



State Significant Development Environmental Impact Statement



Building C2 / C6 Kiosk (SSD 6425-2014)

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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30/10/2014

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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 3, 5 and 6 in DP 876514
Proposed development	Building C2 and 'Kiosk' C6 within Barangaroo South as described in Section 3.0 of this Environmental Impact Statement (SSD 6425)

Prepared by

Name	Harry Quartermain
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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 Harry Quartermain

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 under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It relates to the Building C2 and 'Kiosk' C6 at Barangaroo South.

The proposed Building C2/ C6 'Kiosk' 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 \$31.84 million it is SSD for the purposes of the EP&A Act.

The Director General's Requirements (DGRs) were issued on 28 March 2014 under SSD 6425-2014. The DGRs were issued for "Commercial Building C2 and the Hickson Place Loggia". Notwithstanding, the Hickson Place Loggia is excluded from this application and will rather be included as part of a Section 75W Modification to Commercial Building C5. 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 DGRs. 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 building with retail uses on the ground floor and six storeys of commercial floor space above (to a height of RL33.2) known as Commercial Building C2. The building comprises 7,920m² of floor space, within Block 2 of Barangaroo South. Approval is also sought for a 25m² retail 'Kiosk' (Kiosk C6) that will be located within the area currently known as 'Hickson Place' to the south of the main C2 building.

The Hickson Place 'Kiosk' is intended to be a single use retail tenancy serving Hickson Place. It is intended to be a functionally dynamic, sculptural stand-alone structure that will enhance the activation of the future Hickson Place. It is proposed to be located on the eastern side of Hickson Place with the east façade of the 'Kiosk' aligning with the ground level east façade of the Wynyard Walk Bridge lift. The 'Kiosk' will be 9m long (north-south) and 3m wide (east west). The internal fit out of the 'Kiosk' to facilitate its use by the future tenant will be the subject of a separate approval (DA or CDC, as required).

Building C2 is intended to be used for a combination of retail and commercial and retail purposes. Separate approval (CDC or DA as required) will be lodged for the fit-out of the building once the tenant has been confirmed.

The application also seeks approval for:

- a technology screen on the southern elevation of Building C2 at level 1;
- operation and use of the basement car park to accommodate 12 car spaces (12 for the commercial component and 2 for the retail component or Building C2, no parking is provided for the C6 Kiosk); and
- signage zones to accommodate building identification signage on Hickson Place, Hickson Road, and business identification signage for future tenants.

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 Development Application, comprises land within Barangaroo South generally known and identified in Concept Plan (Mod 7) as Block 2.

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 commenced within the Development Application site.

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 DGRs 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 the Building C2 within Barangaroo South to ensure there is a building that:
 - integrates and provides an appropriate transition between the CBD and Barangaroo and assists in creating the ‘grand boulevard’ along Hickson Road;
 - clearly identifies the southern entry to Barangaroo South and creates an inviting environment for the large number of future visitors, residents and workers; and
 - assists in activating the future ‘Hickson Place’ public domain through provision of the C6 ‘Kiosk’ building intended for a retail use.
- 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 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 Building C2 and a 'Kiosk' C6 at Barangaroo South.

The proposed Building C2 and C6 'Kiosk' are 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 \$31.84 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 Tzannes Associates (**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 Director General of the Department of Planning and Environment (then Department of Planning and Infrastructure) for the preparation of the EIS (refer to DGRs for SSD 6425, which are included at **Appendix B**). The DGRs were issued for Commercial Building C2 and the Hickson Place Loggia. Notwithstanding, the Hickson Place Loggia is excluded from this application and will be included as part of a Section 75W Modification to Commercial Building C5. 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 six 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.

The Concept Plan (Mod 7) 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 Barangaroo 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.

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 Bulk Excavation and Basement Car Parking project, 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 approved Basement Car Park project 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 treatments and public domain within the footprint of the future peripheral buildings C1, C2, C6, R7 and R1.

1.1.4 Other Applications within Stage 1A

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.

Another DA is currently being assessed by the Department for the permanent public domain within Stage 1A. Specifically, that 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.

SSD applications are also being assessed by the Department for a retail building known as R1, situated within Block X, and mixed use building known as R7, situated within Block 1.

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 development application site.

1.2 Objectives of the Development

The objectives of the Building C2 DA are to:

- provide a building that achieves design excellence and is consistent with the Concept Plan;
- provide a building that will facilitate the creation of employment opportunities within the Barangaroo precinct;
- provide a building that has an appropriate scale and form so as to create a grand boulevard along Hickson Road, as contemplated under the Concept Plan;
- preserve the public thoroughfare along Union Walk and allow access from Hickson Road to the Barangaroo Waterfront;
- activate the public domain area currently known as 'Hickson Place';
- create a suitable entrance to the Barangaroo precinct at Hickson Place; and
- ensure that any environmental impacts associated with the construction and operation of the building are appropriately mitigated.

1.3 Summary of Approval Sought

Building C2

This application seeks approval for the construction and use of a building to a maximum height of RL 33.2 known as Building C2, comprising 7,920m² of gross floor area, within Block 2 of Barangaroo South. The building is intended to

accommodate a mix of land uses, but be predominantly used for commercial purposes, as set out below

- Predominantly retail uses on the ground floor;
- A mix of commercial and retail uses, and potential for a medical centre on level one; and
- Six storeys of commercial uses above..

A further approval (DA or CDC as required) will be lodged for the fit-out of the building once the tenant(s) are confirmed.

Kiosk C6

Approval is also sought for a single storey retail 'Kiosk' of 25m² gross floor area located within Hickson Place which is the area between building C2 and the Wynyard Walk Bridge to the south. The Hickson Place 'Kiosk' is intended to be a single use retail tenancy serving Hickson Place. It is intended to be a functionally dynamic, sculptural stand-alone structure that will enhance the activation of the future Hickson Place. The 'Kiosk' is located on the eastern side of Hickson Place with the east façade of the 'Kiosk' aligning with the ground level east façade of the Wynyard Walk Bridge lift. The 'Kiosk' will be 9m long (north-south) and 3m wide (east west).

The internal fit out of the 'Kiosk' to facilitate its use by the future tenant will be the subject of a separate approval (DA or CDC, as required).

Technology Screen

A technology screen is proposed on the Level 1 south façade of Building C2 facing Hickson Place. This screen will have the dual purpose of screening the plant room areas on level 1 of the building and also creating an exciting sense of arrival to Hickson Place, the primary entry to the Barangaroo site from the CBD.

The screen is intended to display graphic content, such as art and informatics / infographics 24 hours a day, 7 days per week. Its content will be programmable and curated as part of the broader approach to public art and way finding at Barangaroo. In this regard it should be noted that the Barangaroo Public Art Strategy will be finalised in the near future.

At this stage it is yet to be determined which technology is preferred for the screen. Further details regarding the technology to be utilised for the screen and the guiding principles for its curation can be provided during the detailed design stage and prior to construction.

The detailed design will achieve compliance with the relevant provisions of the Building Code of Australia and Australian Standards (and accord with applicable conditions of consent).

Other proposed elements

In addition to the above, the application also seeks approval for:

- operation and use of the basement car park to accommodate 12 car spaces; and
- signage zones for business identification signage for future tenancies.

Other projects on-site (separate approval, shown for context only)

This DA also 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; and
- above ground structures (within Building C2) associated with the basement including fire stairs, risers and access lifts and associated temporary treatments to these structures.

This DA also does not seek approval for development that is currently proposed under the Stage 1A Public Domain, which encompasses all the landscape treatments and public domain around Building C2 and 'Kiosk' C6.

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 C2 is located at the south eastern entry to the Barangaroo site as envisaged by the Concept Plan. Specifically the Building C2 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 along Hickson Road;
- allowing for the creation of a grand boulevard along Hickson Road;
- activating the public domain within Hickson Place; and
- clearly identifying the southern entry to Barangaroo South to create a cohesive an 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 C2 and 'Kiosk' C6 within Barangaroo South.

Option 1: The Proposal

Option 1 involves providing buildings as proposed in this DA (as described in Section 3.0). The proposal will ensure that high quality buildings and provided on the site that respond to the strategic need identified above.

Option 2: Do Nothing

Not providing buildings on the site would not be an appropriate outcome for a site of the strategic importance of Barangaroo. Leaving a space between the existing

Hickson Road and approved towers at C4 and C5 would not achieve the objectives of the Barangaroo Concept Plan. The Concept Plan (as modified) envisages a building in the subject location that will provide a clear entry into the Barangaroo precinct and provide a street wall to Hickson Road.

Option 3: Alternative Designs

A number of iterations of building design for Building C2 have been considered. The proposed design is an evolution of the original indicative envelope scheme shown in the Concept Plan, combining two buildings (C2 and C6) into one building in order to provide the optimum public domain / built form outcome noting the site is adjacent to the primary pedestrian entry point at Barangaroo, Wynyard Walk. The Design Statement provided at **Appendix A** provides more information on the way in which the design for Building C2 has evolved.

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	Tzannes Associates
Traffic and Transport	ARUP
Public Domain	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 and GeoStrata
Contamination	AECOM
Site Auditor	Graeme Nyand

1.6 Director General's Requirements

In accordance with section 89G of the EP&A Act, the Director General of the Department of Planning and Infrastructure (now Department of Planning and Environment) issued the environmental assessment requirements for the preparation of the EIS on 28 March 2014 under SSD 6425 -2014. A copy of the Director General's Requirements (DGRs) is included at **Appendix B**.

