



State Significant Development Environmental Impact Statement



Building R7 (SSD 6623)

Barangaroo South

Submitted to Department of Planning and Environment
On Behalf of Lend Lease (Millers Point) Pty Ltd

October 2014 ■ 10051

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This report has been prepared by:



Kate Tudehope and Michael Rowe 30/10/2014

This report has been reviewed by:



Lesley Bull 30/10/2014

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Warren Smith and Partners Pty Ltd

Statement of Validity

Development Application Details

Applicant name	Lend Lease (Millers Point) Pty Ltd
Applicant address	Level 4, The Bond, 30 Hickson Road Millers Point NSW 2000
Land to be developed	Lots 5 in DP 876514
Proposed development	Building R7 within Barangaroo South as described in Section 3.0 of this Environmental Impact Statement (SSD 6623)

Prepared by

Name	Michael Rowe
Qualifications	BPlan (Hons) MPIA
Address	Level 7, 77 Berry Street, North Sydney
In respect of	State Significant Development - Development Application

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 Michael Rowe

Date 30/10/2014

Disclaimer

All place names specified within this Environmental Impact Statement are used for identification purposes only and do not represent the final names which will be adopted. All place names will be subject to a separate naming approval process.

Executive Summary

Purpose of this Report

This submission to the Department of Planning and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application (DA) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It relates to Building R7 at Barangaroo South.

The proposed Building R7 is located entirely within the Barangaroo Site, which is identified as a State Significant Site in Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011*. Development at Barangaroo with a capital investment value of more than \$10 million is State Significant Development (SSD) for the purposes of the EP&A Act. As the proposed development will have a capital investment value of approximately \$11.3 million it is SSD for the purposes of the EP&A Act.

The Secretary's Environmental Assessment Requirements (SEARs) were issued on 15 August 2014 under SSD 6623. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs. The EIS has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) with regards to requirements for an EIS.

Overview of the Development

This application seeks approval for the construction of a five storey mixed use building (RL 23.275) known as Building R7, comprising 1,927m² of floor space within Block 1 of Barangaroo South.

The building is intended to be used for office and retail uses, with public amenities provided at ground level. The fit-out of the building will be subject to separate approvals, as required, once tenants have been confirmed.

The application also seeks approval for:

- operation and use of the basement car park to accommodate 13 car spaces;
- signage zones to accommodate directional signage on Transport Place and business identification signage for future tenancies; and
- landscaping works, including paving immediately surrounding the building, and around the HV Riser to the east.

The Site

Barangaroo is located on the north western edge of the Sydney Central Business District, 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 CBD commercial tenants to the south.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Central and Barangaroo South, and has been subject to multiple investigations that detail the physical and natural characteristics of the site.

The area of land within which development is proposed under this SSD DA, comprises land within Barangaroo South generally known and identified in the approved Concept Plan (Mod 7) as Block 1.

At the time of the initial Concept Plan Approval, the Barangaroo site comprised an open concrete/bitumen apron largely reclaimed over water. Construction of the Stage 1A basement car park, approved under a separate planning approval MP10_0023, has since commenced across the SSD DA site and surrounding land to the north, east and west.

Planning Context

Section 4.1 of the EIS considers all applicable legislation in detail. The development is consistent with and complies with all the relevant strategic policies, environmental planning instruments, plans and guidelines, including Concept Plan (Mod 7).

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the development in accordance with the SEARs and sets out the undertakings made by Lend Lease to manage and minimise potential impacts arising from the development. It demonstrates that the proposed development is satisfactory with respect to:

- Land Use and GFA
- Urban Design and Built Form
- Public Domain and Public Access
- Transport and Accessibility
- Heritage
- Contamination
- Environmentally Sustainable Development (ESD)
- Infrastructure Provision
- Noise
- Air and Odour
- Water, Drainage, Stormwater and Groundwater
- The Building Code of Australia
- Environmental, Construction and Site Management
- Staging
- Consultation

All measures that have been recommended as part of the detailed technical studies to mitigate potential environmental impacts have been incorporated into the proposed development, or are included in the mitigation measures at Section 6.0.

Conclusion and Justification

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

- There is a strategic need to provide Building R7 within Barangaroo South to ensure the building:
 - integrates and provides an appropriate transition between development within the wider Barangaroo site and the existing development at King Street Wharf;

- clearly identifies the southern entry to Barangaroo South and creates an inviting environment for the large number of future visitors, residents and workers; and
 - provides office space for Sydney Ferries, and publicly accessible amenities for future visitors to Barangaroo.
- The development is consistent with and complies with all the relevant strategic policies, environmental planning instruments, plans and guidelines, and Concept Plan (Mod 7).
 - The development will have a wide range of positive social and economic impacts.
 - There are no adverse environmental impacts that cannot be appropriately managed by the mitigation measures set out in this EIS.

1.0 Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (the Department) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of a State Significant Development (SSD) Application for the Building R7 at Barangaroo South.

The proposed Building R7 is located entirely within the Barangaroo Site, which is identified as a State Significant Site in Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011*. Development at Barangaroo with a capital investment value of more than \$10 million is SSD for the purposes of the EP&A Act. As the proposed development will have a capital investment value of approximately \$11.3 million it is SSD for the purposes of the EP&A Act.

The report has been prepared by JBA on behalf of Lend Lease (Millers Point) Pty Ltd, and is based upon the architectural drawings supplied by Durbach Block Jagers (DBJ) at **Appendix A**, and other supporting technical information appended to the report (see Table of Contents).

This 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 Requirements of the Secretary of the Department of Planning and Environment for the preparation of the EIS (refer to SEARs for SSD 6623 which are included at **Appendix B**). This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

1.1 Background

1.1.1 Approved Concept Plan

The Barangaroo Concept Plan (MP06_0162) was approved in February 2007. The Concept Plan covers urban design and policy initiatives and is the statutory planning approval to guide the urban renewal of Barangaroo.

The approved Concept Plan has been modified seven times since originally being approved and the Statement of Commitments has been revised accordingly. The most recent modification, referred to as Concept Plan (Mod 7), was approved on 11 April 2014 (Concept Plan).

The Concept Plan provides for:

- a 563,965m² mixed use development across the entire Barangaroo site, comprising:
 - a maximum of 514,465m² mixed uses GFA, including residential, commercial and retail uses which includes:
 - a maximum of 128,763m² of residential uses (a minimum of 99,763m² of which will be in Barangaroo South);
 - a maximum of 50,000m² of tourist uses GFA;
 - a maximum of 39,000m² of retail uses;
 - a maximum of 4,500m² of active uses GFA (3,000m² of which will be in Barangaroo South); and
 - a minimum of 12,000m² of community uses GFA (10,000m² of which will be in Barangaroo South);

- approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions including a 2.2km public Waterfront Promenade;
- built form principles, maximum building heights and GFA for each development block within the mixed use zone;
- public domain landscape concept, including parks, streets and pedestrian connections; and
- alteration of the existing seawalls and creation of a portion of the new shoreline to the Harbour.

To facilitate the redevelopment of the Barangaroo site under the Concept Plan, the site was listed in Part 12 of Schedule 3 of *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP).

The Major Development SEPP zones the site part B4 Mixed Use and part RE1 Public Recreation. It also establishes maximum building heights and gross floor area (GFA) restrictions for the nominated development blocks within the B4 Mixed Use zone. The site of the subject development is included within the B4 Mixed Use Zone.

1.1.2 Stage 1 Tender and Bid Process

The 22 hectare Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Stage 2 (referred to herein as Barangaroo Central) and Barangaroo Stage 1 (herein referred to as Barangaroo South).

Lend Lease was successfully appointed as the preferred proponent to develop Barangaroo South on 20 December 2009. This application forms one of a series of individual applications that Lend Lease either has or will be submitting to deliver Barangaroo South.

1.1.3 Bulk Excavation and Basement Car Park

A Project Application for Bulk Excavation and Basement Car Parking (MP10_0023) was approved by the Minister for Planning on 2 November 2010 (the Basement Car Park Approval). This followed the approval of a project for the demolition of existing structures at Barangaroo (MP07_0077).

Following the initial approval of the Basement Car Park Project Application, a further six Section 75W Modification Applications to modify that project have been approved. The approval relates to an area referred to as 'Stage 1A' in the southern part of the Barangaroo South site.

The Basement Car Park Approval generally comprises:

- demolition of existing structures and footings, part of an underground caisson wall, hardstand areas, removal of piles, and removal of existing vegetation within Blocks 1, 2, 3 (in part), 4A (in part) and X and within the adjacent public domain area, which have not been previously approved to be demolished or removed under MP 07_0077 Demolition Works;
- site establishment, including provision of concrete crushing infrastructure, environmental protection structures, de-watering infrastructure, and groundwater treatment;
- bulk earthworks for the purposes of excavating for the basement within Blocks 1, 2, 3 (in part), 4A (in part) and X and the adjacent public domain area;
- on-site treatment and remediation of contaminated soils;

- temporary stockpiling of excavated material across the Barangaroo site as required;
- transportation and disposal of material off site, where required;
- structural works, comprising the construction of:
 - foundations (piling, caps and footings);
 - basement levels;
 - perimeter retention system to basement walls; and
 - all associated elements and structures;
- car parking spaces required to support GFA as envisaged by the approved Concept Plan (as modified) for Blocks 1, 2, 3 (in part), 4A (in part) and X in accordance with the car parking rates approved under the Concept Plan;
- indicative parking layout, loading, plant location, bicycle parking and associated amenities;
- road works;
- construction of temporary vehicular access from Hickson Road and permanent vehicular access from Lime Street;
- associated utilities and infrastructure works including decommissioning and/or relocation of services;
- temporary use of the basement for construction related storage and activity;
- construction of the above ground basement risers, car park fire stairs, access lifts, and bicycle entry and exit ramps that will eventually be integrated into the design of the future peripheral buildings C1, C2, C6, R7 and R1; and
- temporary ground floor-level treatments and public domain within the footprint of the future peripheral buildings C1, C2, C6, R7 and R1.

The Basement Car Park Approval includes works within Block 1, which have been integrated into the design of Building R7 and its surrounds. This includes the basement entry off the future Lime Street and above ground structures including fire stairs, access lifts, HV riser and diesel exhaust riser. The approved basement works, which are in the process of being constructed, are identified in red on the Architectural Drawings (**Appendix A**).

1.1.4 Other Applications within Stage 1A of Barangaroo South

Project Approval has been granted for three commercial buildings, known as Commercial Building C3, C4 and C5 and two Residential Buildings (R8 and R9) within the Stage 1A site. A SSD DA was recently lodged with the Department for the development of Building R1, within Block X. Stage 1A of Barangaroo South is identified at **Figure 2**.

Another SSD DA (SSD 6303) is currently being assessed by the Department for the permanent public domain within Stage 1A, including around Building R7 (Stage 1A Public Domain SSD DA). Specifically, the Stage 1A Public Domain SSD DA seeks approval for the following works within Stage 1A of Barangaroo South:

- demolition of any existing hardstand areas and site preparation (including excavation and remediation) in the area to the west of the approved Basement Car Park (MP10_0023);
- construction of the public domain, comprising:
 - the pedestrian lanes, walks and places, including Shelley Lane, City Walk, Union Walk, Transport Place and Hickson Place;

- the vehicular streets, including Globe Street and Lime Street; and
- the Waterfront Promenade, including modification to the seawall and temporary public domain within Globe Square.

The public domain works include provision of all ground treatments and finishes, landscaping, furniture and fixtures, public domain structures, lighting, civil and stormwater infrastructure and utility services. The ground treatments and finishes proposed in the subject SSD DA reflect the Stage 1A Public Domain SSD DA and have been shown to allow the works to be delivered under either development consent.

1.1.5 Barangaroo Delivery Authority

The Barangaroo Delivery Authority was established on 30 March 2009 under the *Barangaroo Delivery Authority Act 2009* (NSW) to manage the redevelopment of Barangaroo and to deliver world class benchmarks in urban design, public domain and sustainability.

The creation of the Barangaroo Delivery Authority reinforces the NSW Government's commitment to the delivery of Barangaroo in a coordinated and financially responsible manner.

The Barangaroo Delivery Authority is subject to the control and direction of the NSW Premier.

The objects of the *Barangaroo Delivery Authority Act 2009* are:

- to encourage the development of Barangaroo as an active, vibrant and sustainable community and as a location for national and global business;
- to create a high quality commercial and mixed use precinct connected to and supporting the economic development of Sydney;
- to facilitate the establishment of Barangaroo Headland Park and public domain land;
- to promote the orderly and sustainable development of Barangaroo balancing social, economic and environmental outcomes; and
- to create in Barangaroo an opportunity for design excellence outcomes in architecture and public domain design.

The Barangaroo Delivery Authority is the registered landowner of most of the Barangaroo site, including the SSD DA site.

1.2 Objectives of the Development

The objectives of the Building R7 DA are to:

- provide a building that achieves design excellence and is consistent with the Concept Plan;
- create a positive transition between the existing development at King Street Wharf and the larger scale development within Barangaroo to the north;
- deliver a 'statement building' at the southern entry of the Barangaroo site;
- accommodate a range of future uses that will contribute to the vitality and vibrancy of Barangaroo; and
- ensure that any environmental impacts associated with the construction and operation of the building are appropriately mitigated.

1.3 Summary of Approval Sought

This application seeks approval for the construction of a five storey building (RL 23.275) known as Building R7, comprising 1,927m² of floor space within Block 1 of Barangaroo South.

The building is intended to be used for a mix of office, retail and potentially indoor recreation uses, with public amenities provided at ground level. Potential retail uses may include shops and food and drink premises. Further DAs will be lodged for the fit-out of the building for future uses, as required, once tenants have been confirmed.

The application also seeks approval for:

- operation and use of the basement car park to accommodate 13 car spaces;
- signage zones to accommodate directional signage on Transport Place and business identification signage for future tenancies; and
- landscaping works, including paving immediately surrounding the building, and around the HV Riser to the east.

In addition, this SSD DA does not seek approval for development that has been approved under the Basement Car Park Approval, which encompasses:

- demolition of any existing structures and footings, hardstand areas, piles and vegetation within the Stage 1A basement area;
- site establishment, including the provision of concrete crushing infrastructure, environmental protection structures, de-watering infrastructure, and groundwater treatment;
- bulk earthworks for the purposes of excavating the basement;
- on-site treatment and remediation of contaminated soils within the basement;
- transportation or stockpiling of excavated material;
- associated utilities and infrastructure works associated with that Project Application including decommissioning and / or relocation of services, including the Harbour Heat Rejection plant approved under Basement Mod 5;
- a basement access point off Lime Street; and
- above ground structures (within Building R7) associated with the basement including fire stairs, risers and access lifts and associated temporary treatments to these structures.

1.4 Analysis of Alternatives

Strategic need for the proposal

As detailed in Section 1.1, 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. With a mix of uses, including commercial, residential, retail and dining along with a new landmark hotel, on completion it will be home to around 1,200 residents, 23,000 office workers and more than 2.9 hectares of public space.

The success of Barangaroo relies heavily on the comprehensive delivery of a new urban form and land uses as envisaged under the Concept Plan. Building R7 is located at the southern entry to the Barangaroo site as envisaged by the Concept Plan. Specifically the Building R7 site has the important strategic role under the Concept Plan of:

- integrating and providing an appropriate transition between the wider Barangaroo site and the existing development at King Street Wharf; and
- clearly identifying the southern entry to Barangaroo South to create a cohesive and inviting environment for the large number of future visitors, residents and workers.

Alternative Options

Three options are available to Lend Lease in responding to the identified need for Building R7 within Barangaroo South.

Option 1: The Proposal

Option 1 involves providing the building as proposed in this SSD DA (as described in Section 3.0). The proposal will ensure that a high quality building is provided on the site that responds to the strategic need identified above.

Option 2: Do Nothing

Not providing a building on the site would not be an appropriate outcome for a site of the strategic importance of Barangaroo. Not providing a building in the space between the approved Commercial and Residential Buildings at Barangaroo South would not provide a positive transition between development at Barangaroo and existing development to the south at King Street Wharf. The Barangaroo Concept Plan (as modified) envisages a building in the subject location which will provide a clear entry into the Barangaroo precinct.

Option 3: Alternative Designs

A design competition was conducted in accordance with the Barangaroo Design Excellence Strategy. This competition included alternative designs submitted by other emerging architects including DRAW, Chenchow Little, Tzannes Associates, Scale Architecture, Lacoste Stevenson, Collins and Turner and CHROFI. The DBJ design was selected as the winner of the competition as it resulted in the best outcome for the site out of the alternatives considered in terms of achieving the primary objectives referred to above.

