

Environmental Assessment Report Project Application

Darling Walk, Darling Harbour Public Domain Works

Submitted to
Department of Planning
On Behalf of Lend Lease Development

September 2009 ■ 08149

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This report has been prepared by: Kirk Osborne

Signature  Date 09/09/09

This report has been reviewed by: Gordon Kirkby

Signature  Date 09/09/09

Statement of Validity

This Environmental Assessment has been prepared and submitted under Part 3A of the *Environmental Planning and Assessment Act 1979* (as amended) by:

Environmental Assessment

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Qualifications	BA MURP MPIA CPP
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Address	Level 7, 77 Berry Street North Sydney NSW 2060
In respect of	Project Application for public domain works at Darling Walk, Darling Harbour

Project Application

Applicant	Lend Lease Development
Address	30 The Bond, 30 Hickson Road Millers Point NSW 2000
Land to be developed	Darling Walk, Darling Harbour
Proposed development	Project Application for public domain works at Darling Walk, Darling Harbour
Environmental Assessment	An Environmental Assessment (EA) is attached
Certificate	<p>I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge:</p> <ul style="list-style-type: none">▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation.▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

Signature



Name

Kirk Osborne

Date

9 September 2009

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- K** Flood Study
Worley Parsons

Executive Summary

In July 2008 the Minister of Planning approved a Concept Plan (MP06_0054) for the redevelopment of Darling Walk, Darling Harbour. A subsequent Project Application for the bulk excavation and construction of the basement structure and buildings (MP08_0057), comprising 67,827m² GFA of commercial and retail uses and a children's theatre was approved in January 2009.

Development Applications for the diversion of the James Street stormwater drain (DA 122-08-08) and remediation and piling works (DA 133-08-08) on the site were also approved in October and December 2008 respectively.

In accordance with the Darling Walk Concept Plan and its terms of approval, this Project Application for Public Domain works is submitted for approval under Part 3A of the *Environmental Planning and Assessment Act 1979*.

Proposed Development

This Project Application seeks approval for the upgrade of the public domain areas of the site and improvements to the existing Bathurst Street footbridge.

The proposed works comprise:

- the detailed design, layout and construction of the public domain works;
- augmentation works to the Bathurst Street pedestrian footbridge, including metal cladding to the steel framework provision of a transparent polycarbonate awning the length of the bridge;
- roadworks (within the boundary of the site); and
- rebuilding of the male toilets by the northern Liverpool Street footbridge.

The public domain works specifically include streetscape upgrades to Harbour Street and the creation and embellishment of the following components:

- Pedestrian Boulevard and Retail Terrace;
- Playground area consisting of a mix of passive and active uses, outdoor dining kiosk and amenities;
- Terraced community green;
- Melaleuca Grove; and
- Civic Connector.

Environmental Assessment

The Project Application has considered and assessed a range of environmental issues including:

- Public Domain and Landscape Design
- Playground and BCA Certification;
- Accessibility;
- Safety and Security;
- Stormwater and Flooding; and
- Construction Management.

This application demonstrates that the development will have minimal adverse environmental impacts, with any potential impacts being effectively managed by the measures outlined within the Project Applications and Draft Statement of Commitments.

The proposed works will improve the public domain and pedestrian links within the site, encourage use by a mix of people of all ages and be a leading example in landscape architecture to achieve sustainability objectives.

1.0 Introduction

This Project Application and Environmental Assessment Report (EAR) is submitted to the Minister for Planning pursuant to *Part 3A of the Environmental Planning and Assessment Act 1979* (EP&A Act). This is to fulfil the Environmental Assessment Requirements issued by the Director General for the preparation of an Environmental Assessment of a Project Application for public domain works at Darling Walk, Darling Harbour.

The Darling Walk site is part owned and currently controlled by the Sydney Harbour Foreshore Authority (the Foreshore Authority). Lend Lease Development (LLD) is the proponent for the redevelopment of Darling Walk.

The report has been prepared by JBA Urban Planning Consultants Pty Ltd, for the proponent, Lend Lease Development and is based on information provided by Aspect Studios, FJMT Architects and supporting technical documents provided by the expert consultant team.

This EAR describes the site, its environs and the proposed development, and includes an assessment of the proposal in accordance with the Director-General's Environmental Assessment Requirements under Part 3A of the EP&A Act. It should be read in conjunction with the information contained within and appended to this report.