Table 1 provides a detailed summary of the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Requirement	Location in EIS	
<ul style="list-style-type: none"> - The residual floor space available within each development block and across the entire Barangaroo site. 		
<p>3. Urban Design and Built Form</p> <p>Demonstrate how the proposed development will achieve design excellence including:</p> <ul style="list-style-type: none"> - the design process leading to the proposal; - a high standard of architectural design, materials and detailing appropriate to the building and the loggia structure and its location and context, including a consideration of the design excellence provisions contained in clause 6.2 of the Sydney LEP 2012. - 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 and integrate into the surrounding built form; - 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; . - detailed plans, elevations and sections; - 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, and the adjoining building at 10 Shelley Street.); - impacts on key views from within the Barangaroo site; - a materials/finished sample board and detailed elevations confirming the application of materials and finishes for the development; - 3D modelling and a physical model of the proposed development in accordance with the City of Sydney Requirements; - shadow diagrams; and - wind effects report. 	Section 4.4	Appendix A
<p>4. Public Domain and Public Access</p> <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. - Details on the interface between the proposed uses, public domain, and the relationship to, and impact upon, the existing public domain, including demonstration of means of activating the public domain. - Demonstrate that basement car parking and basement areas are to be contained beneath building blocks to provide public streets with a high quality landscaped public domain. - Details of any trees proposed to be planted along Hickson Road and the impact of the proposed works on tree health in the long-term. - In the event that the application is lodged prior to the determination of the permanent public domain works proposed under SSD 6303, a public domain plan must be provided. The Plan shall address: <ul style="list-style-type: none"> - the requirements of the public domain plans and guidelines approved under the Barangaroo Concept Plan, and how the design of the public domain responds to these requirements; - all planning, accessibility and design issues related to the connectivity of the site to its surrounding environment, including identified strategic pedestrian and bicycle connections outlined in the Sydney City Centre Access Strategy; - the location of footpaths, pavements, roads and/or rights of carriageways; - all materials and finishes; - the location and composition of public art; - furniture and fixtures, including any temporary and permanent wind mitigation measures; - the location and specifications of any street lighting, pedestrian lighting or feature lighting; - the location of any edges, screens or fences; - the location of any walls, embankments or mounds; - steps, ramps, vehicle crossings, decks and pathways; - services, where affected, utility poles and service pits; 	Section 4.6	Appendix A & Appendix E

Requirement	Location in EIS	
<ul style="list-style-type: none"> - civil and stormwater infrastructure; - tree planting; - mass planting beds, planter boxes and individual plantings; and - an estimate of the costs associated with maintaining infrastructure within the public domain based on the likely lifespan of the proposed materials and structures. - The EIS must also include: - Detailed plans, elevations and sections of all landscape works. - A materials/finishes sample board confirming the application of materials and finishes for the development. 		
<p>5. Transport and Accessibility Impacts</p> <ul style="list-style-type: none"> - Justification of proposed quantum of on-site car and bicycle parking for the proposal having regard to the Concept Plan approval (as amended), RTA Guidelines and accessibility of the site to public transport.. - Details of any changes to car parking along Hickson Road required to service the Site - The EIS shall include a Transport Management and Accessibility Plan that outlines: <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 City of Sydney Cycle Network; - Measures to promote public transport usage and pedestrian and bicycle linkages; - 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. - Identification of Travel Demand Management (TDM) measures that will optimise the opportunity provided by the project site's proximity to public transport, including the preparation of a Work Place Travel Plan. - In relation to construction traffic: <ul style="list-style-type: none"> - cumulative impacts associated with other construction activities on the Barangaroo site; - Details of anticipated truck movements to and from the site; 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 - E/S Guidelines - Road and Related Facilities (DoPt) - NSW Planning Guidelines for Walking and Cycling. 	Section 4.7	Appendix D
<p>6. Heritage</p> <ul style="list-style-type: none"> - The EIS must include an assessment of the likely impacts of the proposal on any heritage and archaeological items and outline mitigation and conservation measures. 	Section 4.8	-
<p>7. 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 105 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 	Section 4.9	

Requirement	Location in EIS	
<i>guidelines "Managing Land Contamination, Planning Guidelines, SEPP 55 Remediation of Land" 1998.</i>		
8. ESD <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
9. 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. - Prepare an Infrastructure Management Plan. The applicant shall provide information on the required water and waste water services and any augmentation of Sydney water infrastructure that may be required for the proposed development. 	Sections 3.4 and 4.11	Appendix H
10. Noise <ul style="list-style-type: none"> - Identify and provide an qualitative assessment of the main noise generating sources and activities at all stages of construction (including cumulative noise), and any noise sources during operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. - Relevant Policies and Guidelines: <ul style="list-style-type: none"> - NSW industrial Noise Policy (EPA) - Interim Construction Noise Guideline (DECC) - Assessing Vibration: A Technical Guideline 2006 NSW - Road Noise Policy (DECCW 201 1) - Development Near Road Corridors and Busy Roads (DoPI) 	Section 4.12	Appendix J
11. Air, and Odour <ul style="list-style-type: none"> - Address potential air quality and odour impacts, in particular during the construction and operation of the development and appropriate mitigation measures. 	Section 4.13	Appendix I
12. 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, demonstration of water sensitive urban design and any water conservation measures. 	Section 4.17	Appendix H
13. 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: <ul style="list-style-type: none"> - 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 <i>Know Your Responsibilities: Managing Waste from Construction Sites Guideline</i>. 	Section 4.17	Appendix L
14. Staging Details regarding the staging of the proposed development	Section 4.18	-
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 **Figure 1** 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 2.

A site plan from the Stage 1A Public Domain DA showing Building C2 in relation to the remainder of Stage 1 is shown at **Figure 2**. As shown in this figure, the site area of Building C2 includes areas identified within the concept plan as being C2 and C6.

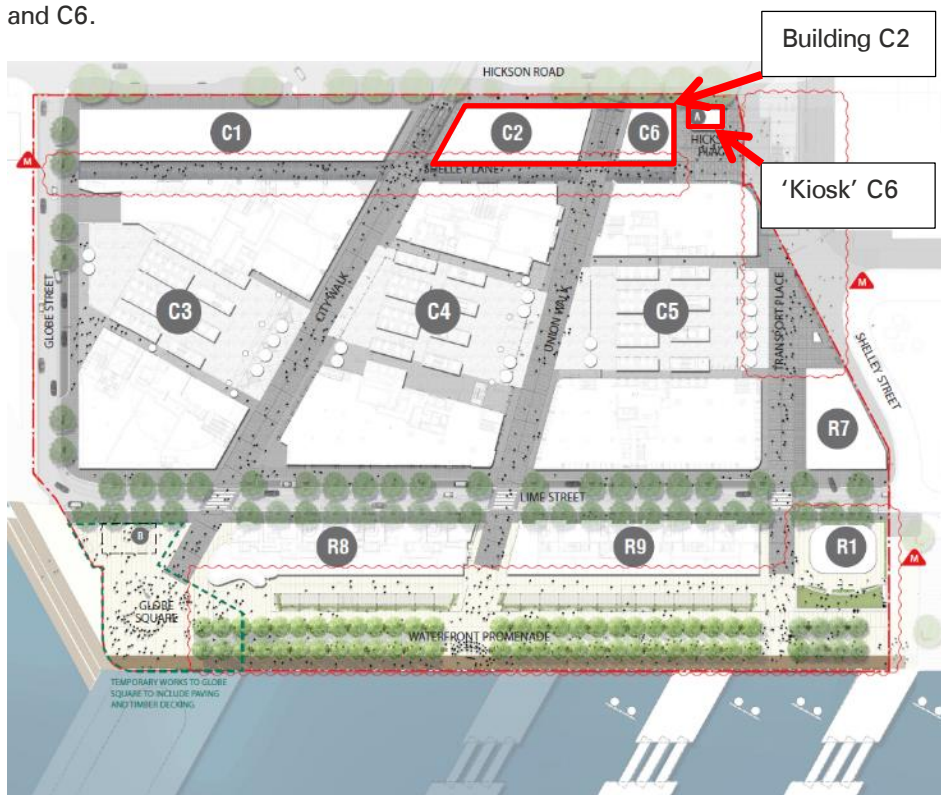


Figure 2 – Stage 1A of the Barangaroo South showing Building C2 / C6 ‘Kiosk’

Land Ownership and Description

A site survey plan 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 C2/C6 ‘Kiosk’ site, the subject of this DA comprises part of Lot 5 in DP 876514. The Building C2 makes use of shared elements of the Basement Car

Park, which occupies part of Lot 3 within 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 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 Approval, approval was granted for the demolition of any 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 of Barangaroo, and with 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 C2 Building is located entirely within the zone of those construction works. The extent of the Basement Car Park Approval and its relationship to the Building C2 site is illustrated in Figure 3. The C6 ‘Kiosk’ is located outside the Approved Car Park area to the south.

Fill and pavement surrounding Building C6 and ‘Kiosk’ C6 have been approved under the Basement Car Park (Mod 6) project and is also in the Stage 1A Public Domain DA. Both Building C2 and ‘Kiosk’ C6 will be constructed to have match the floor levels of the public domain paving at Hickson Place and will not involve further excavation or piling.

