Environmental Impact Statement

State Significant Development Application

241-249 Wheat Road, Cockle Bay (SSD 7684)

Cockle Bay Wharf Redevelopment

Submitted to Department of Planning
On Behalf of DPT and DPPT Operator Pty Ltd

2 December 2016 ▪ 14562

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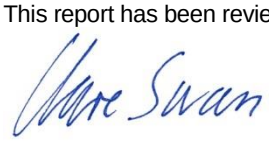
This report has been prepared by:

Harry Quartermain 2/12/2016

This report has been reviewed by:



Clare Swan 2/12/2016

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Statement of Validity

Environmental Impact Statement prepared by	
Name	Harry Quartermain
Qualifications	BA(Hons), MA URP, MPIA, MRTPI
Address	173 Sussex Street, Sydney
In respect of	State Significant Development Application for redevelopment of Cockle Bay Wharf, Darling Harbour
State Significant Development Application	
Applicant name	DPT & DPPT Operator Pty Ltd
Applicant address	Level 51 MLC Centre 19 Martin Place Sydney 2000
Land to be developed	241 – 249 Wheat Road, Cockle Bay
Proposed development	Stage 1 / Concept Proposal for the redevelopment of Cockle Bay Wharf
Environmental Impact Statement	An Environmental Impact Statement (EIS) is attached.
Certification	I certify that I have prepared the content of this EIS and to the best of my knowledge: ▪ It is in accordance with Part 4 of the Environmental Planning and Assessment Act 1979 and Schedule 2 of the Environmental Planning and Assessment Regulation 2000. ▪ It contains all available information that is relevant to the environmental assessment of the development to which the statement relates. ▪ The information contained within this statement is neither false nor misleading.
Signature	
Name	Harry Quartermain
Date	2/11/2016

Executive Summary

This Environmental Impact Statement (EIS) is in relation to a Concept Proposal for the redevelopment of the Cockle Bay Wharf site within Darling Harbour, and is submitted to the Minister for Planning and Environment pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD). The proponent is DPT and DPPT Operator Pty Ltd.

Key features of the Concept Proposal include:

- Demolition of existing site improvements, including the existing Cockle Bay Wharf building, pedestrian bridge links across the Western Distributor, and obsolete monorail infrastructure;
- Building envelopes;
- Land uses across the site;
- A maximum total Gross Floor Area (GFA) across the Cockle Bay Wharf of 85,000m^2 for commercial development and 25,000m^2 for retail (including food and beverage) development;
- Car parking rates to be utilised in subsequent detailed (Stage 2) Development Applications; and
- Built Form, Urban Design and Public Realm Guidelines to guide future development and the public domain.

A detailed description of the Concept Proposal is contained in Section 3 of this report and illustrated in the Architectural Drawings prepared by Francis Jones Morehen Thorp (FJMT) Architects and provided at **Appendix B**.

Photomontages of buildings that could be achieved within the proposed building envelopes are is shown at **Figures ES1, ES2 and ES3**.

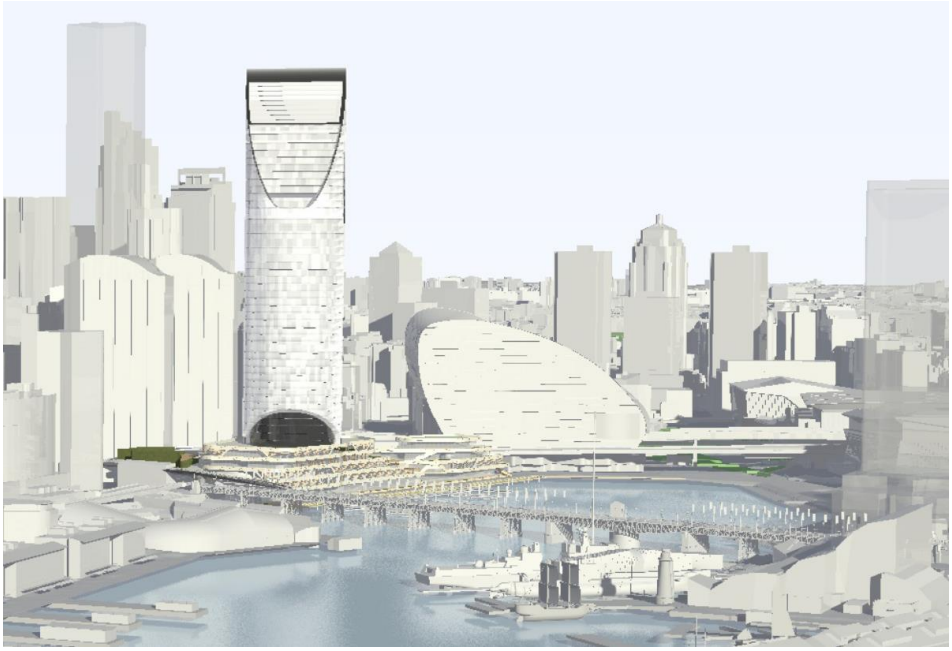


Figure ES1 – Future built form – Circular tower footprint

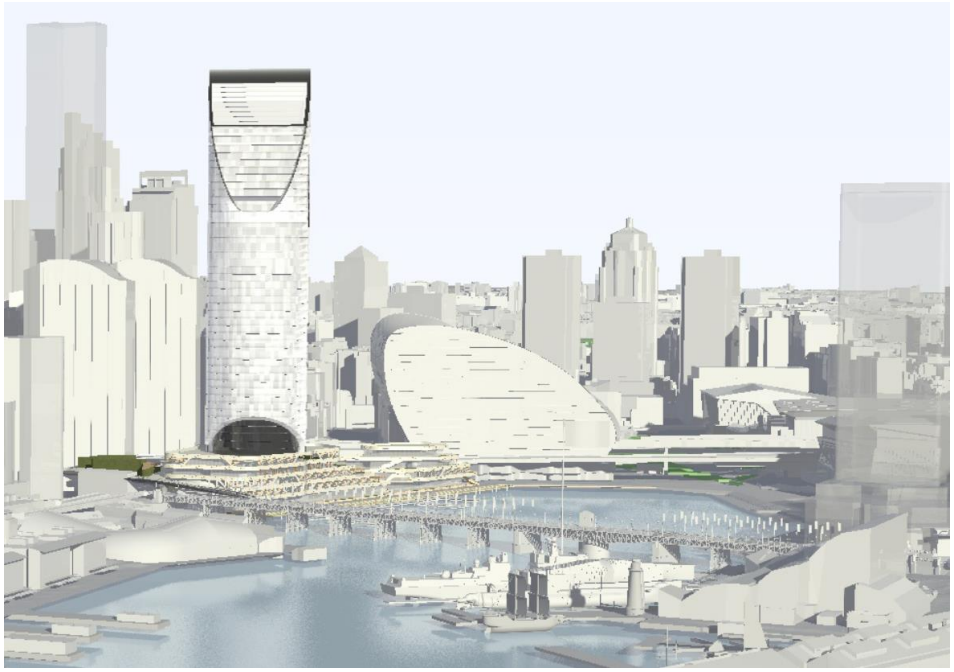


Figure ES2 – Future built form – Elliptical tower footprint

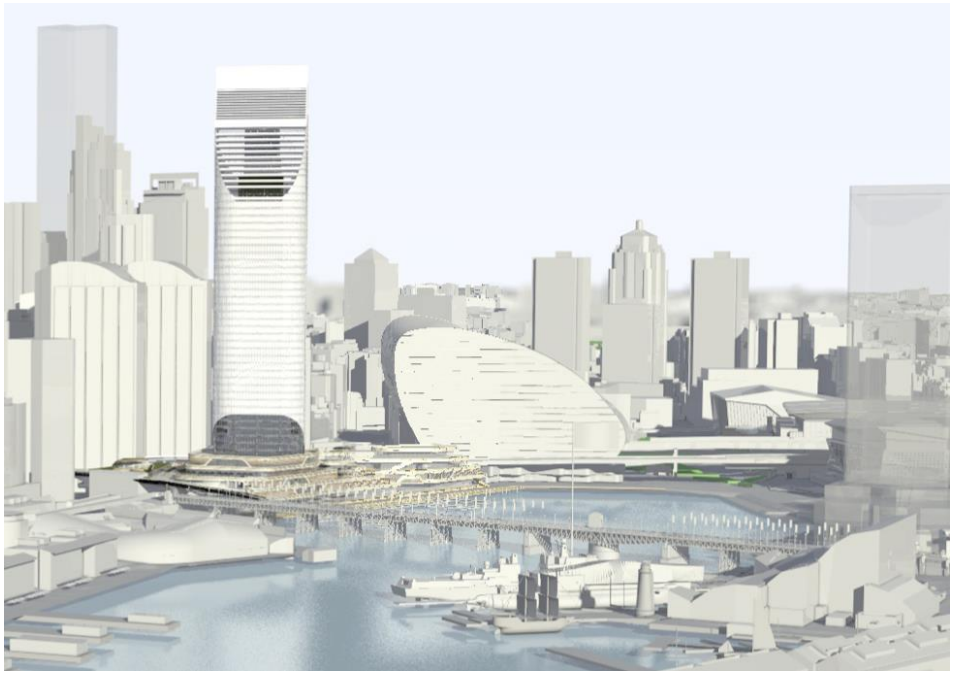


Figure ES3 – Future built form – square tower footprint

The Site

The site of the Concept Proposal is located on the south east side of Darling Harbour and has an area of 35,850m². The Site contains the existing Cockle Bay Wharf and parts of the Western Distributor, Darling Park and approaches to Pyrmont Bridge. The existing building is 3 storeys in height and is a distinctive building in the Darling Harbour precinct because of its location and design.

The Site is located within the Darling Harbour precinct and owned by the NSW Government and managed for NSW Government Property by the Sydney Harbour Foreshore Authority (SHFA). The long-term lease of the majority of the Site is controlled DPT and DPPT Operator Pty Ltd. Ongoing management of areas of the site not currently leased by the proponent will be discussed with SHFA.

Planning Context

The Concept Proposal is State Significant Development (SSD) as it has a capital investment value over $10 million and is located in the Darling Harbour precinct, which is identified as a State Significant Site in Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011*. The Proposed Development is therefore classified as SSD pursuant to Schedule 2 of the SEPP SRD.

A request to issue Secretary's Environmental Assessment Requirements (SEARs) for environmental assessment of the proposal was made on the 26th May 2016 and was provided on 23 June 2016 (see **Appendix A**).

Sections 5.3 to 5.5 of the EIS considers all applicable legislation in detail. The Concept Proposal complies with all relevant planning controls.

Darling Harbour Development Plan No 1 (DHDP) is the principal environmental planning instrument applying to the Site. Under Schedule 6, Part 7, clause 23(1) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the DHDP is taken to be a Regional Environmental Plan. By operation of Schedule 6, Part 21 and Clause 15 of the *Environmental Planning and Assessment Regulation 2000*, Regional Environmental Plans are deemed to be State Environmental Planning Policies (SEPPs).

The principal aim of the DHDP is to define the type of development which may be permitted within the Darling Harbour Development Area. Uses permissible on the Site are broad and include development for the purposes of tourist, educational, recreation, entertainment, cultural or commercial facilities, car parking stations, film television and radio stations, hotels, parks and gardens, residential buildings, serviced apartments, shops, refreshment rooms and utility installations. There are no maximum building heights or GFA restrictions imposed by DHDP, and no other detailed controls or provisions that guide or restrict the form of development on the Site

Consultation

Key stakeholders including local residents, government agencies, public authorities and the City of Sydney Council have been consulted during the preparation of the EIS. Details of this consultation, including key issues raised and how these issues were responded to, are provided at Section 4 of this EIS and in **Appendix T**.

Environmental Impacts

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by the proponent to manage and minimise potential impacts arising from the development (refer to Section 5.0). Key potential impacts assessed include, amongst others:

- view and visual impacts from key locations;
- overshadowing to public spaces and adjacent development;
- traffic generation, car parking requirements, and road and pedestrian safety;
- wind impacts;
- impacts to items of heritage significance;
- impacts to archaeology;
- construction noise and vibration; and
- impacts to existing services and infrastructure;

Identified impacts are addressed in this EIS where possible. This application is a Stage 1 Development Application, and as such proposes only a building envelope. Further assessment for detailed aspects of the design will be required when a detailed design is proposed in a Stage 2 Development Application.

The building envelope delivered by the Concept Proposal has been shaped by its environmental constraints, including the location of the seawall and western distributor. The vertical extent of the proposed envelope is limited by the action of solar access planes to Tumbalong Park and Town Hall Square. Any future building accommodated by the Concept Proposal enveloped would be unlikely to have a significant impact on solar access to surrounding areas, although this will be reassessed within the Stage 2 application.

The prominence of the future building's location demands an outcome that exhibits design excellence to ensure that that views are not adversely affected by the presence of a new building. A rigorous design review process will be undertaken between the Stage 1 and Stage 2 applications to ensure that the future built outcome is appropriate for the site and that it unambiguously exhibits design excellence.

The EIS notes that all identified impacts are capable of being ameliorated through the detailed design process or through the implementation of appropriate mitigation measures. Required design outcomes and mitigations measures are outlined in Section 7.0.

Conclusion

The assessment undertaken as part of this Stage 1 Development Application includes a number of suggested mitigation measures and design recommendations. These have been collated to inform the ongoing management of the Site throughout the detailed design, and Stage 2 Application phase of the retail and commercial building and publicly accessible open space.

This Environmental Impact Statement fulfils the requirements of the EP&A Act and addresses the Secretary's Requirements, and demonstrates that the impacts of the proposal can be satisfactorily managed. In light of the above, and the significant benefits of the proposed development, we therefore recommend that the proposed Stage 1 development be approved.

1.0 Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for State Significant Development (SSD) for a Concept Proposal for the redevelopment of 241 – 249 Wheat Road, Cockle Bay (Cockle Bay Wharf) in Darling Harbour (the Site).

The Site is located within the Darling Harbour precinct which is identified as a State Significant Site in Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011*. As the Concept Proposal will have a capital investment value of more than $10 million it is declared to be State Significant Development (SSD) for the purposes of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The EIS has been prepared by JBA on behalf of DPT and DPPT Operator Pty Ltd and is based on the Concept Proposal Architectural Drawings and Design Report prepared by Francis Jones Morehen Thorp Architects (FJMT) and other supporting technical information appended to the report (see Table of Contents).

This report describes the Site, its environs and the proposed development, and provides an assessment of the proposal in terms of the matters for consideration under Section 79C(1) of the EP&A Act.

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

1.1 Overview of Proposed Development

The proposal relates to a staged development application (in accordance with Section 83B of the EP&A Act) and seeks to set out a 'Concept Proposal' for the redevelopment of Cockle Bay Wharf and the surrounding area.

The Concept Proposal establishes the planning and development framework which will be the basis for the consent authority to assess future detailed development proposals.

The Concept Proposal includes:

- up to 12,000m^2 of publicly accessible open space;
- new retail outlets, including new food and beverage destinations;
- new cultural and entertainment destinations; and
- a new commercial office tower.

The Concept Proposal seeks approval for the following key components and development parameters:

- Demolition of existing site improvements, including the existing Cockle Bay Wharf, pedestrian bridge links across the Western Distributor, and obsolete monorail infrastructure;
- Building envelopes;
- Land uses across the Site;
- A maximum total Gross Floor Area (GFA) across the Cockle Bay Wharf of 85,000m^2 for commercial development and 25,000m^2 for retail (including food and beverage) development;
- Car parking rates to be utilised in subsequent detailed (Stage 2) Development Applications); and

- Built Form, Urban Design and Public Realm Guidelines to guide future development and the public domain.

1.2 Background to the Development

The Site, along with much of the Darling Harbour Area is owned by the NSW Government and managed on behalf of NSW Government Property by Sydney Harbour Foreshore Authority (SHFA). DPT and DPPT Operator Pty LDT (the Proponent) controls the long-term lease on the Site, and also of the adjacent Darling Park site.

The Darling Park site is a successful premium grade office precinct located on the west of the Sydney CBD, the associated Crescent Garden, located to the west of the three existing Darling Park towers, is a key area of open space in this part of the city.

The Proponent has recognised a number key issues with the existing layout of the Darling Park and Cockle Bay precinct, these being:

- The existing Cockle Bay Wharf building is not well integrated with the city, the Western Distributor freeway currently acts as a barrier to separate this area from the CBD;
- Critical pedestrian links from the CBD to Darling Harbour via Druitt Street and Market can be improved;
- Despite being publicly accessible, the existing Darling Park Crescent Garden is not well utilised; and
- The existing Cockle Bay Wharf building is outdated and is not in keeping with the future of Darling Harbour area as a vibrant and modern entertainment and tourist destination.

The Cockle Bay precinct is at risk of being left behind and undermining the significant investment being made in Darling Harbour that will see it return to the world stage as a destination for events and entertainment.

Accordingly, the Proponent is taking a carefully considered and staged approach to the complete revitalisation of the Site and its surrounds.

1.3 Objectives of the Development

The envisaged development, which will be facilitated by the Concept Proposal, will:

- Provide new access routes between the city and the ICC Sydney / Darling Harbour Live precinct;
- Provide significant publicly accessible open space;
- Refresh the pedestrian access from the CBD to Darling Harbour via Druitt Street;
- Support the Sydney economy by providing a new premium commercial building;
- Refresh and renew an existing entertainment and tourist destination; and
- Reconnect the city with the Darling Harbour waterfront and the Darling Park Crescent Garden.

1.4 Analysis of Alternatives

A number of options were considered during the development of this application, these options are explained below.

1.4.1 Do Nothing

Not developing the Site was considered. This option would not allow the identified lack of connectivity and legibility between the CBD and Darling Harbour to be addressed. Doing nothing would also not allow the existing Cockle Bay Wharf building to be upgraded to better integrate with the modern Darling Harbour Live precinct. As this option would not allow the project objectives to be met, it was not considered further.

1.4.2 Development Options

Significant upgrades and expansion is proposed to the publicly accessible open space within and surrounding the existing Cockle Bay Wharf building. In order to make these upgrades viable, a certain quantum of commercial floor area must be provided by the future development. When preparing this application, a number of different built form options were considered to accommodate this commercial floor area, these options included:

- One mid-rise building;
- Two mid-rise buildings; and
- One high rise tower.

These options are examined further below. An analysis of the options that were considered is also provided within the FJMT Design Report, provided as **Appendix B**.

One Mid-rise Building

One mid-rise building could provide the required quantum of floor space without the introduction of a new tall building to the city skyline. A mid-rise building of between 10 and 21 storeys would create significant overshadowing impacts on the foreshore area and would sever views, from the existing open areas, and from the proposed expanded publicly accessible open space west to the Cockle Bay Waterfront.

Private views to Darling Harbour from existing residential and commercial buildings would also be significantly affected by mid-rise building with a large floor plate in this location. For these reasons, this option was not considered further.

Two Mid-rise Buildings

In order to provide the required floor area without significantly affecting overshadowing and view loss, it would be possible to retain the mid-rise form but split the floor area into two mid-rise buildings.

Although this would prevent some of the overshadowing and view-loss impacts identified above, it would not entirely resolve the issue. As the built form provided by this option is required to be moved towards the south, this options would present an additional potential issue with building separation and interface with the IMAX or Ribbon development to the south. For these reasons, this option was not considered further.

One High-rise Tower

By restricting the footprint of the built form to one tower, the required quantum of floor area is able to be provided within the development without significantly affecting private views or views from existing and future public areas and areas of publicly accessible open space.

Although the resulting tower would be taller than the other considered options and therefore visible from a greater distance, the potential impacts of the envelope on neighbouring buildings and open areas in the vicinity of the Site was considered to be improved and manageable. This option was therefore selected for further development.

1.5 Secretary's Requirements

In accordance with section 89G of the EP&A Act, the Secretary of the Department of Planning and Environment issued the requirements for the preparation of the EIS on 23 June 2016. A copy of the Secretary's Environmental Assessment Requirements (SEARs) is included at **Appendix A**.

Table 1 provides a detailed summary of the individual matters listed in the SEARs for SSD 7684 and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 – Secretary's Environmental Assessment Requirements

Requirement	Location in Environmental Assessment	
General		
The Environmental Impact Statement (EIS) must address the E*nvironmental Planning and Assessment Act 1979* and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000.	Environmental Impact Statement	
Key Issues	EIS Section	Technical Study
1. Statutory and Strategic Context The EIS shall address the statutory provisions applying to the site contained in all relevant environmental planning instruments (EPIs}, including: ▪ State Environmental Planning Policy (State and Regional Development) 2011; ▪ State Environmental Planning Policy (Infrastructure) 2007; ▪ State Environmental Planning Policy No.55- Remediation, of Land; ▪ Draft Sydney Environmental Planning Policy (Competition) 201 0; ▪ Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005; ▪ Darling Harbour Development Plan No.1; and ▪ Sydney Local Environmental Plan 2012.	Section 5.5	N/A
The EIS shall address the relevant planning provisions, goals and strategic planning objectives in the following: ▪ A Plan for Growing Sydney; ▪ NSW State Priorities; ▪ NSW Long Term Transport Master Plan; ▪ Sustainable Sydney 2030; ▪ Sydney Development Control Plan 2012; ▪ Sydney Streets Design Code and Sydney Streets Technical Specification; ▪ Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines; ▪ Development Near Rail Corridors and Busy Roads- Interim Guideline; ▪ Sydney City Centre Access Strategy; ▪ The NSW Government Planning Guidelines for Walking and Cycling; ▪ Sydney's Light Rail Future, Sydney's Cycling Future and Sydney's Walking Future; ▪ NSW Bicycle Guidelines; ▪ Healthy Urban Development Checklist; ▪ City of Sydney Waste Minimisation in New Developments 2005; ▪ Waste Classification Guidelines; ▪ Interim Construction Noise Guideline; and ▪ Crime Prevention Through Environmental Design (CPTED) Principles.	Section 5.3	
2. Ecologically Sustainable Development (ESD) The EIS shall: ▪ detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation 2000) will be incorporated in the design, construction and ongoing operation of the staged development; ▪ demonstrate how the proposed development responds to industry	Section 5.11	Appendix L

Requirement	Location in Environmental Assessment	
best practice sustainable building principles and improves environmental performance through energy efficient design, technology and renewable energy; and ▪ provide an integrated Water Management Plan, including an assessment of water demand, alternative water supply, and proposed end uses of potable and non-potable water, water sensitive urban design and water conservation measures.		
3. Development staging The EIS shall set out the staging of the proposed redevelopment including timing of public domain works and pedestrian connections to the CBD and interim land use opportunities on parts of the site awaiting development. The EIS shall also set out those parts of the development subject to future applications, including works outside of the site boundaries and the Darling Harbour site identified in State Environmental Planning Policy (State and Regional Development) 2011.	Section 3.10	N/A
4. Land Use The EIS shall address the proposed land use mix, compliance with the objectives of the Darling Harbour Development Plan No. 1 and demonstrate how the proposal will enhance the tourist, recreational, entertainment, cultural and commercial character of Darling Harbour**.**	Section 5.5.2.	N/A
5. Design Excellence, Built Form and Public Domain The EIS shall:		
▪ demonstrate the process for achieving design excellence and how the proposed envelope will deliver design excellence in the future stage/s;	Section 3.7 Section 5.6	Appendix B
▪ address design excellence of the building and public realm, with specific consideration of the overall site layout, siting and design, orientation, connectivity, activation, open spaces and edges, overshadowing, facades, massing, setbacks and building articulation;		
▪ address the height, bulk and scape of the development within the context of the locality including a comprehensive options analysis for the built form, exploring a range of heights, tower locations and built forms, with justification of the selected option based on a thorough consideration of the benefits and potential impacts of each option;		
▪ address how the proposal fits with the existing context and current and future desired character of Darling Harbour through the development of urban design and public domain guidelines;		
▪ address and respond to comments and recommendations from SHFA's Design and Development Advisory Panel;	Section 4	
▪ provide a framework for public domain and public access upgrades across the site and address opportunities to enhance connections with Darling Harbour, the Sydney CBD and Barangaroo;	Section 5.10	Appendix B
▪ address the relationship of the public domain with the renewal of marine structures being undertaken by SHFA, including opportunities and constraints;	Section 5.27	Appendix B
▪ demonstrate how the proposal identifies and is well integrated into key pedestrian desire lines to the surrounding area and critical pedestrian, tourist and commuter links between SICEEP, Darling Harbour, Barangaroo, Pyrmont and the Sydney CBD; and	Section 5.16	Appendix N
▪ provide a detailed visual impact analysis, which considers the impact of the proposal when viewed from the public domain and key vantage points surrounding the site, including the Sydney CBD, Pyrmont, Darling Harbour and Pyrmont Bridge, including an assessment of any view loss impacts.	Section 5.9	Appendix I
6. Environmental Amenity The EIS shall examine and address:		
▪ solar access,	Section 5.8	Appendix B
▪ acoustic impacts (construction and operational),	Section 5.13	Appendix W
▪ reflectivity,	Section 5.14	Appendix U
▪ overshadowing of public places (including The Boulevard, Tumbalong	Section 5.8	Appendix B

Requirement	Location in Environmental Assessment	
Green, the foreshore walk and the proposed Town Hall Square) and nearby existing and proposed residential uses,		
▪ wind,	Section 5.15	Appendix K
▪ view loss,	Section 5.9	Appendix I
▪ visual privacy,	Section 5.20	N/A
▪ emissions (including the Cross City Tunnel Vent Stack and Darling Park Tunnel),	Section 5.24	Appendix V
▪ noise and vibration impacts to the surrounding area.	Section 5.13	Appendix W
7. Heritage The EIS shall: ▪ provide a detailed Heritage Impact Statement {HIS) that identifies and addresses the impacts of the proposal: – on any archaeology protected under the Heritage Act 1977 – on the heritage significance of the site and adjacent area, including any built and landscape heritage items, conservation areas, views or settings, and in particular Pyrmont Bridge o on places, items or relics of significance to Aboriginal and nonAboriginal people – against any endorsed conservation management plans for heritage items in the vicinity of the site ▪ address opportunities for heritage interpretation within the public domain.	Section 5.17	Appendix F Appendix G Appendix H
8. Transport and Accessibility (construction and operation) The EIS shall include a Traffic and Transport Impact Assessment providing an assessment of the following: ▪ current daily and peak hour vehicle, public transport, pedestrian and bicycle movements, together with the cumulative impacts of existing, proposed and approved developments in the area, and existing traffic and transport facilities provided on the road network located adjacent to the proposed development; ▪ operation of existing and future transport networks including the light rail, ferry and bus networks and the CBD and South East Light Rail (CSELR) and their ability to accommodate the forecast number of trips to and from the development; ▪ estimated total daily and peak hour trips likely to be generated by the proposed development, including vehicle, public transport, pedestrian and bicycle trips; ▪ existing and future performance of key roads and intersections providing access to the site (including Harbour Street, Market Street and the Western Distributor), and any road/intersection upgrades required to accommodate the development. using modelling and analysis supported by RMS; ▪ measures to be implemented to encourage users of the development to make sustainable travel choices, including walking, cycling, public transport and car sharing, such as the provision of end-of-trip facilities for workers and visitors; ▪ appropriate provision of on-site bicycle parking, and how bicycle provision will be integrated with the existing bicycle network; ▪ details and justification for the proposed number of car parking spaces addressing consistency with relevant parking codes; ▪ site access requirements; ▪ likely future servicing requirements; ▪ road safety assessment for any proposed advertising signage, and-lighting displays and reflectivity in visible on roads; and	Section 5.12	Appendix E
▪ likely peak hour construction and servicing vehicle movements and access arrangements and the impacts of this traffic and the cumulative impact from surrounding development sites on the local road network and potential conflicts with other road users.	Section 5.23	Appendix E
9. Western Distributor The EIS shall:	Section 5.16.1	Appendix N

Requirement	Location in Environmental Assessment	
▪ provide an analysis and justification for the development over the Western Distributor (including the road reserve) and Wheat Road, including consideration of pedestrian desire lines between the CBD and Darling Harbour, benefits of providing an additional access point and potential impacts; and ▪ address the impact of development on the structural stability of the Western Distributor, horizontal and vertical clearances and the ability for Roads and Maritime Services to carry out improvement works.	Section 5.12.3	Appendix X
10. Drainage, Flooding, Climate Change and Sea Level Rise The EIS shall: ▪ identify and address the potential flood risk from groundwater, wastewater, stormwater, acid sulphate soils and sea level rise on the site; and ▪ include proposals to mitigate any potential impacts, such as opportunities for water sensitive urban design within the public domain and landscaping and any other water conservation measures.	Section 5.25	Appendix J
11. Utilities The EIS shall: ▪ in consultation with relevant agencies, address the existing capacity and any augmentation requirements of the development for the provision of utilities, including staging of infrastructure; and ▪ provide details of how infrastructure assets of various utility stakeholders will be protected or relocated during the demolition and construction of the project.	Section 5.22	Appendix R
12. Construction Management The EIS shall provide a preliminary construction management plan which: ▪ identifies if any cranes will be required to operate within the Obstacle Limitation for Sydney Airport and if any separate approval is required; ▪ identifies management measures for potential impacts of construction on surrounding areas, such as noise and vibration, air quality and odour impacts, dust emissions, water quality, stormwater runoff, groundwater seepage, soil pollution and construction waste; and ▪ outlines a community consultation, notification and complaints handling strategy.	Section 5.23	Appendix S
13. Contributions and/or Voluntary Planning Agreement The EIS shall address the provision of public benefit, services, infrastructure and any relevant contribution requirements to be agreed with SHFA, including opportunities to provide community uses, start up office space or other public benefits within the development.	Section 3.11	N/A
14. Pre-submission consultation statement The EIS must include a report describing pre-submission consultation undertaken, including consultation with the local community, issues raised during that consultation and how the proposal responds to those issues.	Section 4	Appendix T

1.6 Planning Approvals Status

This State Significant Development Application (DA) is a staged development application made under section 83B of the EP&A Act. It seeks approval for the Concept Proposal for the entire site.