1.5 Project Team

An expert project team has been formed to deliver the project and includes:

Proponent	Lend Lease (Millers Point) Pty Limited
Urban Planning	JBA
Architect	Durbach Block Jagers (DBJ)
Traffic and Transport	ARUP
Contamination and Remediation	AECOM
Site Auditor	Graeme Nyland (Environ)
Public Domain and Landscaping	Aspect Oculus
Civil Engineering	Cardno

Air Quality & Odour	AECOM
Noise & Vibration	Wilkinson Murray
Environmental, Construction & Site Management	Lend Lease Building
Ecologically Sustainable Development	Lend Lease Design
BCA & Accessibility	McKenzie Group
Wind	CPP
Surveyor	Rygate

1.6 Secretary’s Environmental Assessment Requirements

In accordance with section 89G of the EP&A Act, the Secretary of the Department of Planning and Environment issued the environmental assessment requirements for the preparation of the EIS on 15 August 2014 under SSD 6623. A copy of the Secretary’s Environmental Assessment Requirements (SEARs) is included at **Appendix B**.

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 report and the accompanying technical studies.

Table 1 – Secretary’s Requirements (SSD 6623)

Requirement	Location in EIS	
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.	Sections 1-8	
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Section 4 and 5	
Where relevant, the assessment of the key issues below, and any other significant issues identified in the assessment must include: <ul style="list-style-type: none"> – Adequate baseline data – Consideration of potential cumulative impacts due to other development in the vicinity. – Measures to avoid, minimise, and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risk to environment. 	Section 5	
The EIS must be accompanied by a report from a qualified quantity surveyor providing: <ul style="list-style-type: none"> – A detailed calculation of the capital investment value (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. – An estimate of the jobs that will be created by the development – Certification that the information provided is accurate at the date of preparation. 	Submitted under a separate cover	
Key Issues	Report / EIS	Technical Study
1. Environmental Planning Instruments, Policies & Guidelines Address the relevant statutory provisions applying to the site, contained in the relevant EPIs, including:	Section 4.1	-

Requirement	Location in EIS	
<ul style="list-style-type: none"> - <i>State Environmental Planning Policy (State and Regional Development) 2011;</i> - <i>State Environmental Planning Policy (Major Development) 2005;</i> - <i>State Environmental Planning Policy 55 - Remediation of Land;</i> - <i>State Environmental Planning Policy (Infrastructure) 2007;</i> and - <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.</i> Address the relevant provisions, goals and strategic objectives in the following: <ul style="list-style-type: none"> - NSW2021; - Draft Metropolitan Plan for Sydney to 2031; - Draft Sydney City Sub-Regional Strategy; - Barangaroo Integrated Transport Plan; and - Sydney City Centre Access Strategy. 		
2. Barangaroo Concept Plan <ul style="list-style-type: none"> - Demonstrate consistency with the terms of approval of the Barangaroo Concept Plan MP06_0162 (as modified). 	Section 4.2	-
3. Land Use and GFA <ul style="list-style-type: none"> - Provision of a table identifying a floor by floor breakdown of GFA, total GFA and site coverage. - Provision of a table identifying: <ul style="list-style-type: none"> - the total GFA approved for retail, commercial, tourist and community uses approved across the entire Barangaroo site to date; - the total GFA approved across the entire Barangaroo (block-by-block) site to date; and - the residual floor space available within development Block 1 and across the entire Barangaroo site. Note: If no uses are sought for the development as part of the application, an indication of the likely uses is to be provided.	Section 4.3	Appendix A
4. Urban Design and Built Form Demonstrate how the proposed development will achieve design excellence including: <ul style="list-style-type: none"> - the design process leading to the proposal; - a high standard of architectural design, materials and detailing appropriate to each building and its location; - the form and external appearance of the proposed building and/or structures and how it will improve the quality and amenity of the public domain. Should the proposed building not be integrated with the above ground basement riser, this includes providing justification for not incorporating the building with the basement riser and identify how design excellence is achieved through retaining the basement riser as a stand-alone element and the options considered in the design process; - the sustainable design principles incorporated into the development in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security, resources, and water and energy efficiency; - the height, bulk and scale of the development - a view analysis is to be undertaken inclusive of photomontages and perspectives of key elements and views of the development from key locations (including, but not limited to, from Hickson Road, Shelly Street, Margaret Street West, Lime Street, Transport Place (future) and harbour foreshore); - impacts on key views from within the Barangaroo site; - shadow diagrams; and - wind effects report. 	Section 4.4	Appendix A
5. Public Domain and Public Access <ul style="list-style-type: none"> - Identify proposed open space, public domain and linkages with and between other public domain spaces, including Hickson Road, Margaret Street West, Lime Street, Shelley Street, Transport Place (future) and the harbour foreshore. - Detail and outline the interface between the proposed uses and the public domain. 	Section 4.6	Appendix A and Appendix E
6. Transport and Accessibility Impacts The EIS shall include a Transport Management and Accessibility Plan that outlines:	Section 4.7	Appendix D

Requirement	Location in EIS	
<ul style="list-style-type: none"> - Transport and traffic management within the overall Barangaroo precinct, including the demonstration of a minimalist approach to car parking provision; - Pedestrian and cycle access/circulation to meet the likely future demand within the precinct and connections to the external networks, particularly the cycle network identified in the Sydney City Centre Access Strategy, noting that Napoleon St is not considered a suitable cycle route; and - Measures to promote public transport usage and pedestrian and bicycle linkages. <p>The EIS shall include a Traffic Impact Assessment that:</p> <ul style="list-style-type: none"> - Details the proposed vehicular access and car parking arrangements for workers and visitors (cars, bicycles, coaches / buses and taxi ranks), including compliance with parking codes and Australian Standards; - Demonstrates a minimalist approach to car parking provision, including justification of the proposed quantum of car parking, motorbike parking and bicycle parking for the proposal having regard to the Concept Plan approval (as amended), Barangaroo Integrated Transport Plan and accessibility of the site to public transport; - Details the daily and peak traffic movements likely to be generated by the proposed development, including modelling and assessment of the performance of key intersections providing access to the site, and any upgrades (road/intersections) required as a consequence of the proposal. - Details sustainable travel initiatives for workers and visitors, including measures to promote the usage of public transport, pedestrian and bicycle linkages and the provision of end-of-trip facilities; - Details access arrangements for emergency and service vehicles; and - In relation to construction traffic: <ul style="list-style-type: none"> - cumulative impacts associated with other construction activities on the Barangaroo site, including Wynyard Walk; - Impacts on public transport services and access to these services; - Details of anticipated truck movements to and from the site; - Details of car parking and work zones for construction traffic; and - Details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements. - Relevant Policies and Guidelines <ul style="list-style-type: none"> - Barangaroo Integrated Transport Plan - Barangaroo Transport Management and Accessibility Plan - Guide to Traffic Generating Development (RMS) - EIS Guidelines - Road and Related Facilities (DoPI) - NSW Planning Guidelines for Walking and Cycling - Sydney City Centre Access Strategy - Development Near Rail Corridors and Busy Roads – Interim Guidelines (2008) 		
<p>7. Heritage</p> <ul style="list-style-type: none"> - The EIS must include an assessment of the likely impacts of the proposal on any heritage items and outline mitigation and conservation measures. 	Section 4.8	-
<p>8. Contamination</p> <ul style="list-style-type: none"> - Demonstrate compliance with the requirements of SEPP 55. - If remediation works are required, the EIS must include a Remedial Action Plan (RAP). The RAP must be accompanied by a Site B audit statement prepared by an Environment Protection Authority (EPA) accredited site auditor and the RAP must be prepared in accordance with the contaminated land planning guidelines under section 145C of the <i>Environmental Planning and Assessment Act 1979</i> and relevant guidelines produced or approved under section 105 of the <i>Contaminated Land Management Act 1997</i>. - Relevant Policies and Guidelines: The current guidelines under section 145C of the <i>Environmental Planning and Assessment Act 1979</i> are the guidelines "<i>Managing Land Contamination, Planning Guidelines, SEPP 55 Remediation of Land</i>" 1998. 	Section 4.9	-
<p>9. ESD</p> <ul style="list-style-type: none"> - Identify how the development will incorporate ESD principles in the design, construction and operational phases of the development. 	Section 4.10	Appendix G

Requirement	Location in EIS	
10. Infrastructure Provision <ul style="list-style-type: none"> - Detail any infrastructure proposed to service the development and demonstrate that the site can be suitably serviced. - Detail the existing infrastructure on-site, and identify any possible impacts on Infrastructure arising from the construction of the proposed works. - Where the proposed works affect existing infrastructure, the application should detail any mitigation works proposed, including service relocations. 	Sections 3.4 and 4.11	Appendix H
11. Noise and Vibration <ul style="list-style-type: none"> - Prepare a Noise and Vibration Impact Assessment of construction, operation, traffic and cumulative noise impacts. The assessment must be prepared in accordance with the relevant Environment Protection Authority guidelines, and must consider any potential impacts on nearby noise sensitive receivers and outline proposed noise mitigation and monitoring measures. - Relevant Policies and Guidelines: <ul style="list-style-type: none"> - NSW Industrial Noise Policy 2000 (EPA) - NSW Industrial Noise Policy – application notes 2013 (EPA) - NSW Road Noise Policy 2011 (DECCW) - NSW Road Noise Policy – application notes 2013 (EPA) - Assessing Vibration: A Technical Guideline 2006 (DEC) - Interim Construction Noise Guideline 2009 (DECC) 	Section 4.12	Appendix J
12. Air and Odour <ul style="list-style-type: none"> - Provide an Air Quality Impact Assessment. The assessment must be prepared in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales 2005 and must consider the requirements of the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>. The key air quality issues that must be covered in the assessment include, where applicable: <ul style="list-style-type: none"> - The identification of the pollutants of concern including dust and odours; - The identification and assessment of all relevant fugitive and point source emissions; and - Proposed air quality management and monitoring procedures during the works. - Relevant Policies and Guidelines: <ul style="list-style-type: none"> - <i>Protection of the Environment Operations Act 1997</i>; - <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>; - <i>The Approved Methods for Modelling and Assessment of Air Pollutants (August 2005)</i> (DEC) - <i>The Approved Methods for Modelling and Assessment of Air Pollutants (January 2007)</i> (DEC) - <i>Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards</i> (2012) (Department of Health) - <i>Assessment and management of odour from stationary sources in NSW – Technical framework</i> (November 2006) (DEC) - <i>Assessment and management of odour from stationary sources in NSW – Technical notes</i> (November 2006) (DEC) 	Section 4.13	Appendix I
13. Water, Drainage, Stormwater and Groundwater <ul style="list-style-type: none"> - Prepare a Stormwater and Drainage Assessment to assess the impacts of the proposal on surface and groundwater hydrology and quality. - Identify appropriate water quality management measures focussing on the management of the impacts from the proposed works on Sydney Harbour. - Prepare a Water Management Plan. This should include stormwater and wastewater management, including any re-use and disposal requirements, details of any proposed alternative water supply, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and any water conservation measures. - Prepare an Infrastructure Management Plan. The applicant shall provide information on the required water and waste water services and any 	Section 4.14	Appendix H

Requirement	Location in EIS	
augmentation of Sydney Water infrastructure that may be required for the proposed development. <ul style="list-style-type: none"> - Demonstrate that the landscape treatment and tree species selection of public domain areas would not cause cracking or blockages of Sydney Water Infrastructure. 		
14. Building Code of Australia Prepare a BCA and access report demonstrating compliance with the Building Code of Australia.	Section 4.15	Appendix K
15. Environmental, Construction and Site Management Plan The EA shall provide an Environmental and Construction Management Plan for the proposed works, and is to include: <ul style="list-style-type: none"> - community consultation, notification and complaints handling; - impacts of construction on adjoining development and proposed measures to mitigate construction impacts: - noise and vibration impacts on and off site; - air quality impacts on the neighbourhood; - odour impacts; - water quality management for the site; and - construction waste classification, transportation and management methods in accordance with DECCW's Know Your Responsibilities: Managing Waste from Construction Sites Guideline. 	Section 4.16	Appendix L
16. Staging Details regarding the staging of the proposed development	Section 4.17	-
17. Consultation <ul style="list-style-type: none"> - Undertake an appropriate level of consultation with council and State government agencies. - Provide details on the Community Engagement Framework to guide the public consultation process. 	Section 4.18	-

2.0 Site Analysis

2.1 Site Location and Context

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 a range of new development dominated by large CBD commercial tenants to the south.

The 22 ha 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 site is shown in **Figure 1**. Note that the Locality Plan does not illustrate the approved hotel site over the Harbour.



Figure 1 – Locality Plan

2.2 Site Description

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

For the purposes of construction staging, Lend Lease has broken Barangaroo South into two areas, referred to as Stage 1A and Stage 1B. Stage 1A is generally known and identified in Concept Plan (Mod 7) as Blocks 1, 2, 3 and X and the area of the foreshore between Block X and Darling Harbour. The proposed development is located within Block 1.

A site plan from the Stage 1A Public Domain SSD DA showing Building R7 in relation to the remainder of Stage 1A is shown at **Figure 2**.



Figure 2 – Stage 1A of the Barangaroo South showing the proposed location of Building R7

Land Ownership and Description

A site survey plan prepared by Rygate is included at **Appendix C**.

Under the *Barangaroo Delivery Authority Act 2009* (NSW), Barangaroo is defined as the land identified as the “Barangaroo Delivery Authority operational area on the Barangaroo Delivery Authority Operational Area Map”. The operational area comprises Lots 1-6 in DP 876514, Lot 7 in DP 43776, Lot 100 in DP 83823 and Lots 6 and 7 in DP 869022.

The Barangaroo Delivery Authority owns the majority of Barangaroo, however small areas are owned by other Government agencies including the Marine Ministerial Holding Corporation, the Roads and Maritime Services and the Crown.

The Building R7 site, the subject of this SSD DA comprises Lot 5 in DP 876514. The Barangaroo Delivery Authority is the owner of the Site. The Barangaroo Delivery Authority has issued landowner’s consent to the making of this SSD DA, provided with the completed Application Form submitted under separate cover.

2.3 Existing Development and Structures

2.3.1 Built Form

At the time of the initial Concept Plan Approval, the Barangaroo site comprised an open concrete/bitumen apron largely reclaimed over water.

As identified at Section 1.1.3, under the Basement Car Park Project, approval was granted for the demolition of any existing structures and footings, part of an underground cassion wall, hardstand areas, removal of piles, and removal of existing vegetation within Blocks 1, 2, 3 (in part), 4A (in part) and X of Barangaroo South, and within the adjacent public domain area, which had not previously been approved to be demolished or removed under the approval issued in respect of MP 07_0077 Demolition Works.

Construction under the Basement Car Park Approval has substantially commenced and the site of the proposed Building R7 is located within the zone of those construction works. The extent of the Basement Car Park Approval and its relationship to Building R7 site is illustrated in **Figure 3**.

The Basement Car Park Approval includes works within Building R7 site. This includes the basement entry off the future Lime Street and above ground structures including fire stairs, access lifts, HV riser and diesel exhaust riser. The approved basement works, which are in the process of being constructed, are identified in red on the Architectural Drawings (**Appendix A**).

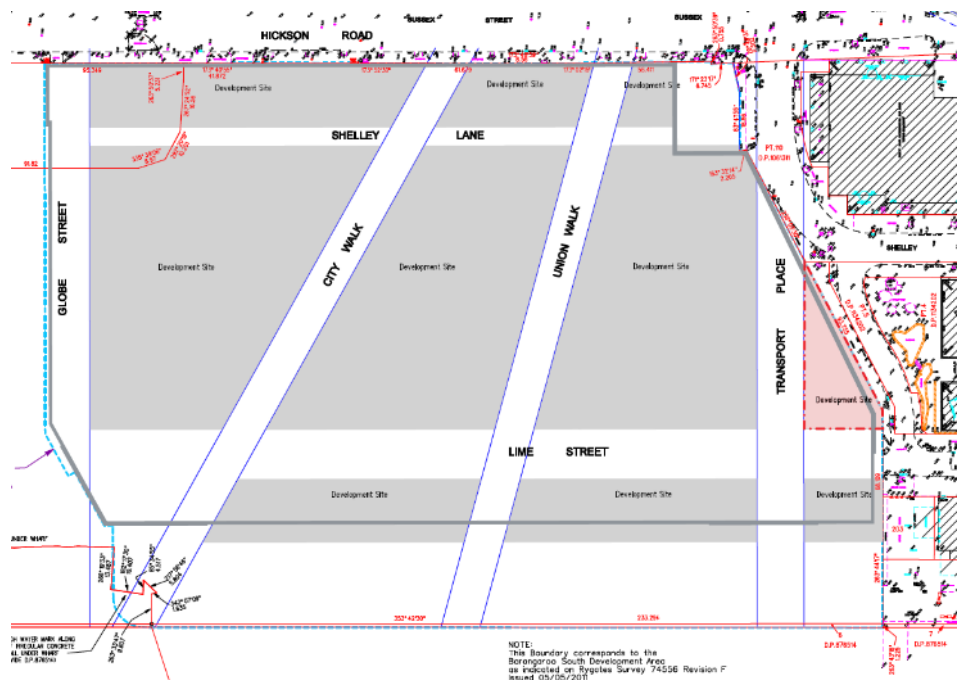


Figure 3 – Extent of Basement Car Park Approval (thick grey line) and relationship to the Site (red box)

Various other approvals have been granted for development within the Barangaroo South site. Relevant to the site are the following approvals:

- MP11_0044 – Approval for the construction of Commercial Building C3, allocation of car parking spaces, temporary public domain works, remediation and associated works.
- MP10_0025 – Approval for the construction of Commercial Building C4, allocation of car parking spaces, public domain works and remediation and associated works.