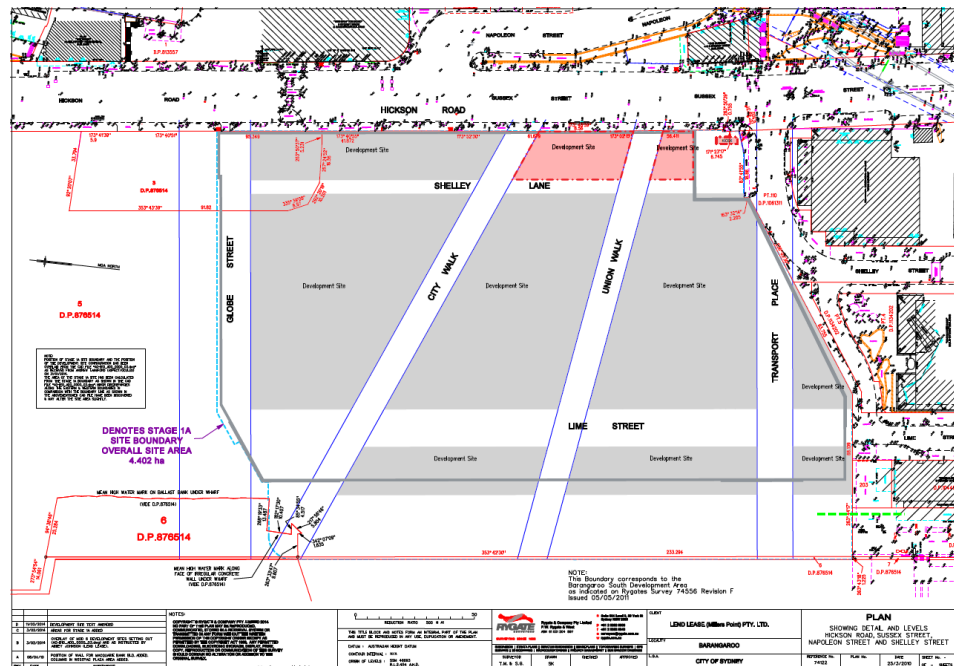


Figure 3 – Extent of Basement Car Park Approval (grey line) and relationship to the Site (red line)

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.

Construction works have commenced on all of the above approvals.

A DA is currently being assessed by the Department for the permanent 'Public Domain' within Stage 1A, including around Building C2. Specifically, that 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. This includes paving over Union Walk, the colonnade fronting Hickson Road and the area within the development site currently known as 'Hickson Place', with which the proposed development has been designed to integrate. An extract from the public domain drawings relating to this area are provided at **Appendix E**.

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 project. Additionally, grates and inlets to collect surface flows from the Public Domain form part of DA 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 C2 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 C2 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 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.

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. Future services intended to be provided along Hickson Road, as identified under the Sydney City Centre Access Strategy 2013.

- **Ferry:** Commuter ferry services arrive and depart from both King Street Wharf and Circular Quay. Additional Ferry Wharves are intended to be provided directly west of Barangaroo Stage 1A in the future.

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 complete by 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. Additionally the Sydney City Centre Access Strategy 2013 indicates an intent to connect existing CBD cycle infrastructure to Hickson Road in the future.

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 C2 / C6 'Kiosk' 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 C2 site is included within the excavation works under the approved Basement Car Park 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 C2/C6 'Kiosk' site is located within the DECCW Declaration Area, which is located further north.

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).

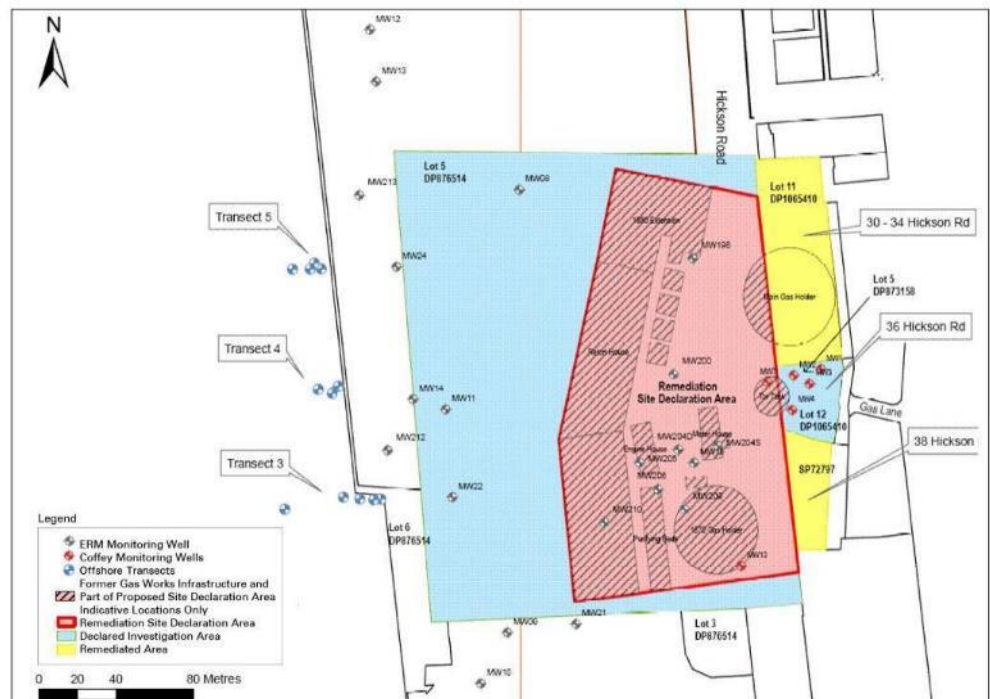


Figure 4 – DECCW Declared Areas

ERM has prepared an Overarching Remedial Action Plan (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.

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) (see **Appendix O**). 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 includes the majority of the DA site. The preparation of the OWRS RAP 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 refers to the part of the DA site that falls outside the basement footprint (i.e. Hickson Place and the C6 Kiosk) as 'Area D'.

Works approved in the Basement Car Park Approval (as modified) include the remediation of the basement area in accordance with the approved ORWS RAP and Site Audit Statement . . . 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).

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 approved the Basement Car Park project, including the RAP on 17 August 2011. Further modifications to the Basement Car Park and the Addendum to the Amended OWRS RAP have since been approved.

A small portion of the Development Application site falls within Area D as referred to by the OWRS RAP (beneath Hickson Place and the C6 Kiosk). Based on the analytical data and findings presented in the ORWS RAP, contamination has not been identified in Area D that requires remediation. Further validation is being carried out in accordance with the RAP .

Within this area multiple land use scenarios are contemplated by the RAP, including paved recreation and slab on grade multi-storey commercial development (which for the purposes of the RAP also includes retail uses) with no basement . The proposed kiosk building the subject of this application is consistent with these land use scenarios in the RAP.

As part of the Stage 1A Public Domain DA, which contemplated paving surrounding a potential building within Hickson Place (which is the kiosk building the subject of this application), AECOM prepared correspondence for that application (Appendix N) confirming that the proposed development is generally consistent with what was contemplated with the ORWS RAP) and can be appropriately managed by the ORWS RAP (without further amendment).

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 1-3, and X (which includes the Building C2/C6 'Kiosk' site within Block 2), 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) for the section of the application site on which Building C2 is located. The C6 'Kiosk' is located outside the boundary of the Car Park DA but is located within the area to be filled to an indicative level of RL3.42m by the Stage 1A Public Domain DA and therefore is based upon the detailed assessments within that DA.

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 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 Building C2, and these works are largely complete. 'Kiosk' C6 is located within the Stage 1A Public Domain DA area.

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 C2/C6 'Kiosk' 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 C2/C6 'Kiosk' site is considered to have no archaeological potential or significance. As set out above, the Building C2 site has been excavated under the Basement Car Park Approval and the area surrounding the C6 'Kiosk' will be prepared under the proposed Stage 1 'Public Domain' development.

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 west of the Building C2 site, in Stage 1A Barangaroo South.

To the south of the Building C2 / C6 'Kiosk' site are the existing buildings at Shelley Street, including KPMG and Macquarie Bank. To the west is the site of commercial towers C4 and C5, which are currently under construction. East of the site is Hickson Road and Sydney CBD.

2.6.2 Future Development

The future developments as envisaged by the approved Concept Plan for Barangaroo South are indicated on **Figure 5**.

Block 3 is located immediately to the north of the Building C2 site. Block 3 comprises Commercial Building C3 along with future building C1, which will be located north of the C2 site along Hickson Road. To the west is the remainder of Block 2, which will accommodate commercial towers C4 and C5, which are currently under construction.

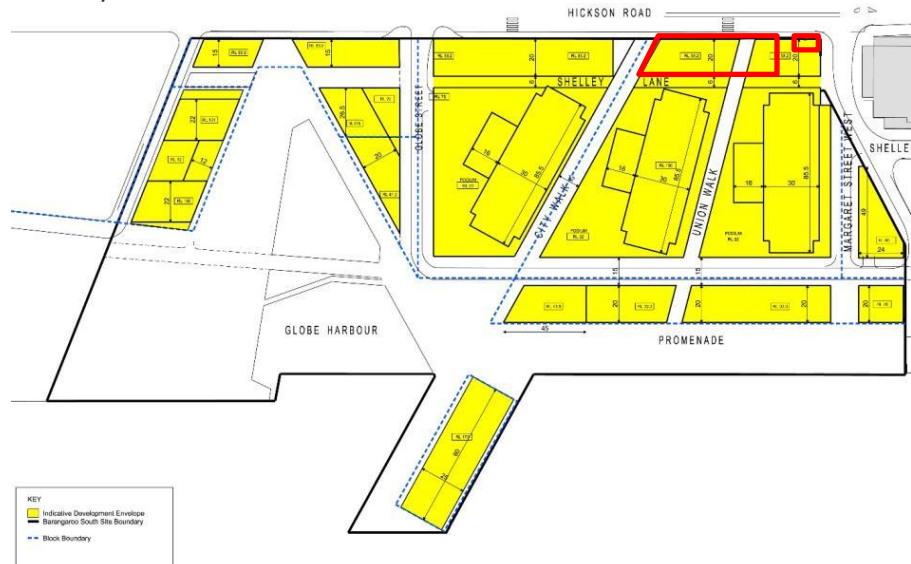


Figure 5 – Building C2/C6 ‘Kiosk’ (red outline) in relation to the approved Concept Plan (Mod 7) Indicative Building Layout

3.0 Description of the Development

3.1 Overview

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

This application seeks approval for the construction and use of a mixed use building with predominantly retail uses on the ground floor and six storeys of predominantly commercial uses above (up to RL 33.2) known as Building C2. The building comprises a total of 7,920m² of gross floor area, within Block 2 of Barangaroo South.

