and adaptable apartments.	Appendix BB
Fire Safety	Warrington Fire	A Fire Engineering Review has been undertaken by Warrington Fire, which finds that any potential performance issues can be resolved through the application of appropriate performance solutions. Therefore, the additional eight levels are capable of meeting relevant fire safety requirements. Ongoing performance solutions of the building will need to be developed as part of the design development process and documented in a format suitable for submission to the relevant approval authorities.	Appendix CC

5.21 Site Suitability

Having regard to the characteristics of the Building R4B site, and its location, the proposal is considered suitable for the site as it:

- Is in close proximity to the future Barangaroo Metro Station, around 400 metres and therefore can contribute additional apartments to a highly accessible location.
- Forms an approved part of the Barangaroo Concept Plan (Mod 10), which has identified the site for the proposed height and density.
- Is capable of being developed in a manner that will minimise impacts and improve the built environment qualities of the locality at the same time.
- Will result in only minor environmental impacts that can be appropriately managed and mitigated as set out in **Section 6.0**.
- Will facilitate the renewal of the Barangaroo South site to its strategic potential, generating considerable benefits associated with the additional residential apartments and in conjunction with a wide variety of amenities and services for workers and visitors.

Given the above, the site is considered to be highly suitable for the proposal.

5.22 Public Interest

The proposed amendments to Building R4B will strengthen the realisation of the strategic potential of the Barangaroo South precinct and will fulfil the intended vision of the approved Concept Plan (Mod 10). The amendments to Building R4B are in the public interest as they:

- Directly support Sydney's development as a and well-connected city by providing additional residential apartments in proximity to the future Barangaroo Metro Station.
- Promote sustainability by ensuring that the approved Building R4B sustainability strategies are retained, with Barangaroo South on track to become the first carbon neutral large-scale precinct in Australia.
- Continue to deliver the associated public domain works as approved under the original SSD DA 6965.
- Continue to contribute to the holistic pedestrian experience which is to be considerably improved through the provision of an activated ground plane, pedestrianised streets, and the delivery of new parkland in the vicinity of the site.
- Contribute towards the vision for the Sydney CBD in providing a tower that benefits the overall accessibility, activation and appreciation of Barangaroo and the adjoining CBD environment.
- Contribute to the delivery of the wider Barangaroo Precinct.

- Will result in the unlocking of increased Key Worker Housing in line with the approved percentage under the Concept Plan.
- Provide for a holistic building design that exhibits design excellence and contributes to the architectural legacy of the City.

In light of the above, the proposal is considered to be in the public interest.

6.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 14**. These measures have been derived from the previous assessment in Section 5.0 and those detailed in appended technical reports (refer to Table of Contents).