- MP10_0227 – Approval for the construction of Commercial Building C5, allocation of car parking space, temporary public domain works, remediation and associated works.
- MP11_0002 – Approval for the construction of Residential Building R8 and Residential Building R9, comprising ground floor retail, upper level residential apartments, and public domain works.
- SSD 13_5967 – Approval for the construction, operation and maintenance of a concrete batching plant to supply concrete for the construction of future development under of Barangaroo South.

Construction works have commenced on all of the above approvals.

The Stage 1A Public Domain SSD DA is currently being assessed by the Department for the permanent Public Domain within Stage 1A of Barangaroo South, including around Building R7. Specifically, that SSD DA seeks approval for the following works within Stage 1A:

- demolition of any existing hardstand areas and site preparation (including excavation and remediation) in the area to the west of the approved Basement Car Park (MP10_0023);
- construction of the public domain, comprising:
 - the pedestrian lanes, walks and places, including Shelley Lane, City Walk, Union Walk, Transport Place and Hickson Place;
 - the vehicular streets, including Globe Street and Lime Street; and
 - the Waterfront Promenade, including modification to the seawall and temporary public domain within Globe Square.

The public domain works include provision of all ground treatments and finishes, landscaping, furniture and fixtures, public domain structures, lighting, civil and stormwater infrastructure and utility services. The ground treatments and finishes proposed in the subject SSD DA reflect the Stage 1A Public Domain SSD DA and have been shown to allow the works to be delivered under either development consent.

A SSD DA was recently submitted to the Department for the development of Building R1, within Block X. That SSD DA seeks approval for the construction of a three storey building (to a maximum height of RL 21) and comprising 804m² of floor space. The application also seeks approval for construction of the structural slab and piling (including associated earthworks and remediation) for Building R1 outside of the Basement Car Park diaphragm wall.

2.3.2 Infrastructure and Services

Stormwater

The external catchment draining to the existing stormwater drainage system is approximately 14 Ha. The existing stormwater drainage system consists of large diameter pipes along Hickson Road that turn across the Barangaroo site and discharge untreated water into the Harbour. Overland flows in excess of the piped flows are directed to the existing low point in Hickson Road and ponded water traverses the Barangaroo South site and ultimately discharges to the Harbour.

Changes to the existing stormwater network, including the provision of trunk drainage works and the relocation of existing stormwater pipes, are approved under the Basement Car Park Approval. A stormwater easement associated with the Basement Car Park Approval runs along the southern boundary of the Building R7 site. Additionally, grates and inlets to collect surface flows from the Public

Domain form part of SSD6303 including Civil Walk, Union Walk, Transport Place and Shelley Lane.

Water

The existing water supplies to the Barangaroo site are supplied from a 300mm diameter Sydney Water main in Hickson Road. Trunk water supply infrastructure will be provided to the R7 site as part of the works approved under the Basement Car Park project.

Sewer

There is an existing sewer trunk main in Hickson Road near the western kerb line which drains to an existing Sydney Water sewage pumping station SP1129 outside the Barangaroo site. Trunk sewer infrastructure will be provided to the R7 site as part of the works approved under the Basement Car Park project.

Electricity

The Barangaroo South site was served by 5 KV high voltage feeders entering the Barangaroo site at the southern end of Hickson Road and terminating in an AusGrid (formerly Energy Australia) HV switch room. The HV supply and private HV reticulation were decommissioned and the private substations demolished as part of demolition works in 2010/2011.

Telecommunications

NBN Co. will supply communication infrastructure to the Barangaroo South site via a flexible communications fibre optic backbone.

Natural Gas

There is an existing gas supply at the intersection of Napoleon Street and Hickson Road and also at the end of Lime Street near the south-west corner of the Barangaroo site.

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; and
- 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 R7 fronts the future Lime Street to the west. Once constructed, Lime Street will connect to Hickson Road via Globe Street in the north, and continue south through the King Street Wharf precinct. Building R7 fronts the existing Shelley Street to the south. Shelley Street will continue to provide access from the southern CBD.

2.4.2 Existing 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.
- **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 both King Street Wharf and Circular Quay.

Further information on existing and known planned public transport accessibility of the Barangaroo site is provided in the Transport Assessment prepared by ARUP at **Appendix D**.

2.4.3 Pedestrians and Cyclists

Pedestrian Access

The NSW Government has commenced construction on Wynyard Walk (previously Barangaroo Pedestrian Link), a direct pedestrian link between the new Barangaroo development and Wynyard Station and transport interchange. Wynyard Walk, expected to be completed during 2015, will provide a high level of access to public transport for the growing western corridor of the CBD, including Barangaroo and King Street Wharf. This will assist in accommodating the additional commuters who are expected to use this route to access the Barangaroo site.

Pedestrian access to Barangaroo is available along local roads, all of which are footpath lined. Notwithstanding the high degree of pedestrian footpaths and thoroughfares, there are generally low levels of pedestrian activity adjacent to the Barangaroo site. Limited pedestrian access is currently available across the Barangaroo site and along the waterfront via fenced routes.

Bicycles

A marked bicycle lane exists along part of Hickson Road and forms part of a cycle way 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). A bicycle lane connecting Kent Street to the Barangaroo site via Napoleon Street may be the subject of a separate future application.

2.5 Physical Characteristics

2.5.1 Geology and Geomorphology

Investigation reports prepared previously by AECOM and others provide a detailed analysis of the geological and geomorphological characteristics of the Building R7 site and the Barangaroo site generally.

The Sydney Geological Map Scale 1:100,000 and the Sydney Geological Map Scale 1:250,000 indicate the Barangaroo site is underlain by

Hawkesbury Sandstone. Quaternary sediments and man-made fill overlay the Hawkesbury Sandstone.

Previous Geotechnical Reports which covered the Barangaroo site indicate that it is underlain by manmade fill, which is in turn underlain by marine sediment and Hawkesbury Sandstone. The fill material is up to 21m deep and comprises a mix of silt clay, coarse gravel and fragments of concrete, brick, steel, glass and ash. The Building R7 site was included within the excavation works under the approved Basement Car Park, as well as the proposed Stage 1A Public Domain, and has already been excavated.

2.5.2 Site 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 have revealed that both the soil and groundwater is contaminated, and that the extent of the contaminated materials varies across the Barangaroo site.

Concentrations of lead, total petroleum hydrocarbons (TPHs), benzene, xylenes and polycyclic aromatic hydrocarbons (PAHs) in the soil variably exceed applicable guideline criteria. The contamination is 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 Office of Environment and Heritage) declared part of the Barangaroo site (part of Blocks 4A, 4B, 4C 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 'DECCW Declaration Area') (see **Figure 4**). No part of the Building R7 site is located within the DECCW Declaration Area.

Remediation of the DECCW Declaration Area within Concept Plan (Mod 7) Block 4 is currently proposed under SSD_5897 being assessed by the Department. The remediation of the remainder of the Barangaroo South site and immediately adjacent land within Barangaroo Central and Hickson Road will be the subject of a separate application(s) (not yet approved).

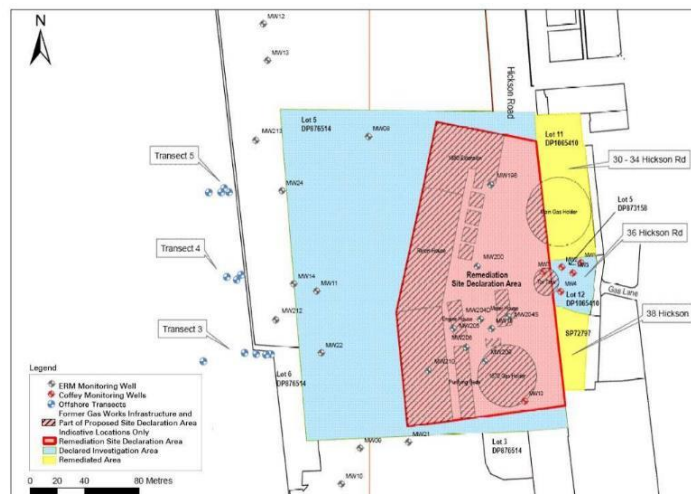


Figure 4 – DECCW Declared Areas

ERM has prepared an Overarching Remedial Action Plan (Overarching RAP) for the Barangaroo site on behalf of the Barangaroo Delivery Authority. The Overarching RAP presents a summary of the contamination issues identified on the Barangaroo site and outlines an approach to the remediation of the site as a whole.

A Site Auditor's Statement has been prepared by Graeme Nyland in relation to the Overarching RAP. The Overarching RAP requires that site specific RAPs be developed for the DECCW Declaration Area and for the other development sites. Site specific Remedial Works Plans are also required under the Overarching RAP, which are to detail remedial measures.

In accordance with the requirements of the Overarching RAP, a Site Specific Remedial Action Plan known as the "Amended Remedial Action Plan - Barangaroo - Other Remediation Works (South) Area" has been prepared by AECOM Australia Pty Ltd, dated 7 July 2011 (ORWS RAP). An addendum to the ORWS RAP, known as the Addendum to OWRS RAP, was prepared in 2012 by AECOM to include a further portion of the Barangaroo South site within the boundaries of the original OWRS RAP. The OWRS RAP (as amended) includes the majority of the SSD DA site. The preparation of the OWRS RAP (as amended) was informed by the Human Health Environmental Risk Assessment, prepared by AECOM, dated 4 July 2011 (HHERA), including the Site Specific Target Criteria (SSTC) that are contained in the HHERA.

Full details of the soil and groundwater contamination and exceedance levels within the site are documented in the AECOM Remedial Action Plans submitted with Bulk Excavation and Basement Car Parking Project Application (as modified).

Works approved in the Basement Car Park Approval (as modified) include the establishment of a remediation enclosure (exclusion zone) for the management of contaminated material, construction of an ex-situ treatment facility within the exclusion zone, and set up of decontamination stations and wheel wash zones at the entrance and exit points of the remediation enclosure. Suitably treated and excavated material will be re-used across the broader Barangaroo site to minimise the need to import fill for public domain works, and the creation of the Headland Park.

Accredited Site Auditor, Graeme Nyland, completed a Site Audit Report and Site Audit Statement that approved the ORWS RAP, as well as an addendum report and statement which approved the addendum to the OWRS RAP. The HHERA and the ORWS RAP were approved by the Office of Environment and Heritage (OEH) in satisfaction of condition A8 of the Basement Car Park Approval (as modified).

After giving consideration to the approvals given by OEH and the site auditor, and after reviewing the RAP, the Minister for Planning and Environment issued the Basement Car Park Approval, including the ORWS RAP, on 17 August 2011. Further modifications to the Basement Car Park and the Addendum to the Amended OWRS RAP have since been approved.

2.5.3 Groundwater and Hydrogeology

The groundwater profile beneath the Barangaroo site is likely to be influenced by the groundwater flow from the east beneath the CBD and tidal fluctuations associated with Sydney Harbour.

Data collected in July 2006 indicates that the depth of groundwater ranged between 1.7m and 2.5m below ground level. Short term variations in groundwater levels were reported particularly close to the sea wall.

A detailed chemical composition of the groundwater was prepared and is addressed in ERM's RAP. In summary, groundwater analysis indicates varying concentrations of contaminants. Detectable concentrations of TPH, PAHs and BTEX are limited to the north eastern area of Barangaroo South associated with the former gasworks. Heavy metal concentrations likely to be related to fill materials are present in groundwater across the Barangaroo site.

As identified at Section 1.1.3, the Basement Car Park Approval (as modified) covers site establishment works within Blocks 1 (which includes the Building R7 site), 2 and 3, as well as Block X, including de-watering infrastructure and groundwater treatment, and the on-site treatment and remediation of contaminated soils.

This DA is informed by the detailed assessments in relation to groundwater and hydrogeology undertaken as part of the Basement Car Park Approval (as modified).

2.5.4 Soil Landscapes

This DA is informed by the detailed soil assessments undertaken as part of the Basement Car Park Approval. The 1:100,000 Sydney Soil Landscape Map indicate the Stage 1A site is underlain by disturbed soils.

An Acid Sulfate Soils Management Plan prepared by AECOM in relation to the Basement Car Park Approval has identified Potential Acid Sulfate Soils (PASS) to be potentially present at depths ranging from -10.58 to 15.36m AHD across the site (refer to Acid Sulfate Soils Report prepared by AECOM at Appendix I of the Environmental Assessment Report (EAR) prepared by JBA dated June 2010 in support of the Basement Car Park Project Application). This plan provided strategies for dealing with those PASS (refer to Appendix I of that EAR).

As identified at Section 1.1.3, the Basement Car Park Approval includes bulk excavation works below the footprint of the proposed building. These works are largely complete.

2.5.5 Vegetation

The site is devoid of existing vegetation.

2.5.6 Heritage and Archaeology

Heritage

The approved Concept Plan and Demolition Project Application comprehensively addressed the heritage significance of the Barangaroo site. 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).

The Statement of Commitments for the Concept Plan required an Interpretation Strategy to be prepared prior to any works commencing that involve surface disturbance. Accordingly, an Outline Interpretation Plan was prepared by Tanner Architects and was submitted to the Department of Planning and Environment as part of the EAR for the Basement Car Park Project Application (refer to Appendix FF of that EAR). The Outline Interpretation Plan relates to the whole of the Barangaroo South area, including the Building R7 site.

Indigenous and Non-Indigenous Archaeology

A Non-Indigenous Archaeological Assessment undertaken by Casey and Lowe for the Barangaroo South area and for land within the vicinity of the broader

Barangaroo site was submitted with the Basement Car Parking Project Application. That Assessment indicated that there was a moderate to high level of non-indigenous archaeological potential across most of the Barangaroo site. The Barangaroo site contains a mixture of archaeological remains associated with maritime infrastructure, shipbuilding and industrial land uses.

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 entire Barangaroo site and was submitted with the Basement Car Park Project Application. That Assessment suggests that, notwithstanding the above, subsurface archaeological deposits containing artefact scatters and/or middens may be located within the eastern portion of the Barangaroo South area (east of the site), including land particularly near the original shoreline.

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 are considered to be no 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 R7 site is considered to have no archaeological potential or significance. As set out above, the Building R7 site has been excavated under the Basement Car Park Approval and Stage 1 Public Domain.

2.6 Surrounding Development

A description of the existing development and future proposed development envisaged under the Concept Plan (Mod 7) is outlined below.

2.6.1 Existing Development

The approved development under the Basement Car Park Approval and Residential and Commercial Building consents (described in Section 1.1) are currently under construction within, and to the north and west of the Building R7 site, in Stage 1A Barangaroo South.

Immediately to the south of the Building R7 site is the Barangaroo South boundary with Shelley Street. On the opposite side of Shelley Street is 1 Shelley Street (Macquarie Bank). To the south east and west are the KPMG and Bungalow 8 buildings respectively.

2.6.2 Future Development

The future development as envisaged by the Concept Plan for Barangaroo South is indicated on **Figure 5**.

Immediately to the north of the Building R7 site is the future Transport Place, beyond which lies Commercial Building C5 which is currently under construction. To the north-east lies Wynyard Walk and public domain areas which are currently proposed under the Stage 1A Public Domain SSD DA.

To west of the site, on the opposite side of Lime Street, lies Building R1 which is currently proposed under the Building R1 SSD DA (SSD 6513-2014). Further to the west lies the foreshore promenade, which is also currently proposed under the Stage 1A Public Domain SSD DA.

Immediately to the south and east of the site is Shelley Street, and existing development at King Street Wharf (discussed in Section 2.6.1).