As part of the 7,920m², within Building C2, level one will comprise 587m² of gross floor area and may be used as commercial offices, retail premises and/or a medical centre. A medical centre is defined in the Standard Instrument as:

medical centre means premises that are used for the purpose of providing health services (including preventative care, diagnosis, medical or surgical treatment, counselling or alternative therapies) to out-patients only, where such services are principally provided by health care professionals. It may include the ancillary provision of other health services.

Note. Medical centres are a type of health services facility—see the definition of that term in this Dictionary.

A health services facility is defined in the Standard Instrument as:

health services facility means a building or place used to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes any of the following:

- (a) a medical centre,
- (b) community health service facilities,
- (c) health consulting rooms,
- (d) patient transport facilities, including helipads and ambulance facilities,
- (e) hospital.

Also included in this application is a retail 'Kiosk' of 25m² gross floor area located within the area known as 'Hickson Place', located between Building C2 and the Wynyard Walk Bridge to the south. The Hickson Place 'Kiosk' is intended to be a single use retail tenancy serving Hickson Place

A summary of Building C2 and C6 Kiosk's uses and GFA is provided at **Table 2**.

Table 2 – Summary of proposed building uses

Use	Building C2/C6 'Kiosk' GFA (m ²)
Building C2	
Retail	635
Commercial	6,698
Commercial / Medical / Retail	587
Kiosk C6	
Retail	25
Total GFA -	7,945

The proposed development also includes:

- Site preparation works;
- A technology screen and signage zones on the building façade; and
- Use of basement facilities including car and bicycle parking and end-of-trip facilities, infrastructure and services.

Further details are provided in the following sections.

3.2 Works within the site (excluded from the development)

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; and
- above ground structures (within Building C2) 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 2, which have been integrated into the design of Building C2. This includes the 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 on the Architectural Drawings (**Appendix A**).

It is noted that a loggia structure was included within the request for DGRs and is therefore included within the DGRs. The loggia structure has been excluded from this application and will form part of a future Section 75W Modification for Commercial Building C5. Where the loggia is shown in this EIS it is indicative for information purposes only.

No public domain works are included within this approval. All public domain works surrounding the site were included within SSD 6303. An indicative plan of these public domain works has been provided at **Appendix E**.

3.3 Site Preparation

The Basement Car Park application provides for the demolition of any existing hardstand areas, majority of footings and piles and site preparation works including remediation (if required) within the Building C2 site. In light of the works being approved under that separate application, no further piling or excavation works are required.

The C6 'Kiosk' is located outside the area covered by the Basement Car Park. The C6 'Kiosk' will be situated on a concrete slab situated within an area previously assessed within the Stage 1A Public Domain DA and site preparation will not involve any piling or excavation.

3.4 Building C2

Building C2 is a building with retail uses on the ground floor and six storeys of commercial gross floor area above (to a height of RL33.2). The building comprises 7,920m² of gross floor area within Block 2 of Barangaroo South. The building will span Union Walk from level two and above and will include parts of the building envelope of the buildings known as C2 and C6 on the Barangaroo Concept Plan (as modified). The relationship between the proposed building and the Concept Plan, including an explanation of any inconsistencies is included in Section 4.4. Building C2 is trapezoidal in shape. The building shape responds to the angle at which the adjoining City Walk Bridge enters the Barangaroo South precinct from the east. The interface with the adjoining bridge, which is located to the north of C2, causes the building to have an irregular shape at the northern elevation.

Building C2 occupies the location of two buildings that are identified as C2 and C6 within the approved Concept Plan. The building overarches the 12m wide Union Walk at a level of two storeys / 9.9m high (RL 13.4).

Building C2 is constructed to the extent of the building envelope on the northern and western elevations. A 4m wide colonnade is included along the eastern elevation, adjoining Hickson Road as contemplated by the Concept Plan. A proposed area of public domain currently known as 'Hickson Place' is located to the south of the building, occupying the area between the building and Wynyard Walk further south.

The building will be constructed primarily from timber and glass. External timber beams will support the colonnade along the Hickson Road frontage and will also support the upper levels through the Union Walk underpass.

Eight retail tenancies will be established on the ground floor, along with a commercial lobby and a bike lobby to service the commercial floors above. The internal floor plates on levels 1 to 6 will be open plan offices. The street address and main entry to the commercial building will be from Hickson Road.

The footprint of level one will match that of the ground floor. On this level, commercial / retail uses and potentially a medical centre will be located within the northern end of the building, while building plant will be located at the southern end of the building.

From level two to level six the building will over hang the colonnade below and will meet the building envelope along the Hickson Road frontage. Further details on the materials and finishes to be applied to Building C2 are provided in the Architectural Drawings at **Appendix A**.

It is noted that Building C2 includes an allowance to accommodate an entrance to a future metro station on the ground floor.

The C2 building is intended to be used for commercial and retail floor space with the possible use of level one as a medical facility. Further approvals (DA or CDC as required) will be lodged for the fit-out of the building once the tenants have been confirmed.

A photomontage of Building C2 is shown at **Figure 6**.



Figure 6 – Photomontage of Building C2
Source: *Virtual Ideas*

3.5 C6 Kiosk

Approval is also sought for a retail 'Kiosk' with a 25m² GFA that will be located within Hickson Place to the south of the main C2 building.

The 'Kiosk' structure is proposed within Hickson Place, the area between Building C2 and the Wynyard Walk Bridge to the south. The Hickson Place 'Kiosk' is intended to be a single use retail tenancy serving Hickson Place. It is intended to be a functionally dynamic, sculptural stand-alone structure that will enhance the activation of the future Hickson Place.

The 'Kiosk' is located on the eastern side of Hickson Place with the east façade of the 'Kiosk' aligning with the ground level east façade of the Wynyard Walk Bridge lift. The 'Kiosk' will be 9m long (north-south) and 3m wide (east west).

The internal fit out of the 'Kiosk' to facilitate its use by the future tenant will be the subject of a separate approval (DA or CDC, as required).

3.6 Operational Hours

The commercial uses within Building C2 are to be in use 24 hours a day seven days a week, with expected typical office operating hours between 7 am and 7 pm. Retail uses within Building C2 and 'Kiosk' C6 have standard trading hours of 7 am to 11 pm seven days a week. Should operation hours beyond this be required, a separate approval would be sought.

3.7 Retail Facades

The retail facades on Building C2 are subject to design development prior to construction or will be consistent with a design shown on future approved application drawings for tenant / shopfront application. Shopfronts will include a combination of fixed and operable elements. A minimum of 55% of each tenancy shopfront is to be transparent glazing.

3.8 Signage Zones and Technology Screen

Primary signage zones have been designated on the plans for business identification and building identification signage.

In addition, a technology screen is proposed on the Level 1 south façade of Building C2 facing Hickson Place. The screen is intended to display graphic content, such as art and informatics / infographics 24 hours a day, 7 days per week. Its content will be programmable and curated as part of the broader approach to public art and way finding at Barangaroo. This screen will have dual purpose of screening the plant room areas on level 1 in the building and creating an exciting sense of arrival to Hickson Place, the primary entry to the Barangaroo site from the CBD. In this regard it should be noted that the Barangaroo Public Art Strategy will be finalised in the near future.

The detailed design of the primary business/building identification signage and the technology screen, including the content (principles for technology screen curation), materiality and details of illumination, will be submitted for the approval of the Secretary prior to the issue of the relevant Construction Certificate.

Future signs within the nominated signage zones will be limited to a maximum of one sign within each signage zone on levels 2 – 6 of the building C2.

Shopfront and projecting horizontal signs are also proposed on the ground floor level of the C2 Building and on the faces of the C6 Kiosk. These will be integrated into the façade and subject to design development prior to construction. A signage strategy for the detailed design of the secondary tenant signage on the ground floor level of the C2 Building and on faces of the Kiosk building will be submitted for approval prior to the issue of the relevant construction certificate.

The detailed design of the technology screen and all signage will achieve compliance with the relevant provisions of the Building Code of Australia and 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*.

3.9 Building Services and Infrastructure

All infrastructure provision to the Building C2/C6 'Kiosk' 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 DA (SSD 6303). Details regarding the proposed infrastructure are provided at **Appendices M, O and P**. The building will connect to this basement infrastructure. The following services are provided within the building:

Communications

The building will be supplied with fibre optic cables. The building will contain two physically separate communication risers to serve the tenants as per PCA Grade A requirements as well as a dedicated base building riser.

Electrical

Power will be supplied from the precinct substation which shall feed the C2 building via the dedicated C2 main switchboard located within the basement.

Power will be supplied to 'Kiosk' C6 from the Building C2 basement via a connection beneath Hickson Place.

Fire

The fire services for the Building C2 and C6 'Kiosk' 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 Building C2 basement infrastructure and monitored by the precinct wide operations. Both the sprinkler and detection system shall be reticulated throughout the entire Building C2 and 'Kiosk' C6 and commissioned prior to practical completion.

Lifts

Three lifts are located within Building C2 which service Levels B2, Ground, L1 to L6.

Hydraulics

Building C2 and 'Kiosk' C6 will be supplied with a 50mm potable water supply from the Building C2 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 of Building C2.

Trade waste will be provided for the connection of grease waste outlets primarily from the retail tenancy on the ground floor, 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.

A recycled water supply from the basement shall be run to a point on the C2 Ground floor for future reticulation to the tenant's toilets and urinals. No toilets are proposed within 'Kiosk' C6.