Table 14 Mitigation Measures

Mitigation Measures
Air and Odour The Building R4B construction works are to be incorporated into the existing environmental management plans including a reactive Air Quality Management Plan (including a reactive dust mitigation system) implemented across the Barangaroo site.
Reflectivity All glazing and materials must not exceed 28% reflectivity.
Wind - The inclusion of strategic planting in the form of densely foliating trees at ground level around the site. To be effective in wind mitigation, these trees should be capable of growing to a height of approximately 5m to 6m, with a canopy diameter of approximately 4m to 5m. - The inclusion of portable café screening on the north-eastern aspect of Building R4B to be controlled by the operator to provide suitable conditions for patrons during adverse wind conditions. Conditions will be suitable as a pedestrian thoroughfare when the café area is not in operation. - The inclusion of wintergardens to offer protection from wind and generally improve amenity of balconies at levels 21 and over
Traffic and Parking - A Travel Demand Management Plan, prepared in accordance with the TMAP by ARUP and dated August 2015, will be implemented prior to occupation of the building. - Construction traffic will be managed in accordance with the following principles, as outlined in the TMAP prepared by ARUP and dated August 2015: - Construction access driveways are designed to allow trucks to enter and leave the site in a forward direction; - Construction access driveways are managed and controlled by site personnel; - Safety for works and the public in the vicinity of the worksite is maintained; - Designated truck routes for all access points are developed which minimises the impacts on the local road network; - A safe, convenient and appropriate environment is established for pedestrians and cyclists at all times; and - Appropriate capacity for pedestrians along the Hickson Road footpath is maintained
Noise and Vibration - Project specific noise and vibration control measures will be incorporated into the Construction Noise and Vibration Management Sub Plan. These are: - General measures to include plant noise audits; operator instruction; equipment selection; site noise planning; and installation of noise barriers between site and street frontages; - Community Relations Programme to be included in Lendlease's Community and Stakeholder Engagement Strategy; - Noise & Vibration Management Plan whereby measures required by this assessment are to be incorporated into the revised version of the sub plan
Building Code of Australia and Accessibility - Work will be carried out in accordance with the recommendations of the BCA Report dated July 2015 and September 2020. - Work will be carried out in accordance with the recommendations of the accessibility report by Morris Goding Accessibility Consultants dated September 2020.
Fire Safety Compliance will be required with the described performance solutions numbered 1 - 13 of the Fire Engineering Report prepared by Warringtonfire dated September 2020.
Construction Framework Environmental Management Plan The CFEMP should be implemented into the construction phase of the project.
Waste Management Waste will be managed in accordance with the Waste Management Plan prepared by ARUP, dated July 2016 and the Waste Management Plan by Foresight Environmental, dated September 2020.
ESD Building R4B will be designed to achieve 5 Star Green Star – Multi Unit Residential v1 Tool Design and As-built ratings.

7.0 Justification of the Proposal

In general, investment in major projects can only be justified if the benefits of doing so exceed the costs. Such an assessment must consider all costs and benefits, and not simply those that can be easily quantified. As a result, the EP&A Act specifies that such a justification must be made having regard to biophysical, economic and social considerations and the principles of ecologically sustainable development.

This means that the decision on whether a project can proceed or not needs to be made in the full knowledge of its effects, both positive and negative, whether those impacts can be quantified or not.

The proposed development involves amending the Building R4B at Barangaroo South to include eight additional levels and 5,650m² of residential GFA following approval of the Barangaroo Concept Plan (Mod 10). The assessment must therefore focus on the identification and appraisal of the effects of the proposed change over the site's existing condition and taking into account the approved Building R4B development (SSD 6965).

Various components of the biophysical, social and economic environments have been examined in this EIS and are summarised below.

7.1 Social and Economic

Barangaroo South is the southern 7.5 hectares of the Barangaroo site, which is destined to become the greenest and most advanced financial district and the first large scale, carbon neutral precinct in Australia. It will comprise a mix of uses, including commercial, residential, retail and dining along with a new landmark hotel. The proposed development seeks to deliver a revised height and 32 additional apartments in building R4B, which will have positive social and economic impacts due to additional dwellings being delivered within close proximity of the future Barangaroo Metro Station.

Specifically, despite the amendments proposed in this EIS, Building R4B will continue to:

- Provide high quality residential accommodation with excellent access to employment, transport, open space and infrastructure.
- Deliver ground level connectivity and activation, in particular fronting the future approved Hickson Park.
- Form part of the elegant backdrop, and reinforce the stepped height transition to, the new Crown Sydney Hotel and Resort.
- Be of a level of quality that affirms Barangaroo as part of Sydney's status as a global city.
- Provide a range of employment opportunities during construction and operation.

There are no adverse social or economic impacts as a result of the proposed development.

7.2 Biophysical

Section 5.0 of this EIS contains a thorough assessment of the likely biophysical impacts of the proposed development. As outlined in **Section 7.0**, any environmental risks that may result from the proposal are addressed through appropriate mitigation measures.