1.1 Project Background

State Environmental Planning Policy (Major Development) 2005 (the Major Development SEPP) identifies development to which Part 3A of the EP&A Act applies and for which the Minister is the consent authority.

The Darling Walk site is located within the Sydney Harbour Foreshore area, identified at Clause 10(d) of Schedule 2 of the Major Development SEPP. Under this provision, developments with a capital investment value of greater than \$5million (and declared by the Minister) are subject to the provisions of Part 3A of the EP&A Act.

On 19th April 2006, the Minister for Planning formed the opinion that the Darling Walk development proposal is a development of the kind described in Schedule 2 of the Major Development SEPP and is a 'major project' to be determined under Part 3A of the EP&A Act and also authorised the lodgement of a Concept Plan for the project.

Since this time, the following four applications have been lodged and approved. These applications are also discussed in more detail below.

- Concept Plan for the redevelopment of the Darling Walk site.
- Project Application for the bulk excavation of the site, detailed design and construction of the buildings on the site.
- Development Application for the diversion of the James Street stormwater drain.
- Development Application for the remediation of the site and associated piling works.

1.1.1 Concept Plan Approval

In December 2007, the Foreshore Authority submitted a Concept Plan and Environmental Assessment Report to the Minister for Planning pursuant to Part 3A of the EP&A Act. The Concept Plan sought approval for:

- redevelopment of Darling Walk, Darling Harbour to provide between 64,000m² and a maximum of 68,000m² GFA of primarily commercial floorspace but including up to 5,000m² GFA of retail floorspace (retail and associated uses) and up to 1,000m² GFA for cultural, recreational and entertainment uses;
- a maximum of 200 car parking spaces to service the commercial buildings and a 600 space public car parking facility;
- public domain improvements;
- demolition of existing buildings; and
- an approvals pathway for the approval of subsequent stages of the development to be assessed under Part 4 of the EP&A Act.

The Concept Plan was approved on 9th July 2008. It also determined that:

- development with a capital investment value of more than \$5million excluding remediation be subject to Part 3A of the EP&A Act and;
- development with a capital investment value of less than \$5million and remediation be subject to Part 4 of the EP&A Act.

1.1.2 Project Application for Bulk Excavation and Construction of Buildings

In September 2008, Lend Lease Development submitted a Project Application and Environmental Assessment Report to the Minister for Planning seeking approval for:

- bulk excavation;
- detailed design, layout and construction of the basement structure and buildings on the site; and
- access and egress arrangements into and out of the basement car park from / to Harbour Street.

The proposed buildings comprise:

- 64,232m² GFA commercial floorspace;
- 2,592m² GFA retail floorspace;
- 1,000m² GFA children's theatre;
- basement car park comprising 200 car parking spaces to service the commercial buildings and a 600 public parking facility.

The Project Application for the buildings was approved on 2nd January 2009.

Within the Project Application, the EA highlighted the need for removal of a total of 52 trees across the site, including 12 trees to the west of the lake and around the children's playground. An Arboricultural Report was submitted with the application which considered they were of low retention value. By virtue of this, it is considered that any further approval for the removal of trees across the site is not required.

Furthermore, indicative details in relation to the McDonald's Drive-thru were submitted within the Preferred Project Report.

In accordance with the Project Application approval, details of the access and traffic management measures in relation to the entrance / exit to and circulation within the McDonalds drive-thru have been agreed with the RTA and provided to the Certifying Authority. This Public Domain Project Application seeks approval for the roadworks within the boundary of the site, as discussed in Section 5 below.

1.1.3 Development Application for Stormwater Drain Diversion

As part of the site preparation works, a Development Application (DA 122-08-08) was submitted in August 2008, on behalf of Lend Lease Development for the diversion of the James Street stormwater drain, which bisected the southern part of the Darling Walk site.

This application included the request to demolish and reinstate the male toilets by the northern Liverpool Street footbridge and removal of existing footings of the northern footbridge and installation of new piles.

Consent was granted by the Sydney Harbour Foreshore Authority on 14 October 2008, however this did not include approval for the rebuilding of the male toilets by the northern footbridge. As such, this Project Application seeks consent for this element (refer to Section 5).

1.1.4 Development Application for Remediation and Associated Piling Works

In August 2008, Development Consent was sought by Lend Lease Development for:

- the remediation of contamination and the removal of Acid Sulphate Soils within the area to be excavated for the proposed basement structure; and
- the installation of a piling / shoring system around the perimeter of the proposed in-ground basement to facilitate the remediation works.