Gas

The incoming natural gas service for the Building C2'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

A chilled water supply shall be supplied from the basement to the C2 ground floor for future reticulation by the tenants of Building C2 and 'Kiosk' C6. The chilled water service shall be meter at the ground floor termination point.

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

3.10 Basement facilities

The application also seeks approval for the operation and use of the basement car park to accommodate 12 car spaces and use of plant within the basement as shown on the Basement Drawings included at **Appendix A**.

3.11 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.

3.12 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 DGRs (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 C2 / C6 'Kiosk' 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 allows 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 Commercial Building C2.

The preparation of the site surrounding the C6 'Kiosk' has been assessed within the Stage 1A Public Domain EIS.

The EAR and PPR and subsequent modifications accompanying the Basement Car Park Project 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;
- validation and remediation of contaminated material;
- non-indigenous archaeology;
- indigenous archaeology;
- geotechnical impacts;
- acid sulphate soils; and
- de-watering, groundwater treatment and water quality.

The following aspects have been previously assessed within the Stage 1A Public Domain application:

- Public Domain surrounding Building C2 / C6 Kiosk; and
- Site preparation within Hickson Place.

This DA is informed by the detailed assessments included in the Basement Car Park Project Application EAR and the Stage 1A Public Domain EIS 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 DGRs.

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 1.4, Building C2 /C6 'Kiosk' plays a role in the success of Barangaroo South and achievement of the above goals. In addition Building C2 /C6 'Kiosk' will directly contribute to the goal of providing capacity for further employment in a central location.</p>												
Draft Metropolitan Strategy for Sydney to 2031	<p>The 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 C2/C6 'Kiosk' 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).</p> <p>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>												
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" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="background-color: black; color: white;">Act</th> <th style="background-color: black; color: white;">Approval Required</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="background-color: #e0e0e0;">Legislation that does not apply to State Significant Development</td> </tr> <tr> <td>Coastal Protection Act 1979</td> <td>N/A</td> </tr> <tr> <td>Fisheries Management Act 1994</td> <td>N/A</td> </tr> <tr> <td>Heritage Act 1977</td> <td>N/A</td> </tr> <tr> <td>National Parks and Wildlife Act 1974</td> <td>N/A</td> </tr> </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
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												

Instrument / Strategy	Comments	
	Native Vegetation Act 2003	N/A
	Rural Fires Act 1997	N/A
	Water Management Act 2000	N/A
	Legislation that must be applied consistently	
	Fisheries Management Act 1994	No
	Mine Subsidence Compensation Act 1961	No
	Mining Act 1992	No
	Petroleum (Onshore) Act 1991	No
	Protection of the Environment Operations Act 1997	No
	Roads Act 1993	No
	Pipelines Act 1967	No
SEPP 55	As identified at Sections 1.1.3 and 3.1 of this EIS, the Basement Car Park and Stage 1A Public Domain Approvals 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. The ORWS RAP contemplated a mixed commercial and residential uses within Block 2. 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.	
SEPP 64	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. 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. The proposed signage is consistent with the objectives of SEPP 64 and satisfies the criteria specified in Schedule 1 of the SEPP as follows: <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	The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the Major Development SEPP.	
	Clause 8 - Zone B4 Mixed Use	The application seeks approval for retail and commercial uses, both of which are permissible within the B4 Mixed Use zone.
	Clause 17 - Height of buildings (Maximum RL 41.5)	Building C2/C6 'Kiosk' has a maximum RL of 33.2, and therefore complies with the maximum permitted height development standard.
	Clause 18 - Gross Floor Area Restrictions - Maximum 209,908m ² (across Block 2)	Building C2/Kiosk C6 has a GFA of 7,945m ² , which when added to the GFA of the other buildings (C4 and C5) approved within Block 2 results in a total GFA of 196,833m 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. However, it is noted that as the site is located above the Sydney Metro Corridor, allowance has been made for a future station within the ground floor of the building. The development will be carried out in accordance with the Deed Lend Lease has entered into with Barangaroo Delivery Authority and Transport for NSW to ensure the protection of the Sydney Metro corridor.	

Instrument / Strategy	Comments	
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 State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP). Accordingly, with a CIV of \$31.84 million this development is State Significant Development.	
Sydney Harbour REP	Clause 20 General	The matters referred to in Division 2 are addressed below.
	Clause 21 Biodiversity, ecology and environment protection	The proposed mitigation measures set out in Section 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 C2/C6 'Kiosk' 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.
	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 C2 and 'Kiosk' C6, as described in Section 3 of this report. Building C2 and 'Kiosk' C6 are located within Block 2 of Barangaroo as identified under the approved Concept Plan (MP06_0162 Mod 7) and have been designed to be largely in accordance with the approved Concept Plan, as detailed below.

The proposed Building C2 and C6 'Kiosk' are consistent with the Concept Plan planning controls and guidelines. At the ground and first floors, the building footprints maintain the 12m wide Union Walk connection through to Hickson Rd, consistent with the building footprints of the approved Concept Plan. At levels 2 and above, the commercial building extends across Union Walk, though still within the Indicative Building Envelope provided for on Block 2. The Indicative design within Concept Plan MOD 4 (as approved in MOD7) also proposed an extension across Union Walk, though at one level higher than previously envisaged. It is noted however that the combination of significant ground and first floor heights provide a generally consistent ceiling height to Union Walk, while also being offset with the introduction of a significant civic space at the southern end of the building, which provides a generous arrival space for the precinct

The Barangaroo Concept Plan identifies maximum GFA and height controls for each Development Block within Barangaroo South, including Block 2, within which Building C2 and 'Kiosk' C6 are 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 of the concept plan approval (MP06_0162).

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 C2 and ‘Kiosk’ C6’s consistency with the Concept Plan numerical controls.

Table 4 – Compliance with Concept Plan (Mod 7) Block 2 GFA and Height Controls

Block 2 Concept Plan (Mod 7) Control	Commercial Tower C4	Commercial Tower C5	Commercial Building C2	Kiosk C6	Cumulative Total	Compliance
Maximum GFA – 209,213m ²	98,359m ²	90,539m ²	7,920m ²	25m ²	196,833m ²	Compliant
Maximum height – RL 180	N/A	N/A	33.2	-	-	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 C2 and ‘Kiosk’ C6 are largely compliant with the Concept Plan (Mod 7)’s Built Form Principles, specifically it will:

- promote the scale of Hickson Road as a grand Boulevard, using materials that are complementary to the sandstone nature of the headland, consistent with Built Form Principle 2;
- define the public sense of space to the street by building the facades to the street alignment consistent with Built Form Principle 3;
- provide for pedestrian permeability through Block 2 consistent with Built Form Principles 4 and 6; and
- be orientated to the west to define the linear nature of the Hickson Road 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 C2 or ‘Kiosk’ C6.

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 C2 and ‘Kiosk’ C6 comply with the principles and controls by providing:

- a building mass that is appropriate within the envelope;
- a street wall that defines the promenade;
- an articulated, well-proportioned and legible building mass;
- permeability and accessibility through Block 2; and

- high architectural quality facades that contribute to the buildings articulation and mass.

Concept Plan Indicative Building Envelope

The Barangaroo Concept Plan (as approved) provides for separate C2 and C6 buildings at Ground, Level 1 and Level 2, from which point they are joined into a single commercial floorplate above. The building was intended to extend to the boundaries of the site in the south west corner and incorporate a single storey colonnade along the Hickson Road frontage. The proposed C2 Building is generally consistent with this intent.

The C2 Building has a maximum building height is RL 33.2 or 29.7m from the finished ground floor level. It incorporates a continuous two storey colonnade along Hickson Road which connects to Union Walk, which is maintained at a width of 12m. The space above Union Walk is one level lower than previously envisaged, though still within the Indicative Building Envelope provided for on Block 2.

The advent of the Wynyard Walk project and further development of building and public domain design on the Barangaroo South site has provided impetus for the reconsideration of the built form footprint within the C2/C6 block. Specifically, the opportunity for the creation of a significant public arrival space in the south west corner of the Barangaroo site is created through a realignment of the southern face of Building C6. This provides a generous landing for the bridge, a key meeting place at one of the principal pedestrian arrival points, and contributes to the creation of an efficient commercial floorplate.

The combination of significant ground and first floor heights provide a generally consistent ceiling height to Union Walk, while also being offset with the introduction of the proposed significant civic space at the southern end of the building, which provides a generous arrival space for the precinct. This allows for views and pedestrian access to be maintained from the public domain, including Hickson Road and Napoleon Street, through Union Walk, to and from the Harbour.

Furthermore, Sydney Harbour water views to the west are available to C2 through the corridors between C3 and C4 and between C4 and C5.