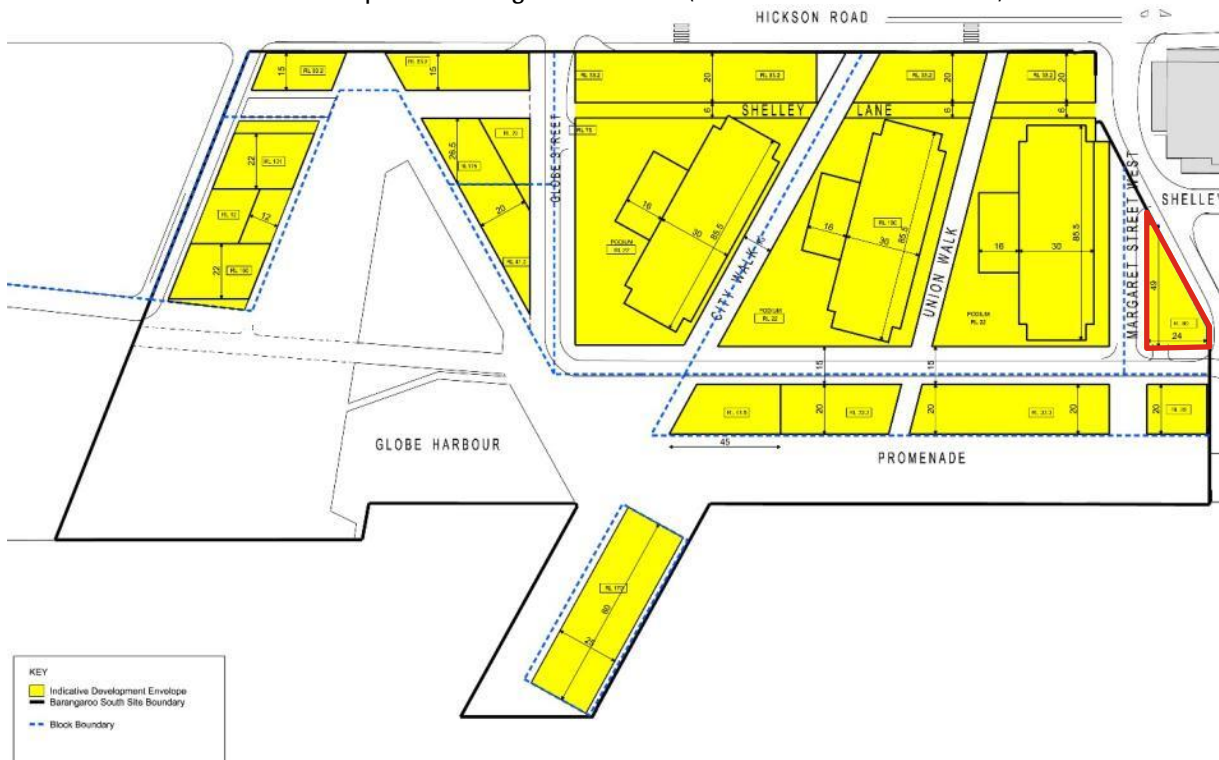


Figure 5 – Building R7 (red outline) in relation to the approved Concept Plan (Mod 7) Indicative Building Layout

3.0 Description of the Development

This chapter of the report provides a detailed description of the proposed development. Architectural Drawings and a Design Statement prepared by DBJ are included at **Appendix A**.

This application seeks approval for construction of a five storey building (to a maximum height of RL 23.275) known as Building R7, comprising 1,927m² of floor space within Block 1 of Barangaroo South.

The building is intended to be used for a mix of office, retail and potentially indoor recreation uses, with public amenities provided at ground level. Potential retail uses may include shops and food and drink premises. Further DAs will be lodged for the fit-out of the building for future uses, as required, once tenants have been confirmed.

The application also seeks approval for:

- operation and use of the basement car park (approved under the Basement Car Park Approval and largely complete) to accommodate 13 car spaces; and
- signage zones to accommodate directional signage on Transport Place and business identification signage for future tenancies; and
- landscaping works, including paving immediately surrounding the building, and around the HV Riser to the east.

A photomontage of Building R7 is shown at **Figure 6**.



Figure 6 – Photomontage of Building R7

Source: Virtual Ideas

This DA does not seek approval for development that has been included in the approved Basement Car Park project (as modified), which encompasses:

- demolition of any existing structures and footings, hardstand areas, piles and vegetation within the Stage 1A basement area;

- site establishment, including the provision of concrete crushing infrastructure, environmental protection structures, de-watering infrastructure, and groundwater treatment;
- bulk earthworks for the purposes of excavating the basement;
- on-site treatment and remediation of contaminated soils within the basement;
- transportation or stockpiling of excavated material;
- associated utilities and infrastructure works associated with that Project Application including decommissioning and / or relocation of services, including the Harbour Heat Rejection plant approved under Basement Mod 5;
- a basement access point off Lime Street; and
- above ground structures (within Building R7) associated with the basement including fire stairs, risers and access lifts and associated temporary treatments to these structures.

The Basement Car Park Approval includes works within Block 1, which have been integrated into the design of Building R7. This includes the basement entry off the future Lime Street and above ground structures including fire stairs, access lifts, HV riser and diesel exhaust riser. The approved basement works, which are in the process of being constructed, are identified in red on the Architectural Drawings (Appendix A).

3.1 Site Preparation

The Basement Car Park Approval and Stage 1A Public Domain SSD DA provide for the demolition of any existing hardstand areas, footings and piles and site preparation works, including remediation (if required), within the Building R7 site.

In light of the works either approved or contemplated under those separate applications, no piling or excavation works are required.

3.2 Building R7

Building R7 is a five storey building with a maximum height of RL 23.275 and a total GFA of 1,927 m². A summary of Building R7's uses, including a floor by floor breakdown of GFA is provided at Table 2.

Table 2 – Summary of proposed building uses and areas

	Use	Building R7 GFA (m ²)
Ground	Retail and/or Indoor Recreation	283
	Public Amenities	91
Level 1	Retail and/or Indoor Recreation	196
Level 2	Retail and/or Indoor Recreation	204
	Commercial / Office	338
Level 3	Retail and/or Indoor Recreation	527
Level 4	Retail	289
Total GFA		1,927

The building is trapezoidal in shape in response to the shape of the site, and is required to integrate with a number of fixed basement elements. Working within these constraints, the ground plane seeks to line the future pedestrian routes with active retail uses. To enable the provision of active ground floor uses within the

constraints of the approved basement structure, the building extends beyond the Concept Plan Indicative Development Envelope into Transport Place. This will reduce the proposed width of Transport Place by 3m, from 15m to 12m. The impacts of the proposed variation on views and the public domain are discussed at Section 4.4.3 and Section 4.6 respectively.

A feature of the design is an external stair off Transport Place which wraps around the building's northern and western elevations, linking the ground plane to the upper levels. The stair will activate the building's primary elevations, and provide architectural interest with green wall planting, seats and generous entries into the upper level tenancies. At the roof level (Level 4), a retail space (envisaged as a food and drink premises) and planted roof top courtyard will animate the roof level and provide views to the Harbour over Building R1.

The main entry to the building will be from Lime Street, with internal access between the floors provided via internal stairs and a lift. The external stair off Transport Place provides a secondary access to the upper levels. At ground level, operable glazing is provided along sections of the northern, eastern and western facades to provide future access to the ground floor tenancies. New public amenities are located in the south west corner of the ground floor, with a dedicated accessible ramp off Shelley Street.

The facade design of Building R7 has been designed to relate to Building R1 through the use of timber. The façade of Building R7 reads as a series of stacked and offset timber columns, grading from more dense at the base to lighter at the top. This will be achieved by both the spacing and shaping of the timber members, with finer columns at the upper levels for greater transparency.

The application also seeks approval for the operation and use of the basement car park (approved under the Basement Car Park Approval) to accommodate 13 car spaces (12 retail spaces and 1 commercial space) and use of plant within the basement as shown on the Basement Drawings included at **Appendix A**.

Further details on the materials and finishes to be applied to Building R7 are provided in the Architectural Drawings at **Appendix A**.

3.3 Landscaping Works

3.3.1 Landscaping Works Surrounding Building R7

It proposed to provide landscaping works to the areas immediately surrounding the building, including to the east of Building R7, in the area around the HV Riser, and to the south of the building along the Shelley Street frontage as illustrated in **Figure 7** below. The ground treatments reflect the Stage 1A Public Domain SSD DA and have been shown to allow the works to be delivered under either development consent. However, it does not seek approval for public domain works that are currently proposed under the Stage 1A Public Domain SSD DA which lie outside the Building R7 site. The relevant Stage 1A Public Domain Drawings prepared by Aspect Oculus have been included at **Appendix E** for information purposes.

The building does not incorporate the basement riser and it does not form part of the proposed landscaping works. The HV Riser will be incorporated into a stand-alone public art element, as part of a future design process and DA. The treatment of the risers has been excluded from this SSD DA and is include on the plans for context only. It may be the subject of temporary treatments approved under the Stage 1A Basement project.



Figure 7 – Ground floor plan illustrating extent of landscape works around Building R7

Source: Aspect Oculus

3.3.2 Landscaping Works to Building R7

Aspect Oculus has prepared Landscape Plans for the proposed development (also at **Appendix E**) which include details of finishes and indicative plantings of the landscaped areas.

The key features of the Building R7 landscaping strategy include the green façade planting and roof top courtyard. The species chosen for the scheme are generally species which require low maintenance and have low water requirements.

The green walls will be planted with a combination of vine species, which will be grown up a tensile stainless steel mesh structure. The species will be intermixed to create a varied and unstructured appearance.

The roof top planting strategy includes feature trees and understory plantings, with species chosen for their adaptability to exposed spaces and varied light conditions.

3.4 Building Services and Infrastructure

All infrastructure provision to the R7 site, including water, gas, electricity and communications, is being provided under either the Basement Car Park Approval or is currently proposed in the Stage 1A Public Domain (SSD DA 6303). The building will connect to this basement infrastructure. The following services are provided within the building, as outlined in the Electrical, Communications and Mechanical Services Design Letter prepared by Aurecon (**Appendix N**) and the Hydraulic Services Return Brief prepared by Warren Smith and Partners Pty Ltd (**Appendix O**).

Communications

The building will be supplied with fibre optic and copper cables. All communications will be connected to a basement node point and terminated on the ground floor of R7 awaiting future connection/distribution by the tenant.

Electrical

R7 will be provided with a 400V electrical supply from the basement level that will reticulate into a main switchboard located on the first level of the structure. This will be situated within close proximity to an electrical riser which will contain all major cabling and distribution boards required by the building.

Fire

The fire services for the building include fire detection, sprinkler services, fire hose reels, hydrants and a booster valve system for fire brigade connection. All services will be connected to the basement infrastructure and monitored by the precinct wide operations. Both the sprinkler and detection system shall be reticulated throughout the entire R7 building and commissioned prior to practical completion.

Lifts

A double car passenger and goods lift shall be dedicated to the R7 building which services Levels B2, Ground and Level 1 to Level 4. There is also capacity to include a lift between the ground level and landing level, subject to future tenants' requirements.

Hydraulics

The building will be supplied with a 50mm potable water supply from the basement infrastructure. The incoming potable cold water service will feed all retail areas and tenancies via a water and pressure pump set, which is to be located within a plant room on Level 1.

Trade waste will be provided for the connection of grease waste outlets primarily from the retail tenancy at Level 4, however provisional capped connection points will also be provided from ground level to Level 3 for the purposes of future proofing. The trade waste will be piped to retail grease arrestors located at basement Level 1, located beneath both the east and west sides of podium. A recycled water supply from the basement shall be provided to toilet amenity areas for tenant's toilets and urinals.

Gas

The incoming natural gas service for the building's retail tenancies and amenity areas will be supplied from a connection to the site infrastructure natural gas mains. The pressure at which gas will be supplied from the site infrastructure will be a maximum of 7kPa and a minimum of 5kPa.

Mechanical

Building R7 will utilise chilled water heat exchangers and pumps located in the Basement to connect to the chilled water district cooling system and provide chilled water for the tenant air conditioning systems.

Each floor is provided with a kitchen exhaust riser provision for future tenant connection. All kitchen exhaust risers shall terminate at roof level.

3.5 Signage Zones

Signage zones have been designated on the plans. The primary signage zones are located on the fascia of the awning to Transport Place and on the underside of the external stair canopy. Projecting horizontal signs are also proposed at the entry to

each of the commercial, retail and potential indoor recreation tenancies. There is also a zone for directional signage within Transport Place.

The plans also identify indicative zones for full-height signage to be provided within the tenancies, behind the glass line. The exact location and design of these signs will be at the discretion of the future tenants, however they will be limited to one (1) panel per floor.

The detailed design of the signage, including the exact content, materiality and details of illumination, will be submitted for the approval of the Secretary prior to the issue of the relevant Construction Certificate. The future signage will be designed and operated in accordance with the relevant Australian Standards including as *AS 4282/1997 Control of obtrusive effects of outdoor lighting* and *AS/NZS 3832 Electrical installations – cold-cathode illumination systems*.

3.6 Construction Hours

In accordance with the Environmental, Construction and Site Management Plan prepared by Lend Lease at **Appendix L**, construction works are proposed to be undertaken between the hours of 7.00am and 7.00pm Monday-Friday and between 7.00am and 5.00pm on Saturdays. No work will be undertaken on Sundays or public holidays. These construction hours are consistent with those approved for the adjoining buildings in Stage 1A Barangaroo South. The potential impacts of construction during these hours have been assessed in this EIS.

3.7 Construction Hoardings

The construction site will be secured by Class A hoardings. The conceptual treatment of the hoardings will be designed to improve the appearance of the site in the streetscape throughout the construction phase and provide a transparent and open view of the site to the community. It will include information about Barangaroo South and its aspirations, such as sustainability, community engagement, heritage and the overall ambitions of the development, all of which may be updated from time to time. It may incorporate elements of public art as part of the graphic installation but will not include any third party advertising material.

A maintenance regime will be implemented to ensure the appearance and integrity of the hoarding is maintained. The final graphic treatment for the hoardings and any future changes will be submitted to the Secretary of the Department of Planning and Environment for approval prior to its implementation on site.

4.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed development. It addresses the matters for consideration set out in the SEARs (see Section 1.6).

The mitigation measures at Section 6.0 complement the findings of this section.

As detailed at Section 1.1.3 of this EIS, the lodgement of the Building R7 SSD DA follows the approval and commencement of works under the Demolition and Basement Car Park projects relating to Blocks 1, 2, 3 (in part), 4A (in part) and X of Barangaroo South.

The Basement Car Park Approval and proposed Stage 1A Public Domain SSD DA allow for demolition works, tree removal, site establishment, bulk earthworks, onsite treatment and remediation of contaminated soils and construction of a basement car park and associated services and infrastructure to support Building R7.

The EAR and PPR and subsequent modifications accompanying the Basement Car Park Approval provide detailed information and environmental assessment of a number of planning and environmental issues, including, relevantly the following:

- demolition, part excavation and tree removal;
- remediation of contaminated material;
- non-indigenous archaeology;
- indigenous archaeology;
- geotechnical impacts;
- acid sulphate soils; and
- de-watering, groundwater treatment and water quality.

This SSD DA is informed by the detailed assessments included in the Basement Car Park Project Application EAR to the extent that they are relevant to the proposed development.

4.1 Relevant EPIs, Policies and Guidelines

Table 3 demonstrates that the proposed development will comply with / is consistent with the relevant strategies, environmental planning instruments, and Concept Plan as determined in the SEARs.