More specifically this staged DA includes establishing land uses, gross floor area, building envelopes, public domain concept, pedestrian and vehicle access and circulation arrangements and associated car parking provision.

A single detailed development application (Stage 2 DA) will follow and will seek approval for the detailed design and construction of all or specific aspects of the proposal in accordance with the approved staged development application.

The Department of Planning and Environment provided the Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development on 23 June 2016. This report has been prepared having regard to the SEARs as relevant.

1.7 Other Approvals

In addition to the approvals noted elsewhere in this document, additional approvals will be required in order to permit the proposed development to occur. These approvals may include, but are not limited to:

- *Sydney Harbour Foreshore Authority Regulation* under clause 4 (for commercial activities and uses in Darling Harbour);
- *Roads Act 1993* (including Section 138 approvals) for works above a public road;
- *Protection of the Environment Operations Act 1997* (including environmental protection licences) for undertaking potentially polluting 'scheduled' activities; and
- *Sydney Water Act 1994* under Section 73 (compliance certificate).
- Referral to NSW Roads and Maritime as a 'Traffic Generating Development' in accordance with *State Environmental Planning Policy (Infrastructure) 2007*
- Application for a Controlled Activity licence under the *Water Management Act 2000* for any aquifer interference required as a result of piling activities (this can be undertaken as Integrated Development). It is noted that no referral is required to the NSW Office of Water, as Sydney Harbour is not considered 'waterfront land' for the purposes of the *Water Management Act 2000*.
- Referral to NSW Heritage Office under *Heritage Act 1977* for works to State-listed Pyrmont Bridge (Can be undertaken as Integrated Development)
- Referral to the Foreshore and Waterways Planning and Advisory Committee in accordance with Schedule 2 of the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005,* required for any works required below the Mean High Water Mark.

These additional approvals, and any other which may be required, will be sought at the appropriate time.

2.0 Site Analysis

2.1 Site Location and Context

The Site is located at 241 – 249 Wheat Road, within the Darling Harbour Precinct. The Site is located in the City of Sydney Local Government Area (LGA). Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District (CBD), and to the east of the Pyrmont Peninsula. The Precinct is unique in terms of its function, location, land ownership and physical characteristics, and accommodates a wide range of land uses. These predominantly relate to recreation, tourism, entertainment and business.

Historically, Cockle Bay has been subject to a significant amount of land reclamation and infilling to create an artificial valley and shoreline for Darling Harbour. The central valley is open and flat, and runs in a north-south direction from the Cockle Bay Shoreline towards Haymarket. The topography gently rises to the east and west from the valley floor towards ridgelines located in the vicinity of Harris Street to the west and Hyde Park to the east.

The Darling Harbour Precinct is undergoing significant redevelopment as part of the SICEEP, Darling Square, and IMAX renewal (The Ribbon) projects. More broadly, the western edge of CBD has been subject to significant change following the development of the Barangaroo precinct.

The project supports the realisation of the NSW State Government's vision for an expanded 'cultural ribbon' spanning from Barangaroo, around to Darling Harbour and Pyrmont. The character of Darling Harbour has been continuously evolving since the 1980s and no longer reflects the original valley floor landscape. The urban, built form and public transport / pedestrian context for the Site will fundamentally change as these developments are progressively completed. The Site's locational context is shown at **Figure 1**.

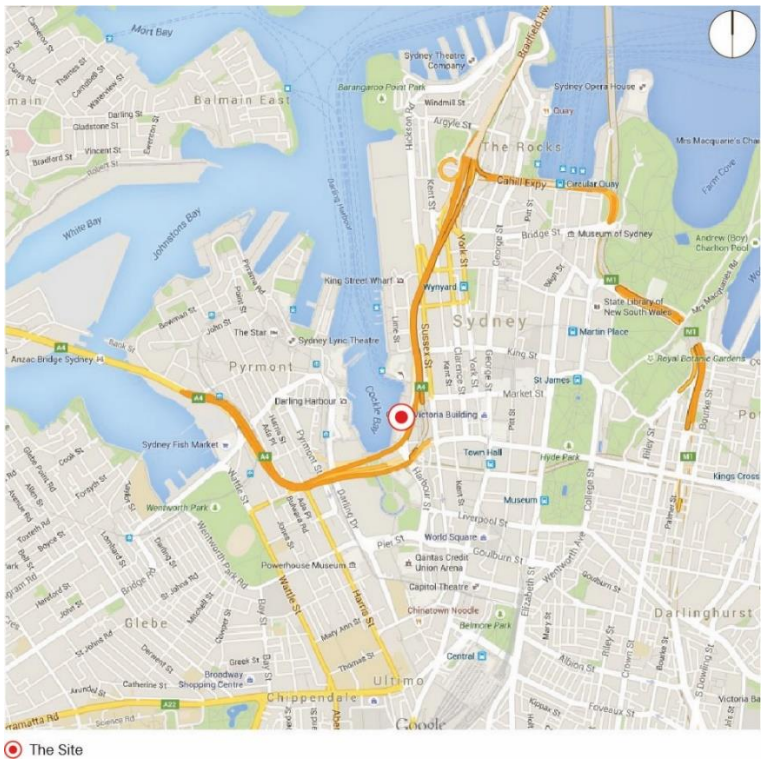


Figure 1 – Location Plan
Source: JBA and Google Maps

2.2 Site Description

The Site is located to the immediate south of Pyrmont Bridge, within the Sydney CBD on the eastern side of the Darling Harbour precinct. The Site encompasses the Cockle Bay Wharf development, parts of the Western Distributor and Wheat Road, Darling Park and Pyrmont Bridge. An aerial photograph of the Site is provided at **Figure 2** below.

The Site is entirely within the Darling Harbour Precinct as it is spatially defined by the Sydney Harbour Foreshore Sites Map, which is called up within *State Environmental Planning Policy (State Significant Precincts) 2005.*

The legal description of the Site is shown at **Table 2** below. The land is owned by the NSW State Government and administered for NSW Government Property by Sydney Harbour Foreshore Authority (SHFA). As outlined below in Section 2.2.1. a long-term lease exists between SHFA and the proponent, which includes the majority of the Site. The long term lease expires in 2088. The Site has a total area of 21,900m^2 and is irregularly shaped. A survey plan is located at **Appendix D**.

Table 2 – Legal Description of Site

Lot and DP	Owner	Lessee
Lot 10 DP801770	SHFA	DPPT Operator and DPT Operator
Lot 16 DP801770	SHFA	DPPT Operator and DPT Operator
Lot 17 DP 801770	SHFA	DPPT Operator and DPT Operator
Lot 19 DP801770	SHFA	DPPT Operator and DPT Operator
Lot 42 DP864696	SHFA	DPPT Operator and DPT Operator
Lot 60 DP1009964	SHFA	DPPT Operator and DPT Operator
Lot 61 DP1009964	SHFA	N/A
Lot 63 DP1009964	SHFA	N/A
Lot 64 DP1009964	SHFA	N/A
Lot 65 DP1009964	SHFA	DPPT Operator and DPT Operator
Lot 30 DP1007434	SHFA	N/A
Lot 32 DP1007434	SHFA	N/A
Lot 33 DP 1007434	SHFA	N/A
Lot 34 DP1007434	SHFA	N/A
Lot 35 DP1007434	SHFA	N/A
Lot 50 DP 1009561	SHFA	DPPT Operator and DPT Operator

Figure 2 – Indicative Site Area
Source: JBA

2.2.1 Site Ownership and Lease

The Site is entirely owned by the NSW Government and managed on their behalf by Sydney Harbour Foreshore Authority on behalf of Government Property NSW. The proponent controls the long-term leasehold over the majority of the Site area, with the exception of:

- The existing pedestrian bridge east of Sussex Street;
- The proposed interface above Pyrmont Bridge; and
- The southern portion of the site, south of the existing building.

If this application is approved leasing arrangements between the proponent and SHFA will be amended to reflect the expanded site boundary.

2.2.2 Existing Development

The existing development at the west of the Site accommodates Cockle Bay Wharf, which consists of a three storey building between the waterfront and Wheat Road. Cockle Bay Wharf contains a variety of restaurants, cafés and entertainment venues, including Home nightclub which has a 24-hour trading licence.

The building extends from Pyrmont Bridge in the north to southern Darling Harbour. The building is bound in the east by Wheat Road and the west by Darling Harbour and the waterfront promenade.

The Western Distributor to the east separates Cockle Bay Wharf from the CBD. The Western Distributor extends from north to south and connects Pyrmont and the western suburbs to the west and the CBD and Harbour Bridge to the north.

There are three pedestrian footbridge connections from Darling Harbour to the CBD within the site area, these are located at Market Street, Druitt Street and within Darling Park.

Photographs of the Site are provided at **Figures 3** – **Figure 6**.

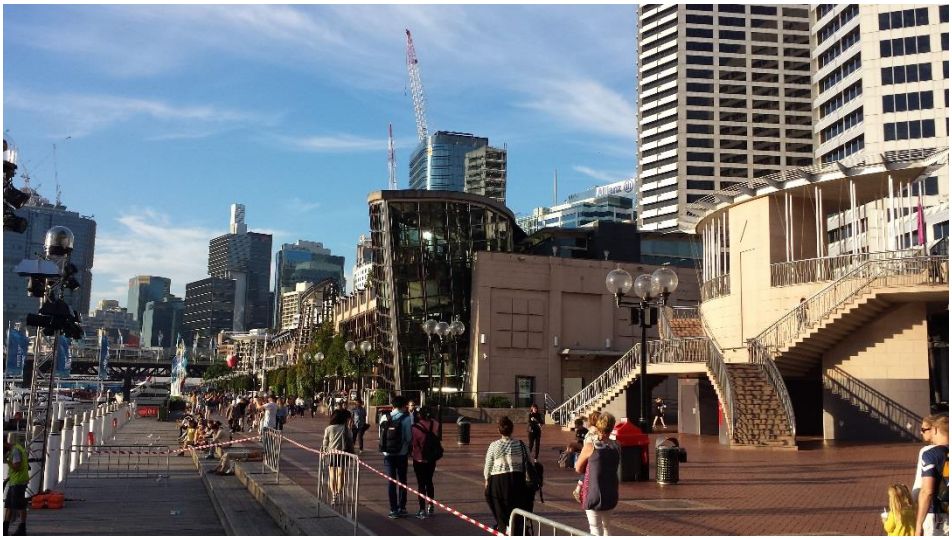


Figure 3 – Cockle Bay Wharf promenade looking north.
Source: JBA

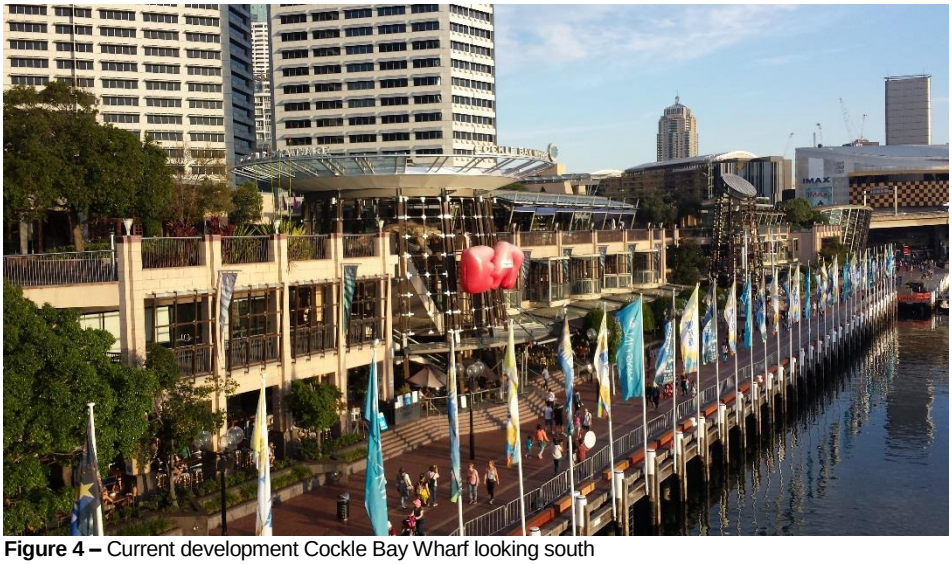


Figure 4 – Current development Cockle Bay Wharf looking south
Source: JBA

Figure 5 – Rear of current development viewed from the Darling Park foot bridge
Source: JBA

Figure 6 – Cockle Bay Wharf entrance from upper level
Source: JBA

2.2.3 Topography

Prior to European settlement, the Cockle Bay shoreline extended approximately 800m further to the south of its current location into Haymarket. Cockle Bay began to be modified in the early 19th Century by way of significant land reclamation and infilling, which was extended further north over subsequent decades up until the late 20th Century.

The land reclamation and infilling described above has resulted in an artificial valley that is open and flat, and runs in a north-south direction from Haymarket in the south to the Cockle Bay shoreline in the north. As a result, the Site is generally flat with little variation in the ground level RL. This is reflected in the Survey Plan prepared by Rygate (refer to **Appendix D**).

The land topography around the Site gently rises away from the Harbour towards ridgelines located within the CBD to the east.

2.2.4 Landscaping and Vegetation

Cockle Bay Wharf provides large areas of hard landscaping (public plazas) to the west along the waterfront promenade. The paved area incorporates outdoor dining areas and small amount of vegetation incorporated into the building.

The remainder of the Site is generally sparsely vegetated with small groupings of vegetation between the Western Distributor and Wheat Road.

2.2.5 Heritage and Archaeology

The Site is not listed as a heritage item by City of Sydney LEP 2012.

The following heritage items are identified as being located within the vicinity of the Site:

- The Pyrmont Bridge located directly to the north of the Site is listed on the NSW State Heritage Register (SHR 1618); and
- The Corn Exchange, located at 173 Sussex Street and listed as follows:
  - State Heritage Register: 1619
  - Register of National Estate: 1/12/036/0150;
  - National Trust of Australia 6507; and
  - Listed on SHFA s.170 Register

An assessment of Heritage impact is provided at Section 5.17 and within **Appendices F,G** and **H**.

2.2.6 Access

Pedestrian Access

The Site is largely inhibited from ground connections to surrounding areas by existing physical barriers, including the Western Distributor to the east and Darling Harbour to the west, although pedestrian access from the north and south from the Cockle Bay waterfront is currently possible.

Three pedestrian bridges connect the Site with the CBD to the east, these are located at Market Street, Darling Park and Druitt Street. Although these bridges provide pedestrian connection to the CBD, the legibility of the connection is varied.

The Site addresses the east of Darling Harbour and provides for the Cockle Bay waterfront promenade, which provides uninterrupted pedestrian access between Barangaroo and Pyrmont, connecting all Darling Harbour Precinct attractions. The promenade also connects with Tumbalong Park, Sydney International Convention Exhibition and Entertainment Precinct and Darling Square to the south.

Cycling

The Site is accessible to cyclists via a number of official cycle routes including the Sydney Harbour Bridge to Anzac Bridge route, and the Sydney Foreshore Loop.

Dedicated Cycleways connecting directly with the Cockle Bay Wharf Site include Pyrmont Bridge to the west, Kent Street to the east and western Darling Harbour promenade to the south. All cycleways connect with the wider Sydney Cycleways Network.

Rail

The Site has good rail connectivity, being located approximately 350m to the north-west of Town Hall Station, 650m south-west of Wynyard Station and 1.1km north-west of Central Station. Town Hall and Central Stations are key stations in the City Rail network with excellent connectivity to the wider network.

Almost all lines on the City Rail network pass through Central Station, which also provides connections with wider NSW, Western Australia, South Australia, Queensland, and Victoria.

Lines connecting at Town Hall include:

- Eastern Suburbs and Illawarra Line (Bondi Junction and Sutherland);
- Bankstown Line (Bankstown and Liverpool);
- Inner West Line (Strathfield and Liverpool);
- Airport and East Hills Line (Airport and Campbelltown);
- South Line (Strathfield and Campbelltown);
- North Shore Line (Chatswood and Hornsby); and
- Northern Line (North Sydney and Macquarie Park).

Light Rail

The Metro Light Rail runs from Central Station to Dulwich Hill via Darling Harbour, The Star Casino, Wentworth Park, Glebe and Rozelle. The closest Light Rail stop from the Site is at the Convention Centre, approximately 450m south west of the Site.

A future Light Rail route connecting Circular Quay with Sydney's south east has commenced construction. The route will travel along George Street, situated approximately 400m east of Cockle Bay Wharf.

Ferry

The Site is situated approximately 100m south of the Darling Harbour Pier 26 Ferry Terminal, 500m south-east of the Pyrmont Bay Ferry Wharf, and 400m south of the King Street Ferry Wharf. Ferries from these locations connect the Site with key locations, including Circular Quay, Milsons Point, and Parramatta. Ferries also connect the Site with a variety of tourist and visitor attractions located around Sydney Harbour.

Bus

There are multiple bus services in the vicinity of the Site. The closest bus stop is located at Druitt Street, near Sussex Street approximately 5 minutes' walk from the Site. The stop provides connections to destinations across Sydney including Parramatta, Ryde, Coogee, Macquarie Park and the CBD. A major bus terminal is located at Railway Square 1.1km to the south.

Vehicular Access

The key roads that provide access to the Site include:

- Wheat Road – a local road (included within the Site title) connecting Cockle Bay with the King Street Wharf area with Haymarket operating in one direction (north).
- Harbour Street –classified as a State Road aligned in the north-south direction that provides connection to Wheat Road from Haymarket and southern Sydney CBD.

2.2.7 Soil and Geotechnical Conditions

A geotechnical assessment has been undertaken by Coffey (**Appendix O**). Coffey's geotechnical assessment concludes that the majority of the Site is located on reclaimed land. The eastern end of the Site, where the Site meets Market Street, is located within land that is outside of the original shoreline of Cockle Bay.

The bedrock beneath the Site falls away sharply to the west of the Site, reflecting the original shoreline. The Sydney 1:100 000 scale geology map indicates quaternary alluvium of Holocene age infilling the Cockle Bay channel underlain by Hawkesbury Sandstone bedrock. The alluvium is described as silty to peaty sand, silt and clay with ferruginous and humic cementation in places and common shell layers.

These river sediments and back swamp deposits would be expected to have been deposited predominantly in a north south direction, consistent with the shape of the bay. The underlying sandstone bedrock is described as medium to very coarse grained quartz sandstone, with very minor shale and laminate lenses.

2.2.8 Site Contamination

A Preliminary Site Investigation (PSI) report has been prepared by Coffey and is provided as **Appendix P**. The objective of the PSI was to assess the suitability of the Site for the continued commercial use (i.e. the future tower and podium).

Based on a review of available public information and observations made during the site walkover, the following potential contamination issues were identified at the Site:

- Presence of contaminated fills of unknown origin as a result of site development and land reclamation process;
- Historical ship yard, timber yard, shipping dock operations; and
- Historical automobile garage and engineers' workshops.

Currently the entire site is covered by building slabs and pavements, which would prevent current site users being exposed to land contamination, should soil and groundwater contamination be present.

2.2.9 Utilities and Infrastructure

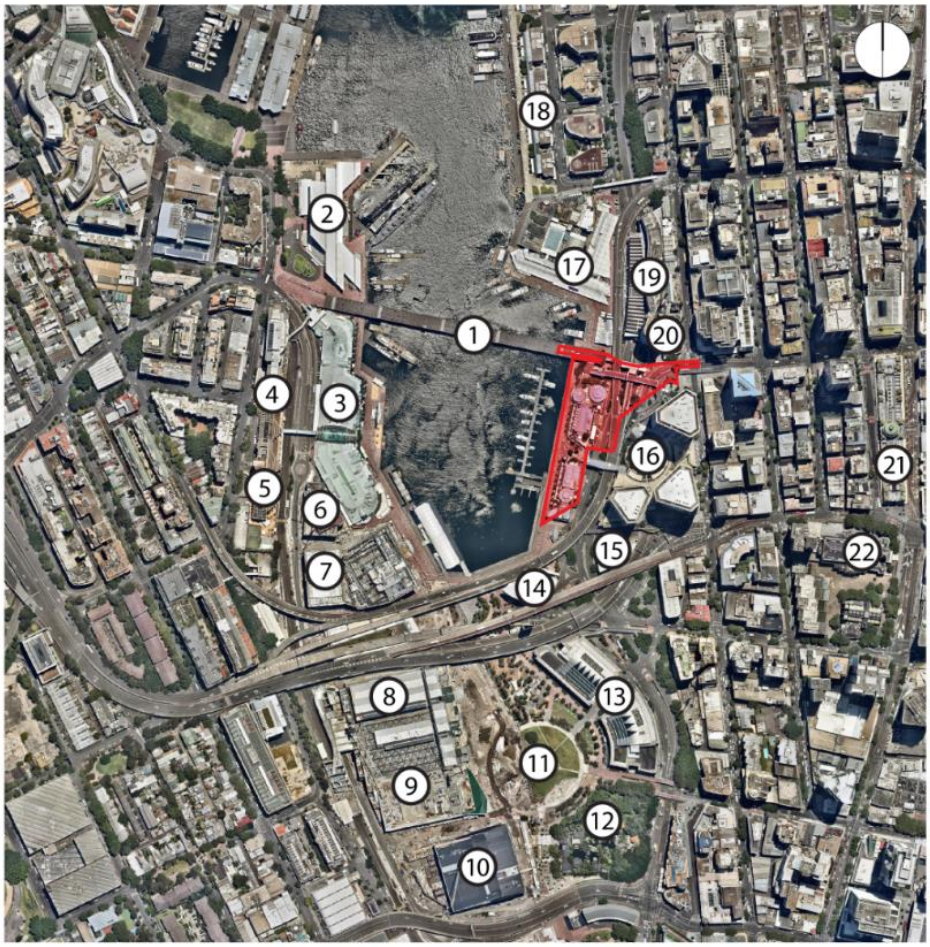
A services report has been prepared by Arup and is provided as **Appendix R**. This report confirms that the Site is currently serviced by the following utilities:

- Water: a 150mm water main is present within Wheat Road;
- Sewer:
  - a 225mm sewer main is located in Wheat Road (north); and
  - a 300mm sewer main is located in Wheat Road (south)
- Stormwater:
  - a 1500mm stormwater main is located in Wheat Road (mid); and
  - a 600mm and a 1800 stormwater main are located in Wheat Road (south);
- Gas: a 110mm medium pressure gas main with a pressure of 210kPa is located within Wheat Road;
- Electricity: - Potential supplies may come from the Sydney North zone substation (132kV/11kV), or from other infrastructure identified by Ausgrid.

2.3 Surrounding Development

The Site's location on the eastern perimeter of Darling Harbour places it in a busy and important tourist and commercial area. The Site is within walking distance of the CBD's major commercial, entertainment and shopping districts including the Queen Victoria Building, Pitt Street Mall, Chinatown and Darling Harbour. The surrounds of the Site are detailed below.

The Cockle Bay Wharf site is predominantly surrounded by commercial, tourist and residential related development. The surrounding built form is generally medium to high density and is constructed in a wide variety of architectural styles. A map of the key developments surrounding the Site is provided at **Figure 7**.



1. Pyrmont Bridge
2. Maritime Museum
3. Harbourside Shopping Centre
4. Ibis Sydney
5. Novotel Hotel
6. ICC Hotel
7. ICC
8. Exhibition Centre
9. Event Deck
10. The Theatre
11. Tumbalong Park
12. Chinese Garden of Friendship
13. Darling Quarter
14. LG Imax Theatre
15. Ausgrid Exchange
16. Darling Park
17. Sydney Aquarium
18. King St Wharf
19. Four Points Hotel
20. Corn Exchange
21. Queen Victoria Building
22. Town Hall

Figure 7 – Surrounding Context Map
Source: JBA and Nearmap

To the North

The northern extent of the Site is Pyrmont Bridge (**Figure 8**) and Market Street. A pedestrian bridge connects the heritage portion of Pyrmont Bridge with Market Street (**Figure 9** and **Figure 10**), crossing the Western Distributor. North of the Site is the Four Points Hotel (**Figure 11**), which cantilevers over the Western Distributor.

The Sydney Aquarium, Madame Tussauds and Wildlife Zoo front Darling Harbour north of Pyrmont Bridge (**Figure 12**). The heritage listed Corn Exchange is located on the corner of Sussex Street and Market, adjacent the Site (**Figure 13**).