Table 5 demonstrates that Building C2 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 2 Controls	Commercial Building C2	Comment
Control 1 Building Mass and Location		
<i>Objectives</i>		
Adoption of “fanning principle” for siting of buildings.	Pedestrian access is available through Union Walk, which passes under Building C2. The enclosure of the airspace between level 2 and 6 of building C2 does not affect the fanning principle.	Consistent
To ensure building mass is appropriate within the envelope.	As outlined above, although the inclusion of building mass over Union Walk was not included in the concept plan, the mass gained here was removed from the southern end of C6 to enable the enlargement of Hickson Place. The building is therefore appropriate.	Consistent
To ensure that the vertical massing of tower form is an integral part of the composition of towers.	No tower form is proposed.	N/A

Concept Plan (Mod 7) Block 2 Controls	Commercial Building C2	Comment
Interesting building shapes are encouraged.	The introduction of the underpass at the junction of Hickson Road and Union Walk will add to the interesting shapes of buildings in the area.	Consistent
<i>Standard</i>		
Maximum horizontal floor plate length - 85.5m	The maximum floor plate length is less than 85.5m	Consistent
The bulk of building mass will be set back from Hickson Road alignment a minimum of minimum of 20m and maximum of 29m	The bulk of building mass, referred to in this control relates to the Commercial Buildings C4 and C5 towers, which are setback the required distance from Hickson Road. Building C2 and Kiosk C6 are located along Hickson Road in order to reinforce the street wall consistent with the built form principles in the Concept Plan.	Compliant
Tower form floor plate depth – maximum 30 m	No tower form is proposed.	N/A
Podium height <ul style="list-style-type: none"> ▪ Minimum predominant height of 3 storeys ▪ Maximum – RL 27 	No podium/ tower form is proposed.	N/A
Reduce the height and/or reduce the floor area above RL 160 in one of the towers.	No podium/ tower form is proposed.	N/A
Control 2 Street Wall Establishment		
<i>Objectives</i>		
To establish spaces to articulate and define facades.	Building C2/C6 'Kiosk' is built to the boundary of Hickson Road and Shelley Lane.	Consistent
<i>Standard</i>		
Built form to establish a colonnade along Hickson Road	A colonnade will be provided along Hickson Road	Consistent
Building form to create a street wall with a one storey minimum height for most of the public accessible ground floor facade.	A two storey street level wall is created on Hickson Road.	Compliant
Building mass to define a street wall on Globe Street, Margaret Street West, City Walk and Hickson Road.	Building C2/C6 'Kiosk' is built up to the boundary with Hickson Road from level 2 to level 6. Below level 2 a colonnade is provided.	Compliant
Shelley Lane Minimum 6m wide	Building C2 does not alter the proposed width of Shelley Lane	Compliant
Control 3 Building Articulation		
<i>Objectives</i>		
To establish an articulated, well-proportioned building mass.	No changes are proposed to the building mass to that approved under the concept plan.	Consistent
<i>Standard</i>		
The building envelope and floor plates are to be articulated and modulated, using a range of architectural components such as prows, corner redents, vertical villages, expressed lift cores, bay windows and other structural expression.	Building C2together with the C6 'Kiosk' would provide a range of finishes that would promote building articulation.	Compliant
Tower Form to express sustainability features such as access to natural light.	No tower forms are proposed.	N/A
Control 4 Building Legibility		
<i>Objectives</i>		
Constituent elements of the building need to be articulated.	The form of the building will be articulated through the provision of a colonnade on the eastern elevation and through the provision an underpass at the entrance to Union Walk. Additionally, the wooden	Consistent

Concept Plan (Mod 7) Block 2 Controls	Commercial Building C2	Comment
	structure of Building C2, a unique defining element of the architecture of the building, will be visible through the glass façade and will therefore aid to the building's articulation.	
Elements of the building and structure should be legible at the base.	The provision of a colonnade on the eastern elevation and through the provision an underpass at the entrance to Union Walk will aid building legibility.	Consistent
<i>Standard</i>		
The separate primary components of the building will be expressed.	The building will comply with this standard.	Compliant
Visible parts of the towers' primary structure are to extend to the ground plane and be expressed as a separate element from the podium.	No tower forms are proposed.	N/A
Control 5 Ground Floor Permeability and Accessibility of Public Realm		
<i>Objectives</i>		
To provide permeability and accessibility through Barangaroo South.	Building C2 will maintain the pedestrian permeability and accessibility through the site.	Consistent
To maximise safety of the public realm	The building envelope of Building C2/C6 'Kiosk' allows for the maximisation of Hickson Place which will improve the safety of the public realm.	Consistent
<i>Standard</i>		
Public access around the Block is to be maintained on all edges.	Public access around the Block edges has been maintained.	Compliant
Provide two north to south and one east to west primary connections including the Hickson Road colonnade, through the block.	The north to south connection through the block will be maintained along Hickson Road colonnade, Lime Street and Shelley Lane. East to west pedestrian connection through the block will be maintained by retention of the Union Walk, City Walk and Wynyard Walk / Transport Place.	Compliant
Provide one north to south and two east to west secondary public access routes, through the block.	Secondary north to south connections will be provided in the adjacent tower buildings. East to west pedestrian connections along Hickson Place in addition to Wynyard Walk, City Walk and Union Walk	Alternate site layout, alternate outcome
Shelley Lane must be not less than 50% open to the sky.	Awnings are not proposed along Shelley Lane.	N/A
For security purposes the secondary routes may be closed at certain times.	Building C2 / C6 'Kiosk' does not affect this standard.	N/A
Control 6 Ensuring Quality of Rooftops		
<i>Objectives</i>		
To ensure that the mass of the rooftop is articulated and legible.	Building C2 provides a green roof and solar PV cells on the roof, thereby providing articulation through variation.	Consistent
<i>Standard</i>		
Roof forms to incorporate architectural treatment.	Building C2 provides a green roof and solar PV cells on the roof.	Compliant
Lift shafts, overruns and control rooms are to be extruded above the roof line and used to provide architectural articulation to the roof.	The lift shafts, overruns and control rooms have been extruded above	Compliant

Concept Plan (Mod 7) Block 2 Controls	Commercial Building C2	Comment
Exposed mechanical equipment is to be avoided.	the roof line to provide articulation to the roof. No exposed mechanical equipment is proposed. All building plant in Building C2 is housed within level 1.	Compliant
The architectural treatment of the roof and its form is to be designed, coordinated and remain sympathetic to adjacent context.	The roof form has been designed in response to its current and future adjacent context.	Compliant
Good quality materials (ie. durable, hardwearing, sustainable) to be used.	Durable materials will be used for the roof, as nominated on the Architectural Drawings.	Compliant
Roof Design to integrate sustainable features.	The Roof Design integrates PV cells as a sustainable feature.	Compliant
Control 7 Facades		
<i>Objective</i>		
To ensure the architectural quality of the facades.	Building C2 / C6 'Kiosk' provides high quality architectural facades.	Consistent
To articulate the building functions and massing with appropriate facade design and detailing.	Building C2 / C6 'Kiosk' provides appropriate building façade design to articulate the building functions and massing.	Consistent
To ensure the facades contribute to the building articulation and mass.	Building C2 / C6 'Kiosk' provides appropriate building façade design to contribute to the building articulation and massing.	Consistent
To contribute to the "carbon neutral" aims for Barangaroo South.	Building C2 provides solar PV cells which will contribute to a carbon neutral Barangaroo South.	Consistent
<i>Standard</i>		
Depth and layering of facades is to be achieved through relief and protrusions. Mirrored facades should be avoided.	Horizontal shade structures are incorporated into the facade increasing the depth and layering. Mirrored facades are not proposed.	Compliant
The choice of appropriate materiality for longevity, durability and flexibility. Materials such as steel, glass, concrete, timber and aluminium.	The proposed materials, which include timber, glass, and concrete, have been chosen for their longevity, durability and flexibility. Timber will be treated to improve its durability.	Compliant
Environmentally sustainable design is to be incorporated on all facades.	As detailed in the Sustainability Report at Appendix G , Building C2 will enhance the ESD performance of the precinct.	Compliant
Facade components such as external shading shall be used to provide light and shade to the building and to consider and reinforce Control 2+3.	Horizontal external shading elements are provided. Additional shading is also provided by the underpass at the junction of Hickson Road and Union Walk.	Compliant
Facades longer than 60m are to be modulated above podium level by distinctive and significant architectural elements e.g. vertical villages, cores or external staircases, in the vertical plane.	The east and west elevations which exceed 60m are modulated with distinctive architectural elements such as the shade structures.	Compliant
The maximum continuous horizontal length of the towers southern elevation should not exceed 60m	No towers are proposed.	N/A
Control 8 Active Street Fronts		
<i>Objective</i>		
To ensure a vibrant public domain will be created at street level.	Building C2 / C6 'Kiosk' will encourage a vibrant public domain by allowing the increased activation of Hickson Place and by providing active retail frontages along Hickson Road and Shelley Lane. .	Consistent

Concept Plan (Mod 7) Block 2 Controls	Commercial Building C2	Comment
<i>Standard</i>		
At least 60% of the Ground Level is to be active on the primary street wall facades	Over 60% of the ground level will be active on the primary street wall facades.	Compliant
Building entrances to internal areas such as office lobbies, exits and service areas or loading docks shall not count toward the 60% requirement.	Noted.	Noted
Building service areas and loading docks will not be located on Hickson Road or Globe Street.	No building service areas or loading docks are located on Hickson Road or Globe Street.	Compliant
The width of driveways shall be minimised.	No driveways are proposed.	N/A
Control 9 Signage		
<i>Objective</i>		
To ensure that the location, size, appearance and the quality of the signage on the building is appropriate.	The proposed alternative signage zones are appropriate in terms of their location and size on the building, as discussed in Section 3.3.2.	Consistent
<i>Standard</i>		
High level signage is to be limited to a maximum of 2 separate faces per building.	High level signs are proposed on the east and west elevations on level 6.	Compliant
Signage is not to exceed 60m ² per sign.	Signage will not exceed 60m ² per sign. Zones for primary building and business identification signage have been nominated.	Compliant
Identity signage only to be incorporated within the building facades/structure.	Identity signage is only located within the building facades/structure.	Compliant
Details of signage to be considered as part of the overall design of the building for the purposes of design excellence.	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.	Compliant
Signage shall not be greater than 1 building storey high (between floor slabs)	The signage zones vary in size, the individual signs within the zones will be able to comply with the control.	Compliant

Statement of Commitments

The Concept Plan 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. There are no commitments that specifically relate to Building C2/C6 Kiosk.

4.3 Land Use and GFA

This application seeks approval for retail uses within the ground floor or Building C2 and 'Kiosk' C6. Commercial uses will be located on levels 1 – 6 of Building C2. Levels 2 – 6 commercial uses are likely to be offices, however level one may be used as a medical centre. A Commercial Lobby is also located on the ground floor of building C2. Further applications (DA or CDC as required) will be made for the fit-out of the various tenancies, once tenants have been confirmed.