Development Consent was granted by the Minister of Planning on 1 December 2008.

The remediation works within the basement part of the site have been completed and those proposed within the public domain area will be undertaken during the construction of the public domain works.

1.2 Overview of Approval Sought

This Project Application is seeking approval for:

- the detailed design, layout and construction of the public domain works (refer to drawings at **Appendix A and B**);
- augmentation works to the Bathurst Street pedestrian footbridge (refer to drawings at **Appendix B**).
- roadworks (within the boundary of the site) (refer to **Appendix C**); and
- rebuilding of the male toilets by the northern Liverpool Street footbridge (refer to drawings at **Appendix A**);

Specifically the public domain works include streetscape upgrades to Harbour Street and the creation and embellishment of the following components:

- Pedestrian Boulevard and Retail Terrace;
- Playground area consisting of a modulated terrain, play equipment, sand and water play areas;
- Terraced community green;
- Melaleuca Grove;
- Civic Connector; and
- Streetscape upgrades.

1.3 Director General's Environmental Assessment Requirements

On 9th May 2008, the Director General issued single Environmental Assessment Requirements (**Appendix D**) for three Project Applications:

- MP 08_0057 - Bulk excavation and construction of basement structure;
- MP 08_0092 - Construction of buildings; and
- MP 08_0093 - Public Domain works and construction of roads.

As discussed at Section 1.1.2, the Project Application, combined the bulk excavation, construction of basement structure and buildings into one application.

The Director General's Requirements require this Public Domain Environmental Assessment (EA) to address the same key issues as has been previously addressed within the Project Application for the bulk excavation and construction of the buildings. **Table 1** below identifies the issues which are relevant to the Public Domain Project Application and those which have been already addressed within the previous Project Application, and are therefore not addressed in this EA. The issues relevant to the proposed public domain works are addressed in Section 6 of this report.

Table 1 – Key Assessment Issues

Key Issue	Issues to be addressed in Public Domain EA	Issues addressed as part of a previous application	Location of issues previously addressed
Relevant EPI's Policies and Guidelines	✓	✓	Project Application for Buildings
Compliance with Concept Plan	✓	✓	Project Application for Buildings
Built Form		✓	Project Application for Buildings
Excavation and Construction		✓	Project Application for Buildings
Urban Design	✓	✓	Project Application for Buildings
Heritage		✓	Project Application for Buildings
Safety / Public Domain / Landscaping	✓	✓	Project Application for Buildings
Environmental and Residential Amenity		✓	Project Application for Buildings
Car Parking / Traffic Impacts		✓	Project Application for Buildings
Environmental Management Plan	✓	✓	Project Application for Buildings
Ecologically Sustainable Development	✓	✓	Project Application for Buildings
Drainage (Stormwater)	✓	✓	Project Application for Buildings
Flooding	✓	✓	Project Application for Buildings
Groundwater		✓	Project Application for Buildings; DA for remediation
Infrastructure	✓	✓	Project Application for Buildings
Consultation	✓	✓	Project Application for Buildings

1.4 Structure of the Report

The report is structured as follows:

Section 1: Introduction, project background, overview of approval sought, summary of DG's requirements addressed, structure of the report, project team and capital investment value.

Section 2: Site analysis and overview of existing site conditions.

Section 3: The current planning framework applying to the site.

Section 4: Summary of the key issues from Consultation with the Foreshore Authority.

Section 5: Project Description.

Section 6: Environmental Assessment of the Project Application.

Section 7: Draft Statement of Commitments.

Section 8: Conclusion.

1.5 Project Team

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

Proponent	Lend Lease Development
Project Manager	Bovis Lend Lease
Urban Planning	JBA Urban Planning Consultants
Landscape Architects	Aspect Studios
Architects	FJMT
Quantity Surveyors	Rider Levett Bucknall
Surveyors	Rygate & Company Pty Ltd
Civil Works Engineers	Hyder Consulting
Flooding Engineers	Worley Parsons
Accessibility Consultant	Morris-Goding Accessibility Consultants
Playground Certifier	Professor David Eager on behalf of accessUTS Pty Limited
BCA Consultant	Philip Chun Associates Pty Ltd

1.6 Capital Investment Value

The estimated cost of works is \$15,120,064 as detailed in the Quantity Surveyors Statement prepared by Rider Levett Bucknall (**Appendix E**).