Figure 8 – Pyrmont Bridge viewed from the south west
Source: JBA

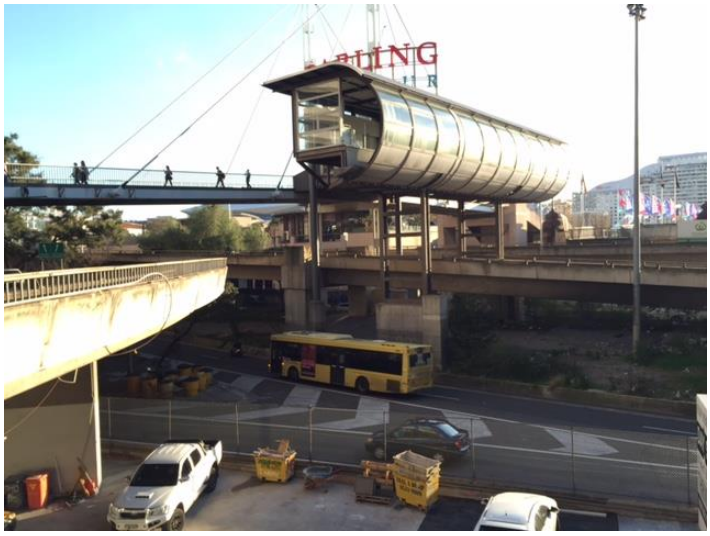


Figure 9 – Pyrmont Bridge Pedestrian Bridge and defunct Monorail infrastructure viewed from Market Street
Source: JBA

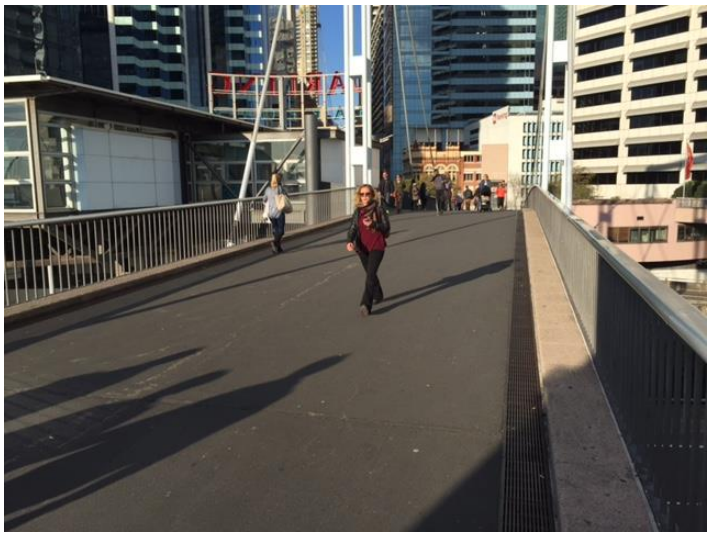


Figure 10 – Pyrmont Bridge Pedestrian Bridge viewed from the west
Source: JBA

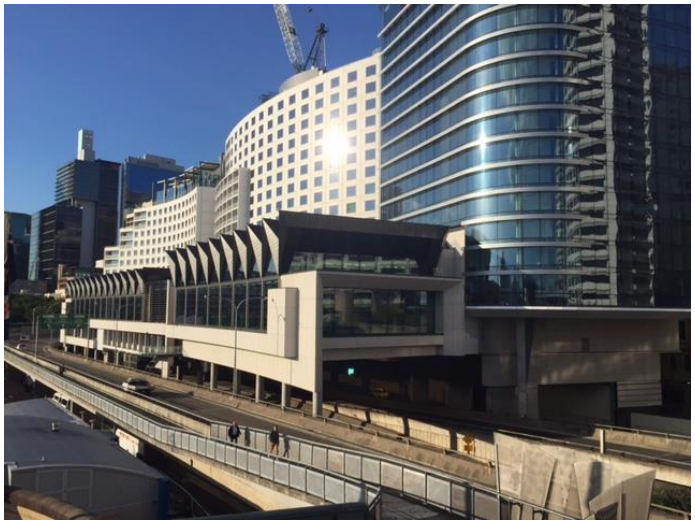


Figure 11 – Four Points Hotel viewed from Pyrmont Bridge
Source: JBA

Figure 12 – Sydney Aquarium, Madame Tussauds and Wildlife Zoo viewed from Pyrmont Bridge
Source: JBA

Figure 13 – The Corn Exchange viewed from Market Street / Sussex Street
Source: JBA

To the South

The Western Distributor flyover marks the southern extent of the Concept Proposal site. The IMAX cinema and a collection of retail and restaurants are located between the Western Distributor flyover lanes above (**Figure 14**). The Ausgrid Power Exchange (**Figure 15**) and the Cross City Tunnel stack are located to the south of the Site on Harbour Street. Further south is Darling Quarter (**Figure16**), Tumbalong Park and the ICC Exhibition Centre and Theatre, located within the Darling Harbour Live precinct.

Figure 14 – IMAX Cinema Development viewed from Cockle Bay foreshore
Source: JBA

Figure 15 – Ausgrid Exchange viewed from Wheat Road
Source: JBA

Figure 16 – Darling Quarter viewed from Tumblong Park looking south east
Source: JBA

To the East

East of Cockle Bay Wharf is Wheat Road and the Western Distributor (**Figure 17**). The three commercial towers of Darling Park (**Figure 18**) adjoin the Site to the east and connect through to Sussex Street. The existing Darling Park towers are controlled by the proponent. The Sydney CBD then continues further east.

Figure 17 – Eastern façade of Cockle Bay Wharf and Wheat Road looking north
Source: JBA

Figure 18 – Darling Park commercial development looking south from the Pyrmont Bridge pedestrian bridge
Source: JBA

To the West

The western foreshore of Darling Harbour is dominated by the International Convention Centre (ICC) and ICC hotel, which is currently under construction (**Figure 19**). The Harbourside shopping centre which features a collection of retail and restaurants is located opposite the Site at the opposite end of Pyrmont Bridge (**Figure 20**). It is noted that the Harbourside shopping centre site is also subject of a SEARs request for a significant residential development. Ibis Sydney and Novotel extend further west with the suburb of Pyrmont extending beyond.

Figure 19 – ICC and ICC hotel (under construction) viewed from Cockle Bay Wharf
Source: JBA

Figure 20 – Harbourside Shopping Centre viewed from Darling Harbour foreshore
Source: JBA

3.0 Description of the Development

Section 83B of the EP&A Act relates to staged development applications. A staged development application is one that sets out concept proposals for the development of a site, and for which detailed proposals for separate parts of the site are to be the subject of subsequent development applications. It is anticipated that a single Stage 2 detailed Development Application will follow this Stage 1 Development Application.

The Concept Proposal (subject of this EIS) establishes the vision and planning and development framework which will be the basis for the consent authority to assess future development proposals within the Site. It articulates what the applicant is seeking to achieve for future development and sets the broad parameters for the development of the Site.

This chapter of the report provides a detailed description of the Concept Proposal, and is informed by the Design Report prepared by FJMT (refer to **Appendix B**) and other supporting information appended to the report (see Table of Contents).

The Concept Proposal seeks approval for the following key components and development parameters:

- Demolition of existing site improvements, including the existing Cockle Bay Wharf, pedestrian bridge links across the Western Distributor, and obsolete monorail infrastructure;
- Building envelopes;
- Land uses across the Site;
- A maximum total Gross Floor Area (GFA) across the Cockle Bay Wharf of 85,000m^2 for commercial development and 25,000m^2 for retail (including food and beverage) development;
- Car parking rates to be utilised in subsequent detailed (Stage 2) Development Applications); and
- Built Form, Urban Design and Public Realm Guidelines to guide future development and the public domain.

Photomontages of buildings that could be achieved within the proposed building envelopes are shown at **Figures 21 - 23**.

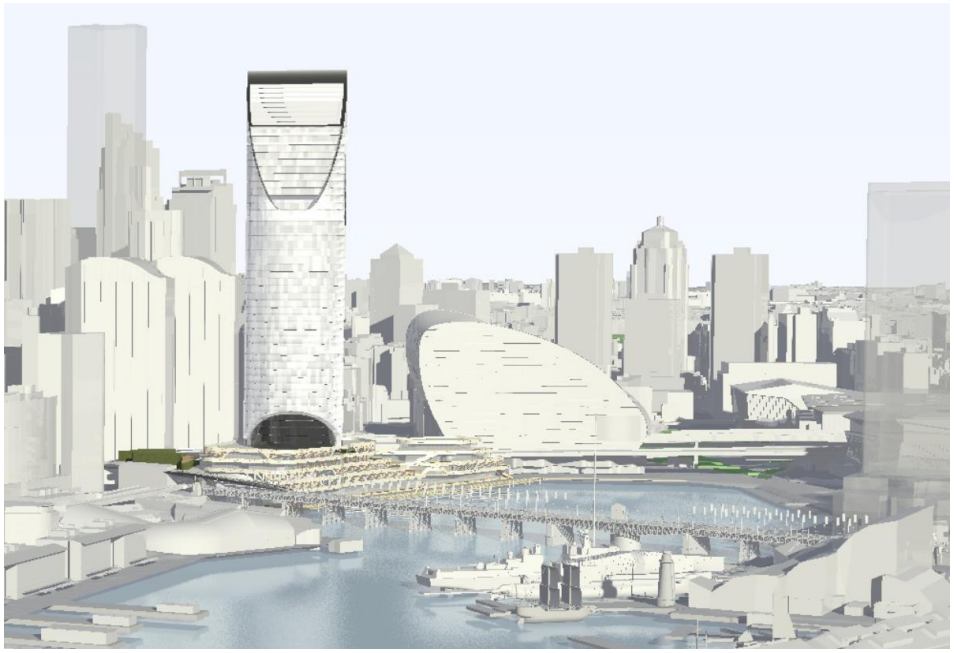


Figure 21 – Future built form – Circular tower form
Source: FJMT

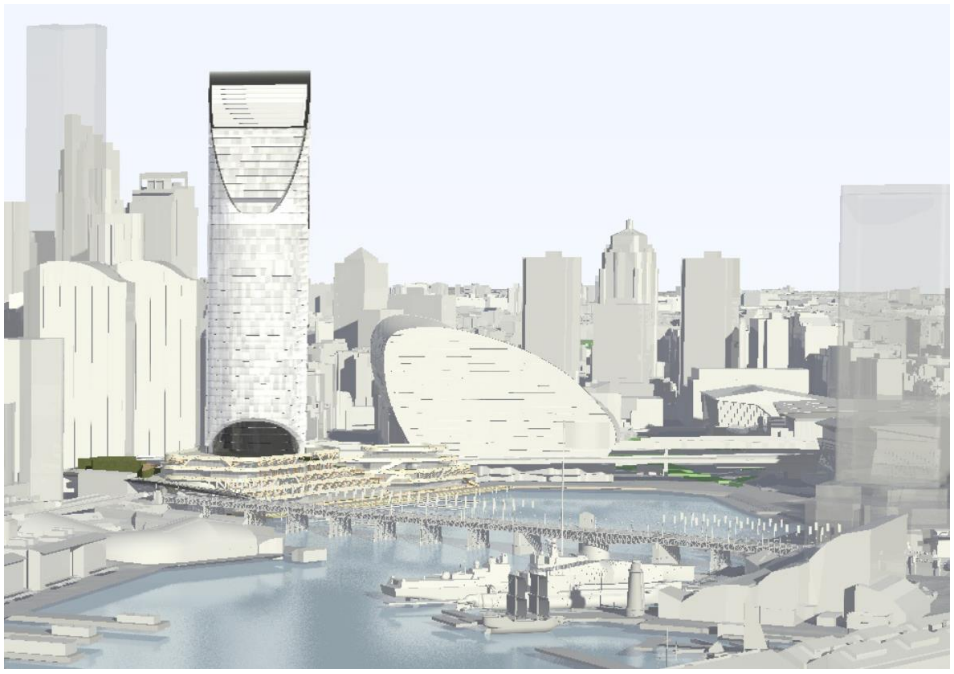


Figure 22 – Future built form – Elliptical tower form
Source: FJMT

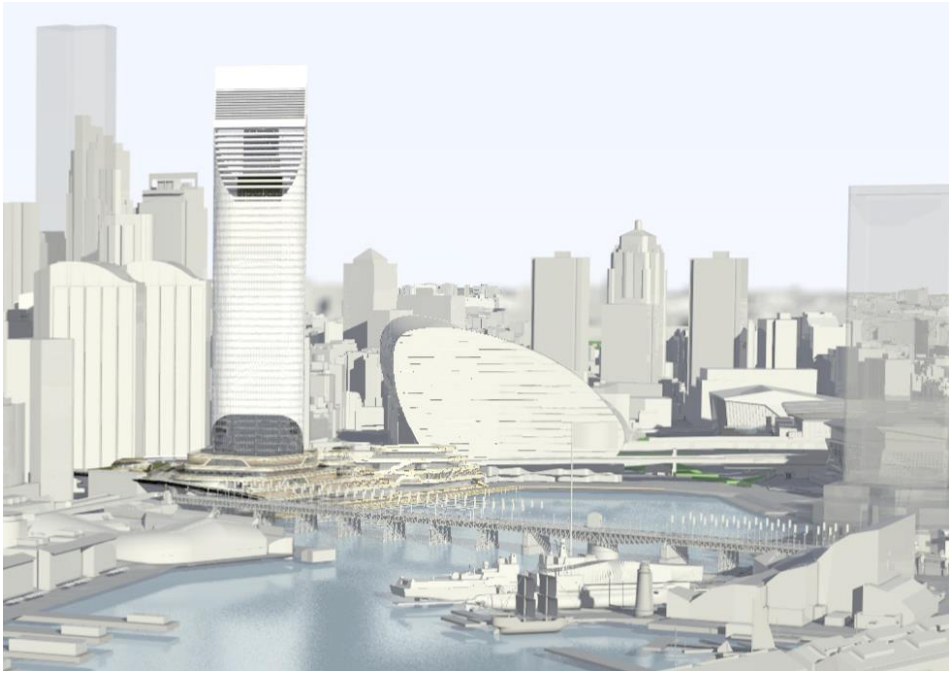


Figure 23 – Future built form – Square tower form
Source: FJMT

3.1 Design Principles

The proposed building envelope is underpinned by a number of core design principles. These principles are outlined below.

1. **Improve connectivity between the City and Darling Harbour:** the development should address the existing separation of Darling Harbour from the CBD by the Western Distributor and improve access for all users, as well the permeability and legibility of the western CBD via the Druitt Street and Market Street connections.
2. **Increase access to open space:** the development should provide an enlarged and improved open space which can be dedicated within a Stage 2 application to a range of uses, including green spaces, footpaths, activity areas, and alfresco dining.
3. **Renew existing buildings:** the development should provide retail, restaurant and recreation buildings to replace those proposed to be demolished within the existing Cockle Bay Wharf building. The replacement retail, restaurant and recreation areas should be in keeping with the recently revitalised Darling Harbour precinct and fit for the future users of the Darling Harbour waterfront.
4. **Support the Central Sydney Economy:** the development should support the Sydney CBD's role as a key economic driver by facilitating a significant commercial building.
5. **Enhance the Waterfront:** the development should exhibit Design Excellence and not detract from the important role of the Site within the context of the Darling Harbour waterfront.

3.2 Design Guidelines

The above principles have informed a number of proposed built-form controls which can be used in conjunction with the proposed building envelope to facilitate the future development at the Site. The Design Guidelines, which are provided in full within the Architectural plans and Design Report prepared by FJMT Architects (refer to **Appendix B**), can be summarised as follows:

- Built-form to remain within the existing building footprint at ground level;

- An accessible deck level will provide open space and visual connections between Market Street and Darling Harbour. The pedestrian pathway should cascade down to Cockle Bay waterfront, creating a through-site-link between the CBD and the Harbour. Any future structures not specifically identified within the architectural plans will have a maximum height of 6m above the deck level to preserve a human scale for future development within the deck area.
- Built-form above the deck level will be focussed to the north of the Site in order to minimise overshadowing of publicly accessible open space to the south.
- A single slender tower form should be developed within a maximum of 60% of the proposed envelope, and a maximum building depth of 65m, to minimise visual/view impacts to the CBD.
- The future tower should be set back from the existing lease boundary by a minimum of 3m and an average of 8m to visually separate the tower from the podium and deck levels.
- Between ground and deck level a podium articulation zone of 3m allows for a variable encroachment into the air space above the promenade. A maximum of 40% of the podium articulation zone on any one level is permitted to be utilised by a future development in order to provide articulation and ensure that a single wall of development does not front the foreshore.
- Development at the south of the Site will be limited to a single storey above the proposed deck level. A roof feature is permitted up a maximum height of RL 38m to reflect the height of the Exhibition Centre, which is currently under construction on the opposite side of Cockle Bay.

3.3 Numerical Overview

Table 3 below provides a summary of numerical information relating to the Concept Proposal. It should be noted that Gross Floor Area (GFA) has been calculated in accordance with the definitions provided in the Standard Instrument – Principal Local Environmental Plan.

Table 3 – Key development information

Component	Proposal
Site area	21,900m^2
GFA	
Commercial	Up to 85,000m^2
Retail	Up to 25,000m^2
Public Domain	Up to 12,000m^2
Maximum Height	
Tower	RL 235m (approx.. 40 sotreys)
Deck	RL 19m (allowing from 5.5m clearance from road surface)
Podium	RL 31m
Tower Setbacks	Average setback of at least 8m from lease boundary/foreshore promenade.
Car spaces	Up to 200

3.4 Building Envelope

The proposed development Concept Proposal, which established a building envelope and maximum areas for specific land uses. The envelope provides for a commercial tower to the north west of the Site, a lower scale commercial building to the south of the Site, and for a deck area. The proposed building and deck envelope, which is explained below, has been determined based upon the design principles outlined above in Section 3.1.

3.4.1 Maximum Deck and Building Envelope Area

The maximum deck envelope area is set by the Market Street / Pyrmont Bridge alignment to the north, and (south of Pyrmont Bridge) by the existing foreshore promenade to the west. The southern and eastern extent of the envelope is set by the Site's interface with the existing Darling Park development.

Following a separate Stage 2 application, development in accordance with this application may occur, subject to design and feasibility studies, up to the extent of the deck envelope. The full envelope is not expected to be required by the GFA proposed by a future development.

The maximum area of the proposed building envelope at the north west of the Site, which can accommodate a tower form, is illustrated below as **Figure 24** and is constrained by:

- Market Street View Corridors (note 1a and 1b);
- a feasible cantilever extent over the Western Distributor (note 2);
- setbacks from Cockle Bay (note 3);
- residential views to Cockle Bay (note 4); and
- commercial views to Cockle Bay (note 5).

In order to allow for an appropriate level of flexibility to ensure that design excellence is achieved by the building, which will be considered within the Stage 2 Application, the proposed tower envelope is able to accommodate a range of building shapes and hence is set significantly larger than a future Stage 2 building design. The setback and envelope controls proposed within the proposed tower envelope are explained further in Section 3.4.3. below. The Concept Proposal also included GFA limits to ensure that the full building envelope is not built out.

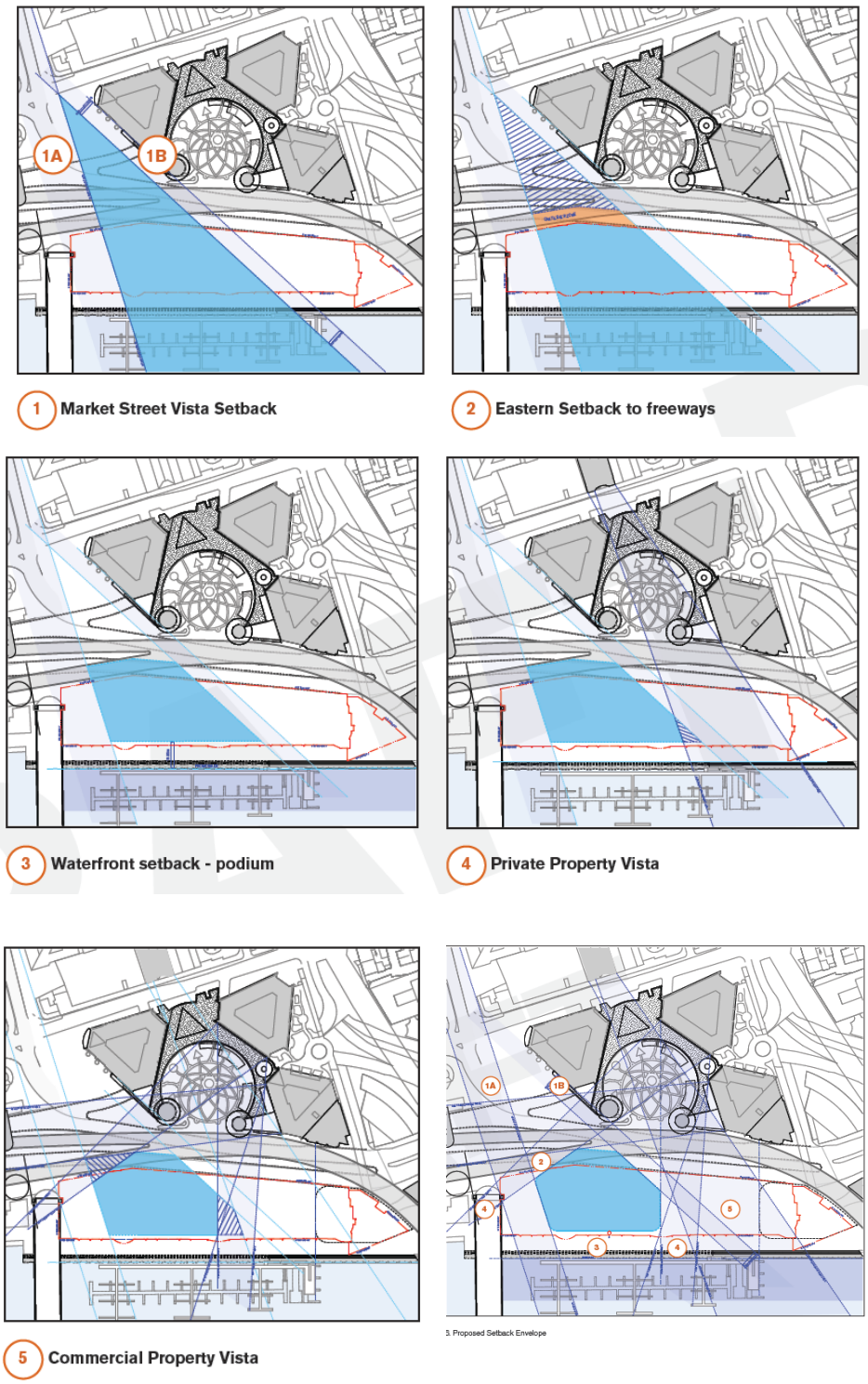


Figure 24 – Tower Envelope

3.4.2 Maximum Building Envelope Height

Up to 12,000m^2 of publicly accessible open space can be provided by the Concept Proposal. A comparison is provided below (**Figure 25** and **Figure 26**), which demonstrates that the open space area facilitated by the Concept Proposal will be comparable in area to Tumbalong Park and Federation Square in Melbourne.

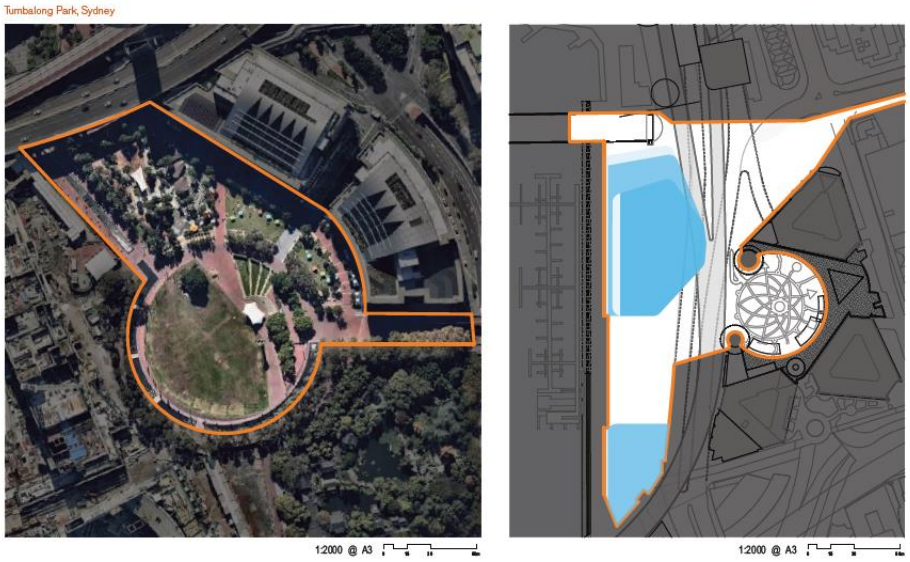


Figure 25 – Comparison of Site area to Tumbalong Park
Source: FJMT

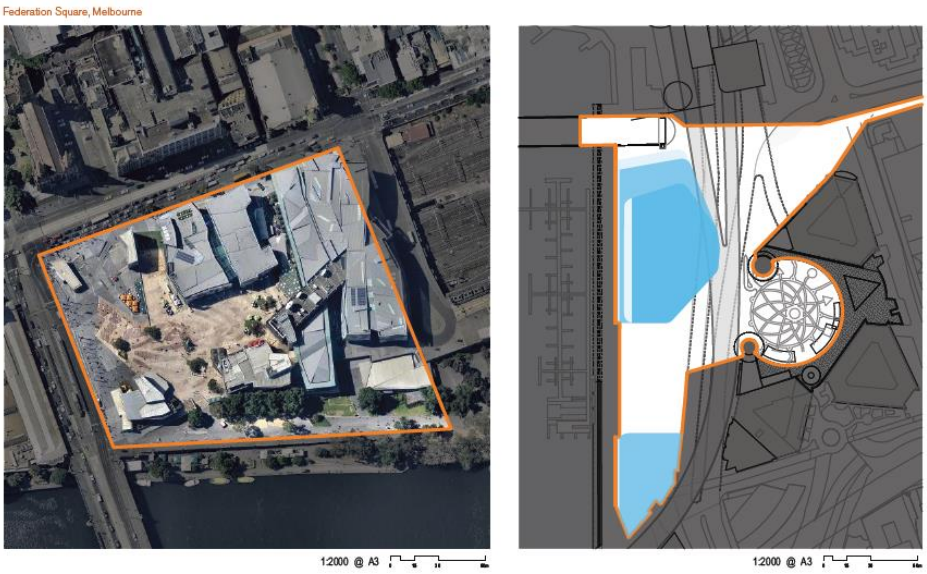


Figure 26 – Comparison of Site area to Federation Square (Melbourne)
Source: FJMT

Figure 27, below, demonstrates that the maximum height of the proposed deck envelope is determined by need to maintain an operational clearance height above the Western Distributor Freeway. A clearance height of 5.5m is required by NSW Roads and Maritime (RMS) from the existing deck of the freeway to the underside of the proposed deck envelope. The proposed deck envelope allows for this required clearance level to be maintained and also allows for an appropriate structural and landscape response to be provided.

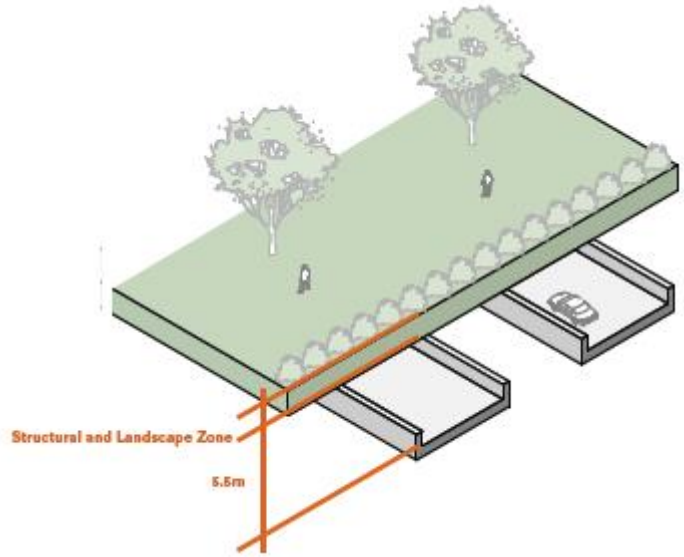


Figure 27 – Required height of the proposed deck envelope

One of the objectives of the Concept Proposal is to maintain an accessible pathway through the Site from the existing ground levels on Market Street, on Cockle Bay Waterfront and on to Pyrmont Bridge. To achieve an accessible pathway no maximum height is proposed by the Concept Proposal for the deck area as the height of this area will be informed by the structural solutions developed for the deck area.