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

A summary of the Building C2 and 'Kiosk' C6's areas, including a floor by floor breakdown of GFA, the total GFA and the Concept Plan indicative building site coverage is provided at **Table 6**.

Table 6 – Summary of proposed building areas

	Use	Building C2/Kiosk C6 GFA (m ²)
Ground	Retail	635
	Commercial Lobby	87
	Kiosk	25
Level 1	Commercial / Medical / Retail	587
Levels 2 to 6	Commercial / Office	1322.2
Total GFA	-	7,945

Building C2 constitutes a total GFA of 7,920m², of which 635m² is retail GFA and 7,285m² is commercial GFA. 587m² of the commercial GFA that is located on the first floor may be used for medical or retail purposes. 'Kiosk' C6 constitutes 25m² of GFA. 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 C2	7,920	209,213	12,070.5
	Kiosk C6	25		
	Commercial Building C4	99,097		
	Commercial Building C5	90,105		
	Total	197,147		
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

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 3 - 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) *The design process leading to the proposal;*
- b) *whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved;*
- c) *whether the form and external appearance of the building will improve the quality and amenity of the public domain; and*
- d) *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.*

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.

Building C2 / 'Kiosk' C6 do not trigger the above requirements.

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 several local and international architectural firms for inclusion on a 'Panel of Nominated Architects' that would be responsible for the design of C2/C6 as well as a number of other buildings within the Barangaroo South precinct.

In accordance with the Approved Design Excellence Strategy, Lend Lease has selected Tzannes Associates (TZA) from the panel.

The Design Team

Building C2 exhibits design excellence through the commissioning of renowned Australian Architects TZA. This partnership satisfies the criteria identified in clause 19(4)(b)(i) of Part 12, Schedule 3 of the Major Development SEPP, namely that the architects responsible for the proposed design have an outstanding reputation in architecture.

TZA is one of the most widely recognised and awarded architectural practices in Australia, combining a sophisticated understanding of urban design and commercial architecture with a pragmatic, flexible and collaborative approach to the design process.

TZA participated in master planning workshops for the site with RSHP, Hassell, PTW and Lend Lease following award of the project. TZA are also architects for various other items in the Barangaroo South precinct, including the C5 west podium and Hickson Place canopy. Design work commenced on C2 early 2013.

The design of Building C2 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 C2 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 C2 that demonstrate the high standard of architectural design include:

- The architecture is proposed as a distinctive element within the city. The proposal is in two parts; a 2 storey base that includes the colonnade and Union Walk and responds to the scale of the public environment; and an upper 5 storey form as a clean simple glazed envelope that allows the interior timber elements to be the hero.
- The project is integrated through a consistent approach to detail and the transformation of the more textured and dynamic base below the simpler geometry of the glass envelope, into a smooth glass skin that reinforces the positive qualities of the public domain.

Achieving Design Excellence

The proposed development will exhibit design excellence as:

- established architectural practice TZA 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 TZA have 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 Development Application exhibits design excellence and therefore clearly meets at 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 DES 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 2 indicated that the building height a maximum building height of RL33.2 for buildings along Hickson Road. The proposed building is consistent with this control.

The Urban Design Controls for the buildings along Hickson Road encourage the creation of a 'grand boulevard' along Hickson Road. The Urban Design Controls for Block 2 also include the requirement to provide a colonnade along the Hickson Road elevation.

Through provision of a two storey colonnade, supported by an overall building height that is compliant with the specified building controls for Block 2, Building C2 supports the intention of the Urban Design Controls and proposes a building that is an appropriate height bulk and scale.

In light of the above, Building C2's massing is considered to be consistent with the Concept Plan.

4.4.3 View Analysis

Building C2 is the first building encountered when pedestrians enter the Barangaroo precinct over the Wynyard Walk Bridge from the Sydney CBD. View analysis has been undertaken from the following perspectives, as required by the DGRs:

- Hickson Road;
- Shelley Street;
- Margaret Street West;
- Napoleon Street;
- Lime Street; and
- The adjoining buildings at 10 Shelley Street.

View from Hickson Road

The view from Hickson Road will be an important as Building C2 demarks the eastern edge of the Barangaroo South precinct and will create the desired 'grand boulevard' along Hickson Road.

The view from Hickson Road will also be the first view of the Barangaroo Precinct for pedestrians arriving at the precinct from the Wynyard Walk Bridge. As shown in **Figure 7** Building C2, along with 'Kiosk' C6, help to create a sense of place at Hickson Place as pedestrians arrive at the Barangaroo South precinct.



Figure 7 – View north along the Foreshore Promenade
Source: *Virtual Ideas*

View west down Union Walk to Darling Harbour

The view west, down Union Walk to Darling Harbour will allow views from Hickson Road to the harbour to be maintained through Block 2. The underpass beneath building C2 maintains this view as shown in **Figure 8**.



Figure 8 – View down Union Walk from Hickson Road
Source: *Virtual Ideas*

4.4.4 Overshadowing

As illustrated in the Shadow Studies at **Appendix A**, the low scale nature of Building C2/C6 'Kiosk' results in very minor overshadowing. The impact of the shadow cast by Building C2 / C6 'Kiosk' were assessed and approved under the Concept Plan, which considered a building up to RL 41.5. As the proposed building envelope is smaller, particularly adjacent to Hickson Place, the shadow impacts that would be created by the proposal are considered to be minor and acceptable.

The shadows of the proposed buildings will fall entirely within the shadow of the approved and future buildings within Barangaroo South. The building will not cast any additional shadow on any key public spaces.

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 C2/ C6 'Kiosk' 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.

4.5 Reflectivity

Due to the location of Building C2 and 'Kiosk' C6, the proposed materiality and the absence of significant direct sunlight, the building will not have any adverse reflectivity impacts on pedestrians or motorists.

It is expected that the development would be subject to standard conditions of consent limiting specular reflectance of visible light to 20%.

4.6 Public Domain and Public Access

The Building C2/C6 'Kiosk' DA does not propose any alterations to the public domain. Public domain will be provided as part of the Stage 1A Public Domain DA (SSD 6303) which proposes the public domain treatments for the entire Stage 1A area within Barangaroo South, including the vicinity of Building C2 / C6 Kiosk. The public domain works at the ground plane of Building C2 / C6 'Kiosk' will integrate seamlessly with this public domain as illustrated on the Architectural Drawings (**Appendix A**). Extracts from the Stage 1A Public Domain drawings have been provided for information at **Appendix E**.

The pedestrian experience around Building C2 / 'Kiosk' C6 has been considered in the overall design of the buildings. The design of the underpass at the junction between Hickson Road and Union Walk has been integrated into the design of the colonnade and would add to the pedestrian experience.

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 C2 and 'Kiosk' C6 are intended to be used for commercial and retail purposes, ARUP has determined that the majority of Building C2/Kiosk C6 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 C2 / 'Kiosk' C6 will be in accordance with the Barangaroo South Transport Management and Accessibility Plan (TMAP).

Two scenarios were considered when assessing the retail component:

- Scenario 1 – using level one of Building C2 as commercial GFA; and
- Scenario 2 – using level one of Building C2 as retail or health centre GFA

Under scenario one the car parking rates established under the Concept Plan, ARUP has determined that a maximum of 11 car parking spaces can be provided for the Building C2 commercial component of C2 and two (2) spaces for the retail component of Building C2 and 'Kiosk' C6.

Under scenario two the car parking rates established under the Concept Plan, ARUP has determined that a maximum of 12 car parking spaces can be provided for the Building C2 commercial component of C2 and five (5) spaces for the retail component of Building C2 and 'Kiosk' C6

Consistent with the maximum levels of parking provision within the Concept Plan, 12 car parking spaces have been allocated for Building C2 / C6 'Kiosk' 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 C2 will be four (4) vehicles per hour during peak hours. This traffic increase is considered to be negligible.

The C2 building will have bicycle access and onsite facilities for commuter cyclists (i.e. showers, changing rooms, lockers). A minimum target of 5% of building occupants provided with a bicycle parking space has been adopted which aligns with the mode share target of 4% of journey to work by bicycle. Current planning for C2 building has adopted a 10% target for bicycle parking which is in excess of the mode share target and will allow for growth in this mode of travel as the cities bicycle facilities improve.

Mitigation Measures

Due to:

- the negligible traffic generation;
- existing car parking provision;
- 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 C2 / 'Kiosk' C6 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 C2 / 'Kiosk' C6 works are expected to commence in January 2015 and are anticipated to generate three 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 C2 / 'Kiosk' C6 works, ARUP has not recommended any specific additional 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 C2 / 'Kiosk' C6. Proposed Building C2 / 'Kiosk' C6 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

Proposed Building C2 is to be located entirely above the Basement Car Park and therefore contamination issues that may relate to this building have been addressed within that application. 'Kiosk' C6 is located outside of the Basement Car Park area but within the area assessed within the Stage 1A Public Domain DA. No additional excavation or piling is proposed as part of the construction of the C6 Kiosk.

ERM has prepared an Overarching Remedial Action Plan (Overarching RAP) for the Barangaroo site for the Barangaroo Delivery Authority which includes the area around 'Kiosk' C6. 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 site of 'Kiosk' C6, which is identified as being within Area D. 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. As part of that scope of works, one sample was taken from within Area D.

In addition to the SSTC, the OWRS establishes a validation methodology and remedial strategy (if required) for Area D. The validation works in this area are

currently underway as part of the Excavation and Basement Project (MP10_0023), and are being carried out in accordance with the ORWS RAP, and in consultation with the Site Auditor. If required, remediation will be carried out in accordance with the ORWS RAP approved as part of the Excavation and Basement Project (MP10_0023), and in the context of the Public Domain works (subject to separate DA).