2.0 Site Analysis

2.1 Site Location and Context

Darling Walk is located within the Darling Harbour precinct. It is situated west of Harbour Street at the western edge of Sydney Central Business District (CBD), south of the Western Distributor fly over, north of the Chinese Garden and east of Tumbalong Park. Town Hall Railway Station is approximately 400m to the north-east and Central Station is approximately 800m to the south-east.

The site's location is shown at **Figure 1** below and a site context plan is shown at **Figure 2** and included at **Appendix A**.

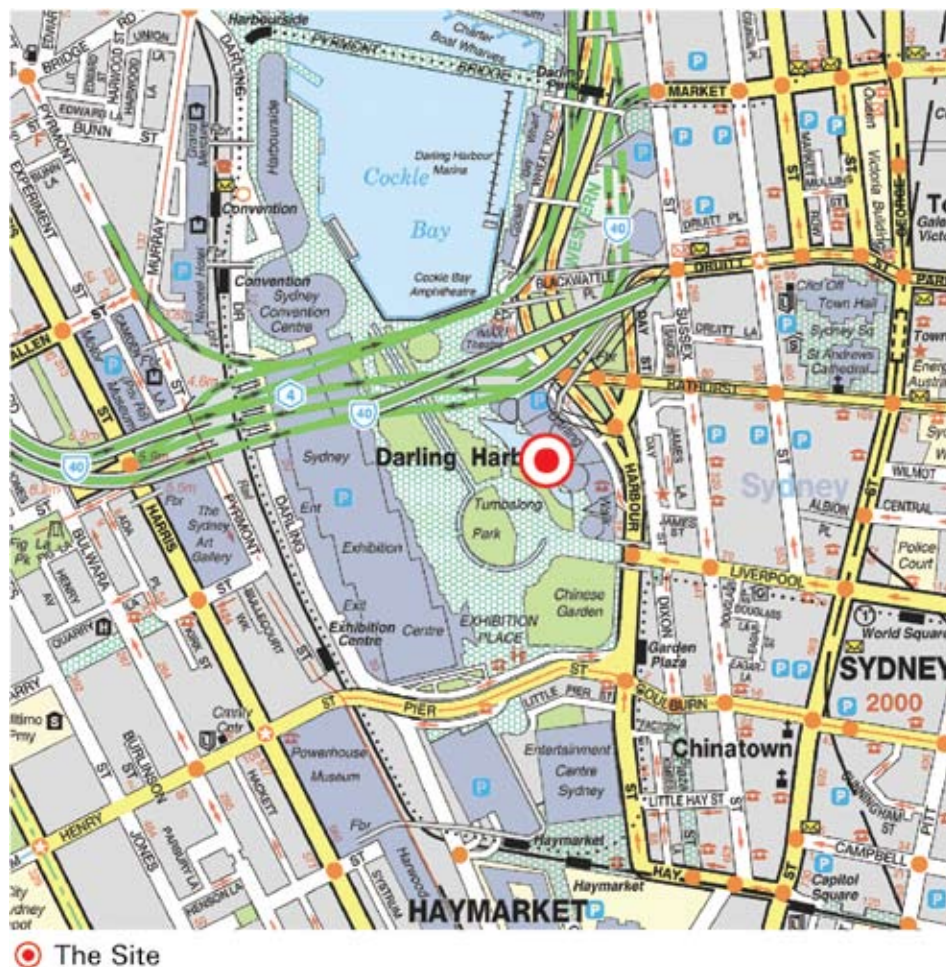


Figure 1 – Location Plan

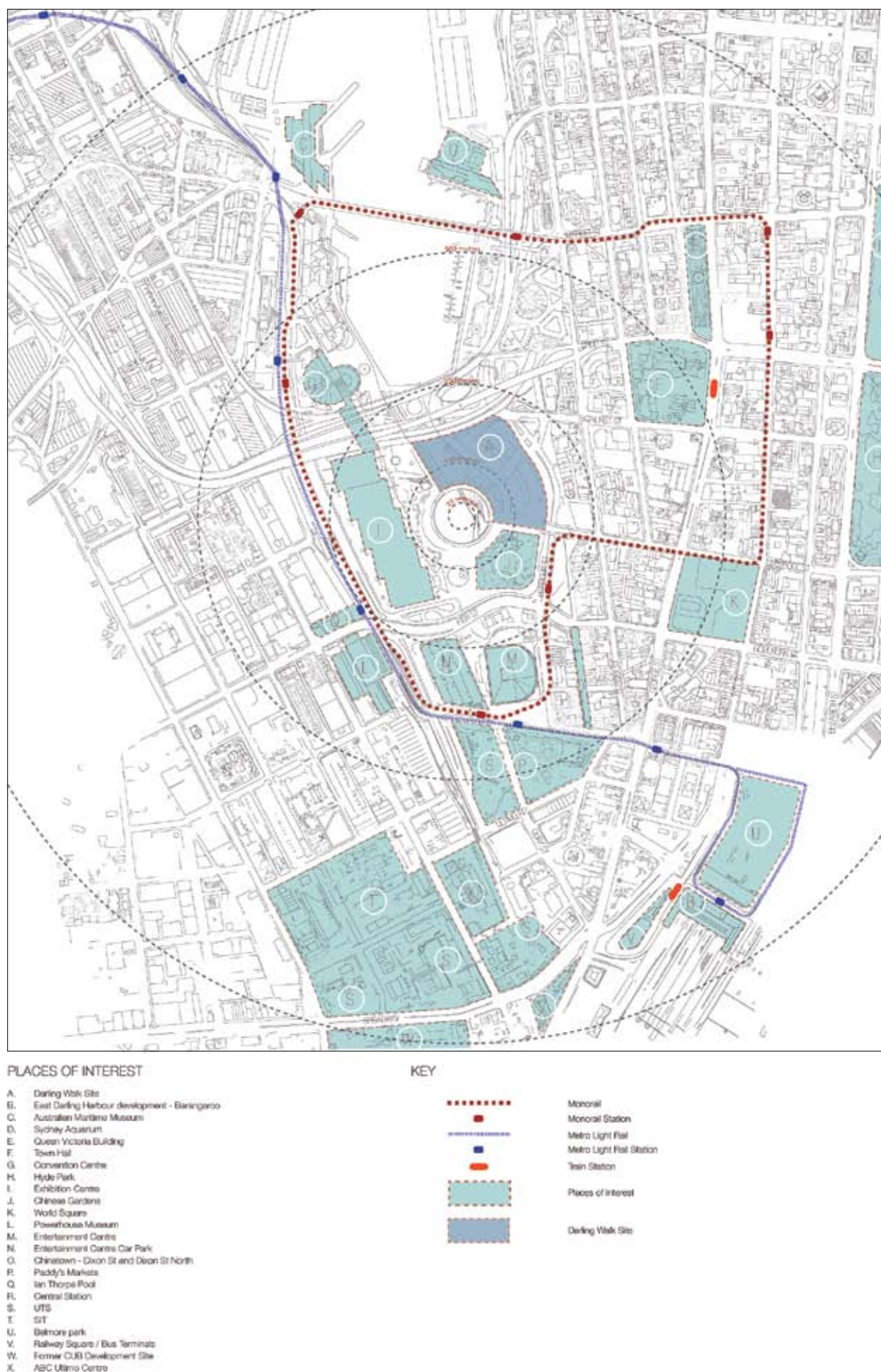


Figure 2 – Site Context Plan

2.2 Site Description

The land to which this Project Application applies comprises the Darling Walk site. The site is elongated in shape and covers an area of approximately 32,900m². The extent of the site is illustrated in **Figure 3**.



■ The Site

Figure 3 – Extent of the site

2.3 Land Ownership and Legal Description

The site includes 27 parcels of land, as legally described in **Table 2** and identified on the Landownership Plan at **Appendix F**. Land ownership details are also set out in **Table 2**.