The maximum height of the proposed tower form is set by the interface of the Site area with key solar access planes, including:

- the plane that protects solar access to Tumbalong Park (refer to **Figure 28**); and
- the plane proposed within the Draft Central Sydney Planning Strategy that will protect solar access to the future Town Hall Square (refer to **Figure 29**).

Note that the images below demonstrate how the envelopes included within the Concept Proposal have been shaped by the solar access planes. Areas of the envelopes shown in **Figure 28** and **Figure 29** that exceed the solar access plane have been removed from the proposed development envelopes.

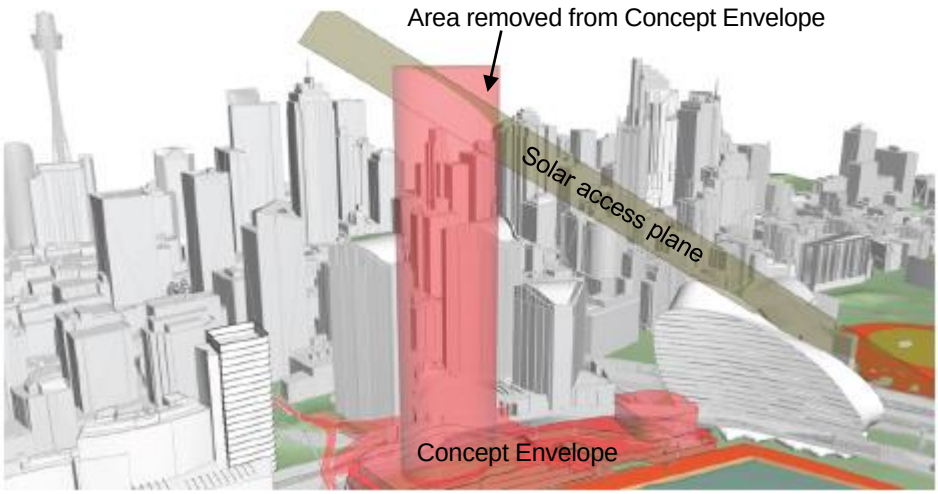


Figure 28 – Solar Access to Tumbalong Park

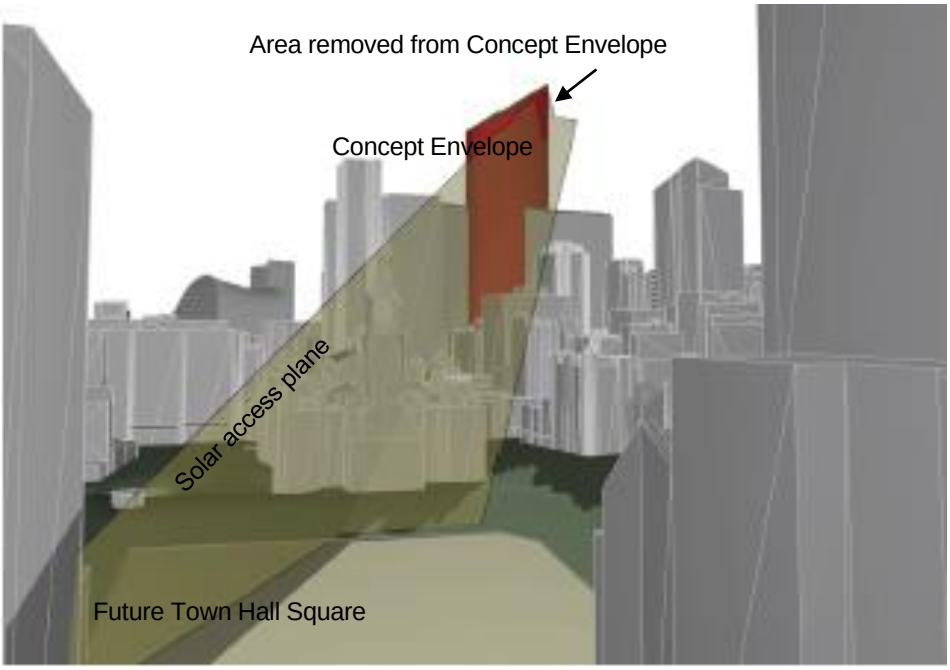


Figure 29 – Solar Access to Town Hall Square

Potential solar access and overshadowing impacts of the proposed building envelope have been assessed by FJMT in their design report (refer **Appendix B**) and a summary of this assessment is provided in Section 5.8. The Stage 2 Development Application will provide a detailed assessment of solar access and overshadowing, which will be reduced from the Stage 1 assessment due to articulation from a maximum Stage 1 envelope to a nuanced, designed Stage 2 building.

3.4.3 Envelope Setbacks, Interface and Articulation Zones

To guide future Stage 2 development within the proposed envelope, a number of development controls are proposed. These include:

- A maximum of 60% of the tower envelope may be delivered for a commercial building, subject to a future Stage 2 Development Application. A range of building forms would be possible within 60% of the proposed envelope, as illustrated in **Figure 30**.
- The future tower will have a maximum depth of 65m.
- The proposed tower building envelope includes a minimum setback from the existing lease line of 3m.
- Any future building within the proposed tower building envelope must provide an average setback of 8m from the existing lease line. The average setback control allows for a number of tower forms to be developed within the proposed envelope.
- A podium articulation zone of 3m extends west of the existing lease line from level 1 to level 3. No podium articulation zone is provided at ground level to ensure that the width of pedestrian promenade is improved relative to the existing conditions. A building may extend into up to 40% this articulation zone. Any future building within this articulation zone will be subject to a variation to the current lease between the proponent and the NSW Government.
- An architectural roof form is permitted above the proposed commercial building envelope area at the south of the Site.

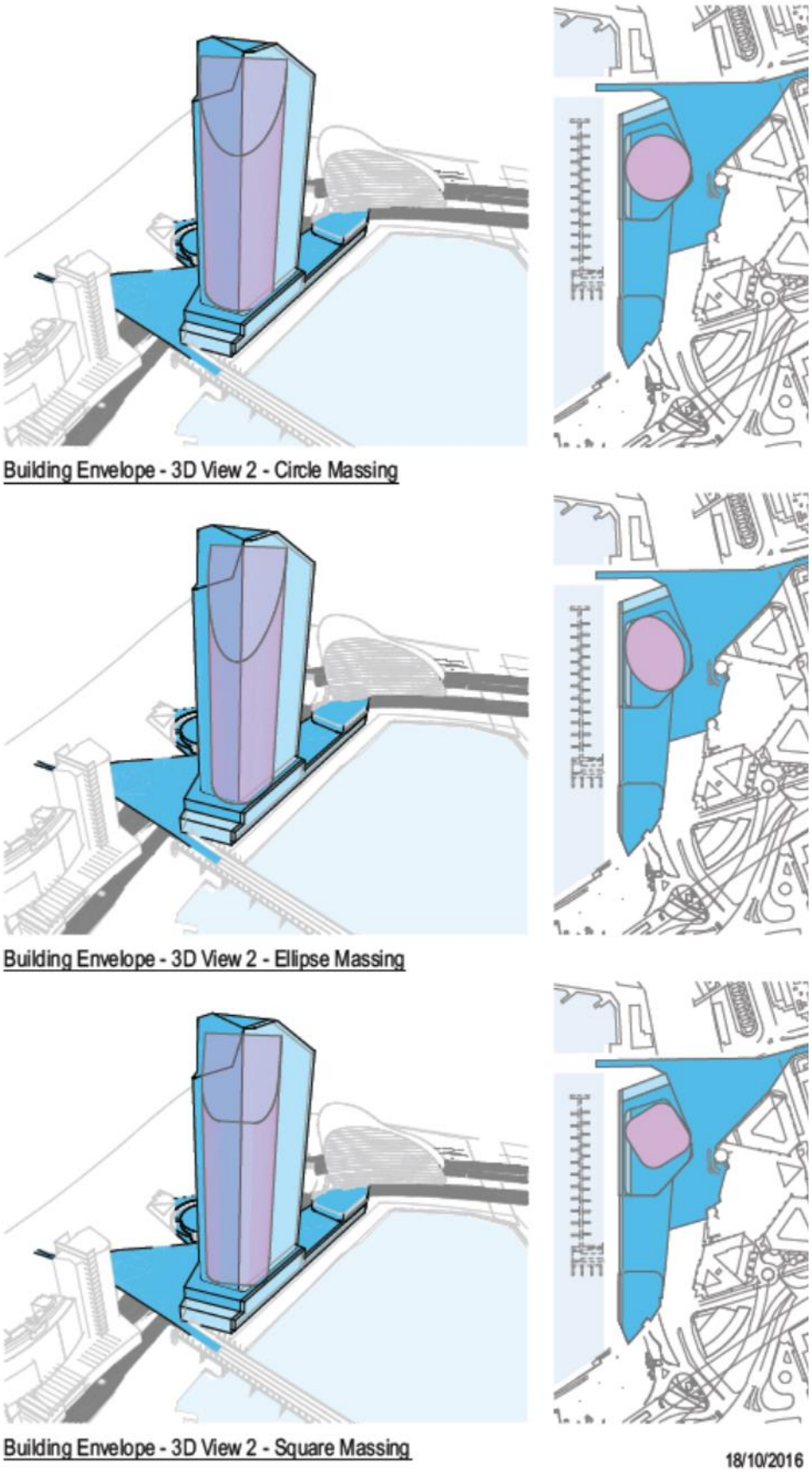


Figure 30 – Possible built form outcomes (purple shape represents future building outcomes within the blue envelope)
Source: FJMT

3.5 Land Use

The Concept Proposal will establish land uses within the development site. The land uses established within the DA will help the precinct achieve the vision as set out in the Precinct Vision Statement provided as **Appendix C.**

The proposed building envelope will facilitate a future development for the following land uses:

- Commercial Office;
- Retail, including food and beverage outlets; and
- Open Space.

The proponent is in early negotiations with a single anchor tenant. The outcome of this negotiation will not affect the mix of land uses proposed within the Concept Proposal. The proposed locations, and range of land use quantities, for each of the proposed land uses are outlined below.

3.5.1 Commercial

Up to 85,000m^2 of commercial floor space is achievable within the volume of the proposed building envelope. The majority of this will be located within the proposed tower form at the north west of the Site. Within the Stage 2 Development Application, consideration will be given to a number of ancillary land uses, which may include:

- Child Care Facilities;
- Shared Office Space for start-up companies; and
- Community facilities.

The envisaged commercial floor area accommodated within the proposed building envelope will accommodate a Premium Grade commercial building.

3.5.2 Retail

Up to 25,000m^2 of retail floor space is achievable within the proposed building envelope. The Concept Proposal will facilitate a future application, which will provide high-end food and beverage outlets along with destination retail.

The Site currently accommodates numerous restaurants, cafes and nightclubs, some or all of which may be accommodated within the future development of the Site. Specific tenancies, and their respective licencing requirements, will be examined, either as part of the Stage 2 Development Application, or as part of individual fit-out applications.

The intent of the development is to refresh and enhance the existing retail offering at the Site, improving the existing retail experience and attracting new people to the area and creating a precinct that is more in keeping with the renewed, diverse and modern, character of Darling Harbour.

3.5.3 Open Space

A substantial new area of open space will be facilitated by the proposed development. Up to 12,000m^2 of publicly accessible open space is aimed to be delivered subject to structural constraints and design requirements, including the connection to Pyrmont Bridge and the spatial requirements of the proposed areas of terracing. The detailed design of the future open space will be subject to the detailed designs within the Stage 2 Development Application, it is planned that this application will include areas to be used for community gatherings and activities, commercial leases, public art and local heritage interpretation.

3.6 Public Access Upgrades

The Concept Proposal includes significant upgrades to public access facilities throughout the Site. An assessment of the access improvements between the City and Cockle Bay has been prepared by Arup and is provided as **Appendix N**.

The Concept Proposal responds to perceived desire lines between the CBD and the Cockle Bay waterfront to drastically improve connectivity for pedestrians travelling to and from the southern Darling Harbour area. As shown below in **Figure 31**, pedestrians currently must take an esoteric and illegible route through the existing development in order to travel from north east to south west. By providing a direct and legible route though the Site, future development will enable desire lines to be serviced to meet the future demands of the upgraded Darling Harbour precinct. The detailed delivery of the new public access route will be the subject of a future detailed DA but approved in principle with the Stage 1.

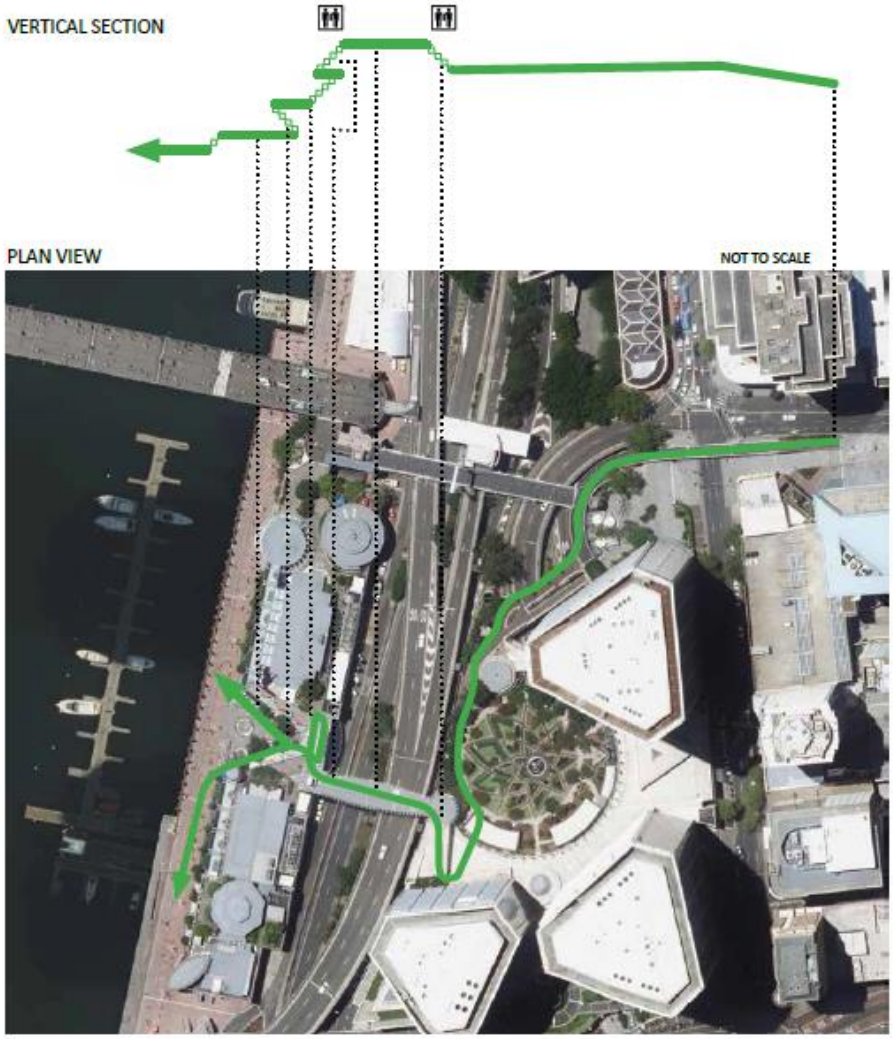


Figure 31 – Current pedestrian route through the Site
Source: Arup

The proposed building envelopes do not reduce the existing capacity of the Cockle Bay foreshore walk. The Concept Proposal would improve the operation of the Cockle Bay Wharf waterfront in two ways:

- Firstly, by providing the opportunity to expand the wooden foreshore promenade that currently extends around Cockle Bay from the south and terminates part way along the existing building. This improvement to the existing promenade could be delivered, either as part of the future Stage 2 Development Application for the building on the Site, or as part of a separate Development Application. An assessment of this option is provided in Section 5.27.
- Secondly, by providing a direct route of passageway between Darling Harbour and the City. This will reduce the current 'bottleneck' effect that can occur during capacity events, such as New Year's Eve. **Figure 32** below is extracted from **Appendix N** and demonstrates the current operation of the precinct at New Year's Eve. The Concept Proposal would ease this existing saturation by:
  - allowing easier access and egress from the Site; and
  - by expanding and improving the quantum and quality of publicly accessible open space in the precinct.

Figure 32 – Precinct operating at capacity on New Year's Eve
Source: Arup

3.7 Design Excellence

A key objective of the Concept Proposal is to facilitate a development that exhibits the high level of design excellence required for a site of this prominence. A staged Development Application process has been selected for the Site in order to ensure that the precinct meets this objective.

The design of the building envelopes proposed as Stage 1 (i.e. this application) has been informed by a number of key constraints, which are described in Section 3.4. The overall site layout, including the position of the proposed tower structure and location of the pedestrian links to the Cockle Bay waterfront and to Pyrmont Bridge have been set by these key design constraints. A number of options (including a range of heights and tower locations) were considered to enable the Site to be developed within these constraints, as described in Section 1.4 and within the Design Report at **Appendix B**.

The building envelopes, for which consent is sought within the Concept Proposal, allow significant scope for future contemplation of design within the precinct to ensure that design excellence is delivered.

Within the future open space, flexibility is allowed for innovation and excellence to be exhibited in design, including in the provision of open space, connectivity, wayfinding, landscaping, open space, edges, facades, public art and articulation.

The proposed building development controls within the concept tower form allow for design excellence to be exhibited by the future development by protecting flexibility setbacks, and building articulation as well as facades and finishes.

The Concept Proposal has been developed in consultation with a number of stakeholders, as outlined in Section 4. As noted, the design of the development has been modified to respond to feedback received during this consultation.

The Concept Proposal establishes a generous building envelope for the future development, which allows for flexibility within the design of the Stage 2 development application. Allowing this level of flexibility protects the ability of those involved in ensuring that the Stage 2 DA achieves design excellence to shape the future development, and therefore deliver design excellence.

Further detail regarding the specific process through which design excellence will be achieved is provided in Section 5.6.

3.8 Parking and Vehicular Access

The Concept Proposal will facilitate car parking within the future podium levels. Car parking will be provided up to the level established within the City of Sydney LEP 2012, although this instrument does not technically apply to the Site. The parking rates in LEP 2012 are maximum rates and reflect the City Council's objective of reducing traffic and encouraging use of non-car based travel.

Using the car parking rates in the 2012 LEP it is estimated that up to 200 car parking spaces would be allowed. Parking design will be finalized in a Stage 2 DA, but would not exceed the maximum allowed under the provisions of LEP 2012. Appropriate disabled parking will be provided.

Vehicular access to the proposed development will be provided from Wheat Road. As part of the proposed development Wheat Road may be realigned within the site (subject to RMS and TfNSW consent) with the intent to provide:

- for two-way traffic to the northern boundary of the Site;
- one traffic lane in each direction;
- a turning circle at the northern end of the Site;
- set down/pick up for coaches and taxis on the western side of Wheat Road;
- a short section of short term parking for private car set down/pick-up;
- access to off street parking and loading areas on the eastern side of Wheat Road;
- reconfiguration of the connection of Wheat Road to Harbour Street with modifications to the existing traffic signals allow egress from Wheat Road onto Harbour Street.

All parking areas (driveways, ramps, circulating aisles and parking bays) will be designed to comply with requirements of AS2890.1-2004 and AS2890.6-2009.

Loading for the new development will be provided within a loading dock located on the reconfigured Wheat Road. The docks will be designed to accommodate rigid trucks and to comply with the requirements of AS2890.2- 2002 with all trucks entering and departing the docks in a forward direction.

3.9 Structural Engineering

A Structural Engineering Report has been prepared by Enstruct Group that describes the construction methodology for the proposed structure within the constraints of Darling Harbour and the Western Distributor (**Appendix Q**).

The main building podium would consist of a conventional cast concrete frame on slabs that are supported by large concrete piles. The tower would be constructed with conventional modern high rise construction methods. The overbridge would include concrete beams at close spacing that supports a slab and topping layer as shown at **Figure 34**. The beams would be supported at available locations within the Western Distributor ramps as shown at **Figure 33**.

It is noted that consultation with RMS is ongoing, the design of the proposed structural solution will be updated in light of this consultation to allow for ongoing maintenance and future expansion of the Western Distributor.

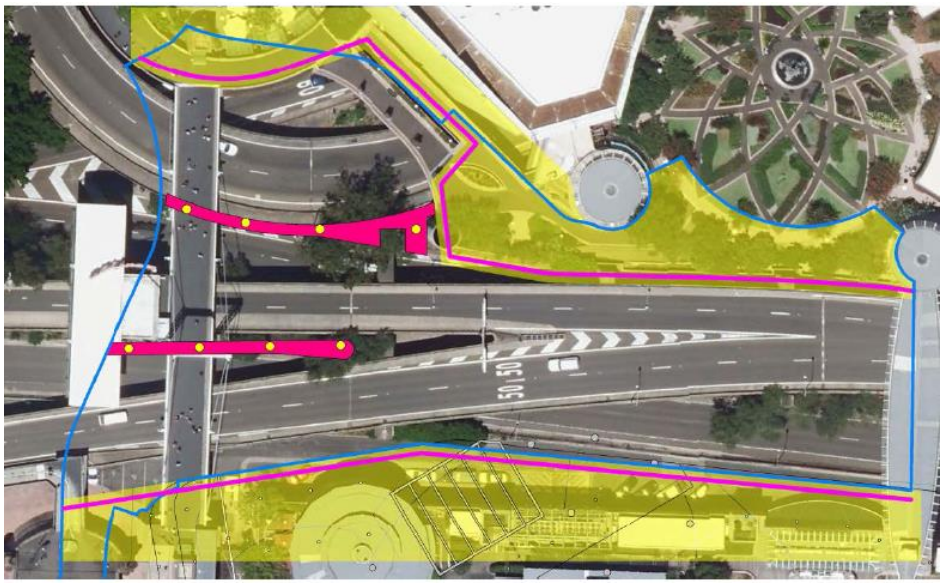
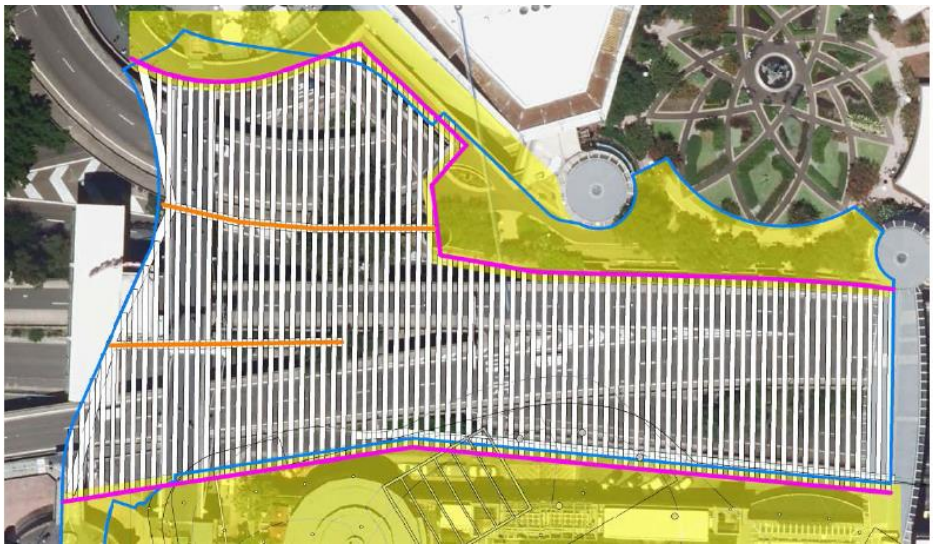


Figure 33 – Available support locations for overbridge
Source: Enstruct



Source: Figure 34 – Overbridge beam layout
Source: Enstruct

3.10 Development Staging

An Indicative Staging Strategy is included within the Outline Construction Management Plan, included as **Appendix S**. Although future development applications would be accompanied by a detailed staging plan, at this stage the intent of the development is to:

- Maintain pedestrian access from the CBD to the waterfront throughout the development;
- Arrange suitable traffic diversions for any required road closures; and
- Separate pedestrians from development sites with appropriate hoarding.

Development of the Site would be facilitated by future Stage 2 (detailed) development application(s). It is currently anticipated that proposed development works would be delivered within a number of concurrent construction phases. This will allow the envisaged overbridge and the envisaged tower to be delivered concurrently, thereby expediting delivery of the precinct and reducing the disruption caused by the construction process. This will be confirmed within the Stage 2 application.

The indicative construction management plan demonstrates that existing improvements on the Site would be demolished from south to north. Access from the CBD to Cockle Bay would be able to be maintained, either via the Market Street bridge, or via the Druitt Street bridge.

3.11 Contributions

The applicant is responsible for a lease of the Site from NSW Government Property (through Sydney Harbour Foreshore Authority). The proposed development will be undertaken in accordance with the applicant's lease, which includes a financial contribution.

In addition to the financial contribution paid to the NSW Government under the applicant's lease of the Site, significant upgrades to the open space both within, and surrounding, the Site will be facilitated by the proposed development.

Although details of the significant upgrades proposed will be finalised within the Stage 2 development application, indicatively the open space upgrades related to the proposed overbridge and improved pedestrian access will cost the applicant around $80 million. The upgrades will include a new urban park space, new public art, and ongoing maintenance of the new space. Details of the proposed upgrades will be provided in the future Stage 2 application(s).

As outlined above in Section 3.5 a number of potential land uses are possible on the Site, some of which would provide a community benefit. These potential community benefits could include space for childcare facilities, start-up offices, open space activations, public art or a number of other options. The details of future land uses proposed on the Site will be provided as part of the detailed design within the Stage 2 Development Application.

4.0 Consultation

A Pre-submission Stakeholder and Community Engagement Report (**Appendix T**) has been prepared by Newgate Engage. The report summarises the community and stakeholder engagement activities and outcomes undertaken in support of the Concept Proposal. This report outlines key issues raised during consultation, and how these have been addressed in the design or generally throughout the preparation of the Concept Proposal, or how the identified issues can be addressed within the Stage 2 DA.

4.1 Stakeholder Analysis

The community interest in the future of Cockle Bay is extensive due to the popularity of Darling Harbour as a year-round destination, particularly for tourists, families and local residents. **Table 4** below outlines the range of stakeholders that have been consulted with in preparation of the Concept Proposal.

Table 4 – Summary of stakeholder participants

Government	Industry	Local Community Groups
▪ NSW Roads and Maritime Services ▪ City of Sydney Council ▪ The Department of Planning and Environment ▪ Property NSW (formerly Sydney Harbour Foreshore Authority) ▪ The Office of the NSW Minister for Planning ▪ The Department of Premier and Cabinet ▪ Transport for NSW (TfNSW)	▪ Committee for Sydney ▪ Property Council of Australia ▪ Sydney Business Chamber ▪ Tourism and Transport Forum (TTF) ▪ Darling Park retail tenants ▪ Urban Taskforce	▪ Darling Harbour Alliance (run by Property NSW) ▪ Friends of Pyrmont ▪ Pyrmont Action ▪ Pyrmont Community Group ▪ Council of Ultimo/Pyrmont Associations. ▪ ResNet ▪ The CoS Combined Resident Action Groups ▪ Darling Harbour Live Community Liaison Group ▪ Property NSW Design Advisory Panel ▪ Local residents (via a newsletter)

4.2 Engagement Programs

Three key engagement platforms have been used across all stakeholder groups in the lead up to the lodgement of the Concept Proposal, specifically:

- printed material – including mail-outs of 1,200 project fact sheets to residents and businesses encouraging feedback to the project team.
- face-to-face communication – meetings, community focus groups, one on one interviews and community surveys.
- Technology – Project telephone number and project email

The Pre-submission Stakeholder and Community Engagement Report at **Appendix T** elaborates further on the above engagement activities.