Table 3 – Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument / Strategy	Comments
Strategic Plans	
NSW 2021	<p>NSW 2021 is a 10 year plan to rebuild the economy, provide quality services, renovate infrastructure, restore government accountability, and strengthen our local environment and communities. The Barangaroo site has an important role in the NSW 2021 Plan as it will assist with achieving multiple goals set out in the Plan, including but not limited to improving the performance of the NSW economy, increasing the competitiveness of doing business in NSW, providing critical infrastructure, building liveable centres.</p> <p>As discussed in Section 0, Building R7 plays a role in the success of Barangaroo South and achievement of the above goals. In addition Building R7 will directly contribute to the goal of providing capacity for further employment in a central location.</p>

Instrument / Strategy	Comments														
Draft Metropolitan Strategy for Sydney to 2031	<p>The SSD DA is consistent with the draft Metropolitan Strategy for Sydney to 2031, as it will deliver a building in Barangaroo South which is identified as one of the key priorities for Global Sydney within the Strategy.</p> <p>More specifically Building R7 is consistent with the objectives for a 'Liveable City' in that it will create a new building and urban environment which is active and inviting. It will also provide employment throughout the construction and operational phases.</p>														
Draft Sydney City Sub-Regional Strategy	<p>The SSD DA is consistent with the Draft Sydney City Subregional Strategy as it will deliver a building at Barangaroo South which is identified in the Draft Strategy as a major development opportunity to conduct a focused and considered renewal process aimed at generating a new urban precinct in Australia's premier city.</p>														
Barangaroo Integrated Transport Plan	<p>The Barangaroo Integrated Transport Plan (BITP) addresses a range of transport modes and recommends actions in the areas of walking, cycling, traffic and taxi access, Wynyard Bus Interchange, ferry services, light rail and bus services, Wynyard Station upgrades, rail capacity and a Transport Square Interchange on the western foreshore of the CBD. The development is consistent with the mode share targets that were established under the Concept Plan that are reinforced in the BITP (see Appendix D). The proposed development integrates with the BITP's vision for Transport Place, in particular the way it creates an arrival / entry statement for the future ferry wharves.</p>														
Sydney City Centre Access Strategy	<p>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:</p> <ul style="list-style-type: none"> - Wynyard Walk, which will provide a direct, accessible pedestrian connection between Barangaroo and the Wynyard Station interchange precinct; - New bus routes serving Barangaroo and Walsh Bay; and - A new Barangaroo ferry hub and new routes to provide more opportunities to access Barangaroo and the mid-town precinct by public transport. <p>The proposal is consistent with the Strategy, providing services and employment in a location highly accessible to existing and planned public transport and commuter linkages. The proposal will not impact on the ability for the Government to deliver the planned infrastructure and service upgrades as part of the Strategy.</p>														
State Legislation															
EP&A Act	<p>The proposed development is consistent with the objects of the EP&A Act for the following reasons:</p> <ul style="list-style-type: none"> - 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; and - it will ensure the promotion and co-ordination of the orderly and economic use and development of land. <p>The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons:</p> <ul style="list-style-type: none"> - the proposed development has been declared to be of state significance; - the development is not prohibited by an environmental planning instrument; and - the development has been evaluated and assessed against the relevant heads of consideration under section 79C. 														
EP&A Regulations	<p>The 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 (see Section 7.3).</p> <p>As required by Clause 7(1)(d)(v) of Schedule 2, and as set out below, no additional approvals will be required in order to permit the proposed development to occur.</p> <table border="1" data-bbox="635 1832 1316 2067"> <thead> <tr> <th data-bbox="635 1832 1125 1865">Act</th> <th data-bbox="1125 1832 1316 1865">Approval Required</th> </tr> </thead> <tbody> <tr> <td colspan="2" data-bbox="635 1865 1316 1899">Legislation that does not apply to State Significant Development</td> </tr> <tr> <td data-bbox="635 1899 1125 1933">Coastal Protection Act 1979</td> <td data-bbox="1125 1899 1316 1933">N/A</td> </tr> <tr> <td data-bbox="635 1933 1125 1966">Fisheries Management Act 1994</td> <td data-bbox="1125 1933 1316 1966">N/A</td> </tr> <tr> <td data-bbox="635 1966 1125 2000">Heritage Act 1977</td> <td data-bbox="1125 1966 1316 2000">N/A</td> </tr> <tr> <td data-bbox="635 2000 1125 2033">National Parks and Wildlife Act 1974</td> <td data-bbox="1125 2000 1316 2033">N/A</td> </tr> <tr> <td data-bbox="635 2033 1125 2067">Native Vegetation Act 2003</td> <td data-bbox="1125 2033 1316 2067">N/A</td> </tr> </tbody> </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
Act	Approval Required														
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Coastal Protection Act 1979	N/A														
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Heritage Act 1977	N/A														
National Parks and Wildlife Act 1974	N/A														
Native Vegetation Act 2003	N/A														

Instrument / Strategy	Comments									
	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								
SEPP 55	<p>As identified at Sections 1.1.3 and 3.1 of this EIS, the Basement Car Park Approval and Stage 1A Public Domain SSD DA provides for the remediation of all contaminated material within the site (if required) and no excavation or piling works are proposed as part of this DA.</p> <p>The ORWS RAP contemplated a mixed commercial and residential uses within Block 1. As the proposed development is for a commercial use it is consistent with the future use provided for under the ORWS RAP and satisfies clause 7(2) of SEPP 55.</p>									
SEPP 64	<p>SEPP 64 applies to all signage that under an environmental planning instrument can be displayed with or without development consent and is visible from any public place or public reserve. The Architectural Drawings (Appendix A) identify zones for signage which illustrate the indicative location and size of future signage.</p> <p>Under clause 8 of SEPP 64, a consent authority must not grant consent for any signage application unless the consent authority is satisfied that the proposal is consistent with the objectives of the SEPP and with the assessment criteria which are contained in Schedule 1.</p> <p>The proposed signage is consistent with the objectives of SEPP 64 and satisfies the criteria specified in Schedule 1 of the SEPP as follows:</p> <ul style="list-style-type: none"> – the provision of signage is consistent with the desired future character for new buildings within the Barangaroo site; – the proposed signage zones sit within the building envelope, and will not dominate the skyline or reduce the quality of vistas; – the proposed signage has been located in the most architecturally appropriate locations to assist in place identification and wayfinding; and – All illumination of future signage will be fully integrated with the building structure. 									
Major Development SEPP	<p>The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the Major Development SEPP.</p> <table border="1" data-bbox="352 1391 1118 1827"> <tr> <td data-bbox="352 1391 576 1536">Clause 8 - Zone B4 Mixed Use</td> <td data-bbox="576 1391 1118 1536">The likely future uses for retail, commercial and retail / indoor recreation premises are permissible and consistent with the objectives of the B4 Mixed Use zone. Building R7 also incorporates community uses (i.e. public amenities) which are permissible with development consent.</td> </tr> <tr> <td data-bbox="352 1536 576 1626">Clause 17 - Height of buildings (Maximum RL 80)</td> <td data-bbox="576 1536 1118 1626">Building R7 has a maximum RL of 23.275, and therefore complies with the maximum permitted height development standard.</td> </tr> <tr> <td data-bbox="352 1626 576 1738">Clause 18 - Gross Floor Area Restrictions - Maximum 9,400m² (across Block 1)</td> <td data-bbox="576 1626 1118 1738">Building R7 has a GFA of 1,927m², and therefore complies with the maximum GFA development standard. See Section 4.3.</td> </tr> <tr> <td data-bbox="352 1738 576 1827">Clause 19 - Design Excellence</td> <td data-bbox="576 1738 1118 1827">The proposed development demonstrates Design Excellence in accordance with clause 19. See Section 4.4.1.</td> </tr> </table>		Clause 8 - Zone B4 Mixed Use	The likely future uses for retail, commercial and retail / indoor recreation premises are permissible and consistent with the objectives of the B4 Mixed Use zone. Building R7 also incorporates community uses (i.e. public amenities) which are permissible with development consent.	Clause 17 - Height of buildings (Maximum RL 80)	Building R7 has a maximum RL of 23.275, and therefore complies with the maximum permitted height development standard.	Clause 18 - Gross Floor Area Restrictions - Maximum 9,400m ² (across Block 1)	Building R7 has a GFA of 1,927m ² , and therefore complies with the maximum GFA development standard. See Section 4.3.	Clause 19 - Design Excellence	The proposed development demonstrates Design Excellence in accordance with clause 19. See Section 4.4.1.
Clause 8 - Zone B4 Mixed Use	The likely future uses for retail, commercial and retail / indoor recreation premises are permissible and consistent with the objectives of the B4 Mixed Use zone. Building R7 also incorporates community uses (i.e. public amenities) which are permissible with development consent.									
Clause 17 - Height of buildings (Maximum RL 80)	Building R7 has a maximum RL of 23.275, and therefore complies with the maximum permitted height development standard.									
Clause 18 - Gross Floor Area Restrictions - Maximum 9,400m ² (across Block 1)	Building R7 has a GFA of 1,927m ² , and therefore complies with the maximum GFA development standard. See Section 4.3.									
Clause 19 - Design Excellence	The proposed development demonstrates Design Excellence in accordance with clause 19. See Section 4.4.1.									
SEPP (Infrastructure)	The proposed development does not involve any piling or excavation within land identified on the interim rail corridor map.									
SEPP (State and Regional Development)	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 (State and Regional Development SEPP)</i> . Accordingly, with a CIV of \$11.3 million this development is State Significant Development.									
Clause 20 General	The matters referred to in Division 2 are addressed below.									

Instrument / Strategy	Comments	
Sydney Harbour REP	Clause 21 Biodiversity, ecology and environment protection	The proposed mitigation measures set out in Section 6 will ensure the development will not have any 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 which provides improved pedestrian access to Barangaroo and the foreshore, and is therefore considered entirely consistent with clause 22.
	Clause 23 Maintenance of a working harbour	The proposed Building R7 forms part of the redevelopment of the wider Barangaroo site for mixed uses that was assessed as part of the Concept Plan for the site.
	Clause 24 Interrelationship of water and foreshore uses	The proposed development will not have any adverse impacts on the use of waterway for maritime functions. The development is located away from the foreshore.
	Clause 25 Foreshore and waterways scenic quality	This application seeks to provide a high quality new building that will contribute to the scenic quality of the waterway.
	Clause 26 Maintenance, protection and enhancement of views	The proposed development will not adversely impact any views and vistas, preserving the key view down Transport Place to the Harbour from Wynyard Walk and Hickson Place. It will also provide new views to the Harbour from the new building. The proposed encroachment into Transport Place will not result in any adverse view impacts, as outlined at Section 4.4.3.
	Clause 27 Boat storage facilities	N/A. No boat storage facilities are proposed.

4.2 Barangaroo Concept Plan

This DA seeks approval for the construction of Building R7 as described in Section 3 of this report. Building R7 is located within Block 1 of Barangaroo South as identified under the approved Concept Plan (Mod 7) and has been designed in accordance with the approved Concept Plan, as detailed below.

The Barangaroo Concept Plan identifies maximum GFA and height controls for each Development Block within Barangaroo South, including Block 1, within which Building R7 is located. In addition, the Concept Plan requires future applications to demonstrate consistency with the Built Form Principles and Urban Design Controls within the Supplementary Urban Design Statement by RSH+ P (12 November 2010), as modified subject to Condition B9.

Compliance with the conditions of consent, and consideration of the Built Form Principles, was imposed by the Minister for Planning to ensure that the bulk and scale of future buildings on the Development Blocks is acceptable with respect to the relationship between the surrounding land uses and the bulk and scale of buildings.

Numeric Concept Plan Controls

Table 4 provides a comparison of Building R7's consistency with the Concept Plan numerical controls.

Table 4 – Compliance with Concept Plan (Mod 7) Block 1 GFA and Height Controls

Block 1 Concept Plan (Mod 7) Control	Building R7	Block 1 Cumulative Total	Compliance
Maximum GFA – 9,400m ²	1,927m ²	1,927m ²	Compliant
Maximum height – RL 80	RL 23.275	-	Compliant

Further discussion regarding GFA is provided in Section 4.3.

Built Form Principles

As demonstrated in the Architectural Drawings and Design Statement at **Appendix A**, Building R7 complies with the Built Form Principles outlined in Concept Plan (Mod 7), specifically it will:

- define the public sense of space to the street by building the facades to the street alignment consistent with Built Form Principle 3;
- assist with achieving a tapering building form across Barangaroo South consistent with Principle 5; and
- be orientated to the north to provide optimum orientation and transparency across the site consistent with Built Form Principle 8.

It is noted that the development is not inconsistent with the other Built Form Principles, however they do not specifically relate to Building R7.

Urban Design Controls

In the introduction to the Urban Design Controls, the document states that the Controls are intended to *"guide the built form and allow flexibility for the design of individual buildings and spaces, within the certainty of a structured framework."* The controls are not implemented as a prescriptive set of design requirements in order to allow for innovation, creativity and alternative design solutions to be achieved on each of the development blocks.

Building R7 complies with the principles and controls by providing:

- a building mass that is appropriate within the envelope;
- a street wall that defines Transport Place;
- an articulated, well-proportioned and legible building mass;
- an articulated and legible rooftop;
- high architectural quality facades that contribute to the buildings articulation and mass; and
- activation of Transport Place by providing active uses along the building's northern frontage.

Table 5 demonstrates that Building R7 is generally consistent with the key Urban Design Controls of the Concept Plan (Mod 7).

Table 5 – Compliance with Concept Plan Urban Design Controls

Concept Plan (Mod 7) Block 1 Control	Building R1	Comment
Control 1 Building Mass and Location		
Objectives:		
To ensure building mass is appropriate within the envelope.	The proposed building is well below the maximum building height and will therefore provide a massing that is appropriate within the envelope. It is noted that the building extends 3m to the north of the indicative building envelope which is discussed in further detail below this table. The reduced massing compared to the maximum originally shown in the Concept Plan has come about as a design response to the evolution of Transport Place as the main pedestrian entry to the site, and the need to provide an iconic but more human scaled building in that location.	Consistent. See further discussion below table.

Concept Plan (Mod 7) Block 1 Control		Building R1	Comment
Standard:			
Above street wall on western and eastern façade to have a minimum 3m setback. Balconies are allowed to fill the setback zone.	As no tower form is proposed there is no need to provide a setback above street wall.		See further discussion at Section 4.4.2
Control 2 Street Wall Establishment			
Objectives:			
Street wall defines Margaret Street West and the extension of Lime Street.	Building R7 is built to the block boundaries and so defines Margaret Street West (now referred to as Transport Place) and Lime Street.		Consistent
To ensure an active street wall is established around each Block.	Building R7 has been designed to activate the public domain, with retail uses fronting Transport Place and landscaped areas to the east. The external stair which wraps around the building will also activate the building façade and will be animated by planting, seats and generous entries into the upper level tenancies. The encroachment into Transport Place is proposed to facilitate active uses along this important pedestrian link (see further discussion below the table).		Consistent
Standard:			
The building mass at the podium is to form a continuous street wall around the site with a 1 storey minimum and a 2 storey maximum for a minimum of 85% of the site perimeter.	As a result of the reduced scale of the building, it is not considered necessary or appropriate to provide the podium and tower form as anticipated by the controls. The street wall height reflects the podium height of Commercial Building C5 which is considered a more appropriate design response to achieve the objectives of the control.		See further discussion at Section 4.4.2
Street wall to be no greater than 11.6m RL	See response above.		See further discussion at Section 4.4.2
Northern Façade is to be primary Street wall.	The northern façade effectively forms the primary street wall to Transport Place.		Consistent
At least a portion of each side of the tower above podium level is to be parallel to the street.	Each façade runs parallel to the adjacent street (where applicable).		Consistent
Control 3 Building Articulation			
Objectives:			
To establish an articulated, well-proportioned building mass.	Building R7 represents a well-proportioned and articulated building mass consistent with its role in providing a transition between the Barangaroo site and existing development at King Street Wharf.		Consistent
Consistent elements of the building should be articulated.	Consistent elements of the building have been articulated.		Consistent
Standard:			
Above street wall on western and eastern façade to have a minimum 3m setback. Balconies are allowed to fill the setback zone.	Due to the scale of the building there are no above street wall setbacks proposed.		See further discussion at Section 4.4.2
Streetwall to be no greater than 11.6m RL	As a result of the reduced scale of the building, it is not considered necessary or appropriate to provide the podium and tower form as anticipated by the controls. The street wall height reflects the podium height of Commercial Building C5 which is considered a more appropriate design response to achieve the objectives of the control.		See further discussion at Section 4.4.2

Concept Plan (Mod 7) Block 1 Control		Building R1	Comment
Control 4 Ground Floor Permeability + Accessibility of Public Realm			
Objectives:			
To ensure sufficient legible and accessible routes through Barangaroo South.	Building R7's footprint has been designed to align with future street frontages and therefore allow for the provision of legible and accessible routes through Barangaroo South.		Consistent
Control 5 Ensuring Quality of Rooftops			
Objectives:			
To ensure an articulated tower volume.	Building R7 does not propose a tower form, however the building has been appropriately articulated to reduce the perceived bulk and scale.		N/A
To ensure architectural quality of the roof.	The rooftop is articulated and angled to provide architectural interest, and accommodates an open, accessible courtyard which will activate the space and provide visual interest for adjoining buildings which overlook Building R7.		Consistent
To ensure consistency of night time lighting.	The rooftop will be lit in a manner consistent with other buildings and public domain elements and in accordance with relevant Australian Standards.		Consistent
Control 6 Articulated Facades			
Objectives:			
To ensure quality of façades.	The facade has been designed using quality materials and finishes. These materials will provide a natural appearance and have a suitable longevity, durability and flexibility.		Consistent
To articulate building functions and massing with appropriate cladding design and detailing.	The timber columns will be graded from more dense at the base, to lighter at the top of the building with the upper columns being finer for greater transparency. The eastern façade is slanted to create a generous entry statement.		Consistent
Steel, glass, concrete and aluminium as primary materials for all façades.	The primary materials will include glass and concrete. In addition timber columns will be constructed in front of the glass line. The use of timber will reflect the proposed façade for Building R1 and is appropriate for the lower-scale building that is proposed.		Consistent
To ensure that building façades are articulated to define building massing.	The proposed façade finish is appropriate given the scale of Building R7. The dynamic roof line, external stair, entry portals and timber columns will break-down and define the building massing. The sloped eastern façade will define the entry, and create a gateway to the site.		Consistent
Application of external shading devices to ensure depth and interest of visual appearance.	The depth of the internal floor plate from the building edge will provide appropriate shading to the eastern and western facades.		Consistent
Control 7 Active Street Fronts			
Objectives:			
To ensure a vital public domain will be created at street level.	Building R7 has been designed with a focus on the vitality of the surrounding public domain and landscaped areas. The proposed encroachment into Transport Place is required to facilitate active ground floor uses.		Consistent
Building service areas, parking entrances and loading docks will not be located on Lime Street.	At the time of these controls were drafted for Concept Plan (Mod 4) 'Lime Street' was what is now known as Shelley Street. The proposed car park entrance is located off Lime Street (formerly referred to as Globe Street).		Consistent
The width of driveways shall be minimised'	The Basement entry off Lime Street was approved as part of the Basement Car Parking project. This entry is currently under construction, and does not form part of the Building R7 application.		N/A