Table 2 – Landownership Details

Lot	Deposit Plan	Owner
900	1132344	Sydney Harbour Foreshore Authority
318	871455	Sydney Harbour Foreshore Authority
319	871455	Sydney Harbour Foreshore Authority
11	1125890	Sydney Harbour Foreshore Authority
600	1126760	Sydney Harbour Foreshore Authority
602	1126760	Sydney Harbour Foreshore Authority
502	1126762	Sydney Harbour Foreshore Authority
504	1126762	Sydney Harbour Foreshore Authority
505	1126762	Sydney Harbour Foreshore Authority
201	1130038	Sydney Harbour Foreshore Authority
202	1130038	Sydney Harbour Foreshore Authority
203	1190038	Sydney Harbour Foreshore Authority
204	1130038	Sydney Harbour Foreshore Authority
205	1130038	Sydney Harbour Foreshore Authority
206	1130038	Sydney Harbour Foreshore Authority
208	1130038	Sydney Harbour Foreshore Authority
213	1130038	RTA
217	1130038	Sydney Harbour Foreshore Authority
218	1130038	RTA
305	787105	Sydney Harbour Foreshore Authority
7	787105	Sydney Harbour Foreshore Authority
8	787105	Sydney Harbour Foreshore Authority
9	787105	Sydney Harbour Foreshore Authority
10	787105	Sydney Harbour Foreshore Authority
2	1048307	Sydney Harbour Foreshore Authority
316	869004	Sydney Harbour Foreshore Authority
Part of Harbour Street		City of Sydney