The environmental impact assessment of the proposed development has demonstrated that despite the amendments proposed to Building R4B, the proposal will offer the following outcomes:

- A very high level of residential amenity will be achieved for all apartments.
- Any wind impacts can be appropriately mitigated through the use of wind ameliorating devices such as screens, balustrades, awnings or vegetation.
- External normal specular reflectance of glazing and cladding will be limited to 28% to ensure that the building performs well in terms of solar reflectivity and glare, consistent with the approved approach.
- Water management measures will be implemented to ensure that there are no adverse water, drainage, stormwater or groundwater impacts.

- Waste will be managed during the construction and operational phases to promote recycling and limit the amount of waste going to landfill.
- Responsive measures will ensure that air quality impacts are managed during the construction phase.
- Solar impacts are considered appropriate for a Central Sydney location, and are not significant impact to the amenity on the site or surrounds.
- Noise and vibration management measures will be implemented during the construction and operational phase to ensure that there are no adverse impacts on surrounding sensitive receivers.
- Construction and operational traffic can be appropriately managed

7.3 Ecologically Sustainable Development

The EP&A Regulation lists four principles of ecologically sustainable development to be considered in assessing a project, comprising:

- The precautionary principle.
- Intergenerational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation and pricing of environmental resources.

An analysis of these principles is set out below.

Precautionary Principle

The precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment and therefore the precautionary principle has been taken into account and is not infringed by the proposal.

Intergenerational Equity

Inter-generational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- Enhancing the experience of visitors to the precinct through providing additional amendments to ensure the viability and efficiency of a critical building in the built form of Barangaroo South.
- Providing an amended building with additional apartments to contribute to the vitality and activation of the public domain within Barangaroo South.
- Implementing safeguards and management measures to protect environmental values

The proposal has integrated short and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications such as waste disposal would be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this EIS and the appended technical reports. In this regard, Barangaroo South has become the first large scale, carbon neutral, water positive precinct in Australia.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration. This EIS has demonstrated that the proposal will not have any significant effect on the biological diversity and ecological integrity of the site and surrounding area. The potential impacts associated with development identified in the expert consultant reports (see **Section 5.0**), particularly those associated with construction, have been incorporated into the mitigation measures as **Section 6.0** of this EIS. Furthermore, the landscaping component of the approved development is not proposed to be amended and will improve biodiversity outcomes on the site by moderating the site microclimate and improving the biodiversity of the existing site, which is devoid of any plant or animal life.

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reusing, recycling and managing waste during construction and operation would be implemented to ensure resources are used responsibly in the first instance.

Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

8.0 Conclusion

This EIS has been prepared to consider the environmental, social and economic impacts of the proposed development sought in this amending SSD DA to Building R4B in Barangaroo South. Namely, the proposed development comprises amendments related to the addition of eight storeys within Building R4B and an additional 5,650m² of residential GFA, which will in turn deliver 32 additional apartments.

The EIS has addressed the issues outlined in the SEARs for this SSD DA, and accords with Schedule 2 of the EP&A Regulation with regards to consideration of the relevant environmental planning instruments, built form, and social and environmental impacts.

Having regard to the relevant biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- The proposed development reflects and fulfills the requirements of the recently modified Concept Plan (Mod 10), which enables additional height and GFA to be included in Building R4B.
- The overall design principles and siting of Building R4B are retained in this application, ensuring that the building:
 - reinforces the principle of locating the highest form at the north of the precinct to complete the city frame and define the city's north-western edge;
 - continues to define the street alignments and responds to the desired future scale and activation for Watermans Quay;
 - provides housing close to employment and recreation opportunities, particularly with the amendment of 32 additional apartments;
 - continues to activate the public domain and contribute to the vibrancy of Barangaroo South;
 - promotes equitable access to views towards the harbour through defining the street corridors whilst providing sky view corridors between residential towers; and
 - continues to align with the fanning principle and presents the longest facade to the north.
- The development is generally consistent with all the relevant strategic policies, environmental planning instruments, plans and guidelines.
- The development is generally consistent with the Concept Plan (Mod 10).
- There are no adverse environmental impacts that cannot be appropriately managed by the mitigation measures set out in this EIS.

Given the merits described above, the carrying out of this project is justified and supportable in the circumstances.