4.3 Outcomes from Consultation

Early engagement has been undertaken to build an understanding of perceptions and aspirations for the existing Cockle Bay Wharf and to incorporate community feedback into the Concept design where possible. The objectives of the community engagement were:

- to build stakeholder and community awareness of, and capacity to participate in, the formal consultation process for Stage 1 and 2 of the DA, including submitting

feedback about community facilities and amenities, landscaping, public art and preferred retail premises and restaurants;

- to enable stakeholders and community members to learn about the DA and provide feedback;
- to provide a structured and understood framework for questions and comments;
- to facilitate an understanding of both the commercial and public benefit aspects of the project and the need to balance inputs and outcomes.

The key findings from the consultation are summarised in detail at the Pre-submission Community and Stakeholder Engagement Report at **Appendix T**. Importantly, the consultation program with stakeholders and community, including the SHFA Design Review Panel, has influenced the design development in the following ways:

- The commercial tower has been set back a six metres from the originally illustrated position, and as far as possible from the waterfront without encroaching on the Market Street view corridor and the Western Distributor;
- The height of the building was reviewed and a lower, wider building considered however assessments showed a lower, wider building to have greater impacts and reduced the amount of space available for the public domain;
- Community consultation clearly demonstrated overwhelming support for the greatest amount of space in the public domain and less concern about the tower's height, when considered as a trade off. For these reasons the proposed height of the tower remains at 235 metres;
- The area for community space has increased, and the developable space reduced by about 20 per cent, including deletion of a previously considered southern tower, which is reflected in the Concept building envelope.

A detailed summary of all the responses and feedback across the various engagement platforms are presented in the Pre-Submissions Stakeholder and Community Engagement Report (**Appendix T**).

The request made to the secretary for SEARs made reference to a maximum or 110,000m^2 of Commercial GFA. Following consultation, this was reduced to a maximum of 85,000m^2 of Commercial GFA.

5.0 Environmental Assessment

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

Under Section 79C(1) of the EP&A Act, in determining a development application the consent authority has to take into account a range of matters relevant to the development including the provisions of environmental planning instruments; impacts of the built and natural environment, the social and economic impacts of the development; the suitability of the Site; and whether the public interest would be served by the development.

The assessment includes only those key matters under Section 79C(1) that are relevant to the proposal. The key planning issues associated with the proposed concept plan are listed in **Table 5** below.

Table 5 – Key Planning Issues

Planning Issues	Assessment	Technical Study
Secretary's Environmental Assessment Requirements	Section 5.1	**Appendix A**
Environmental Planning and Assessment Act 1979	Section 5.2	N/A
Compliance with Planning Policies	Section 5.3	N/A
Compliance with Planning Instruments	Section 5.5	N/A
Design Excellence	Section 5.6	N/A
Built Form	Section 5.7	**Appendix B**
Visual and View Analysis	Section 5.9	**Appendix I**
Reflectivity	Section 5.14	**Appendix U**
Public Domain and Landscaping	Section 5.10	**Appendix B**
Overshadowing	Section 5.8	**Appendix B**
Wind Impact	Section 5.15	**Appendix K**
Traffic and Transport	Section 5.12	**Appendix E**
Access and Accessibility	Section 5.16	**Appendix M** **Appendix N**
Non-Indigenous Heritage	Section 5.17	**Appendix G**
Aboriginal Heritage	Section 5.17	**Appendix H**
Archaeology	Section 5.17	**Appendix F**
Noise and Vibration	Section 5.13	**Appendix W**
Infrastructure and Utilities	Section 5.22	**Appendix R**
Geotechnical Issues	Section 5.18	**Appendix O**
Contamination	Section 5.19	**Appendix P**
Construction Management	Section 5.23	**Appendix S**
Crime Prevention through Environmental Design	Section 5.26	N/A
Environmental Sustainable Development	Section 5.11	**Appendix L**
Development Contributions	Section 3.11	N/A
Ecologically Sustainable Development	Section 8.0	N/A
Social and Economic	Section 8.0	N/A
Public Interest	Section 8.0	N/A

5.1 Secretary's Environmental Assessment Requirements

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

The proposal is not considered to significantly impact on any matters of National Environmental Significance as defined under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As such, no separate approval under the EPBC Act is considered necessary.

5.2 State Significant Development

5.2.1 State Significant Development

The EP&A Act establishes a specific assessment system to consider projects classed as State Significant Development (SSD). As noted, the Concept Proposal the subject of this DA is classed as SSD.

Section 83B of the EP&A Act relates to staged development applications. A staged development application is one that sets out concept proposals for the development of a site, and for which detailed proposals for separate parts of the Site are to be the subject of subsequent development applications. The application may set out detailed proposals for the first stage of development.

This development application is a Staged SSD Development Application (DA), comprising a Concept Proposal for the entire site. A staged development application is commonly referred to as a 'Stage 1 Development Application' or a 'Concept Proposal'. These terms are used interchangeably throughout the consultant reports, but should be interpreted to mean 'staged development application' (for the purposes of section 83B of the EP&A Act) in each instance.

Section 83D of the EP&A Act provides that while any consent granted on the determination of a staged development application for a site remains in force, the determination of any further development application in respect of that site cannot be inconsistent with that consent.

This EIS has examined and considered, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the proposed development. **Table 6** provides an assessment of the Concept Proposal against the objects of the *Environmental Planning and Assessment Act, 1979*.

Table 6 – Objects of the EP& A Act 1979

Object	Comment
5(a)(i) To encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment.	The Concept Proposal will contribute to the proper management, development and conservation of the natural and artificial resources of the Site. In particular, measures outlined in the ESD report prepared by Arup and included as **Appendix L** will be implemented to ensure the conservation of natural resources throughout the construction and operational phases, and existing resources and infrastructure will be retained and re-used where practicable. The Concept Proposal will promote the social and economic welfare of the community by providing an improved urban environment for retail and commercial use, and will greatly enhance a key CBD location that is presently underutilised. The Concept Proposal will contribute to a better environment through the implementation of sustainability measures, and the provision of extensive public domain works.
5(a)(ii) To encourage the promotion and co-ordination of the orderly economic use and development of land.	The proposed Stage 1 SSD DA involves the orderly redevelopment of the Site. The Proposal will promote

Object	Comment
	economic growth and make greater use of an underutilised site in a prime CBD location.
5(a)(iii) To encourage the protection, provision and co-ordination of communication and utility services.	The Concept Proposal would not impact on the provision or coordination of communication and/or utility services. Relevant utility providers have been consulted during the development of the proposal.
5(a)(iv) To encourage the provision of land for public purposes.	The Concept Proposal supports the provision of a substantial quantum of public domain works, to the benefit of existing and future workers, the general public, surrounding residents and the wider community.
5(a)(v) To encourage the provision and co-ordination of community services and facilities.	The Concept Proposal nominates the upgrade of the public domain which will enhance community facilities and services. These uses will be formalised in the future Stage 2 DA(s).
5(a)(vi) To encourage the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.	The proposal would be undertaken in a highly modified and disturbed urban environment, and would not impact on biodiversity values. The Site is not considered to have habitat suitable for any threatened flora and fauna. Stormwater and construction impacts to the Harbour can be suitably managed by conditions of consent comparable to other recent approvals in the precinct.
5(a)(vii) To encourage ecologically sustainable development.	The Concept Proposal accords with the principles of Ecologically Sustainable Development, as set out in Schedule 2 of the EP&A Regulation 2000. This is further considered in Section 5.11 of this EIS.
5(a)(viii) To encourage the provision and maintenance of affordable housing.	The Concept Proposal does not propose any form of housing as part of the concept plan. The site as part of a tourist, entertainment and retail precinct in the Sydney CBD is more suited to commercial and retail uses.
5(b) To promote the sharing of the responsibility for environmental planning between different levels of government in the State.	Extensive consultation has been undertaken with various levels of government and government agencies during the preparation of this proposal, and all government agencies will be afforded the opportunity for further input into the development process during the public exhibition process.
5(c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.	The community consultation carried out assisted the development of the proposal and is detailed in **Appendix T** and Section 4 of this EIS. Further consultation will be carried out during design development, prior to the commencement of construction, and throughout the construction period.

5.3 Compliance with Planning Policies

The proposed Concept Proposal is generally consistent with the provisions of the relevant planning policies identified in the SEARs, as detailed in the following sections and other supporting technical information appended to the report.

The proposal's consistency with the relevant strategies, policies and guidelines as set out in the SEARs is addressed in **Table 1**, in Section 1.5. **Table 7** below provides an overview of the Concept Proposal's compliance with key planning policies.

Table 7 – Consistency with relevant strategies, policies and guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW Long Term Transport	The proposal addresses the objectives of this Plan given it will:

Instrument/Strategy	Comments
Masterplan	▪ Boost walking and cycling usage by providing a more permeable, connective and direct linkage between Darling Harbour and the CBD; ▪ Through such interface improvements, improve sustainability and promote growth in the proportion of travel by active modes; ▪ Provide a sustainable Premium Grade commercial office building in a highly accessible location; and ▪ Assist in unclogging the CBD by supporting a reduced reliance on vehicular connections between surrounding employment and tourism hubs.
Sustainable Sydney 2030	The proposal is in accordance with the Strategy in that it will: ▪ Help to reinforce the Sydney CBD as the heart of 'Global Sydney' – new and high-class commercial floor space additions will contribute to the improvement of the CBD's economic competitiveness against other interstate and international centres; ▪ Strengthen Sydney's status as a global visitor destination by improving the connectivity and public domain between major CBD transport nodes and activity hubs, and the tourism and cultural infrastructure around Darling Harbour (particularly to the future Sydney International Convention, Exhibition & Entertainment Precinct); ▪ Enhance the attractiveness and viability of inner-city walking and cycling as a means of transport; and ▪ Support new development through the provision of high quality, green open space.
Sydney Development Control Plan 2012	Part 2, clause 11 of the *State Environmental Planning Policy (State and Regional Development)* confirms that development control plans do not apply to State Significant Development Applications. The Sydney DCP therefore does not apply to the proposed development.
Sydney Streets Design Code and Sydney Streets Technical Specification	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the technical requirements of this guideline.
SICEEP Urban Design and Public Realm Guidelines (published by Infrastructure NSW)	The Concept Proposal will increase the open space by up to 12,000m^2. The newly created open space will be designed to respond to the recent developments within Darling Harbour that have been guided by the SICEEP Urban Design And Public Realm Guidelines. An indicative Landscape Plan has been provided by FJMT within the Design Report at **Appendix B.** Detailed plans will be provided within the State 2 DA. This guideline is a non-statutory document.
SHFA's Darling Harbour Public Domain Manual 2015	The Concept Proposal will facilitate a future development that will increase the open space by up to 12,000m^2. Newly created open space will be treated as Public Domain and the future design of the open space will give consideration to SHFA's *Darling Harbour Public Domain Guidelines*. An indicative Landscape Plan has been provided by FJMT within the Design Report at **Appendix B.** Detailed plans will be provided within the Stage 2 DA.
Development Near Rail Corridors and Busy Roads - Interim Guideline	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
Guide to Traffic Generating Developments	Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007* established development that should be referred to the RMS as a Traffic Generating Development. As the development facilitated by the proposed building envelope will deliver a commercial building with a floor area of more than 15,000m^2 it will be a development to which this policy applies and will therefore be referred to the RMS.
Sydney City Centre Access Strategy	With walking the predominant mode of transport throughout the city centre, the proposal is consistent with the Strategy in that it will improve the safety, amenity and capacity for CBD based pedestrian journeys. Enhancing the access between Darling Harbour and Market and Druitt Streets, the proposal will also better connect tourists and workers to

Instrument/Strategy	Comments
	Town Hall Station, future light rail stops along George Street, and a future metro station on Pitt Street. This will contribute to the growth of public transport patronage and the modal split of travel away from private car usage. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
The NSW Government Planning Guidelines for Walking and Cycling;	The proposal will improve walkability and cycle access across the City, offer a more legible and coherent connection between the CBD and Darling Harbour, and support a reduced reliance on private vehicles. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
Sydney's Light Rail Future	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
Sydney's Cycling Future	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
Sydney's Walking Future	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
NSW Bicycle Guidelines	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
City of Sydney Waste Minimisation in New Developments 2005	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. An outline Construction Management Plan has been prepared by Brookfield and is provided as **Appendix S**. That document provides an overview of the waste minimisation practices that will be put in place during the construction process. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.
Interim Construction Noise Guideline	The proposal has been assessed with consideration of the Interim Construction Noise Guideline at **Appendix W** and Section 5.13 of this report.
CPTED	CPTED principles are addressed in Section 5.26 of this report. The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. Further assessment of the future development against CPTED principles will be undertaken within the Stage 2 DA.
Heritage Council Guidelines Assessing the Significance of Archaeological Sites and Relics	The Heritage Council Guidelines are addressed in **Appendix G**, and Section 5.17 of this report.
Heritage Council Guideline on Heritage Curtilages, 1996	The Heritage Council Guidelines are addressed in **Appendix G**, and Section 5.17 of this report.
Heritage Council Guideline, Design in Context – guidelines for infill development in the Historic Environment, 2005	The Heritage Council Guidelines are addressed in **Appendix G**, and Section 5.17 of this report.
Healthy Urban Development Checklist	The proposal responds to the Healthy Urban Development checklist to present an opportunity to revitalise and renew Cockle Bay Wharf to better connect the city and Harbour and encouraging pedestrian connectivity and physical activity. The proposed use is consistent with the locality and would result in increased open space and the ability for city workers visitors to enjoy Darling Harbour and the waterfront.
Waste Classification Guidelines	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. An outline Construction Management Plan has been prepared by Brookfield and is provided as **Appendix S**. That document provides an overview of the

Instrument/Strategy	Comments
	waste minimisation practices that will be put in place during the construction process. A future Stage 2 Development Application will ensure that future development on the Site meets the requirements of this guideline.

5.3.1 A Plan for Growing Sydney

A Plan for Growing Sydney is the key Strategic Planning document for Metropolitan Sydney. The Plan sets the foundation for achieving region-wide outcomes in relation to the economy and employment centres and corridors; housing and transport; environment; parks and implementation and governance. The goals which support the overarching vision for Sydney to become a strong Global city and a great place to live are:

- *A competitive economy with world-class services and transport;*
- *A city of housing choice with homes that meet our needs and lifestyles;*
- *A great place to live with communities that are strong, healthy and well connected; and*
- *A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.*

A Plan for Growing Sydney outlines that action is needed to make available sufficient office space capacity in the Sydney CBD in 10 to 14 years. The CBD will need to expand its capacity by redeveloping existing buildings and growing upwards.

The plan notes that Sydney's appeal to international investment and skilled workers is driven by the diversity of activities which surround the commercial core. Providing a mix or commercial and retail activity, arts and culture, public spaces and parks contribute to Sydney's Global city reputation.

The Site is part of Sydney's Cultural Ribbon as shown on **Figure 35**. The cultural ribbon provides buildings and parks such as the War Memorial, Royal Botanic Gardens, Sydney Opera House on the eastern side of the city and connects to the emerging post-industrial cultural facilities on the western side of the city. The ribbon also includes the Walsh Bay Arts Precinct, Barangaroo and Darling Harbour.

All of these venues are important to Sydney's tourism and entertainment economy contributing to the CBD being Australia's pre-eminent tourist destination.

The inter-relationship of these vibrant cultural facilities along a renewed urban foreshore will generate great social, economic and community benefits and will add to Sydney's reputation as a Global city.

The Concept Proposal is consistent with the Plan for Growing Sydney in that it aims to:

- Contribute to the strengthening of 'Global Sydney' as a centre for economic, and cultural activity;
- Provide a mix of commercial and retail uses to contribute to Sydney's Global city reputation;
- Increases connectivity and activation with the Cultural Ribbon;
- Provide employment opportunities during the construction and operation period of the proposed development;
- Supporting existing and new public transport infrastructure, as well as providing employment within close proximity to existing services and facilities;
- Contributes to the Darling Harbour Live Entertainment Precinct and The Cultural Ribbon; and

- Revitalises and improves the amenity of Cockle Bay, attracting development and business and creating a vibrant centre where people want to spend time.

Figure 35 – The Cultural Ribbon, the Site marked with a star
Source: A Plan for Growing Sydney

5.4 Draft Central Sydney Planning Strategy 2016

The draft Central Sydney Planning Strategy 2016 (the Strategy) was released on 14 July 2016. The Strategy promotes growth in Central Sydney over the next 20 years and seeks to position and strengthen Sydney as Australia's leading global city.

The Strategy largely applies to land identified within the Sydney LEP 2012 as being within Central Sydney. While the subject site is outside this area, the Concept Proposal is largely consistent with the Strategy in that:

- it will promote employment growth and capacity in the CBD with the delivery of up to 85,000m^2 of employment floor space;
- the design positively responds to the context of the Site;
- it will improve pedestrian connectivity between the CBD and Darling Harbour;
- it will create open space that will complement the new Town Hall Square and expand on the network of public spaces in central Sydney;
- it will enable greater appreciation of heritage listed Pyrmont Bridge;
- it will renew and revitalise the Cockle Bay Wharf precinct;
- it will not materially impact solar access and overall amenity of Town Hall Square and Tumbalong Park.

5.5 Compliance with Environmental Planning Instruments

The relevant strategies, environmental planning instruments, policies and guidelines as set out in the SEARs are addressed in **Table 8**.

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

Instrument/Strategy	Comments
Strategic Plans	
SEPP (State & Regional Development)	Pursuant to the SEPP a project within the Darling Harbour Development Area will be SSD if it has a capital investment value (CIV) of $10 million or more. The proposed development has a CIV of over $10 million, and is therefore identified as SSD and considered to be development of State and/or Regional Significance. This EIS has accordingly been prepared in support of the DA.
SEPP (Infrastructure)	The proposed development triggers consultation with NSW Roads and Maritime Services (RMS) under the provisions of Schedule 3 of the SEPP as the proposed Concept Proposal will generate, over 15,000m^2 of commercial floorspace. Future Stage 2 DAs may also require referral to relevant infrastructure providers and assessment against the Development Near Busy Roads Guideline.
SEPP 55 (Remediation of Land)	Clause 7 of SEPP 55 specifies that a consent authority must not consent to the carrying out of any development on land unless it has considered whether land is contaminated and if the land is contaminated, it is satisfied that the land is/can be suitable for the proposed development. A Preliminary Site Contamination Assessment has been prepared for the Site by Coffey and is included at **Appendix P**. The Plan has been summarised in Section 5.19 of this EIS. In summary, as future development of the Site will involve little or no excavation, the Preliminary Site Investigation considers that the Site can be made suitable for the continued commercial and retail uses.
Draft SEPP (Competition)	The proposed Concept Proposal is consistent with the aims of the Draft SEPP (Competition) in that it will promote economic growth and competition within NSW.
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	The Harbour REP applies to the Site. The Site is not zoned under the Harbour REP, however is located within the City Foreshores Area Strategic Foreshore Site and is also within the Foreshores and Waterways area. Compliance is further discussed in Section 5.5.1 below. If Land-Water Interface Works are proposed under a Stage 2 DA, that application will require referral to the Foreshore Committee in accordance with Schedule 2 of the SREP.
Darling Harbour Development Plan No 1	The Concept Proposal is consistent with the provisions of the Darling Harbour Development Plan No.1 (DHDP). Compliance with the DHDP is discussed in further detail in Section 5.5.2 below.

5.5.1 Sydney Harbour Catchment REP

The Site is identified within the following areas under the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* (SREP):

- the Sydney Harbour Catchment Area;
- the Foreshores & Waterways Area Boundary; and
- the City Strategic Foreshores Area.

Part 3, Division 2 within the SREP refers to matters which are to be taken into consideration by consent authorities before granting consent for development.

Table 9 illustrates the proposal's consistency with the relevant provisions and matters for consideration set out in clauses 20 to 27 of the SREP.

Table 9 – Consistency with the relevant provisions of the SREP

Relevant matters for consideration	Comment
Biodiversity, ecology and environment protection	The proposed development is a Stage 1 Development Application, which seeks consent for a building envelope and certain land uses. A future Stage 2 Development Application will ensure specific measures are implemented to manage stormwater runoff and water quality. Increases in the quantity and quality of vegetation within the Site will be facilitated by the proposed development, resulting in a net improvement on the Site. Specific details will be assessed as part of the subsequent Stage 2 Development Applications.
Public access to, and use of, foreshores and waterways	The Concept Proposal will facilitate significant upgrades and improvements to the access and usability of the foreshore. This improvement is outlined in **Appendix N** and in Section 5.16 of the EIS.
Maintenance of a working harbour	The Concept Proposal does not relate to 'working waterfront' land, therefore no 'working harbour' uses will be lost because of the proposed development.
Interrelationship of waterway and foreshore uses	The Concept Proposal does not directly impact upon access to or uses within the waterway. If future northward expansion of the current foreshore broad walk is proposed the impacts of this expansion will be assessed within that future application.
Foreshore and waterways scenic quality	The proposal is consistent with the context of the city and its function as a centre for business, adjacent to the waterfront. The visual impact of the Concept Proposal is assessed within Section 5.9 and in **Appendix I**.
Maintenance, protection and enhancement of views	The visual impact of the Concept Proposal is assessed within Section 5.9 and in **Appendix I**.
Boat storage facilities	Boat storage facilities are not proposed as part of the proposed development.
Development in the vicinity of heritage items.	Heritage is addressed at Section 5.17 of this EIS and at **Appendices F**, **G** and **H**.

5.5.2 Darling Harbour Development Plan No.1

The Darling Harbour Development Plan No.1 (DHDP) is the principal planning instrument applicable to the Darling Harbour area, and more specifically the Cockle Bay Wharf site. It provides a broad framework for development, principally through identifying permissible uses.

The objectives of the DHDP are to encourage the development of a variety of tourist, educational, recreational, entertainment, cultural and commercial facilities, and to set out those uses which are deemed permissible. The Concept Proposal is consistent with these objectives.

The proposed development is a Concept Proposal that seeks approval for building envelopes, within which a mix of uses will be permissible. The proposed use is commensurate with its CBD fringe location and its relationship with the new world-class convention and exhibition centres within Darling Harbour.

The Concept Proposal will facilitate a future development application, which will enhance the tourist, recreational, entertainment, cultural and commercial character of Darling Harbour and provide a new world-class retail and commercial building.

The proposal's mix of leisure, business and tourism uses has been developed to ensure a development that supports and is complementary to existing precinct activity seven days a week therefore helps to the create of an activated precinct.

Future development within the Site (as facilitated by the Concept Proposal) will provide an opportunity for more people to make use of the existing and proposed recreational, entertainment, cultural and commercial facilities in the area.

A summary of the permissibility of uses proposed as part of the Concept Proposal, illustrative design scheme, and other potential permissible uses under the DHDP is provided with **Table 10** below.

Table 10 – Consistency with Darling Harbour Development Plan No. 1

Component	Darling Harbour Development Plan No. 1	Permissible?
Demolition	Clause 8 of DHDP - the renovation or demolition of a building or work may not be carried out except with a permit being obtained as a permissible use.	Yes
Commercial Building	Clause 6 (d) of DHDP - Schedule 1 includes 'commercial premises' as a permissible use.	Yes
Public domain improvements	Clause 6 (a) of DHDP includes development for the purposes of recreational facilities as a permissible use Clause 6 (c) of DHDP includes development for the purposes of beautifying the landscape as a permissible use. Clause 6 (d) of DHDP – Schedule 1 includes 'parks and gardens' as a permissible use. Clause 6 (e) of DHDP includes development for any purpose incidental or subsidiary to permitted development as a permissible use.	Yes
Retail premises	Clause 6 (d) of DHDP – Schedule 1 includes, 'commercial premises (other than premises used for pawn broking or other forms of moneylending)', 'professional consulting rooms', 'recreation facilities', 'refreshment rooms', 'shops', and 'theatre restaurants' as permissible uses.	Yes
Car parking	Clause 6 (d) of DHDP – Schedule 1 includes 'car parking stations' as a permissible use. Clause 6 (e) of DHDP includes development for any purpose incidental or subsidiary to permitted development as a permissible use.	Yes
Signage e.g. wayfinding, building identification, event signage	Clause 6 (a) of DHDP includes development for the purposes of tourist, educational, recreational, entertainment, cultural facilities or commercial facilities as a permissible use. Clause 6 (c) of DHDP includes development for the purposes of beautifying the landscape as a permissible use. Clause 6 (e) of DHDP includes development for any purpose incidental or subsidiary to permitted development as a permissible use.	Yes
Extension/ Augmentation of infrastructure	Clause 6 (d) of DHDP – Schedule 1 includes 'public utility undertakings' and 'utility installation' as a permissible use. Clause 6 (e) of DHDP includes development for any purpose incidental or subsidiary to permitted development as a permissible use.	Yes

5.6 Design Excellence

In order to demonstrate design excellence for this development a Competitive Design Alternatives Process will be established in line with the City of Sydney *Competitive Design Policy*

As noted by this policy in relation to this process:

> *(1) The design alternatives are to be prepared in response to a Competitive Design Process Brief by a minimum of three (3) different architectural firms who can demonstrate experience in the design of high quality buildings. Each alternative should provide, at a minimum, an indicative design solution for the site, with sufficient detail to demonstrate that it is a feasible development option and achieves design excellence in accordance with the approved Design Excellence Strategy.*

(2) The consent authority will nominate at least one independent person as observer of the competitive design alternatives selection process. The observer must be provided with reasonable notice to attend all meetings involved with the competitive design alternatives selection process.
(3) The role of the observer is to verify that the competitive process has been followed appropriately and fairly.
(4) The developer determines the outcome of the selection process.

5.7 Built Form

The DHDP does not provide controls for building height, floor s pace ratio or setbacks within Darling Harbour. Accordingly, the Concept Proposal has been designed to respond to the Site's opportunities and constraints.

The Concept Proposal will provide a built form that is responsive to the context and characteristics of the Site, including existing built form, the relationship to Darling Harbour, surrounding views and vistas, maintenance of sunlight to key open spaces and the location of the Site at the edge of the CBD.

5.7.1 Building Height and Scale

The Concept Proposal presents an opportunity for the revitalisation of a strategic site where the city meets the Harbour, and where connections are formed between the convention centre, Pyrmont, Market Street and the waterfront.

The FJMT design report included as **Appendix B** provides an analysis of the built form that would be facilitated by the Concept Proposal. As illustrated in the Design Report (and reproduced below as **Figure 36**) precedent exists, within the immediate locality (Barangaroo), and within the wider CBD area (Circular Quay), to demonstrate that in a situation where the Sydney CBD and the Harbour foreshore directly interface, additional height can be accommodated appropriately.

As noted in the Design Report provided as **Appendix B**, the centre of Darling Harbour has previously accommodated low-scale development to create a 'valley floor' feel. It is noted that recent development consents in the area (notably the Ribbon development, adjacent to the Site and the SICEEP precinct) indicates that this Valley Floor principle has been vastly adapted to accommodate incremental changes in the local built form. Further, as the Site is located on the edge of Darling Harbour and provides an interface with the Sydney CBD, the height and scale of building that will be facilitated by the Concept Proposal is considered to be appropriate for this location.