Concept Plan (Mod 7) Block 1 Control		Building R1	Comment
Control 8 Signage			
Objectives:			
To ensure control over location, size, appearance and quality of signage on buildings	Signage zones have been identified on the plans. The detailed design of the signage, including their exact location, size and materiality will be submitted to the Secretary for approval prior to the issue of the relevant Construction Certificate.		Noted
Signage is limited to a maximum of 2 opposite faces per building.	No high level building identification signage is proposed. The signage zones identified on the plans are required to identify the future commercial, retail and potential indoor recreation tenancies, with the number of zones proposed appropriate for the number of tenancies within the building. External signage is mainly located on the building's northern and western elevations, with the southern and eastern elevations primarily accommodating internal signage. The location and design of the signs will be finalised once the future tenants' requirements are known.		Noted
Signage shall be integrated into the building design	Signage zones have been identified on the plans. The detailed design of the signage, including the manner in which they integrate to the building design, will be submitted to the Secretary for approval prior to the issue of the relevant Construction Certificate.		Noted

Concept Plan Indicative Building Envelope

As detailed in Section 3.2, Building R7 is required to integrate with a number of fixed basement elements. Specifically, the northern wall of the approved basement entry is 1m from the Indicative Building Envelope boundary provided in the Concept Plan. In order to provide an active retail frontage to Transport Place within the constraints of the existing basement structure, Building R7 will extend over the Indicative Building Envelope boundary into Transport Place by three (3) metres, with the active uses effectively 'sleeving' the basement at this interface. This will result in the width of the proposed Transport Place being reduced from 15m to 12m, with a retractable awning proposed to provide shelter for future uses such as retail shops or food and drink tenancies. It is noted that notwithstanding this encroachment, the building is entirely within the Block 1 boundary.

The proposed design solution is considered appropriate for the following reasons:

- the activation of Transport Place is a key consideration under the Concept Plan (Mod 7), as it forms a key pedestrian route into the Barangaroo site;
- the activation of Transport Place will improve surveillance along this frontage;
- the original width was determined at a time when Transport Place was intended to be a vehicular street, therefore the reduced width of Transport Place will not impact on pedestrian movements (noting that had it been a road there would have been less pedestrian space), and therefore there is adequate space provided to accommodate the volumes of pedestrian that are expected to use this route;
- the potential public domain area now being occupied by the building has been in turn replaced by the new public domain area immediately to the north of the building which had originally been envisaged as private domain;
- the reduced width of Transport Place is consistent with the width of the other 'Walks', being City Walk and Union Walk; and
- the change will not have any adverse impact on views along Transport Place, as demonstrated at Section 4.4.3.

In light of the above, the proposed design solution is considered to be generally consistent with the terms of the approval of the Concept Plan.

Statement of Commitments

The Statement of Commitments requires a number of Plans and Strategies to be submitted to the Planning Reference Group prior to lodgement of any relevant Project Application (other than for demolition or early /site preparation work). In conformance with the Statement of Commitments the above Plans and Strategies were submitted to the Planning Reference Group prior to the submission of the Commercial Building C4 Project Application. Further, the proposal is consistent with the Statement of Commitments relating to ESD, as outlined in the Sustainability Report prepared by Lend Lease Design (refer to **Appendix G**).

There are no commitments that specifically relate to Building R7.

4.3 Land Use and GFA

It is intended that Building R7 will be used for office and retail uses, with public amenities provided at ground level. Further applications will be made for the fit-out and use of the various tenancies, as required, once tenants have been confirmed.

The impacts of the future use will be assessed as part of any future application. Depending on the final use, the future applications will provide Plans of Management and Security Management Plans, if required.

A summary of Building R7's uses, including a floor by floor breakdown of GFA, the total GFA and the Concept Plan indicative building site coverage is provided at **Table 6**. It is noted that the land uses identified in the table are indicative only, and separate future applications will be prepared for the fit-out and use of the building as required.

Table 6 – Summary of proposed building uses and areas

	Use	Building R7 GFA (m ²)
Ground	Retail and/or Indoor Recreation	283
	Public Amenities	91
Level 1	Retail and/or Indoor Recreation	196
Level 2	Retail and/or Indoor Recreation	204
	Commercial / Office	338
Level 3	Retail and/or Indoor Recreation	527
Level 4	Retail	289
Total GFA	-	1,927
Site Coverage	-	100%

A summary of the total approved/proposed GFAs by Concept Plan block, land use and precinct are provided in **Tables 7 and 8**.

Table 7 – Summary of approved/proposed GFA by Concept Plan block

Block	Building	Approved/Proposed GFA (m ²)	Max Allowable GFA (m ²) under the approved Concept Plan (Mod 7)	Residual GFA
Block 1	Building R7	1,927	9,400	7,473
	Total	1,927		
Block 2	Commercial Building C4	99,097	209,213	20,011
	Commercial Building C5	90,105*		
	Total	189,202*		
Block 3	Commercial Building C3	117,968*	142,669	24,701
	Total	117,968*		
Block X	Residential Building R8	9,694	18,908	0
	Residential Building R9	8,410		
	Building R1	804		
	Total	18,908		

Table 8 – Summary of approved/proposed land uses across Barangaroo South

	Retail	Commercial	Tourist	Community	Residential
Building C2	635	7,285	-	-	-
Commercial Building C3	7,021	106,593	-	1,677	-
Commercial Building C4	2,338	97,099	-	-	-
Commercial Building C5	4,593.70	85,330.50	-	-	-
Kiosk C6	25				
Residential Building R8	832	-	-	-	8,826
Residential Building R9	815	-	-	-	7,595
Building R1	804	-	-	-	-
Building R7	1,499	338	-	91	-
Total	18,562.70	295,645.50		1,768	16,421

It is noted that the likely future tenant of the commercial area provided on Level 2 will be Sydney Ferries. If this is the case the area would be defined as 'Community Use' under the Concept Plan, which includes:

*"child care centres, community facilities, educational establishments, entertainment facilities (other than cinemas and amusement centres), information and education facilities, **landside ferry facilities**, places of public worship, **public administration buildings**, public halls, recreation areas, recreation facilities (major, outdoor and indoor) as defined in Major Development SEPP and the Department of Planning's Standard LEP Template"*

If Sydney Ferries do ultimately occupy this part of Building R7, this area will form part of the minimum of 10,000m² of community uses GFA that is being provided across the Barangaroo Site in accordance with the Concept Plan.

4.4 Urban Design and Built Form

4.4.1 The Design Process and Design Excellence

Pursuant to Clause 19, Part 12 of Schedule 3 of the Major Development SEPP and DGR 4 - Urban Design and Built Form, in determining an application for a new

building at Barangaroo, the consent authority must consider whether the proposed development 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; and*
- 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) requires a design competition to be held for development that will be greater than RL 57, or where the erection of a new building is proposed on a site of greater than 1,500 square metres.

In addition, Condition C2 – Design Excellence of the approved Concept Plan (Mod 7) requires a design excellence competition to be held by the Director-General and convention of a design review panel for development that exceeds 55 metres in height, or is on land exceeding 1,500m² in area. Under Condition C2, the key matters for consideration are:

- whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved;
- whether the form and external appearance of the building will improve the quality and amenity of the public domain;
- whether the building meets sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency;
- a comparison of the proposed development against the indicative building controls identified in Section 13.0 – Built Form of the approved Concept Plan EAR; and
- whether the new development detrimentally impacts on view corridors, particularly from public spaces and streets.

The proposed development does not trigger the above requirements. However, a design competition was held for the building with the intent of selecting an architect that demonstrates the capacity to design a building that exhibits design excellence.

The Design Process

In order to ensure design excellence was achieved across the Barangaroo South site Lend Lease prepared a Design Excellence Strategy (DES). The DES was approved by the Barangaroo Reference Group. The DES set out a range of initiatives and elements to ensure a high quality design outcome is achieved for all individual buildings. Specifically Lend Lease selected Building R7 as the location for a design competition for an emerging architect.

The competition was held in 2013 and included alternative designs submitted by a range of eminent emerging architects including DBJ, DRAW, Chenchow Little, Tzannes Associates, Scale Architecture, Lacoste Stevenson, Collins and Turner and CHROFI.

A judging panel comprising Lend Lease team members, a Barangaroo Delivery Authority representative and Ivan Harbour from Barangaroo South master architects Rogers Stirk Harbour and Partners (RHS+ P) selected DBJ over the other entrants due to the innovation shown in the design and the building's relationship to its context.

An overview of the design vision is provided in the Architectural Design Statement at **Appendix A**.

Following the completion of the design competition the proposed design for Building R7 has been through a rigorous process of design review, both internally and with the independent design experts. The proposed design was presented to the Barangaroo Delivery Authority's Design Director and design advisors. Comments from all of the design reviewers have been taken into account and have led to the refinement of the design.

The Design Team

DBJ are a permanent team of ten who have worked together for over 20 years. The team is involved in every aspect of every project from inception to completion, and works across the design from conceptual framing to the forging of meaning, form and materiality.

DBJ's work is recognised as both iconic and innovative through international publications and awards for commercial, public and residential architecture, as well as urban design.

In 2010, the firm's Roslyn Street project was awarded AIA National Harry Seidler Award for Commercial Architecture and AIA NSW Chapter Sir Arthur G Stephenson Award for Commercial Architecture. In 2009 Sussan / Sportsgirl Headquarters was awarded AIA National Award for Commercial Architecture and AIA VIC Sir Osborn McCutcheon Award for Commercial Architecture.

Further information regarding DBJ can be found in their Architectural Design Statement at **Appendix A**.

The design of Building R7 was informed by the 'Master Architects' of the Barangaroo South, RHS+ P. Other members of the consultant team, including Aspect Oculus have also contributed greatly to the design, ensuring that Building R7 is a realistic, integrated and innovative design. Lend Lease's team of world class specialists in engineering, sustainability, urban planning and landscape design have all helped to shape the scheme from its inception.

The project team has always been mindful of emerging trends throughout the world and has benchmarked the scheme against other projects in Australia and internationally.

High Standard of Architectural Design

Some of the key design features of Building R7 that demonstrate the high standard of architectural design include:

- the building's unique sense of scale, with the building acting as a marker and entry statement into the site;
- the incorporation of the external stair which is articulated as a concrete cut through the timber façade, animating the building and linking the ground plane to all of the upper levels;

- the use of timber columns on the façade which integrates with Building R1, forming an 'axis of timber cousins' in consultation with the Building R1 architects, Collins and Turner;
- the ground plane creates a permeable and active edge to Transport Place; and
- implementing a variety of environmentally sustainable measures including the use of grey water for irrigation, recycled timber for the building's façade and roof mounted photovoltaics.

Achieving Design Excellence

The proposed development will exhibit design excellence as:

- emerging architectural practice DBJ has been engaged as architects on the project to work alongside other esteemed members of the consultant team;
- a high standard of architectural design, materials and detailing is achieved, appropriate to the building type and location;
- the building form, external appearance and the ground floor plane provides for high amenity and quality of public domain;
- Lend Lease commits to ensuring continuity in the design process and realisation of the submitted design in the completed building by ensuring that DBJ has direct involvement in the design documentation phase;
- it generally complies with the planning framework established for the site;
- the new development will have no adverse impacts on view corridors, particularly from public spaces and streets.
- it utilises Lend Lease's skills and proven track record to deliver an exemplary commercial building; and
- it explores and implements innovative technical and sustainable solutions, contributing to cutting edge design excellence.

The SSD DA exhibits design excellence and therefore clearly meets the intent of Clause 19 of the Major Development SEPP and Condition C2 of the approved Concept Plan (Mod 7). The strategy is also consistent with the Design Excellence Strategy requirements established in the approved Concept Plan's associated Statement of Commitments.

4.4.2 Height, Bulk and Scale

The Urban Design Controls for Block 1 establish a maximum height of RL 80. The proposed building has a maximum height of RL 23.275 and therefore complies with the maximum height control. The reduced massing compared to the maximum originally shown in the Concept Plan, and has come about as a design response to the evolution of Transport Place as the main pedestrian entry to the site, and the need to provide an iconic but more human scaled building in that location.

There is no minimum height limit for Block 1, however the Urban Design Controls envisaged a taller building in the location and therefore provided street wall and tower setback controls to achieve a podium and tower form. As a smaller building is now proposed on the site, it is not appropriate or necessary to provide a built form that strictly as contemplated by these specific numeric controls to achieve a podium and tower form.

Instead, the height of the building has been determined to reflect the height of the Commercial Building C5 podium, and will therefore create a defined street wall on both sides of Transport Place. The proposed massing, which does not rely on a 2 storey street wall with a tower above, is more consistent with the buildings at

King Street Wharf, in particular 1 Shelley Street, and therefore provides a more cohesive transition between the existing development and the Barangaroo site.

The low scale, small floor plate and highly articulated form means the building will have an acceptable bulk and scale. The proposed timber columns, which grade from being more dense at the base, to lighter at the top, together with the unique wrap-around external stair case which is articulated as a concrete cut through the timber facade, will mitigate any perceived bulk. This façade treatment, together with the sloped eastern façade and articulated roof line, work to create a dynamic built form which will have a strong presence when viewed from all perspectives. The materials and form will also create an exciting contrast when viewed against its highly urbanised eastern-backdrop of the CBD and other commercial and retail buildings at Barangaroo South.

In light of the above, Building R7’s height is considered to be generally consistent with the terms of the approval of the Concept Plan.

4.4.3 View Analysis

Due to the small scale of R7, it is not visually prominent, and in some cases not visible, from the established Concept Plan key viewpoints. Accordingly the view impacts have been considered from the following key locations in order to assess the impact of the proposed building:

- View north-west from Shelley Street;
- View south-west along Transport Place; and
- View south-east at the intersection of Transport Place and Lime Street.

View north-west from Shelley Street

The view to the north-west from the corner of Shelley Street is an important view for pedestrian arriving at the site from King Street Wharf, as well as existing users of buildings to the south of the site.

The alignment of the eastern façade of Building R7 has been designed to align with the foyer of Commercial Building C5 to provide clear pedestrian sight lines, and to create a sense of space at this important entry into the Barangaroo site.

As shown in **Figure 9**, the building aligns with the Barangaroo site’s southern boundary and maintains the existing view corridor down Shelley Street towards the Harbour. The sloped eastern façade, dynamic roof line and alignment to the curve of Shelley Street ensures that the building is articulated, and provides an architecturally interesting entry statement.



Figure 8 – View north-west from the corner of Shelley Street

View south-west along Transport Place

Views along Transport Place will be an important view for pedestrians that arrive at the site from Wynyard Walk. As shown in **Figure 9** Building R7 will frame the southern side of Transport Place.