Proposed 'Kiosk' C6 is for retail use and will be surrounded by public domain (see **Appendix N**). The SSTC described in the HHERA and the OWRS RAP indicate that the land uses envisaged for this part of the site included a commercial slab, being a commercial building built on a slab with no basement excavated below ground level (and minimal intrusive ground works) and public domain (amongst others). For the purposes of the RAP and contamination considerations, the commercial uses also includes retail uses.

The proposed 'Kiosk' is consistent with this land use as it will involve the construction of a building that will be located on a ground level slab and not involve significant intrusive ground works. Further, it is highlighted that for the purpose of contamination there is no difference between commercial land uses and retail land uses as they represent the same risk of access and exposure to contamination (particularly, the NEPM Health Investigation level F relates to commercial / industrial land uses – which includes shops, offices, factories and industrial sites).

As such, the SSTCs established in the HHERA remain valid and the approach to validation and remediation (if required) within the ORWS RAP remains valid in relation to Area D and the proposed 'Kiosk' C6. The implementation of the validation and remedial approach (if required) as documented in the approved ORWS RAP will therefore ensure that Area D will also be made suitable for the proposed uses (i.e. 'Kiosk' C6 surrounded by public domain).

Mitigation Measures

As there are no further remediation works required under this DA no contamination related mitigation measures are required for the construction of Building C2.

The validation and remedial approach (if required) will be completed in accordance with the ORWS RAP, before construction works associated with 'Kiosk' C6 commence.

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 C2 specific initiatives include:

- The use of sustainably sourced timbers and, where possible, reclaimed wood for the structural beams of the building.
- Materials, sealants and adhesives will be chosen responsibly to be consistent with Green Star to minimise VOCs and formaldehyde.
- Incorporation of rooftop solar photovoltaics.
- 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.
- Connection to non-potable water supply from Recycled Water Treatment Plant for flushing.

- Selection of low flow fittings and controls to minimise water use.

No specific measures apply to the C6 Kiosk.

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, water sensitive urban design 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 an Infrastructure Provision and Stormwater Statement outlining the existing infrastructure, how the proposed Building C2/C6 'Kiosk' 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 C2 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 DA (SSD 6303). 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 DA (SSD 6303). 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 **Appendices M, O and P**).

Mitigation Measures

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

4.12 Noise Impacts

An Acoustic 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 C2/C6 'Kiosk' works. A summary of the assessment and proposed mitigation measures are provided below.

Assessment - Construction Noise

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 C2/C6 Kiosk, 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 C2/C6 'Kiosk' 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 C2/C6 Kiosk.

Due to the nature of the construction works associated with Building C2, no significant vibration levels are expected to be generated and no mitigation measures will be necessary.

Assessment -Operational Noise

Wilkinson Murray has explained that the potential operational noise impacts of Building C2/C6Kiosk 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 and have indicated that an acoustic assessment of mechanical plant be undertaken following the detailed design phase.

Due to the absence of any specific use being proposed as part of this DA, no assessment of noise generated from particular 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

Mitigation Measures

Wilkinson Murray has determined that no specific noise and vibration measures are required for the proposed Building C2/C6 'Kiosk' works beyond those that are already implemented at Barangaroo South. Therefore 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 C2/C6 Kiosk.

4.13 Air and Odour

An Air Quality Assessment Letter 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 C2/C6 'Kiosk' works need to be considered. The Building C2/C6 'Kiosk' works proposed under this application are typical of a low rise building and will be low impact.

Based on studies for construction activities at Barangaroo, AECOM has confirmed that the Building C2/C6 'Kiosk' works will not substantially increase air emissions. AECOM's cumulative assessment of construction activities associated with concurrent construction of other main Barangaroo buildings (C3, C4, C5, R1, R7, 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 pollutants to cause odours were likely to exceed the relevant criteria. It has been confirmed that the Building C2/C6 'Kiosk' 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 C2/C6 'Kiosk' works will be acceptable from an air quality perspective.

Mitigation Measures

Currently a reactive dust mitigation system has been 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 C2 construction works.

AECOM has recommended that the Building C2/C6 'Kiosk' construction works be incorporated into the existing environmental management plans and 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

An Infrastructure, Water and Drainage Assessment 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 is subject to a Construction Certificate Application covered under the Bulk Excavation and Basement Car Parking Project Application (MP10_0023). Grates and inlets to collect surface flows from the Public Domain form part of DA SSD6303 including Union Walk, Hickson Place, and Shelley Lane. The proposed building will integrate into these surrounding systems. No further infrastructure works are required to facilitate the construction of Building C2/C6 Kiosk.

Mitigation Measures

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

4.15 Structural Engineering

On 15 November 2011, a Deed regarding the carrying out of development at Barangaroo was executed between the Director General of Department of Transport (TfNSW), Lend Lease (Millers Point) Pty Ltd and the Barangaroo Delivery Authority. This Deed, amongst other things, requires that Lend Lease consults with TfNSW regarding future applications, complies with stipulated requirements for the design and construction of development, and obtains the approval of TfNSW for works in the vicinity of the Sydney Metro corridor. These requirements apply regardless of the requirement for concurrence of the Minister for Transport under the ISEPP.

The Deed includes requirements on design of buildings and structures at Barangaroo and the structural stability of these buildings in relation to ground movement, vibration and settling; fire resistance; and avoidance of impacts on the

operation and structure of the Metro. Requirements related to construction methodology under the Deed include controls to limit impact on rock adjacent to the Metro infrastructure and over-excavation and over-drilling, over-cutting and over-sawing for works in the proximity of Metro infrastructure. The design of Building C2 has been based on the requirements of a future Metro station. It is unlikely that there will be any impact on the Sydney Metro corridor.

The proposed development will be carried out in accordance with the Deed and informed by previous advice to ensure the protection of the Sydney Metro corridor. The footprint of Building C2 and 'Kiosk' C6 partially overlies the Metro protection corridor.

In light of the above, it is concluded that the proposed works will suitably accommodate the Metro and will avoid impacts on the Sydney Metro.

4.16 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.

The proposed building has been assessed against the provisions for Access for People with Disabilities in Part D3 of the BCA. 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.

4.17 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 C2/C6 'Kiosk' including the following as required by the DGRs:

- 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
- 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 6.00pm Monday-Friday and between 7.00am and 5.00pm on Saturdays. No work will be undertaken on Sundays or public holidays.
- The Building C2/C6 'Kiosk' site will be enclosed by Class A hoardings along all frontages.
- Site vehicular access will be off Hickson Road.
- 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.
- Tower cranes, which form part of the approved buildings, will be used for materials handling. A materials handling team member will ensure the efficient management of deliveries and removals and hence minimise disruption to traffic around the Barangaroo site.
- 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; Public Domain, Construction Noise and Vibration Assessment.
- 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.
- ORWS RAP prepared by AECOM will be implemented for remediation of contaminated soil and water as part of the works and processes approved under the Basement Car Park Approval.
- Management of construction generated solid and liquid waste will be addressed in accordance with the Spoil & Waste Management Sub-Plan operating at the Barangaroo South site.
- Vehicular and pedestrian traffic management and controls will be implemented and monitored to minimise disruptions to site activities, the surrounding road network, as well as the ongoing operation of the passenger terminal. The site haulage route and Waterfront 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 L** and accordingly the above recommendations are reflected in the Mitigation Measures in Section 6.0.

4.18 Staging

Lend Lease proposes to undertake the construction of Barangaroo South in a staged manner. Building C2/C6 'Kiosk' will be constructed concurrently with the other approved developments within Barangaroo South. As a result of the small size of the building it is intended that Building C2/C6 'Kiosk' will be complete in June 2016.

Building C2/C6 'Kiosk' 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 public domain adjacent to Building C2/C6 'Kiosk' will be coordinated with the delivery of the building.

4.19 Consultation

In accordance with the DGRs for this Development Application (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 Development Application and proposed ongoing stakeholder engagement. Accordingly, consultation has been undertaken as required by the DGRs 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 DA are consulted with.

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 C2/C6 Kiosk.

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.

Following lodgement of the Development Application, 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 DGRs, 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 9 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 9 – 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 C2 / 'Kiosk' C6 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 public domain works. AECOM has recommended that the Building C2/C6 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 C2/C6 'Kiosk' 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 C2. Potential noise impacts and mitigation measures required during the operation of Building C2 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)

				Risk Assessment		
Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Significance of Impact	Manageability of Impact	Residual Impact
Water, Drainage, Stormwater and Groundwater	C+O	<ul style="list-style-type: none"> – 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 DA (SSD 6303).	2	2	4 (Low/Medium)
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 C2 is negligible in the overall construction traffic of Barangaroo. Furthermore, as no car parking spaces are proposed to be allocated to Building C2, 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 C2 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 C2.
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 Traffic Management Plan and the ECSMP and associated sub plans 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 C2 and 'Kiosk' C6 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 C2/C6 'Kiosk' 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 uniquely tactile wooden-frame building that relates appropriately to the pedestrian scape at the entry to Barangaroo via Wynyard Walk;
- provide an activated open space for use by employees and visitors to Barangaroo at the landing of the Wynyard Walk, the primary pedestrian entry to the southern part of Barangaroo from the CBD, by creation of Hickson Place framed by the C2 building and C6 Kiosk building; 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

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

- enhancing the experience of visitors to the precinct through providing 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 such as climate change 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 C2 and proposed 'Kiosk' C6 at Barangaroo South.

The EIS has addressed the issues outlined in the DGRs 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 C2/C6 'Kiosk' 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 along Hickson Road; 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, including 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.

Given the merits described above it is requested that the application be approved.