Figure 36 – Existing precedent of building height near to the water front (yellow line represents the existing built-form line)

The proposed building height will contribute to the creation of a revitalised cultural, entertainment and recreational hub, and is acceptable for the following reasons:

- The proposed building height would deliver a landmark building that would revitalise Cockle Bay as a gateway destination to the City and Darling harbour;
- The proposed tall, slender built form close to the CBD would complement other proposed tall buildings within and adjacent to the Darling Harbour precinct;
- At a maximum of RL 235m the tower envelope that is included as part of the Concept Proposal is lower than the future tower sites envisioned under the forthcoming Central Sydney Planning Strategy, which includes provision for towers of up to RL 310m in certain locations.
- The proposed height maintains mid-winter solar access to Tumbalong Park and maintains the Market Street vista and minimises impacts on the future Town Hall Square to an extent considered acceptable;
- A slender tower maximises view sharing opportunities to surrounding buildings including the Ribbon, Darling Park and the Astoria residential building;
- By freeing up large sections of the site at ground level, the tower would allow for the creation of new open space opportunities that maximises solar access; and
- Visual analysis of the proposed built form at **Appendix I** and Section 5.9 demonstrates that the proposed building heights are capable of integration into the built form typology of the locality.

5.8 Solar Access and Overshadowing

The FJMT Design Report, which is provided as **Appendix B** provides an assessment of the impact of the Concept Proposal's envelope on solar access. Specifically, the report examines the impact of the proposed development on The Boulevard, Tumbalong Green, the foreshore walk and the proposed Town Hall Square, as well as nearby existing and proposed residential uses.

It should be noted that the assessment of overshadowing and solar access impact has been undertaken as an assessment of the impact of the entire building envelope presented by the Concept Proposal. This results in a conservative (and maximum) assessment of impact, as building controls proposed as part of this application would limit the future development within the proposed building envelope to 60% of the total envelope.

A solar access and overshadowing impact assessment of a future building provided within the proposed building envelopes would be provided as part of the Stage 2 Development Assessment and would inevitably result in a reduction in predicted overshadowing, when compared to the assessment undertaken of the Concept Proposal.

5.8.1 Overshadowing of Public Space

Foreshore Promenade and The Boulevard

The impact of overshadowing caused by the proposed building envelopes on the eastern foreshore promenade of Cockle Bay, and on the SICEEP Boulevard, has been assessed by FJMT. Overshadowing impacts were modelled for the winter solstice (21 June), the assessment demonstrated that there is no overshadowing impact from the proposed envelope to the Foreshore, Boulevard and Tumbalong Green between 12-2. A limited area of overshadowing does occur north and south of the Cross City Tunnel vent stack identified at and around 11am.

Overshadowing impacts to the publicly accessible foreshore in this area will be brief, limited to a small area adjacent to the Cross City Tunnel Stack for maximum of 10 minutes before 11:30am, and isolated to a specific locality as shown in **Figure 37**. The small duration and area of anticipated overshadowing impacts to the foreshore promenade are outweighed by the significant increase in publicly accessible area associated with the Concept Proposal (and the quality of solar access enjoyed within that area), which would be provided by the future development.

The new publicly accessible open space, which will be provided by the future development of the Site, is predicted to achieve around 1380 hours of solar access annually. The Concept Proposal will therefore result in an increase in the choice of available open spaces locally, and in an increase of solar access across publicly accessible areas in the Darling Harbour precinct more broadly.

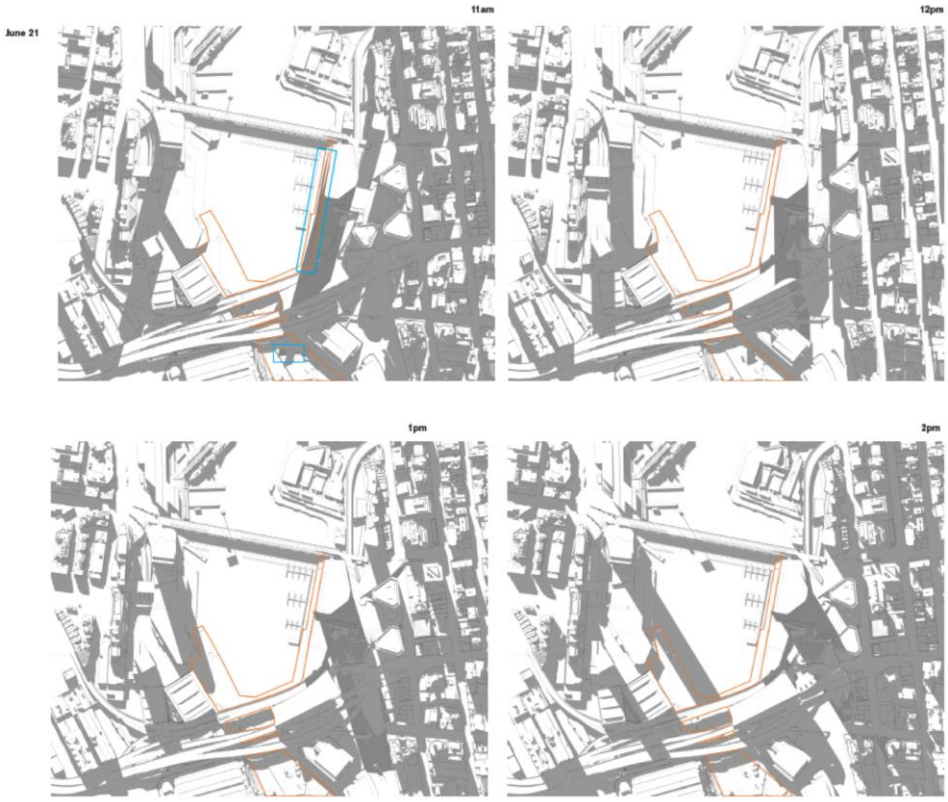


Figure 37 – Overshadowing impact of the envelope on the foreshore promenade and The Boulevard (foreshore areas outlined in orange, Concept Proposal shadow shown darker than existing shadows)

Tumbalong Park (Tumbalong Green)

The impact of overshadowing caused by the proposed building envelopes on Tumbalong Park has also been conducted by FJMT. The study examined additional overshadowing, when compared to the approved situation (i.e. after the construction of the neighbouring 'Ribbon' development.) **Figure 38** is a heatmap that illustrates the amount of solar access enjoyed by each part of Tumbalong Park. As shown, on June 21st there is negligible difference between the proposed envelope and the anticipated shadow impact prior to any new development taking place on the Site.

Figure 38 – Overshadowing impact of the proposed enveloped on Tumbalong Green (site area shown in blue)

Town Hall Square

FJMT has conducted an assessment of the overshadowing impact of the proposed envelopes on the existing Sydney Square and Town Hall Steps and also on the future Town Hall Square.

The proposed building envelopes have no additional shadow impact on Sydney Square and the Town Hall Steps, which are currently controls within Sydney LEP 2012.

The Draft Central Sydney Planning Strategy proposes to introduce additional 'no additional overshadowing' control to the future Town Hall Square between 12pm and sunset (year-round). Impacts of the proposed development envelope on the future Town Hall Square are minimal and are limited to a brief window after 3:45pm for a period in April and a period in August. **Figure 39** is a heat-map that expresses the solar reduction of the future town hall square in percentages and excludes shadows by existing adjacent structures.

Averaged across the New Town Hall square the Concept Envelope causes an impact of less than 1% reduction in solar access. This equates to no more than 21 hours' solar loss (from the maximum available c.1700 hours) over the entire year (or no more than 30 minutes per day during spring and autumn). The area within the future Town Hall Square that is predicted to receive the greatest impact is limited to the north east of the square, where the square will interface with Park Street.

Any future building within the proposed envelopes would be subject to additional assessment and would have a less-significant impact than that assessed within this application due to the reduction from the maximum envelope proposal as part of the Stage 1 DA.

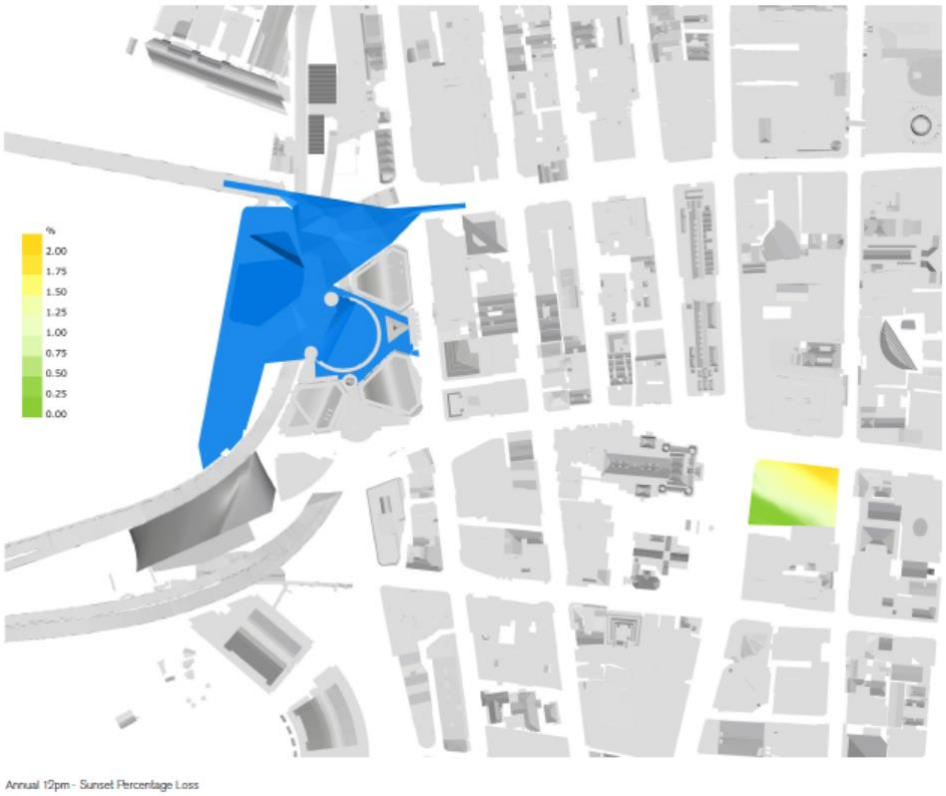


Figure 39 – Overshadowing impact of the proposed enveloped on Future Town Hall Square (site area shown in blue)

5.8.2 Overshadowing of Residential Uses

FJMT has assessed the impact of the proposed building envelopes on the solar access received by the neighbouring residential development located at 230 – 238 Sussex

Street, Sydney. The assessment determined that the proposed building envelope would have no impact on the solar access currently received by this building at any time on June 21. Any future building within the proposed envelopes would be subject to additional assessment and would have a less-significant impact than that assessed within this application.

5.8.3 Summary

FJMT has prepared an impact assessment of the maximum solar access impact caused by the building envelopes proposed by the Concept Proposal. This assessment is provided within the Design Report, which is provided as **Appendix B**.

The overshadowing impact assessment concludes that, although some additional overshadowing would be caused by the proposed envelopes, this overshadowing is transient and of limited durations and is therefore acceptable for the following reasons:

- Impacts anticipated to the foreshore promenade would be more than offset by the significant expansion of the open space in this area, which would be facilitated by the proposed development;
- Impacts anticipated to future Town Hall Square are minimal, temporary and transient, limited to an area of the future square that will interface with Park Street. The impact is limited to an average 1% reduction in solar access across the square, which equates to no more than 21 hours of solar loss across the entire year; and
- Any building provided by a Stage 2 Development Application within the proposed envelopes would occupy up to 60% of the envelope, would have a maximum depth of 65m, and would therefore have a less significant impact than that currently under assessment;

5.9 Visual and View Impact Assessment

A Visual Impact Assessment (VIA) has been undertaken by JBA and is provided as **Appendix I**. This report and its conclusions are summarised below.

5.9.1 Methodology

To support the visual analysis key public domain views, view corridors and public vantage points within and surrounding the site have been identified. The selection of vantage points has also had regard to the location of existing heritage items within the vicinity of the site that are visible from the public domain including the Pyrmont Bridge, the Corn Exchange Building, the Shelbourne Hotel, and the former 'Foley Bros', 'Central Agency' and 'Archway Terrace' warehouses.

Building envelope photomontages have been prepared for a total of 16 public domain views and vantage points. The locations of the photomontage images and direction of view are shown on **Figure 40**.

The photomontage images for each of the identified public domain views have been taken at ground level (pedestrian eye level) to indicate what a pedestrian will see when travelling through or within the general vicinity of the site and its surrounds.

The photomontage images have been produced using a variety of camera lens sizes and have been prepared in respect of Land and Environment Court (LEC) proceeding no. 10884/14 in accordance with the LEC's practice directions. The photo positions have been surveyed by a registered surveyor (C.M.S Surveyors). To provide future context where relevant, the photomontages include the following buildings that are approved or proposed:

- 115 Bathurst Street (Greenland Centre);
- 505 George Street;
- Crown Casino and Hotel, Barangaroo;

- Residential Towers, Barangaroo,
- IMAX Redevelopment (The Ribbon), Darling Harbour; and
- ICC Sydney Hotel, Darling Harbour.

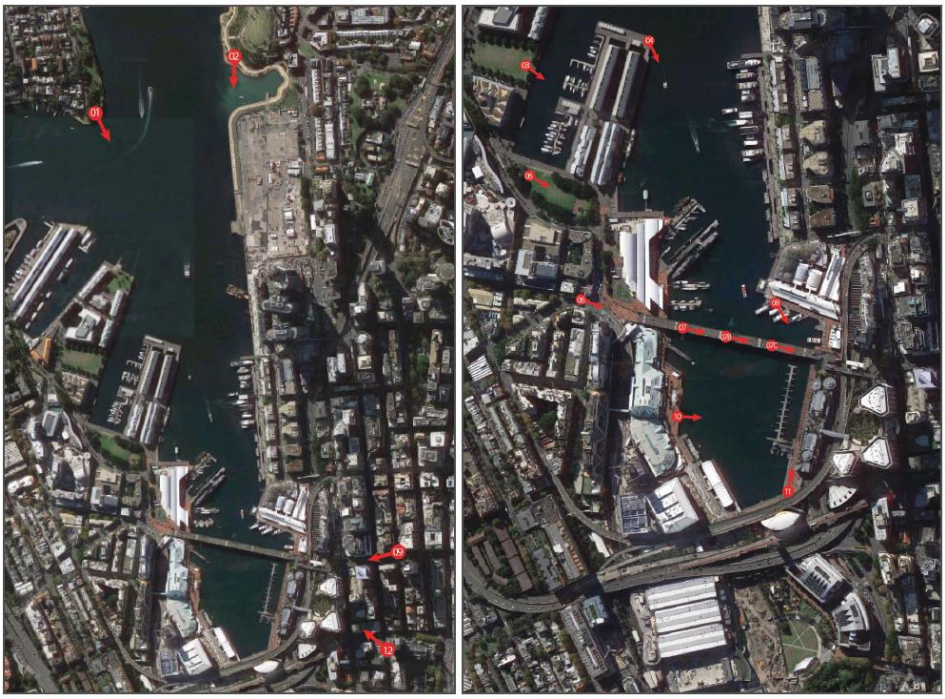


Figure 40 – Visual Analysis Camera Locations (public domain views, view corridors and vantage points

The residential building at 222-228 Sussex Street, Sydney was identified as being the only building in the immediate vicinity of the Site that may be subject to private view loss as a result of the Concept Proposal. To mitigate any private view loss from 222-228 Sussex Street, the maximum building envelope has been designed to maintain the existing view corridor to Darling Harbour between Darling Park Tower 1 and 2 (as noted above in Section 3.4.1)

5.9.2 Assessment

The VIA notes that from many of the locations assessed, the Concept Proposal will have a visual impact, however, the full impact of the Concept Proposal will not be fully realised by the subsequent Stage 2 DA(s) as the built form within the tower element will be restricted to 60% of the envelope and to a maximum depth of 65m. In relation to the waterfront podium, the VIA notes that Concept Proposal will change the scale and height of the development in the area and make a significant and striking architectural statement that signifies its Harbour foreshore location at the gateway to the CBD. This represents a positive statement in Global Sydney.

The podium element is larger than the existing Cockle Bay Wharf development but will preserve or enhance pedestrian experience along the foreshore promenade and will continue to provide for a human scale and respond to the predominant low-medium scale foreshore development.

The VIA concludes that the Concept Proposal will not detract from the overall visual connectivity for pedestrians in the public domain nor result in any significant adverse impact. The wide range of different viewing points available within the Darling Harbour precinct, Pyrmont and its approaches will continue to provide for variety and interest in the different views, vistas and sightlines available to pedestrians approaching and moving through the precinct from the north, south, east and west.

Low, medium and high level views of the sky along streets and from public domain places (parks etc.) are retained in a variety of contexts.

5.9.3 Private View Loss

The VIA also assessed the impact of the Concept Proposal on existing private views. The VIA notes that the siting and design of the Concept Proposal (in particular the tower element) has specifically sought to respond to view sharing principles and to provide for an appropriate outlook from adjoining private development to the greatest extent practicable in a highly urbanised inner city environment.

The private view impacts associated with the Concept Proposal (podium and tower elements) are considered to continue to provide for a reasonable 'outlook' from apartments that may nonetheless have a change in 'view'. This is consistent with current planning objectives, strategies, principles and development controls for the CBD which recognise that outlook, as distinct from views, is the appropriate measure of residential amenity within a global CBD context.

5.10 Open Space

The Concept Proposal includes an outline framework for the future upgrades for the publicly accessible open space proposed within the Site. Proposed concepts include an indicative public art strategy, which includes opportunities to interpret and represent the heritage significance surrounding the Site. An overview of the indicative Art Strategy is provided below as **Figure 41.**

Figure 41 – Indicative Art Strategy

The provision of future open space will be a subject of the Stage 2 detailed development application. The design of future open space will be guided by the design report (**Appendix B**), the Precinct Vision Statement (**Appendix C**), and also by the design review processes outlined in Section 5.6 to ensure that the future open space exhibits design excellence and meets the needs of future users of the opens space.

5.11 Environmental Sustainability

An Environmentally Sustainable Design (ESD) Report has been prepared by Arup (**Appendix L**). Although details relating to ESD initiatives provided by the future development will only be available during the detailed design process, the Arup assessment outlines a wide variety of sustainability initiatives, which may be proposed within the Stage 2 detailed design development application.

The development facilitated by the Concept Proposal will be a premium grade commercial tower. As such, premium level sustainability initiatives will be required within any future Stage 2 DA(s).

The report notes the following are key sustainability initiatives, which may be considered further:

- Energy –reduce energy use and greenhouse gas emissions.
- Indoor Environmental Quality – design the building to maximize occupant comfort addressing issues of thermal and visual comfort and indoor air quality.
- Water –minimize potable water consumption and optimise the water efficiency.
- Materials – minimize waste, encourage reuse and recycling of materials and use low environmental impact materials.
- Transport – encourage more energy efficient and less polluting forms of transport to and from the Site.
- Benchmarking – The buildings are to be designed to achieve a minimum 5 stars NABERS Energy and Green Star Design and As-Built v1.1 rating.

5.12 Traffic and Transport

A Traffic Report has been undertaken by Colston Budd Rogers and Kafes Pty Ltd (CBRK) (**Appendix E1**). The report considers the traffic matters raised in the SEARS. These matters noted in **Table 1** and are summarised below:

- existing traffic conditions;
- estimated traffic generation of the proposed development;
- impact of the proposed development on the operation of the surrounding road network; and
- provision of appropriate on-site parking.

As the Concept Proposal has potential to impact on the ongoing maintenance and operation of the Western Distributor, consultation with RMS and TfNSW will be continued throughout the design and construction phases of the future development.

5.12.1 Existing Local Traffic

Section 2 of **Appendix E1** examines the existing traffic situation, including traffic flows, the level of service at existing intersections and the capacity of local public transit. This section is summarised below.

Traffic Flows

CBRK conducted traffic counts between 7.00am and 9.30am in the morning and 3.30pm and 6.30pm in the afternoon, these being the weekday morning and afternoon peak periods, over three days in August and September 2016. Observations were made at the following locations:

- Harbour Street/Wheat Road (IMAX access);
- Harbour Street/Wheat Road (Cockle Bay Wharf access);
- Harbour Street/Wheat Road (King Street Wharf access); and
- Harbour Street/Blackwattle Place.

The reported traffic flows are presented below in **Table 11**.

Table 11 – Existing traffic flows

Road	Observed vehicles per hour
Harbour Street	1,800 – 2,600
Wheat Road	10 – 790
Blackwattle Place	15

During the traffic observation periods, queueing was noted on Harbour Street, it was noted that:

- in the weekday morning survey period, there was no queuing northbound on Harbour Street through the intersection with Blackwattle Place;
- in the weekday afternoon survey period, there were three occasions when queuing northbound on Harbour Street extend to the intersection with Blackwattle Place. This represented 0.2% of the survey period.
- in the weekday morning survey period, there were 40 occasions when queuing southbound on Harbour Street extend to the intersection with Blackwattle Place. This represented 9% of the survey period;
- in the weekday afternoon survey period, there were eight occasions when queuing southbound on Harbour Street extend to the intersection with Blackwattle Place. This represented 1.5% of the survey period; and
- When queuing on Harbour Street did extend to Blackwattle Place it was noted that:
  - on the three occasions the northbound queue extended to Blackwattle Place the queue lasted less than a minute within a five minute period; and
  - the majority of the time (65%) the southbound queue extended to Blackwattle Place the queue lasted than a minute within a five minute period. The maximum time was some two minutes.

Intersection Operation

CBRK conducted a SIRDA analysis of the operation of intersections surrounding the Site in order to determine their Level of Service (LoS). The SIDRA analysis found that the signalised intersection of Harbour Street and Blackwattle Place currently operates with average delays of less than 15 seconds per vehicle in the peak periods. This represents a LoS of A/B. Observations noted that due to the low traffic flows in Blackwattle Place the traffic signals were only activated occasionally and that the green time allocated to turning to/from Blackwattle Place was a minimum.

Public Transport, Pedestrians and Cycling

As outlined in Section 2.2.6, the Site is well serviced by pedestrian and cycle connections. Numerous public transportation options are also available, including:

- Wynyard and Town Hall railway stations are within 10 minutes walking distance;
- Proposed Sydney Metro Stations will significantly increase rail capacity from 2024;
- Numerous bus services operate within the vicinity of the Site, bus facilities are located at Wynyard Park and Queen Victoria Building (within 10 minutes' walk);
- Existing Light Rail currently extends to within 500m of the Site, extensions to the light rail network are currently under construction and will increase the coverage and capacity of the light rail network.

5.12.2 Anticipated Impact of the Concept Proposal

The following section summarises Section 3 of **Appendix E1**.

Parking and Traffic Generation

Future development of the Site will provide car parking in line with the *Sydney Local Environmental Plan 2012.* Although the Site is not included within the Sydney LEP the maximum parking rates that apply to surrounding sites within the CBD can be extrapolated to apply to the Site. Through adopting maximum car parking rates, development at the Site will reflect Council's objective of reducing vehicular traffic and encouraging use of alternative transportation.

To calculate the applicable parking rates for the development, the area of the existing building (rather than the entire 'Site') has been used. The building area is some 10,000m^2 with some 85,000m^2 commercial and some 25,000m^2 retail floorspace proposed. Using the formula provided by the Sydney LEP the proposed development could provide a maximum of 200 parking spaces (155 commercial and 45 retail spaces).

Short term set down/pick up parking (Kiss and Ride) will be provided on the realigned Wheat Road. Parking provision will be confirmed in a Stage 2 DA, but would not exceed the maximum allowed under the provisions of LEP 2012.

With regards to bicycle parking the rates in the City of Sydney DCP 2012 have been adopted, although it is noted that these do not technically apply to the Site. For the proposed development the following rates in DCP are relevant:

- commercial – 1/150m^2 employees plus 1/400m^2 visitor;
- retail – 1/200m^2 employees plus 1/300m^2 visitor; and
- open space – 1/1,000m^2 employees plus 1/200m^2 visitor.

Applying these rates the proposed development would require the following number of bicycle spaces:

- commercial – 1,008 (733 employee and 275 visitor);
- retail – 208 (125 employee and 83 visitor); and
- open space – 72 (12 employee and 60 visitor).

As with required car parking, the final number, location and arrangement of the required bicycle parking will be the subject to the future Stage Development Application(s).

Traffic Generation and Impact

Traffic generated by the proposed development will comprise private vehicles, taxis, coaches and service vehicles. The morning and afternoon peak hour traffic generation of the existing uses on the Site are summarised is below:

- Approximately 53 vehicles per hour in the morning peak hour, comprising:
  - 32 cars;
  - 14 trucks;
  - 3 coaches; and
  - 4 taxis.
- Approximately 69 vehicles per hour in the afternoon peak hour, comprising:
  - 19 cars;
  - 1 truck;
  - 7 coaches; and
  - 42 taxis.

As noted in **Appendix E,** CBRK has predicted that development delivered following the Concept Proposal would generate between 85 and 100 vehicles per hour (two way) in the morning and afternoon peak hours. CBRK modelled the impact of these additional

vehicles on the existing road network capacity, as outlined above. The analysis was conducted under the following scenarios:

- Left only turn from Wheat Road to Harbour Street; and
- Left/right turn from Wheat Road to Harbour Street.

The analysis found that the modified intersection of Harbour Street/Blackwattle Place/Wheat Road would operate with average delays of less than 15 seconds per vehicle in the morning and afternoon peak periods under both scenarios. The analysis concluded that provision of a left only turn egress would allow traffic to exit the Site satisfactorily.

Although a left only turn can be introduced at this location without significant impact, allowing right turns from Wheat Road to Harbour Street would require further study. Queuing was observed on Harbour Street extending back through the Blackwattle Place intersection in the peak periods (mainly in the morning peak period). These queues occur for a short period and generally clear each cycle. It is suggested that further modelling (such as a network model of the intersections along Harbour Street) be undertaken before a right turn can be supported. This further assessment can be undertaken as part of the Stage 2 Development Application if a left/right turn from Wheat Road to Harbour Street is proposed.

5.12.3 Impacts on the Western Distributor

Aurecon was commissioned to prepare a Fire Safety Study (**Appendix X**)**.** The Aurecon report examined a number of scenarios wherein a fire occurred on the Western Distributor, or on Harbour Street, within the land bridge accommodated within the proposed envelope.

The modelling undertaken indicates that the likelihood of untenable conditions being present within the egress pathways on the roadways beneath the proposed land bridge over the Western Distributor is low. The Aurecon report concludes that despite the fact that future land bridge would meet the definition of 'tunnel' as defined by AS4825 (this being: *A substantially enclosed roadway or track-way greater than 80m in length*) the modelling undertaken allows the proposed development to be more appropriately described as an 'underpass'.

The underpass facilitated by the Concept Proposal has been designed in consultation with RMS to allow for the ongoing operation and anticipated future improvement works to be accommodated within the horizontal and vertical clearances provided within the proposed building envelope. Consent from RMS and TfNSW will be required prior to development consent. Consultation with RMS and TfNSW will be continued throughout the detailed design and construction phase of the development.

Development of the Stage 2 design will continue to be developed in consultation with the RMS to ensure that impacts on the ongoing operation, maintenance and expansion of the Western Distributor and Harbour Street are appropriately managed.