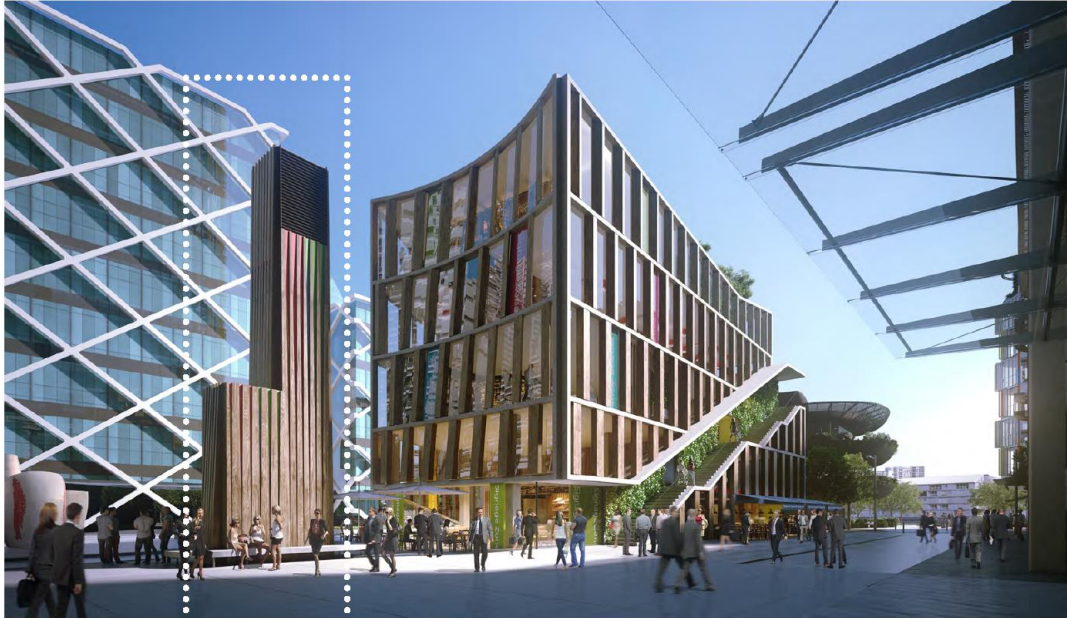


Figure 9 – View south-west along Transport Place

At this interface with Transport Place, the building protrudes beyond the Concept Plan Indicative Development Envelope by 3m, reducing the width of Transport Place from 15m to 12m. As shown at **Figures 10** and **11**, the reduced width will not have any perceivable visual impact on the view corridor along Transport Place. Rather, the encroachment is required to enable active uses to be provided along this frontage, without which, Transport Place would be bounded by the basement wall. On this basis, the proposed encroachment will provide an improved visual outcome and an interesting, active frame to this space. It is also noted that a 12m width is consistent with the width of City and Union Walks.



Figure 10 – View of the indicative building envelope



Figure 11 – View of the proposed building in relation to the indicative building envelope

View south-east from the intersection of Transport Place and Lime Street

Views from the corner of Transport Place and Lime Street will be important for pedestrians approaching the site from the foreshore. As shown in **Figure 12**, Building R7 has been designed to align with the Macquarie Bank building at 1 Shelley Street, and will retain views to King Street Wharf. From this view point, the building's role in providing a transition to existing development around the Barangaroo site is also apparent.

From this location, the building has an active and engaging presentation to Transport Place, which will encourage pedestrian movement along this key route.



Figure 12 – View south-east from the intersection of Transport Place and Lime Street

4.4.4 Overshadowing

As illustrated in the Shadow Studies at **Appendix A**, the low scale nature of Building R7 results in very minor overshadowing impacts. The impact of the shadow cast by Building R7 were assessed and approved under the Concept Plan, which considered a building of up to RL 80. As the proposed building is substantially smaller, the shadow impacts that would be created by the proposal are considered to be minor and acceptable.

The shadows of the proposed building will largely fall within the shadow of the approved and future buildings within Barangaroo South. On 21 June, the shortest day of the year, the shadow impacts are as follows:

- 9am: a small shadow falls to the south west of Building R7 across the Lime Street and Shelley Street road reserves, and the pedestrian path between Bungalow 8 and R1;
- 12pm: no additional shadows; and
- 3pm: a small area of shadow falls across the footpath to the south of Building R7, the Shelley Street road reserve and a small area of the Macquarie Bank building forecourt.

Building R7 will not generate any additional shadows at the Equinox and will only result in small areas of additional overshadowing to surrounding outdoor areas on the Summer Solstice, when shade is considered desirable.

4.4.5 Wind

A Wind Study has been prepared by CPP and is included at **Appendix F**. The Study identifies that the wind flow around Building R7 is dictated by the neighbouring taller structures and the open Harbour to the west. The results of the wind tunnel testing demonstrate that, from a pedestrian comfort perspective, the wind conditions around the site all met the pedestrian walking criterion and at the majority of locations will be as acceptable for pedestrian standing activities.

Whilst the architectural form of the building has been developed since the original wind modelling was undertaken, the general massing has remained similar and the amended geometry would be expected to have similar wind conditions to those originally assessed.

4.5 Reflectivity

Due to the building's location, the proposed materiality and the absence of significant direct sunlight, the building will not have any adverse reflectivity impacts on pedestrians or motorists.

The development would be subject to standard conditions of consent limiting specular reflectance of visible light to 20%.

4.6 Landscaped Treatment and Public Access

The Building R7 SSD DA seeks approval for paving works immediately surrounding the building, as well as paving around the HV Riser to the east, and along the site's perimeter adjacent to Shelley Street. The remainder of the public domain will be provided as part of the Stage 1A Public Domain SSD DA which proposes the public domain treatments for the entire Stage 1A area within Barangaroo South, including the vicinity of Building R7. The landscaping works at the ground plane of Building R7 will integrate seamlessly with this public domain as illustrated on the Architectural Drawings (**Appendix A**). The HV Riser will be treated as a public art element, and will be subject to a separate design and DA process.

The pedestrian experience around Building R7 has been considered in the overall design of the building (refer to **Figure 13**). The building has been designed to provide active frontages at the ground plane, and facilitate pedestrian movements in and around the building. In order to provide an active retail frontage to Transport Place within the constraints of the existing basement structure, Building R7 will encroach into Transport Place by three (3) metres, with the active uses effectively ‘sleeving’ the basement structure at this interface. This will result in the width of Transport Place being reduced from 15m to 12m, with a retractable awning proposed to provide shelter for future food and drink tenancies. Notwithstanding this encroachment, as outlined in Section 4.2, the building will remain within the Block 1 boundary and still provide appropriate pedestrian amenity and access.

The proposed change is considered appropriate for the following reasons:

- the activation of Transport Place is a key consideration under the Concept Plan (Mod 7), as it forms a key pedestrian route into the Barangaroo site;
- the activation of Transport Place will improve surveillance along this frontage;
- the reduced width of Transport Place will not impact on pedestrian movements, with adequate space provided to accommodate the volumes of pedestrians that are expected to use this route; and
- the change will not have any adverse impact on views along Transport Place, as demonstrated at Section 4.4.3.

The public will be able to access the Ground Floor amenities, as well as all internal and external areas of the building. However, to ensure security, the public amenities will be closed afterhours and a security gate will prevent afterhours access to the upper levels via the external stair.

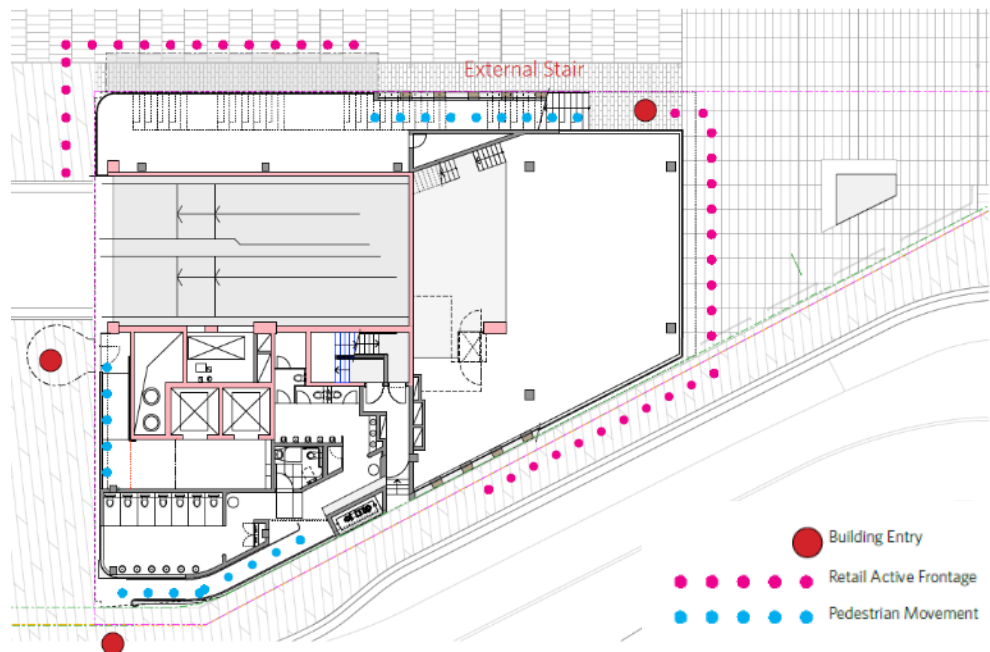


Figure 13 – Pedestrian movements diagram

4.7 Transport and Accessibility Impacts

A Transport Assessment has been prepared by ARUP and is included at **Appendix D**. A summary of the assessment and proposed mitigation measures are provided below.

4.7.1 Operational Traffic

Assessment

On the basis that the building is intended to be used for commercial and retail premises, ARUP has determined that the majority of Building R7 users will arrive via non-car modes of transport, such as walking, cycling or public transport. A variety of public transport linkages are located within close proximity to the site and bicycle parking will be provided throughout the public domain (proposed as part of SSD 6303). The bicycle parking provided for Building R7 will be in accordance with the Barangaroo South Transport Management and Accessibility Plan (TMAP).

Applying the maximum car parking rates established under the Concept Plan, ARUP has determined that up to 14 car parking spaces can be provided for the retail component of R7, and one (1) space for the commercial component. Consistent with the maximum rates under the Concept Plan, 13 car parking spaces (1 commercial space and 12 retail spaces) have been allocated for Building R7 within the basement provided under the Basement Car Park Approval. The location of these parking spaces is identified on the Basement 2 Plan at **Appendix A**. Considering the quantum of floor space provided, and based on the trip generation rate for retail uses, ARUP has determined that the traffic generation of Building R7 will be six (6) vehicles per hour during peak hours. This traffic increase is considered to be negligible.

Based on the Concept Plan Statement of Commitment relating to bicycle parking, the retail component of Building R7 is required to provide 0.66 bicycle spaces (rounded up to one (1) bicycle space). The commercial component is also required to provide one (1) space. One (1) space is provided in the basement with associated end of trip facilities are proposed within the building. Bicycle parking for visitors will be provided within the adjacent public domain, as detailed in the Stage 1A Public Domain application.

Mitigation Measures

Due to the negligible traffic generation, small number of parking space proposed, the proximity of the site to public transport, and the provision of an appropriate number of bicycle spaces, ARUP has not recommended any mitigation measures for the operation phase of the proposal.

4.7.2 Construction Traffic

Assessment

Arup has outlined the expected construction programme for works associated with the Barangaroo site, including internal and external works. These timeframes have informed an assessment of the cumulative construction traffic expected for the Barangaroo South and nearby projects on other land, whilst the Building R7 works are being undertaken.

The highest expected combined level of construction activity generated by all worksites associated with the site will be during August 2014. The Building R7 works are expected to commence in June 2015 and are anticipated to generate eight construction vehicle movements per day, with no more than two trucks per hour forecast to access the site. This expected increase is negligible in the overall construction traffic of works at the Barangaroo site.

The majority of construction truck movements will occur prior to the afternoon peak commuter period, to minimise the potential impact on the surrounding road network. During the morning peak period the access road is expected to operate

satisfactorily and requires no further works to mitigate the minor increase in construction traffic.

Mitigation Measures

Due to the minor nature of the increase in construction traffic resulting from the proposed Building R7 works, ARUP has not recommended any specific mitigation measures.

4.8 Heritage

As outlined in Section 2.5.6, it has been confirmed that the Barangaroo South site does not contain any further items of heritage or archaeological significance. Furthermore, no items of heritage significance are located in the immediate vicinity of the proposed Building R7. Proposed Building R7 is located internally to the Barangaroo South site, and is consistent with the maximum parameters established under the Concept Plan (Mod 7). Previous studies and significant excavation works have been undertaken on the site, and potential archaeological items of significance have been identified and removed. As such, the proposed development will not have any impact on items listed on any heritage register.

4.9 Contamination

Assessment

ERM has prepared an Overarching Remedial Action Plan (Overarching RAP) for the Barangaroo site for the Barangaroo Delivery Authority. The Overarching RAP presents a summary of the contamination issues identified on the Barangaroo site and outlines an approach to the remediation of the site as a whole.

In accordance with the requirements of the Overarching RAP, a Site Specific Remedial Action Plan known as the "Amended Remedial Action Plan - Barangaroo - Other Remediation Works (South) Area" has been prepared by AECOM Australia Pty Ltd, dated 7 July 2011 (ORWS RAP). An addendum to this RAP, known as the Addendum to OWRS RAP was prepared in 2012 by AECOM to include a further portion of the Barangaroo South site within the boundaries of the original OWRS RAP. The OWRS RAP (as amended) includes the Development Application site. The preparation of the OWRS RAP (as amended) was informed by the Human Health Environmental Risk Assessment, prepared by AECOM, dated 4 July 2011 (HHERA), including the Site Specific Target Criteria (SSTC) that are contained in the HHERA.

The OWRS RAP found that:

No Potentially Impacted Material (PIM) has been identified in Block 1 and remediation is not considered warranted. Furthermore, no significant groundwater contamination has been identified within this area. Consequently, specific remediation works are not considered to be required in this part of the Site.

As identified at Sections 1.1.3 and 3.1 of this EIS, the Basement Car Park Approval and Stage 1A Public Domain SSD DA provides for the remediation of all contaminated material within the site (if required) and no excavation or piling works are proposed as part of this SSD DA.

The OWRS RAP contemplated a mixed commercial and residential uses within Block 1. As the proposed development is for a commercial use it is consistent with the future use provided for under the RAP and satisfies clause 7(2) of SEPP 55.

Mitigation Measures

As there are no further remediation works required under this SSD DA no contamination related mitigation measures are required for the proposed works.

4.10 Ecologically Sustainable Development

A range of significant sustainability targets have been established for Barangaroo South that will be delivered progressively throughout the development phase.

Building R7 specific initiatives include:

- Strong passive design response including external shading and high performance glazing to minimise energy use, provide for high indoor environmental quality (IEQ) and maintain access to views and daylight.
- Incorporation of rooftop solar photovoltaics.
- Connection to non-potable water supply from Recycled Water Treatment Plant for flushing.
- Low energy design incorporating external shading, external planting to enhance micro-climates, mixed mode design, low energy LED lighting and connection to precinct district cooling plant.
- Use of sustainable materials including responsibly sourced timber and low embodied carbon concrete.
- Selection of low flow fittings and controls to minimise water use.
- Materials, sealants and adhesives will be chosen responsibly to be consistent with Green Star to minimise Volatile Organic Compounds and formaldehyde.

The ESD Report prepared by Lend Lease included at **Appendix G** demonstrates that the proposed development supports the site wide aspirations through the use of renewable energy and selection of environmentally responsible materials.

An analysis of the proposal against the principles of ecologically sustainable development set out in the EP&A Regulation is provided in Section 7.3.

4.11 Infrastructure Provision

Cardno has prepared Water and Stormwater Design Statement outlining the existing infrastructure, how the proposed Building R7 will be serviced, and if any impacts will occur on existing infrastructure as a result of the proposed development (refer **Appendix H**). The key elements of the Infrastructure Provision and Stormwater Statement are outlined below.

Assessment

All infrastructure provision to the R7 site, including water, gas, electricity and communications, is being provided under either the Basement Car Park Approval or is currently proposed in the Stage 1A Public Domain SSD DA. The building will connect to this basement infrastructure (see Section 3.4). No existing infrastructure is expected to be impacted or require relocation as a result of the proposed works.

Similarly, all water, drainage, stormwater and groundwater considerations have been resolved under the Basement Car Park Approval or are being addressed in the Stage 1A Public Domain SSD DA. The proposed building will integrate with these networks (see Section 3.4).

The design of the proposal has anticipated all required servicing arrangements, and it is confirmed that the proposal will not have any impact on any existing infrastructure (refer to Infrastructure Letters at **Appendix M**).

Mitigation Measures

As there are no environmental impacts Cardno has not recommended any mitigation measures for the proposed works.

4.12 Noise Impacts

A Construction and Operational Noise Report has been prepared by Wilkinson Murray and is included at **Appendix J**. This report has examined the potential noise and vibration impacts of the proposed Building R7 works. A summary of the assessment and proposed mitigation measures are provided below.

Assessment

Wilkinson Murray has identified the sensitive residential and commercial receivers located within the vicinity of the Barangaroo South site. The potential construction noise of the proposal has then been identified and assessed against the applicable criteria.

Due to the scale of Building R7, Wilkinson Murray has confirmed that it is unlikely there will be any excessive noise levels at surrounding receivers. Wilkinson Murray has also modelled the cumulative potential noise impact of construction at Barangaroo South. It has been determined that the construction noise from Building R7 will not significantly add to the noise levels cumulatively on the Barangaroo South site.

Based on the expected traffic generation, it is not expected that any adverse construction traffic noise will be associated with Building R7.