5.12.4 Summary

In summary, the CBRK report (**Appendix E**) found that:

- there is effectively no queuing northbound on Harbour Street back to Blackwattle Place;
- for the majority of the time there is no queuing southbound on Harbour Street to Blackwattle Place. The occasional queuing that does occur (mainly in the morning peak period), is of a short duration;
- Intersections surrounding the Site currently operate with a good (A/B) LoS;
- The Site has good public transport, pedestrian and cycle connections;

- Up to 200 car parking spaces will be provided by a future development on the Site which complies with the Sydney LEP 2012 maximum rates which provide a guide to appropriate parking on the site;
- The existing road network has capacity for the additional trips created by the Concept Proposal, a left only turn from Wheat Road to Harbour Street can be supported, however, further analysis at Stage 2 would be required to support a right turn from Wheat Road to Harbour Street.
- The Aurecon report (**Appendix X**) defines the proposed land bridge as an 'underpass'. Appropriate measures will be included in the design of the Stage 2 development application to ensure that the operation roads within the underpass is not affected by the future development.

5.13 Noise and Vibration

A Noise Assessment has been undertaken by Acoustic Logic (**Appendix W**). The study has identified and investigated potential acoustic and vibration impacts generated by future development including:

- traffic noise generation from additional vehicle movements on public roads;
- plant and equipment;
- retail and commercial uses; and
- construction noise and vibration impacts.

5.13.1 Existing Environment

Acoustic Logic undertook a series of attended and unattended noise measurements at the Site to establish the existing ambient noise environment. Acoustic loggers were placed in four locations, these being:

- Loc 1 – NE corner, Level 2 of existing Cockle Bay structure - 18 July to 26 July, 2016;
- Loc 2 – SE corner, Level 2 of existing Cockle Bay structure - 18 July to 26 July, 2016;
- Loc 3 – 234 Sussex Street - 10 Nov to 18 Nov, 2015.
- 311-316 Sussex Street – 6th July to 13th July, 2016.

In addition to these location, existing noise acoustic monitoring from neighbouring projects was interrogated to provide an expanded representative baseline. Additional baseline monitoring was provided from:

- Development at 65 – 67 Sussex Street (carried out in 2015); and
- Novotel southern terrace (carried out in 2013).

Recorded and reported acoustic baselined surrounding the Site are reported below in **Table 12**.

Table 12 – Background Noise Level, dB(A) L90

Location	Day	Evening	Night
Loc 1	66	64	54
Loc 2	71	70	58
Loc 3	56	52	49
311 – 316 Sussex Street	62	61	55
Novotel	58	59	52
65 – 67 Sussex Street	66	61	55

5.13.2 Assessment Criteria

Assessment criteria applicable to the development are outlined below:

- Acoustic impacts associated with construction will be assessed against the NSW EPA *Interim Construction Noise Guidelines 2009* (INCG);
- General acoustic impacts will be assessed against the NSW EPA Industrial Noise Policy (INP);
- Noise from traffic on public roads will be assessed against the NSW EPA Road Noise Policy (RNP);
- Patron Noise from licenced areas will be assessed by Liquor and Gaming; and
- Guideline for Development Near Rail Corridors and Busy Roads.

5.13.3 Impact Assessment

Construction Noise and Vibration

The ICNG provides acoustic criteria that can be applied during the construction process, relevant to the proposed development are the following:

- Commercial and Retail – 70dB(A) $L_{A(EQ\ 15\ min)}$
- Residences:
  - RBL + 10dB(A) $L_{A(EQ\ 15\ min)}$ for 'Noise Affected' properties;
  - 75dB(A) $L_{A(EQ\ 15\ min)}$ for 'Highly Noise Affected' properties

A detailed program and methodology for the demolition and excavation works has yet to be developed, and so the assessment provides an indicative assessment of noise emissions based on typical construction activities.

Based on noise emissions from standard construction equipment, hydraulic hammers, excavators and concrete saws would be the loudest activities during construction. **Table 11** summarises the likely worst case scenario for hammering and excavation on key receivers.

Table 13 – Worst case scenario construction noise assessment

Construction Plant	Plant Noise Level dB(A)	Receiver Location	Predicted Worst Case Noise Level dB(A) L_{eq}	Construction Noise Objective dB(A) L_{eq}
Hammering	120	Harbourside	63	70
		Sheraton	72	70
		Darling Park Towers	82	70
Excavator	114	Harbourside	57	70
		Sheraton	66	70
		Darling Park Towers	76	70
Angle Grinders	114	Harbourside	57	70
		Sheraton	66	70
		Darling Park Towers	76	70

The assessment indicates that:

- there are no residential receivers within proximity of the Site that may be affected by construction noise that exceeds the ambient noise environment;
- predicted noise levels during would exceed the noise criteria at the Darling Park Towers, however it is noted that Darling Park is managed by the applicant and so would be subject to construction noise management and consultation with tenants in association with the developer;

- predicted hammering noise levels would marginally exceed the noise criteria at the Sheraton, which is impacted by traffic noise levels of up to 70 dB(A) $L_{eq;}$ and
- overall, construction noise levels are excepted to be below the noise criteria. Where exceedances do occur they are expected to be able to be managed through construction conditions and through the construction management plan.

With respect to construction vibration, Acoustic Logic conclude that due to the proximity of surrounding receivers no significant vibration impacts are expected during construction works.

Any future Stage 2 DA would undertake a further assessment of construction noise and vibration in support of a DA.

Additional Traffic on Public Roads

Access to the Site is generally via Wheat Road with connection from King Street and Shelley Street. There are no sensitive receivers on Wheat Road that would be impacted by traffic accessing the Site. Residential dwellings on Shelley Street are heavily impacted by traffic noise from the Western Distributor and any traffic noise generated by the proposal would have a negligible impact compared to existing traffic noise. Acoustic Logic conclude that the proposal would be compliant with the Road Noise Policy.

Mechanical Plant

A detailed assessment of mechanical plant noise emissions will be undertaken during the design development phase of the subsequent DA, once specifications and plant selections have been made and can be governed by standard conditions of consent.

Retail and Licenced Premises

The Concept Proposal would include retail food and beverage uses, not dissimilar to the existing licenced tenancies that occupy Cockle Bay Wharf. Noise from licensed food and beverage tenancies (i.e restaurants and bars) will be typically associated with:

- Patron noise;
- Music; and
- Mechanical plant.

Acoustic Logic have undertaken a worst case scenario assessment for predicted noise generated by retail venues that indicates that noise levels at the closest residential receiver would be below the noise emission criteria due to the shielding inherent from the built form on the site to these receivers.

Each of the retail tenancies will be subject to separate future approvals for their fitout, and a noise assessment will be required to be submitted with the future separate application(s). Each retailer will be subject to City of Sydney noise guidelines.

5.14 Reflectivity

Arup have prepared a Reflectivity Report in support of the Concept Proposal and is included at **Appendix U**. To inform the assessment of reflectivity Arup has undertaken an indicative assessment of a simplified massing model for one possible development outcome by the concept envelope. The report investigates the potential for solar reflectivity glare on motorist, pedestrians and on surrounding buildings. The reflectivity measures of Sydney DCP 2012 have been adopted as a guide for this assessment.

Arup has tested the potential impact of reflectivity in a range of locations surrounding the Site, testing specular reflectivity for each indicative façade to ensure there are no impacts on motorists. The report found that the greatest potential for glare was when travelling north on Harbour Street when close to the façade of the podium level kiosk

and when travelling east on Union Street / Darling Drive due to solar interaction with the façade. Design elements such as reflectivity of glazing can ensure that any development limits reflectivity to 20% or less.

Reflectivity analysis will be undertaken for detailed design and submitted with the subsequent Stage 2 DA. It is anticipated that all facade glazing will have a normal specular reflectivity of visible light of 20% or less (as required) to avoid adverse glare. Such measures will ensure that the future buildings will not cause adverse solar glare to vehicle drivers or pedestrians in any of the surrounding areas or to the occupants of other residential buildings.

5.15 Wind Impact

A Wind Impact Assessment of the Concept Proposal has been carried out by Cermak Peterka Petersen (CPP) and is included as **Appendix K**. The report is qualitative, and draws conclusions based on the prevailing wind conditions and the results of quantitative wind tunnel tests.

The western edge of the city is known for having erratic and relatively windy conditions, however, the surrounding high rise development would provide some shielding from certain wind directions. The report finds that the proposed building envelope may result in downwash from the tower and that windy conditions could be expected close to building corners. The report indicates that while some locations could experience windy conditions, these can be mitigated through design measures and all locations would pass relevent criterion.

The report notes that the strength of the conditions in windy locations will depend on the final architectural form of the proposal and can be confirmed through wind tunnel testing as part of a Stage 2 DA.
CPP concludes that mitigation measures can be implemented to reduce the potential wind impacts including planting, landscaping and porous screen walls. Such measures, where required, can be detailed within future Stage 2 DAs.

5.16 Access

5.16.1 Public Access

A Pedestrian Assessment has been undertaken by ARUP that considered the impact of the proposal on pedestrian movements (refer to **Appendix N**). The Assessment has undertaken a pedestrian planning analysis of the existing site and the proposals impact on site accessibility and movement.

A quality analysis audit was undertaken for the four primary pedestrian routes that connect Cockle Bay wharf to the surrounding area and would be affected by the proposal, including Pyrmont Bridge (route 1), north Cockle Bay Wharf (route 2), the central Cockle Bay Wharf bridge crossing (route 3) and Druitt Street Bridge (route 4). The analysis measured journey time and the quality and operation of each route against five key metrics:

- Connected – connectivity, permeability and the ease for pedestrians to travel from one place to another;
- Comfort – the amenity of the pedestrian environment, including shade and shelter, street furniture and space to mingle;
- Sense of Place – an environment that attracts people and encourages social interaction;
- Visibility – visibility of pedestrians and extent which they are seen from nearby land uses; and
- Convenient – the extent which a route may minimises delays.

The existing and proposed pedestrian routes are shown at **Figure 42.**

The analysis found that generally the existing pedestrian paths offered varying degrees of connectivity with many pathways currently underutilised. The Concept Proposal improves the connectivity of the Site with more direct travel paths that reflect desire lines of travel that would make the journey more accessible and direct.

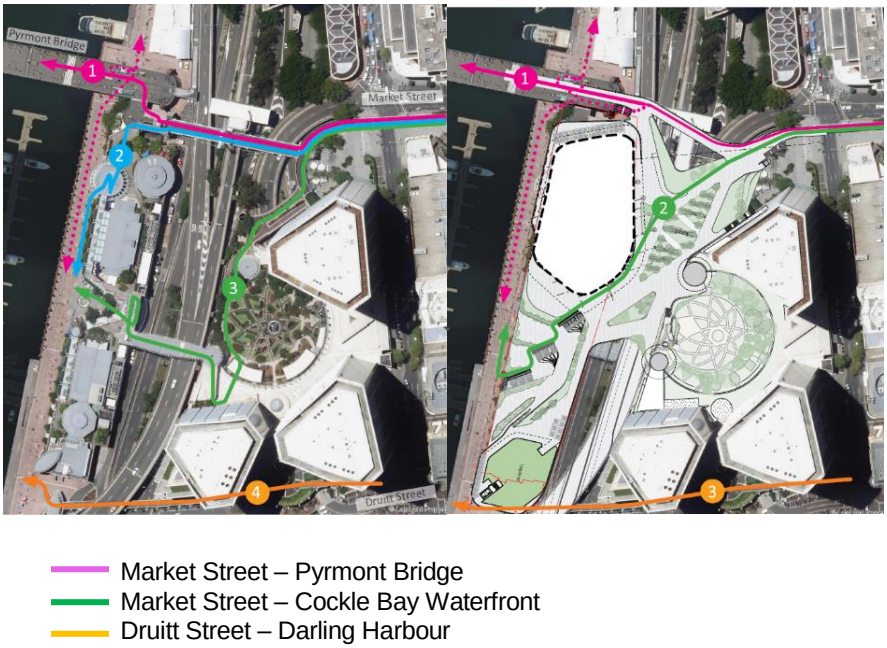


Figure 42 – Existing and proposed pedestrian travel routes

The Concept Proposal also provides an opportunity to significantly improve amenity and create a sense of place through the introduction of new open spaces which can accommodate additional shelter and rest areas within a landscaped environment. Overall journey time are improved by the proposal as shown at **Table 14.**

Table 14 – Pedestrian Journey Time Assessment

	Route	Existing Journey Time	Proposed Development Journey Time	Difference
1	Pyrmont Bridge	164	140	-24
2	North Cockle Bay Wharf	240	see route 3	-
3	Central Cockle Bay Wharf Bridge	295	219	-76
4	Druitt Street Bridge	191	191	negligible

Accessibility modelling has been undertaken by ARUP of the 10-minute walking catchment. The modelling shows that the proposal increases the 10-minute perceived walk time catchment by 50%, represented by the pink shaded areas shown in **Figure 43**. This means that more of the CBD will be accessible on foot from the Site within 10 minutes. The additional catchment equates to an additional 11,000 workers in 2016 and 14,000 in 2041. The catchment almost extends to George Street improving the connection between the city and Harbour for pedestrians.

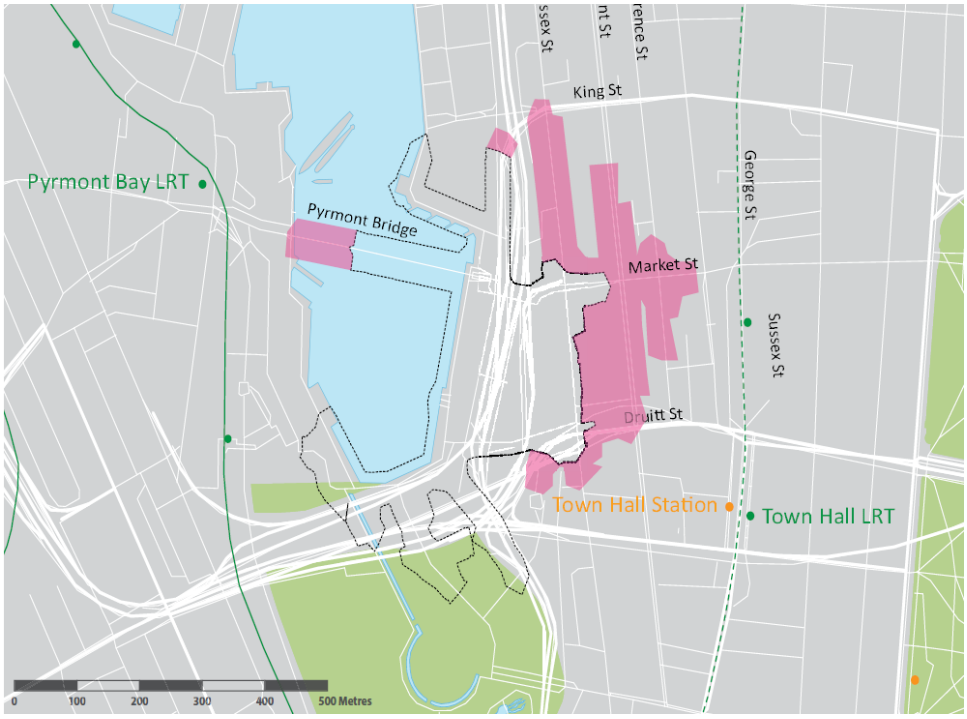


Figure 43 – 10-minute perceived walking catchment and increased capture area resulting from the proposal (in pink)

Overall the pedestrian benefits have been summarised as follows:

Connectivity

- More direct connections between the CBD, Pyrmont Bridge and the waterfront;
- Full ramp connection between CBD and Pyrmont Bridge;
- Improved natural wayfinding through the land bridge open space;
- Improved sightlines to the waterfront;
- Improved connectivity with Darling Park and its Garden; and
- Improved pedestrian experience during the connection via Druitt Street.

Amenity

- Additional shelter and rest areas through the landscaped environment;
- Consistent and high quality pedestrian environment;
- Potential to improve lighting, activation and amenity throughout all hours of the day;
- Increased sense of place with the landscaped open space a destination; and
- Greater separation of the Western Distributor improves noise and air quality.

Accessibility

- Improved accessibility to the CBD and perceived pedestrian walkability.

Events

- Increased capacity for public events with a Harbour view;
- Flexibility for public and private events; and
- Increased flexibility of operation with multiple access points and configurations of space.

5.16.2 Accessibility

Morris Goding Accessibility Consulting has undertaken an assessment of the proposal against the relevant provisions of the Federal Disability Discrimination Act (DDA) and Building Code of Australia (BCA) in regards to accessibility. The Access Report (refer to **Appendix M**) proposes a statement of commitments that considers operational modes and user groups that attempts to deliver equality, independence and functionality to people with disabilities, in compliance with the DDA and, as far as possible, eliminate discrimination against persons on the grounds of disability.

The drawings indicate that compliance with statutory requirements pertaining to site access and common area access can readily be achieved.

Mitigation Measures

In order to ensure equal access is provided throughout the proposed development, the detailed design of the proposal will need to ensure compliance with the relevant accessibility provisions of the DDA, BCA 2014 and relevant regulatory guidelines.

5.17 Heritage

A Historical Archaeological Assessment has been prepared by GML Heritage and is included at **Appendix F**. A Heritage Impact Assessment (HIA) has been prepared by Weir Phillips Heritage to assess the impact of the Concept Proposal on items listed on the State Heritage Register, including Pyrmont Bridge, this is included at **Appendix G**. An Aboriginal Heritage Due Diligence Report has been prepared by GML Heritage and is included at **Appendix H**. These reports are summarised in the following section.

5.17.1 Archaeology

A Historical Archaeological Assessment has been prepared by GML Heritage and is included at **Appendix F**. A summary of the assessment and proposed mitigation measures are provided below.

Assessment

The Historical Archaeological Assessment evaluates the Site's potential to contain historical archaeological objects and the potential impacts the Concept Proposal will have (if any) on the heritage significance of the Site. GML Heritage's report follows the guidelines for Archaeological Assessments set out in the '*NSW Heritage Manual*', '*Assessing Significance for Historical Archaeological Sites and Relics'* and the ICOMOS '*Burra Charter'.*

As there have been no archaeological excavations undertaken at the Site, the Assessment has analysed the archaeological potential of the Site including a comparison of the outcomes of previous archaeological investigations within the general vicinity of the Site.

The Assessment found that there is overall a moderate to high potential across approximately 60% of the Site with moderate level of disturbance across the Site and localised areas of high levels of impact from existing development (see **Figure 42**). The potential for archaeological remains is summarised as follows:

- The eastern half of the Cockle Bay Wharf building is considered to be the main area with high potential for historical archaeological remains, due to continuous reclamation during the nineteenth and twentieth centuries. The integrity of any remains is considered to be fragmentary as a result of piling and excavation for services associated with previous redevelopments at the Site. The potential significance of remains at this location could be of local or State significance.
- The area beneath the Western Distributor is considered to have moderate potential for archaeological remains. The potential significance of remains would likely be of local significance.

- The northeast and western edges of the Site are assessed as having low potential for archaeological remains due to previous development.

Figure 44 – Potential to encounter archaeology on the Site
Source: GML

Potential Impacts of the Concept Proposal

In terms of potential impacts arising from the Concept Proposal, the Assessment identifies that the future buildings have some potential to impact archaeological deposits depending on the extent and depth of proposed footings.

Key impacts arising from the Concept Proposal are outlined below:

- Demolition of the Cockle Bay Wharf building, including the removal of below-ground footings and piles may have an impact on archaeological remains.
- Works associated with the proposed tower, particularly in the eastern half of the building footprint, may result in a high level of impact on archaeological remains due to the density of piles.
- Construction of the eastern half of the proposed retail building, south of the tower would potentially impact archaeological remains, however, due to the predicted depth of deposits in this area there is potential for some deposits to survive.
- The western half of the proposal is located outside the area of historic land reclamation and would not have an impact on archaeological deposits.
- Works, including excavation may have the potential to expose or impact on remains of earlier seawalls, earlier wharf structures or building remains.

- The construction of the foundation piers of the land bridge is expected to impact within the footprint of each pier.

Summary

The Assessment concludes that there is potential for some disturbance to archaeological remains within the footprint of the Concept Proposal buildings. It is noted that the site was developed less than 20 years ago and that subsequently any archaeological remains are likely to have been previously disturbed. The potential remains are considered likely to be of local significance, however, depending on the nature and extent of any remains present, could be of State significance, in particular the remains of early seawalls and buildings.

However, it is noted that the likely impacts are only indicative at the Concept Proposal stage and appropriate mitigation measures can be put in place. These mitigation measures will be further developed during the detailed design of the Stage 2 DA, when the detailed impacts of the proposal will become clearer.

A summary of the key mitigation measures for the Concept Proposal is provided below. For further detail, refer to the Historical Archaeological Assessment at **Appendix F**.

Mitigation Measures

In order to minimise impacts to potential archaeological remains the following mitigation measures are proposed by GML Heritage:

- Archaeological test excavation, undertaken in accordance with archaeological best practice, should be undertaken to determine the location of predicted archaeological remains and to assess their degree of survival and intactness.
- Should the program of historical test excavation identify substantial and/or significant historical archaeological remains, further excavation and recording of these features may be required following demolition of existing structures.
- The results of archaeological test excavation and recording should be used to inform future historical heritage management and interpretation measures, if appropriate, as part of future development of the Site.
- In the event of any unexpected significant finds, works should cease and the NSW Heritage Division, OEH be notified in accordance with Section 146 of the Heritage Act.

5.17.2 Impact on Items Listed on the State Heritage Register

A Heritage Impact Assessment (HIA) has been prepared by Weir Phillips Heritage to assess the impact of the Concept Proposal on items listed on the State Heritage Register, including Pyrmont Bridge, this is included at **Appendix G**.

The Assessment has been prepared to assess the potential impacts the Concept Proposal will have (if any) on the overall significance of the Site and surrounding area; significant built and heritage items, including Pyrmont Bridge, and opportunities for heritage interpretation within the public domain.

Weir Phillips has been prepared their assessment with reference to the NSW Heritage Office's publication:

- *Statements of Heritage Impact* (2002);
- *Guideline on Heritage Curtilages* (1996);
- *Guidelines Assessing the Significance of Archaeological Sites and Relics*; and
- *Design in Context – guidelines for infill development in the Historic Environment* (2005).

The HIA identifies the following heritage items as being located in the vicinity of the Site:

- The Corn Exchange Building, 173-185 Sussex Street, Sydney;
- Shelbourne Hotel, 200 Sussex Street, Sydney;
- Cockle Bay Precinct Archaeological remains;
- Former "Foley Bros" warehouse including cartway, courtyard and interiors, 230-232 Sussex Street, Sydney;
- Former "Central Agency" warehouse including interiors, 48-58 Druitt Street, Sydney; and
- Former warehouse "Archway Terrace" including interiors, 26-32 Market Street, Sydney.

The HIA includes an assessment of the proposal which confirms it will have either no impact or an acceptable impact on the above heritage items.

Impact on Pyrmont Bridge

The Heritage Impact Statement notes that the setting of Pyrmont Bridge has evolved over time with the setting of the bridge fundamentally changed after the redevelopment of Darling Harbour after 1988 with development occurring in proximity to the approaches of the bridge, including Cockle Bay Wharf.

Existing view corridors from the south would have some visual interruption, however the Concept Proposal would maintain existing views from the north, north-east and from Pyrmont. The HIA found that the Concept Proposal would not visually detract from the bridge or the Harbour setting as the proposal would be limited to the truncated end of the bridge or the first span out from the eastern shoreline of Darling Harbour.

The proposal would be setback by at least 2m from the bridge at podium level with greater setback for the tower element. The HIA found that appreciation of the technical significance of the bridge would not be impacted by the proposal as these values are largely independent of its setting. Weir Philips found the setback provides good connection for pedestrians while maintaining sufficient separation.

The HIA includes an assessment of the effect of the proposal with respect to the *Pyrmont Bridge Conservation Management Plan (2006)*. The report found the proposal would not visually detract from the bridge, would not hasten the deterioration of surviving fabric and would not result in irreversible alteration of surviving fabric.

The re-establishment of the severed connection between Market Street and the bridge is considered to have a positive impact on the significance of the bridge as it will restore its original approach path and role connecting Pyrmont and the City (as shown in **Figure 45**). The Concept Proposal would limit any impact on the interface with the bridge by joining with the bridge at later and intrusive additions.

Figure 45 – Original relationship between Pyrmont Bridge and Market Street

The Assessment concludes that while the proposal would have a positive impact on the setting of the bridge, these impacts are considered acceptable.

5.17.3 Aboriginal Heritage

An Aboriginal Heritage Due Diligence Report has been prepared by GML Heritage and is included at **Appendix H**. The Report identifies the potential for the Site to possess Aboriginal heritage sites, places or objects, and/or values in accordance with the Office of Environment and Heritage guidelines for due diligence.

A search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 19 August 2016 which found there are no Aboriginal heritage sites within the study area and 39 recorded Aboriginal sites in Sydney CBD and immediate surrounds. The most common site type registered in the area is potential archaeological deposit sites, followed by artefact sites and open camp sites. GML identify that due to the land use history and environmental context there could be potential for Aboriginal archaeological potential associated with the original Cockle Bay foreshore.

The Site is located on land that has undergone progressive land reclamation that has extended the original Cockle Bay shoreline westward over time with fill. Past investigations have confirmed that there is potential to identify artefacts within fill.

Figure 45 below shows the potential for Aboriginal archaeological items across the Site. The areas with low potential include those areas that were fully submerged prior to European reclamation and moderate potential to find remains within fill that was used for reclamation in the past. There is high potential where the original foreshore was previously located, at the far west of the Site, outside the location of the proposed tower footprint.

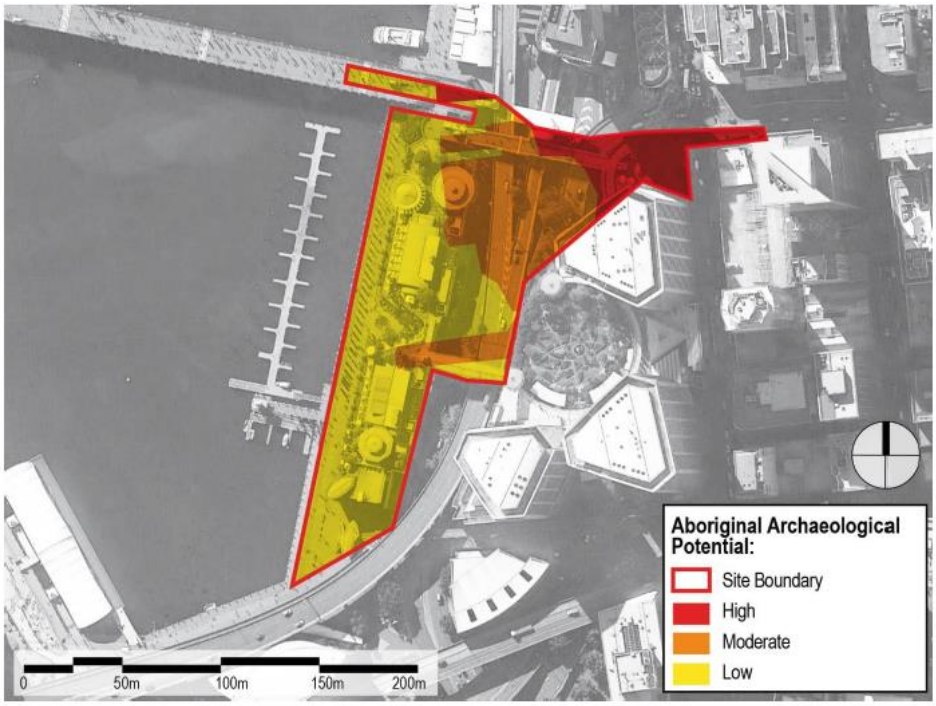


Figure 46 – Potential to Encounter Aboriginal Heritage
Source: GML

Mitigation Measures

In order to mitigate potential impacts arising from the proposal on Aboriginal remains the following mitigation measures are proposed by GML Heritage:

- An 'unexpected finds protocol' should be developed and should any intact soil horizon or suspected Aboriginal archaeological deposit be identified, works should cease and a qualified Aboriginal archaeologist should be consulted.
- Aboriginal community consultation should be undertaken in accordance with the OEH guidelines for consultation 2010.
- An Aboriginal archaeological research design should be prepared that details how the study area will be tested and if relevant, subject to salvage excavation, in consultation with the applicant.
- Should archaeological excavation identify an Aboriginal site/deposit of exceptional value. There may be a need to cease works and discuss options for its conservation and mitigation.