Wilkinson Murray has explained that the potential operational noise impacts of Building R7 are more appropriately addressed in association with the proposed use and fit out of the building in the future, which will be addressed via a separate application. Potential noise generators have been identified as plant material and equipment. Wilkinson Murray suggests that adequate mitigation measures can be implemented during the design development phase of the proposal. Due to the absence of any specific use being proposed as part of this DA, no assessment of noise generated from different uses has been undertaken. The assessment of potential noise generated from specific uses and any required mitigation measures will be undertaken as part of a future application for the use of the building.

Due to the nature of the construction works associated with Building R7, no significant vibration levels are expected to be generated and no mitigation measures will be necessary.

Mitigation Measures

Wilkinson Murray has determined that no specific noise and vibration measures are required for the proposed Building R7 works. It is recommended by Wilkinson Murray that the procedures and management measures included in the existing Environmental Site Construction Management Plan are continually applied during the construction of Building R7.

4.13 Air Quality and Odour

An Air Quality Statement has been prepared by AECOM and is included at **Appendix I**. A summary of the air quality assessment and proposed mitigation measures are provided below.

Assessment

AECOM has identified that a range of construction activities will be concurrently undertaken at Barangaroo and the cumulative impact of these activities along with the proposed Building R7 works need to be considered. The Building R7 works proposed under this application are typical of a low rise building and will be low impact, with limited landscaping works.

Based on studies for construction activities at Barangaroo, AECOM has confirmed that the Building R7 works will not substantially increase air emissions (including odour). AECOM's cumulative assessment of construction activities associated with concurrent construction of five main Barangaroo buildings (C3, C4, C5, R8 and R9); the operation of a concrete batching plant; recycled water treatment plant; remediation works in Block 4; and other approved works in the immediate surrounds of the Barangaroo South site determined that the EPA's 24 hour and annual PM₁₀ and 1 hour NO₂ ambient criteria would be exceeded. This has largely been attributed to the operation of the concrete batching plant.

In this cumulative assessment AECOM noted that no emissions of other pollutants, including odour, were likely to exceed the relevant criteria. It has been confirmed that the Building R7 works will not result in any exceedances of this criteria both in the construction and operational phases. Subject to the ongoing implementation of the mitigation measures specified below, AECOM has confirmed that the air quality impacts of the Building R7 works will be acceptable from an air quality perspective.

Mitigation Measures

A reactive dust mitigation system is currently being implemented by Lend Lease at the Barangaroo South site. This includes ambient pollution monitoring directly linked to real-time warnings and incorporates work procedures to ensure that action is taken to reduce dust levels when they are elevated and at risk of exceeding acceptable air pollution levels. The system has been operational on the Barangaroo South site for many months, and will continue to operate throughout the Building R7 construction works.

AECOM has recommended that the Building R7 construction works be incorporated into the existing environmental management plans and that the reactive dust mitigation system be continued. If these mitigation measures are implemented, no adverse effects on local air quality are expected to occur in association with this development.

4.14 Water, Drainage, Stormwater and Groundwater

A Water and Stormwater Design Statement has been prepared by Cardno and is included at **Appendix H**. A summary of the assessment is provided below.

Assessment

All water, drainage, stormwater and ground water infrastructure servicing Building R7 is being provided as part of the approved Bulk Excavation and Basement Car Parking Project Application (MP10_0023) and the Stage 1A Public Domain SSD DA that is currently under assessment. Grates and inlets to collect surface flows from the Public Domain form part of the Stage 1A Public Domain SSD DA. The proposed building will integrate into these surrounding systems. No further infrastructure works are required to facilitate the construction of Building R7.

Mitigation Measures

As there are no environmental impacts Cardno has not recommended any mitigation measures for the proposed works.

4.15 Building Code of Australia

A Building Code of Australia (BCA) Assessment has been prepared by McKenzie Group Consulting and is included at **Appendix K**. The assessment identifies the areas of the proposal including fire resistance, egress, fire services and equipment, ventilation and smoke hazard management, lift services, sanitary facilities, access and energy efficiency that either comply with the BCA requirements or are to be the subject of a performance based alternative.

Due to the size and nature of the building, it is anticipated that the building will feature alternative solutions that address non-compliances with the deemed to satisfy provisions of the BCA. The alternate solutions will be assessed against the relevant Performance Requirements of the BCA by suitably qualified persons, and in consultation with the NSW Fire Brigade, prior to the issue of a Construction Certificate.

The proposed building has been assessed against the provisions for Access for People with Disabilities in Part D3 of the BCA relative to the range of future land uses it is intended to accommodate. Compliance with these provisions is proposed to be achieved subject to further review of detailed design of the proposed development. Details of compliance with Part D3 of the BCA for the proposed development will be resolved as part of the Construction Certificate process.

4.16 Environmental, Construction and Site Management Plan

An Environmental Construction and Site Management Plan (ECSMP) has been prepared by Lend Lease (**Appendix L**) to address environmental issues associated with the construction of Building R7 including the following as required by the SEARs:

- Community consultation, notification and complaints handling;
- Impacts of construction on adjoining development and proposed measures to mitigate construction impacts;
- Noise and vibration impacts on and off site;
- Air quality impacts on the neighbourhood;
- Odour impacts;
- Water quality management for the site
- Traffic management; and
- Waste and chemical management.

Key elements of the ECSMP can be summarised as follows:

- Works are proposed to be undertaken between the hours of 7.00am and 7.00pm Monday-Friday and between 7.00am and 5.00pm on Saturdays. No work will be undertaken on Sundays or public holidays.
- The Building R7 site will be enclosed by Class A hoardings along all frontages.
- Existing lunch, change and ablution facilities on the Barangaroo South site will be used by all personnel.

- All site personnel, including subcontractors and visitors, will be inducted under Lend Lease's Environment, Health and Safety Management System (EH&S). Records of all induction, ongoing training and reporting will be maintained.
- Site specific Environmental Management protocols will be established to ensure environmental responsibilities are implemented and documented.
- Primary contact(s) to deal with environmental emergencies will be nominated and their 24 hour/day 7 days/week contact details will be prominently displayed on site.
- Management and monitoring of the noise and vibration generated from construction activity will be addressed according to the recommendations of the Wilkinson Murray, Barangaroo South; *R7 Building - Construction and Operational Noise Report*.
- Dust suppression, as well as erosion and sediment control measures, will be installed prior to excavation works and service installations, and will be maintained for the duration of construction.
- Surface and ground water hydrology and quality, including Darling Harbour water quality, will be assessed and monitored with monitoring in place as part of the works and processes approved under the Basement Car Park Approval. The monitoring will be continued during construction works. In addition, supplementary erosion and sediment control measures such as temporary sediment basins, will be implemented to treat surface run-off during construction works.
- Management of construction generated solid and liquid waste will be addressed in accordance with the Spoil & Waste Management Sub-Plan operating at the site.
- Vehicular and pedestrian traffic management and controls will be implemented and monitored to minimise disruptions to site activities, the surrounding road network. The site haulage route and foreshore promenade will continue to be managed in accordance with the works and processes set out in the Basement Car Park Approval.
- A comprehensive Stakeholder Engagement Strategy (refer to Appendix A of the ECSMP) will be implemented to maintain a good neighbour policy with surrounding businesses, residents and special interest groups during construction.

The development will be undertaken in accordance with **Appendix N** and accordingly the above recommendations are reflected in the mitigation measures in Section 6.0.

4.17 Staging

Lend Lease proposes to undertake the construction of Barangaroo South in a staged manner. Building R7 will be constructed concurrently with the other approved developments within Barangaroo South. It is anticipated that construction will commence in July 2015, and as a result of the small size of the building, it is intended that the building will be complete in March 2016.

Building R7 will be completed in a single build, however to facilitate the construction process it is requested that the Minister structure the consent conditions to provide flexibility for interim construction and occupation certificates to be issued for discrete works packages (i.e. a staged construction process).

It is intended that the delivery of landscaped areas adjacent to Building R7 will be coordinated with the delivery of the building.

4.18 Consultation

In accordance with the SEARs for this SSD DA (see **Appendix B**), an appropriate level of consultation was undertaken with Council and State government agencies.

This section details the consultation undertaken as part of the preparation of this SSD DA and proposed ongoing stakeholder engagement. Accordingly, consultation has been undertaken as required by the SEARs and in conformance with the Department of Planning and Environment's *Major Project Community Consultation Guidelines 2007*.

In addition to the consultation processes described below, the proposed development 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 public will have an opportunity to make submissions on the project.

Council and Agency Consultation

Lend Lease recognises the importance of positive relationships with Council and agencies and seeks to proactively engage with them over the duration of the project. Lend Lease proposes to undertake stakeholder engagement to ensure all individuals and/or groups that have an interest in the SSD DA are consulted with.

Council was involved in the identification of architects for the design competition process for Building R7. As part of the preparation of the DA, Lend Lease met with Council and presented the Building R7 design and had opportunity to provide feedback.

Lend Lease meets with the EPA, Sydney Water, Transport for NSW and Roads and Maritime Services on a regular basis. As part of those regular meetings Lend Lease has informed each of the agencies that a future application would be lodged for Building R7.

Community and Stakeholder Engagement

The Barangaroo Delivery Authority and Lend Lease are consulting with local residents and other relevant stakeholders as part of its ongoing community engagement program related to Barangaroo. The opportunity to participate has been provided through a number of direct and indirect mediums including community consultation events, Barangaroo Open Day, presentations and workshops, the Barangaroo South website and Barangaroo South newsletter.

Lend Lease engaged with the Metropolitan Local Aboriginal Land Council via Comber Consultants in April 2010 during the preparation of the Barangaroo South Aboriginal Archaeological and Cultural Heritage Assessment and subsequent Aboriginal Archaeological Management Plan and Research Design Report. These documents were originally prepared in relation to the Basement Car Park project (MP10_0023) and relate to the whole Barangaroo South site.

Lend Lease will undertake further detailed consultation and notification to the local community and relevant stakeholders, prior to the commencement of works.

5.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the development has been adapted from *Australian Standard AS4369. 1999 Risk Management and Environmental Risk Tools*.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- the adequacy of baseline data;
- the potential cumulative impacts arising from other developments in the vicinity of the Site; and
- measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 14 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- the receiving environment;
- the level of understanding of the type and extent of impacts; and
- the likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 14 – Risk Assessment Matrix

				Risk Assessment		
Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Significance of Impact	Manageability of Impact	Residual Impact
Key: C – Construction, O: Operation						
Wind	O	– Increase wind speeds and impact pedestrian activities	The wind conditions around the site will all meet the pedestrian walking criterion and pass the distress criterion. The proposed development will not change the local wind conditions. Therefore no mitigation is required.	2	1	3 (Low)
Reflectivity	O	– Unacceptable reflectivity impacts on pedestrians and vehicles	Glazing and materials must not exceed 20% reflectivity.	2	1	3 (Low)
Infrastructure	C	– Impact on existing infrastructure	Cardno has determined that no existing infrastructure is expected to be impacted or require relocation as a result of the proposed Building R7 works.	1	1	2 (Low)
Air Quality and Odour	C	– Diminished air quality levels – Increase odours during construction	Currently a reactive dust mitigation system has been adopted by Lend Lease at the Barangaroo South site. This includes ambient pollution monitoring directly linked to real-time warnings and incorporates work procedures to ensure that action is taken to reduce dust levels when they are elevated and at risk of exceeding acceptable air pollution levels. The system has been operational on the Barangaroo South site for many months, and will continue to operate throughout the Building R7 works. AECOM has recommended that the Building R7 works be incorporated into the site management plan and the reactive dust mitigation system be adopted. If these mitigation measures are implemented, no adverse effects on local air quality are expected to occur.	2	3	5 (Low/Medium)
Noise	C	– Increase in noise and vibration levels during construction activities – Increase in noise levels during operation	Wilkinson Murray has noted that no specific noise and vibration measures are required for the proposed Building R7 works. It is recommended by Wilkinson Murray that the procedures and management measures included in the existing site-wide environmental management plan are continually applied during the construction of Building R7. Potential noise impacts and mitigation measures required during the operation of Building R7 will be determined as part of separate acoustic assessment undertaken as part of the application for the use of the building.	2	3	5 (Low/Medium)
Water, Drainage, Stormwater and Groundwater	C+O	– Altered overland flow patterns causing flooding – Increased sediment and erosion runoff – Diminished water quality levels	All water, drainage, stormwater and groundwater considerations have been resolved under the Basement Car Park Approval or are being addressed in the Stage 1A Public Domain SSD DA.	2	2	4 (Low/Medium)

				Risk Assessment		
Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Significance of Impact	Manageability of Impact	Residual Impact
Traffic	C+O	<ul style="list-style-type: none"> - Increased construction traffic - Increased delay times - Diminished level of service 	Arup has determined that the additional traffic generated during the construction of Building R7 is negligible in the overall construction traffic of Barangaroo. Furthermore, as no car parking spaces are proposed to be allocated to Building R7, there is not expected to be any impact on the surrounding road network during the operation of the proposal.	2	2	4 (Low/Medium)

6.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 9** below. These measures have been derived from the previous assessment in Section 5.0 and those detailed in appended consultants' reports.

Table 9 – Mitigation Measures

Mitigation Measures
Air and Odour
The Building R7 construction works are to be incorporated into the existing environmental management plans and the reactive dust mitigation system be continued.
Reflectivity
All glazing and materials must not exceed 20% reflectivity.
Noise
The procedures and management measures included in the existing Environmental Site Construction Management Plan are to be applied during the construction of Building R7.
Building Code of Australia
Alternative solutions that address non-compliances with the deemed to satisfy provisions of the BCA should be considered. The alternate solutions should be assessed against the relevant Performance Requirements of the BCA by suitably qualified persons. Details of compliance with Part D3 of the BCA should be resolved as part of the Construction Certificate process.
Environmental, Construction and Site Management Plan
The ECSMP should be implemented into the constructional phase of the development.

7.0 Justification of the Proposal

In general, investments in major projects are justified if the benefits of doing so exceed the costs. Such an assessment must consider all costs and benefits. 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.

The proposed development involves provision of Building R7 at Barangaroo South. The assessment must therefore focus on the identification and appraisal of the effects of the proposed change over the site's existing condition.

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, on completion it will be home to around 1,200 residents, 23,000 office workers and more than 2.9 hectares of public space. The social and economic success of Barangaroo relies heavily on the delivery of new buildings to support these uses.

The proposed development will provide a new building within Stage 1A of Barangaroo South and will therefore have a significant positive social and economic impact for the large number of future visitors, residents and workers at Barangaroo South. Specifically, Building R7 will:

- provide for a use that services residents, workers, visitors and tourists to Barangaroo, supporting the surrounding uses on the site and wider Sydney CBD;
- create a landmark building at the southern entry to Barangaroo; and
- 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 4.0 of this EIS contains a thorough assessment of the likely biophysical impacts of the proposed development. The environmental risk assessment contained at Section 5.0 demonstrates that the proposed development will not result in any significant adverse environmental impacts that cannot be appropriately addressed through standard conditions of consent or the mitigation measures included at Section 6.0.

The environmental impact assessment of the proposed development has demonstrated that:

- water management measures will be implemented to ensure that there are no adverse water, drainage, stormwater or groundwater impacts;
- responsive measures will ensure that air quality impacts are managed during the construction phase;

- no specific noise or vibration management measures are required for the proposal; and
- 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. They are:

- the precautionary principle;
- intergenerational equity;
- conservation of biological diversity and ecological integrity; and
- improved valuation and pricing of environmental resources.

An analysis of these principles follows.

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 uncertain and serious threat of irreversible damage to the environment.

Intergenerational Equity

Intergenerational 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 another critical building in the built form of Barangaroo South;
- providing a new building to contribute to the vitality and activation of the public domain within Barangaroo South; and
- 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 will be avoided and/or minimised by design and through the application of safeguards and management measures described in this EIS and the appended technical reports during construction.

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 4.0), particularly those associated with

construction, have been incorporated into the mitigation measures as Section 6.0 of this EIS.

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

The EIS has been prepared to consider the environmental, social and economic impacts of the proposed Building R7 at Barangaroo South.

The EIS has addressed the issues outlined in the SEAR's and accords with Schedule 2 of the EP&A Regulation with regards to requirements for an environmental impact statement.

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

- There is a strategic need to provide the Building R7 within Barangaroo South to ensure there is a building that:
 - integrates and provides an appropriate transition between the wider Barangaroo site and the existing development at King Street Wharf; and
 - clearly identifies the southern entry to Barangaroo South to create an inviting environment for the large number of future visitors, residents and workers.
- The development is consistent with and complies with all the relevant strategic policies, environmental planning instruments, plans and guidelines.
- The development is general consistent with the Concept Plan.
- The development will have a wide range of positive social and economic impacts.
- 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 it is requested that the application be approved.