5.18 Geotechnical

An Initial Geotechnical Assessment of the Site has been prepared by Coffey, this is provided as **Appendix O**.

The Geotechnical Assessment determines that the Concept Proposal is feasible from a geotechnical perspective, subject to appropriate design and construction methodology. Further geotechnical investigations can be carried out and submitted with the future Stage 2 Application, in order to mitigate potential geotechnical risk.

5.19 Contamination

A Preliminary Site Investigation (PSI) has been prepared by Coffey and is included at **Appendix P**. An assessment of historical data found that the Site has been used for various industrial purposes and a working dock from as early as the 1880s to 1980s

when the area was subsequently developed as part of the Darling Harbour Entertainment Precinct.

Many former uses had the potential to contaminate the Site, including ship dock operations and historical automobile garage and engineering workshops. The western portion of the Site was reclaimed and is known to contain unknown sources of fill that is likely to be similar to material used in the surrounding areas of Darling Harbour, King Street Wharf and Barangaroo. Based on the Site historical review, Coffey has developed a conceptual site model that indicates the Site may have areas of environmental concern and associated chemicals of potential concern including PAH, TRH, BTEX, PCB, OCP, heavy materials and asbestos. It is noted that this existing contamination is below ground and therefore isolated from existing publicly accessible areas.

The Site is currently fully developed which has prevented testing for soil and ground water at the Site to be undertaken. However, Coffey found that the Site is currently covered by a building slab and concrete which precludes the potential for site contamination by site users.

The proposed future development includes ground uses that would effectively remain unchanged from that which currently exists as the proposal does not seek to excavate the Site and would continue to cover the Site by a building slab and concrete. Accordingly, on that basis, Coffey conclude that the Site is suitable for the continues commercial and retail uses, as along as the detailed design includes:

- no basements that will be utilised for retail, commercial use or work zones;
- slabs and/or pavement that cover the entire site surface, with no opportunity for direct access between site users and the underlying soils and groundwater; and
- the fitting of air conditioning and ventilation that will ensure that there will be minimal opportunity for any soil vapour to be accumulated within the buildings, should such vapours be present and ingress the building.

Should any of the above design features not be included, Coffey recommend that further land contamination assessment would be required, more relevantly with the detailed design at Stage 2.

In addition, Coffey make the following recommendations to be implemented as part of any future Stage 2 DA:

- Undertaking a contamination assessment to assess acid sulfate soil conditions and to develop appropriate management options to be implemented during construction;
- Spoils generated from the Site during construction will be required to be waste classified in accordance with NSW EPA (2014) Waste Classification Guidelines prior to off-site disposal. This also applies to the spoils generated from the piles and columns to be constructed as part of the deck structure construction; and
- Implementation of Unexpected Finds Protocol (UFP) to manage unexpected contamination encountered during construction.

5.20 Visual Privacy

The Concept Proposal will facilitate an increase in publicly accessible open space, along with a landmark commercial tower and high end retail outlets. Impacts of the proposed development on visual privacy will be addressed within the Stage 2 development application when more detail is available in relation to:

- the design of the building and its likely outlook; and
- the design of the publicly accessible open space and the likely impacts on privacy of onlooking to, and outlooking from, this area.

5.21 Structural Engineering

A Structural Engineering Report has been prepared in support of the Concept Proposal by Enstruct Group and is included at **Appendix Q**. The report has reviewed the Site constraints to develop a viable construction methodology for the proposal. The following key engineering components are proposed:

- Foundations - steel encased large diameter concrete piles, bearing in competent rock.
- Podium - conventional cast in situ concrete frame with post tensioned slabs.
- Commercial Office Tower - jump start composite steel columns, conventional jump formed reinforced concrete core providing lateral capacity for the tower, post tensioned long span floor plates supported by high strength concrete columns.
- Overbridge - prefabricated prestressed precast concrete beams at close centres supporting precast slab and topping layer. Dimensioned to allow transport and lifting thereby minimizing intrusion in the western distributor zone.

The Enstruct report notes that the Concept Proposal will include construction on existing piles and above the existing sea wall. The future tower form has been so located to enable all required piling to be undertaken behind the existing sea wall.

The existing structure has been studied by Enstruct. This deck will be retained by the proposed development as part of the boardwalk. It will also play a key role as a construction platform for the superstructure which is built to the east of the existing sea wall over the harbour.

The absence of detailed driving records has caused some concern about the durability of the existing piles for future use. As a result, new piles may be constructed to support the proposed podium and tower superstructure. New piles to support the future development can be introduced without fully demolishing the existing structure. As the design of the development is further developed, the structural feasibility of the Stage 2 development will be assessed within that application.

5.22 Utilities

A Preliminary Utility Services Infrastructure Assessment has been prepared by Arup and is included at **Appendix R**. A summary of this report is provided below.

Arup has performed a ‘dial before you dig’ enquiry in order to determine the existing utilities and arrangements, forecast demand and any required upgrade works to accommodate the Concept Proposal.

Water

The existing 150mm water main is available from Wheat Road and Arup confirm the water main size is expected to be sufficient is size for the Concept Proposal. The water main is located within the property boundary and would need to be modified to suit the Concept Proposal along the new Wheat Road, subject to Sydney Water approval.

Sewer

The existing sewer mains available at the Site include a 225mm and 300mm sewer main located at north and south Wheat Road respectively. Arup confirm the existing sewer main capacity is sufficient for the Concept Proposal. While the sewer main infrastructure is located within the property boundary it would need to be diverted to suit the proposed development. Arup note the northern end of the proposal to the 225mm sewer main would be subject to the available invert level as the connection is greater than 30m away.

Stormwater

The existing stormwater mains available at the Site include a 1500mm stormwater main at Wheat Road (mid) and a 600mm and 1800mm stormwater main at Wheat Road (south). Arup confirm the existing water main capacity is sufficient for the Concept Proposal. The water main infrastructure is located within the property boundary and will need to be accommodated to modified to suit the proposed development.

Gas

The existing natural gas main available at the Site is a 110mm medium pressure gas main 210kPa. Arup confirm the existing gas main capacity is sufficient for the Concept Proposal, subject to Jemena's approval. The gas main infrastructure is located within the Site boundary and would need to be relocated approximately 20m west to suite the proposed development, along new Wheat Road and subject to Jemena's approval.

Electrical

ARUP confirm the estimated demand generated by the Concept Proposal to be in the order of 8 to 12 MVA which will require 3 to 4 substations. Arup has undertaken initial discussions with Ausgrid who advise there is likely available spare capacity for the proposal from a new Sydney North Zone Substation on Sussex Street.

The existing in ground conduits would be required to be augmented to provide new HV supplies to the Site and would need to be relocated approximately 20m to the west to suit the proposed development, along Wheat Road, Subject to Ausgrid approval.

5.23 Construction Management

An Outline Construction Management Plan has been prepared by Brookfield and is included at **Appendix S**. A summary of the report is provided below.

Assessment

The Outline Construction Management Plan (OCMP) details the Site construction and environmental management principles for the proposed development. The CMP details management principles which seek to manage the impact of construction activities in terms of public and employee safety, noise, vibration, air and water quality and construction traffic. Detailed Construction Management Plans will be prepared for the Stage 1 DA(s) prior to the commencement of construction.

Traffic, Parking and Pedestrian Management (Construction)

Colston Budd Rogers and Kafes (CBRK) have prepared a report entitled *Principles of Construction Traffic Management for the Proposed Redevelopment of Cockle Bay Wharf, Darling Harbour,* and this is provided as **Appendix E2.** This report will form the basis of a site specific Construction Traffic Management Plan that will be prepared to ensure vehicle movements to and around the Site will not impact the operation of the surrounding pedestrian or vehicle network.

Appendix E2 notes likely construction traffic routes to and from the Site and sets principles to guide the detailed construction management plans that will be required by the future Stage 2 Development Application. The CBRK report covers:

- The diversion of Wheat Road;
- Enabling and substructure works;
- Construction hours;
- Truck routes to and from the Site;
- Required traffic diversions;
- Construction site access points;
- Impacts on pedestrians; and

- Consultation.

The principles of Construction Traffic Management that are noted by the CBRK report include:

- temporarily close Wheat Road adjacent to the site and divert existing Wheat Road traffic during periods of the construction;
- construct a new temporary connection to Wheat Road to the north of the site and maintain access to existing bus/coach parking on Wheat Road, servicing for Helm Bar and the adjacent Aquarium, and maintain access to King Street Wharf via Shelley Street;
- install temporary traffic signals at the intersection of Harbour Street and Blackwattle Place (left in and left out movements only) to cater for construction traffic movements generated by the proposed Cockle Bay Wharf redevelopment and the adjacent IMAX Cinema development during construction;
- provide a convenient and appropriate environment for pedestrians;
- minimise effects on pedestrian movements and amenity. The Outline Construction Management Plan (**Appendix S**) notes that a temporary pedestrian bridge may be constructed during the construction works to ensure that pedestrian connectivity is not severed during the construction process;
- maintain appropriate capacity for pedestrians at all times along the pedestrian promenade and connections to/from Sussex Street;
- maintain convenient access and circulation for buses and coaches;
- provide appropriate safety fencing/hoardings around the site compound and adjacent to the construction activity;
- manage and control construction traffic movements on the adjacent road network and vehicle movements to and from the site;
- maintain traffic capacity at intersections and mid-block in the vicinity of the site;
- construction work zones adjacent to and directly above the Western Distributor will be undertaken at night during agreed working hours. This work will require the temporary closure of part of the northbound and/or southbound carriageways of the freeway, adjacent to the construction activity;
- the temporary lane closures of the Western Distributor, will be subject to approval by RMS and TMC;
- manage and control traffic diversions around the construction activity associated with the temporary partial closure of the Western Distributor;
- maintain access to properties adjacent to the site;
- restrict construction vehicle activity to designated truck routes through the area;
- construction access driveways to allow trucks to enter and exit the site in a forward direction;
- maintain safety for workers;
- the construction access driveways and the on-street traffic diversions to be managed and controlled by qualified traffic controllers;
- construction hoardings/fencing and scaffolding to be erected around the construction site, with overhead protection provided where required;
- construction vehicles to be accommodated on-site or within the on-street works zones adjacent to the construction activity;
- all trucks removing demolition material from the site to be loaded from the on-site construction compounds;

- pedestrian movements adjacent to the site to be protected with the erection of Class B construction hoardings and containment fencing/barriers;
- pedestrian movements across the construction access driveways to be managed and controlled by traffic controllers when the driveway is in use;
- construction activity to be carried out in accordance with approved hours of work;
- the preparation of the construction traffic management plans, signage detail, control of pedestrians and control and management of construction activity/ vehicles in the vicinity of the site will be the responsibility of the appointed builder.

The principles of construction traffic management presented in this report will be used as the basis for the preparation of the construction traffic management plans for the various stages of construction and for ongoing negotiations with the authorities. The final Construction Management Plan will be prepared prior to construction and will be informed by the requirements of the Stage 2 Detailed Design.

Noise and Vibration

The OCMP details noise and vibration management principles and measures which will be formalised in a Noise and Vibration Management Plan developed in consultation with relevant stakeholders. An independent noise and vibration consultant will install and monitor noise and vibration logging equipment that will be triggered in the event of exceeding acceptable measures.

Dust Emissions

Dust control will be implemented in all areas of active demolition and construction and as required for the health and safety of employees. A Construction Air Quality sub plan will be prepared as part of an Environmental Management Plan which will outline dust control measures to be implemented in accordance with the *Protection of the Environment Operations Act*.

Water Quality

The Site will be managed to ensure that any discharges will be strictly controlled preventing hazardous materials and contaminants are contained and do not pollute Councils stormwater system or Darling Harbour.

A Water Quality Management Plan will be implemented that will outline key management strategies to avoid and manage discharges in compliance with relevant State Planning Policies. Environmental Audits will be undertaken that will review the usage and storage of hazardous materials on site.

Sediment and Erosion Control

Sediment and erosion controls will be provided in accordance with the principles and site actions identified in the OCMP. These controls will ensure that there are no unacceptable impacts on water quality within existing watercourses and stormwater drainage systems, and to the Harbour, as a result of the proposed development.

Ground Water Seepage

The groundwater in Cockle Bay is generally 0m AHD and fluctuating seawater would largely affect ground water beneath the Site footprint. As no basement is currently proposed, the risk of excavation induced movements and groundwater inflow issues impacting on adjacent structures is expected to be negligible.

Soil Pollution

The Preliminary Site Investigation prepared by Coffey (**Appendix P**) confirms that the Site is currently covered by building slab and concrete which reduces the potential for site contamination to affect site users. No excavation (other than piling and footings) is proposed and the future development would remain consistent with the existing development scenario. Measures to ensure the prevention of soil pollution would be included an any future CMP.

Construction Waste

A Construction Waste Management Plan will be developed to ensure best practice waste management initiatives are implemented. The constructor will also implement a Waste Minimisation Plan (WMP), the aim of which is to manage and minimise the amount of waste going to landfill. The WMP will exceed regulatory requirements and comply with Green Star benchmarks for the proposed development.

Community Consultation

The Contractor will be required to minimise disruption and inconvenience to neighbouring buildings and their occupants. A Community Liaison Officer will be employed to consult and work with neighbours as necessary. Prior to commencement of works, the Contractor will undertake a communication meeting with stakeholders and surrounding tenants in accordance with the strategy outlined in the CMP. A Communications Plan will be developed prior to the commencement of construction.

5.24 Air Quality

An Air Quality Impact Assessment (AQIA) has been prepared by Pacific Environment, this assessment is provided as **Appendix V**. The AQIA includes an assessment of the impact of the Concept Proposal on emissions, and the impact from the Cross City Tunnel Vent Stack and Darling Park Tunnel.

Pacific Environment have completed an air quality assessment of the CCT ventilation stack and nearby Western Distributor roadway to determine the potential air quality impact of these sources on the proposed development.

The assessment concludes that the emissions from the CCT stack and Western Distributor are not anticipated to result in any exceedances of the NSW EPA criteria for the air quality metrics assessed in the vicinity of the proposed development.

The modelling completed to date indicates that higher concentrations of the air quality metrics evaluated are predicted to occur at the top of the proposed development compared with those at ground level. Optimisation of any air intakes locations for the proposed development can occur during the detailed design stage for the development.

5.25 Drainage, Flooding, Climate Change and Sea Level Rise

A Stormwater Management Report has been prepared for the Concept Proposal by Enstruct, this is provided as **Appendix J.** This report is summarised below.

The Concept Proposal does not propose to disturb existing major street drainage pipelines, which currently pass through the Site. New drainage systems will meet authority requirements in terms of capacity and water quality management. Future development of the Site will afford the opportunity to collect roof runoff for irrigation of podium level garden planters, and appropriate rainwater storage will be provided as part of a future Stage 2 Development Application.

A Flood Assessment was undertaken for the City of Sydney Council and is presented in the “Darling Harbour Catchment Flood Study” dated October 2014, prepared by BMT WBM. Information from this flood study has been extracted for the vicinity of the Concept Proposal.

The flood modelling indicates anticipated flood levels in Harbour Street immediately adjacent to the development site will be RL2.87 for the 100 year average recurrence interval (ARI) storm event and RL3.34 for the probable maximum flood (PMF) storm event.

An existing Jersey kerb barrier (RMS Type F unit) exists along Harbour Street and this barrier will be reconstructed as part of any future development to provide an overland

flood protection barrier for the Site. Additional provisions will be made to improve drainage from Harbour Street during extreme flood events as well as draining the Site itself. There will be no adverse effects on flooding as a result of the proposed development.

The peak water level expected in Sydney Harbour will be RL2.28 m. The proposed flood level for the development will be at least RL3.05 m (the intended base structural slab level). Therefore, no adverse flood impacts are anticipated to affect the proposed development from flooding in Harbour Street or from sea levels in Cockle Bay.

5.26 Crime Prevention Through Environmental Design

The Proposed Development is a Stage 1 Development Application, which seeks consent for building envelopes and specific land use only. The Stage 2 Development Application, which will be consistent with this application, will fully consider the principles of Crime Prevention Through Environmental Design (CPTED) in the detailed design phase. As assessment against the CPTED principles will be provided in the Stage 2 application.

5.27 Extension of Marine Structures

The Concept Proposal includes provision and recommendation to extend the existing marine structures along the foreshore promenade. It is noted that the Concept Proposal will not reduce the width of the existing foreshore promenade, and any expansion of the foreshore promenade undertaken consistently with this application will provide an expansion of the existing pedestrian capacity and an opportunity to enhance and improve the pedestrian experience and engagement with the waterfront.

The maritime infrastructure in Cockle Bay is managed for the NSW Government by Roads and Maritime (RMS) and Sydney Harbour Foreshore Authority (SHFA). A number of options may be available to seek consent for an expansion of the foreshore promenade. Options would be discussed with RMS and SHFA before separate consent is sought to undertake these works. Available approval pathways could include:

- A Development Application to City of Sydney Council;
- Modification of the recently approved State Significant Application to renew the marine structures within Cockle Bay (SSD6611, approved 13/11/15); or
- Inclusion of this aspect of the development within a future Stage 2 application on the Site.

Following further consultation with SHFA and RMS, more information will be available in relation to the assessment of any expansion of marine structures surrounding the Site. Delivery of any future expansion of marine structures will be undertaken in accordance with a future development consent.

6.0 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 SSDA9 has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools. In accordance with the SEARs, the ERA addresses the following significant risk issues:

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

The adequacy of the baseline data is demonstrated through the range of detailed technical reports and supporting documentation appended to this EIS. Overall, Section 5 of the EIS and the appended technical reports and supporting documents provide a comprehensive and detailed assessment of the potential cumulative impacts arising from the proposal and other developments in the vicinity of the Site.

This assessment has determined that there are no adverse environment, social or economic impacts which cannot be managed or mitigated.

Figure 47 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 47 – Risk Assessment Matrix

Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Risk Assessment		
				Significance of Impact	Manageability of Impact	Residual Impact
Key: C – Construction, O: Operation						
Visual and Views	O	▪ Visual impacts to surrounding residents and public places	▪ The proposal is supportable in regards to the balance between the protection of private views and the protection of public domain views.	3	3	6 Medium
Traffic and Transport	C+O	▪ Increased traffic on local roads ▪ Increased parking on local roads	▪ Based on the existing intersection performance and the likely traffic to be generated from the proposed development, all key intersections will perform at an acceptable level of service during the peak periods. As such, no mitigation measures are required to manage the surrounding road network.	2	2	4 Low / medium
Non-Indigenous Heritage	C	▪ Impact on heritage items ▪ Impact on heritage items in the vicinity, including the Pyrmont Bridge.	▪ The proposed development is unlikely to result in any material impact on the significance or value of adjoining Items of Heritage Significance ▪ Mitigation measures can be adopted during the design and construction to prevent significant impact	2	2	4 Low / Medium
Non-Indigenous Archaeology	C	▪ Impacts to archaeological items of significance.	▪ Should unexpected finds such as Aboriginal stone artefacts or shell middens be located during development, work should cease in the immediate vicinity of the find and the project archaeologist notified in accordance with an unexpected finds protocol established for the Site.	2	2	4 Low / medium
Noise and Vibration	C	▪ Increase in noise levels during construction activities	▪ The Stage 2 SSD DA report(s) should identify strategies for noise control and management, which may include physical design measures and management measures such as permissible hours of operation for the various uses.	3	2	5 Low / medium
Infrastructure and Utilities	O	▪ Adequate connection to infrastructure and utilities.	▪ The detailed design of the future development is to identify the final design and provision of infrastructure and utilities. This is to be conducted in consultation with the relevant authorities and providers.	2	2	4 Low / medium
Flooding and Sea Level Rise	O	▪ Potential flooding and stormwater impacts	▪ The finished floor level should be maintained to be above the 1maximum sea level predicted in Darling Harbour. ▪ Future Stage 2 design can include measures such as: – Provide rainwater tanks – Provide green roofs – Proprietary devices such as Gross Pollutant Traps	3	2	5 Low / medium
Reflectivity	O	▪ Adverse solar reflectivity glare to motorists and pedestrians	▪ Exterior façade elements used throughout the development are to limit light reflectivity to 20% or less in the future detailed buildings on the Site.	2	2	4 Low / medium

Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Risk Assessment		
				Significance of Impact	Manageability of Impact	Residual Impact
Contamination	C+O	▪ Exposure of contamination or hazardous materials during construction	▪ It is recommended that spoils generated from the Site during construction will be are required to be waste classified in accordance with NSW EPA (2014) Waste Classification Guidelines prior to off-site disposal. ▪ An Unexpected Finds Protocol (UFP)should be implemented to manage unexpected contamination encountered during construction ▪ It is recommended that additional investigation include an assessment for acid sulphate spoils to develop an appropriate strategy to manage acid sulphate spoils encountered during excavation.	2	3	5 Low/Medium
Wind Impact	O	▪ Adverse wind environment	▪ Potential mitigation measures are to be further explored in the detailed design of the buildings on the Site.	3	2	5 Low / medium
Environmental and Construction Management	C	▪ Noise, dust, air quality and traffic impacts	▪ Works are to be carried out in accordance with the Construction Management Plan prepared at the relevant stage of the project.	3	2	5 Low / medium

7.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 15** below. These measures have been derived from the previous assessment in Section 5.0 and those detailed in appended consultants' reports.

As the proposed development is a Concept Envelope only, many of the impacts cannot be fully assessed (and therefore mitigated) until the Stage 2 Development Assessment(s) are undertaken. The mitigation measures provided below are therefore to be read predominantly as design guidance for the Stage 2 Detailed Design and Development Application. Future Stage 2 Development Applications will include a complete set of applicable Mitigation Measures for the future development.

Table 15 – Mitigation Measures

Mitigation Measures
Wind The recommendations of the Wind Report prepared by Cermak Peterka Petersen (CPP) are to be implemented including: ▪ to include an awning or overhang to the west of the tower to improve local wind conditions. The necessity and size of any awning could only be finalised after quantification of the wind conditions following wind-tunnel testing.
Traffic The recommendations outlined in the Transport Impact Assessment prepared by CBRK are to be employed including: ▪ A Construction Traffic Management Plan should be developed based upon the Principles outlined in this EIS.
Noise The construction noise mitigation measures outlined in the Noise and Vibration Report prepared by Acoustic Logic are to be adopted during construction. ▪ The Stage 2 SSD DA report(s) will seek to identify the strategies for noise control and management.
Geotechnical The recommendations outlined in the Geotechnical Assessment prepared by Coffey Environments Australasia Pty LTD are to be implemented including the following: ▪ Review of geotechnical and groundwater constraints and excavation retention requirements following concept design of the proposed basement and any other proposed in-ground structures.
Heritage The recommendations outlined in the Heritage Reports include: ▪ Archaeological test excavation, undertaken in accordance with archaeological best practice, should be undertaken to determine the location of predicted archaeological remains and to assess their degree of survival and intactness. ▪ Should the program of historical test excavation identify substantial and/or significant historical archaeological remains, further excavation and recording of these features may be required following demolition of existing structures. ▪ The results of archaeological test excavation and recording should be used to inform future historical heritage management and interpretation measures, if appropriate, as part of future development of the Site. ▪ In the event of any unexpected finds, works should cease and the NSW Heritage Division, OEH be notified in accordance with Section 146 of the Heritage Act. ▪ An 'unexpected finds protocol' should be developed and should any intact soil horizon or suspected Aboriginal archaeological deposit be identified, works should cease and a qualified Aboriginal archaeologist should be consulted. ▪ Aboriginal community consultation should be undertaken in accordance with the OEH guidelines for consultation 2010. ▪ An Aboriginal archaeological research design should be prepared that details how the study area will be tested and if relevant, subject to salvage excavation, in consultation with the applicant. ▪ Should archaeological excavation identify an Aboriginal site/deposit of exceptional value. There may be a need to cease works and discuss options for its conservation and mitigation.
Access The recommendations of the Accessibility Report prepared by Morris Goding are to be incorporated into the detailed design. ▪ In order to ensure equal access is provided throughout the proposed development, the detailed design of the

Mitigation Measures
proposal will need to ensure compliance with the relevant accessibility provisions of the BCA.
Ecologically Sustainable Development The following measures will be incorporated into the building design to maximise its environmental performance and energy efficiency: ▪ The ESD measures outlined in the Ecologically Sustainable Design Report prepared by Arup are to be explored in the Stage 2 detailed design of the building design to maximise the environmental performance and energy efficiency of the building.
Construction Management A Construction Management Plan (CMP) will be finalised and agreed to with the RMS prior to the release of the Construction Certificate following subsequent DAs.
Visual Impact ▪ Mitigation Measures outlined in the Visual Impact Assessment prepared by JBA shall be considered in the detail design of the development.
CPTED ▪ A CPTED report should be undertaken for the detailed designs and submitted with the Stage 2 DA(s).
Reflectivity ▪ Reflectivity analysis should be undertaken for the detailed designs and submitted with the Stage 2 DA(s).

8.0 Conclusion and Justification of the Proposal

This EIS has been prepared to assess the environmental, social and economic impacts of the proposed Stage 1 Concept Proposal for the Cockle Bay Wharf Site. The EIS has addressed the issues outlined in the SEARs (**Appendix A**) and accords with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

It is considered the project warrants approval for the following reasons:

- the Concept Proposal is permissible with consent and meets the requirements of the relevant statutory planning controls;
- the proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the *Environmental Planning and Assessment Regulation 2000*;
- the area and shape of the site allows for the provision of the proposed Concept Proposal whilst not resulting in any unacceptable adverse impacts on surrounding buildings and uses;
- significant public benefit will be provided by the Concept Proposal through the repair of severed access between Darling Harbour and the CBD, though the introduction of a new pedestrian link to Darling Harbour, and through the provision of expanded (up to 12,000m^2) publicly accessible areas in the Darling Harbour precinct.
- the mixture of uses proposed will complement the current and future uses of Darling Harbour, contributing to the revitalisation of the precinct as a lively and world-class destination;
- world class high quality retail and entertainment offering catering for local and tourist markets will be delivered on the Site through the Concept Proposal, contributing to the entertainment and retailing experience of Darling Harbour;
- opportunities will be provided for more activated ground level public domain spaces and greater opportunities for event spaces in the public domain, contributing to the entertainment and tourism values of Darling Harbour;
- a number of benefits will be delivered to the Pyrmont Bridge, including greater building separation, the removal of disused monorail infrastructure, make-good works and additional viewing opportunities from publicly accessible areas;
- address identified pedestrian flow bottle-necks, such as on New Year's Eve;
- the proposal will provide for additional surveillance opportunities with the delivery of the future buildings and overall improvements to the Site, in turn increasing the perception of the area as a high quality and safe environment;
- the site is adequately serviced with potable water and stormwater infrastructure and electrical and communication services;
- the project has been informed by extensive pre-lodgement community consultation, with feedback from this consultation shaping the end outcome of the Concept Proposal;
- the provision of a vibrant retail and Commercial precinct will further support and strengthen the vitality of Darling Harbour on the world stage.

Given the planning merits described above, and the significant public benefits associated with the proposed development, it is recommended that this application be approved.