2.4 Existing Development

The site formerly comprised the Sega World games and amusement complex, housing a range of entertainment, retailing and tourism uses and a large area of public domain space, as shown in **Figure 4**.

Following the approval of the applications as listed in Section 1, the buildings were demolished and excavation and remediation works undertaken.

Figure 5 shows the site following demolition of the buildings.



Figure 4 – Former Sega World building situated on the Darling Walk site



Figure 5 – Current aerial view of the site

2.5 Surrounding Development

Darling Walk is part of the Darling Harbour precinct which contains venues such as Sydney Entertainment Centre, Sydney Convention and Exhibition Centre, the IMAX cinema, and numerous harbour side bars and restaurants.

The pedestrian area to the north of the site links the Darling Walk site to Cockle Bay and the waterside. Within this area lies the Palm Grove amphitheatre, an event space and the IMAX cinema.

Immediately to the south of the site is the Chinese Garden of Friendship. Tumbalong Park bounds the Darling Walk site to the south-west. It is circular in shape and comprises a large grassed area, a raised covered stage area and back stage facilities. Further west is the Sydney Convention and Exhibition Centre.

To the east, the site is bounded by Harbour Street, which links to the Western Distributor. The eastern side of Harbour Street includes a range of uses, such as the Crown Plaza hotel, residential apartment buildings (Millennium Towers and Emporio), Global College and a police station (**Figure 6**). These buildings vary in height between 14 storeys (Crown Plaza hotel) and 21 storeys (Millennium Towers), both substantially taller than the proposed development at Darling Walk.

The surrounding uses are also illustrated on the context plan at **Figure 2** and **Appendix A**.



Figure 6 – Aerial view of site (prior to demolition) and surrounding development

2.6 Accessibility

Pedestrian Access

The key pedestrian bridge linkages to the site from the CBD comprise the Bathurst Street pedestrian bridge, situated to the north east of the site and the two parallel Town Hall / Liverpool Street pedestrian bridges which are situated to the south of the site.

The Bathurst Street bridge is to be augmented and integrated into the northern buildings as discussed in further detail in Section 5.

A further pedestrian connection is an at grade pedestrian crossing at the Harbour Street / Day Street intersection which links to the proposed Civic Connector.

Vehicular Access

Vehicular access to the site is currently confined to the access gates from Harbour Street for construction vehicles only. Access to the site and car parking areas will ultimately be from Harbour Street at the Harbour Street / Day Street interchange section and egress from the car park will be on to Harbour Street at the southern end of the southern building.

Public Transport Access

The site is within easy walking distance of a number of public transport nodes, including Town Hall Railway (400m), Central Railway Station (800m), Darling Harbour Ferry Wharf (500m), the Light Rail Station (400m) and a number of bus services on surrounding streets.

3.0 Planning Framework and Context

3.1 Relevant Planning Instruments

The following planning instruments are relevant to the proposed development:

- Darling Harbour Development Plan No. 1
- State Environmental Planning Policy (Major Development) 2005
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy 55: Remediation of Land
- Sydney Regional Environmental Planning Policy (Sydney Harbour Catchment) 2005

3.1.1 Darling Harbour Development Plan No.1

The principal environmental planning instrument applying to the site is the Darling Harbour Development Plan No.1 (DHDP). Following recent amendments to the EP&A Act it is now taken to be deemed SEPP. Its principal aim is to define the type of development which may be permitted within the Darling Harbour Development Area. Permissible uses include commercial, retail, cultural and entertainment uses.

An assessment of the proposal against the Darling Harbour Development Plan controls is included in Section 6.

3.1.2 State Environmental Planning Policy (Major Development) 2005

The Major Development SEPP identifies certain categories of development and certain specified sites that are subject to assessment and determination under Part 3A of the EP&A Act. The Minister for Planning is the consent authority for Part 3A projects. The site is listed under Schedule 2 of the Major Development SEPP.

3.1.3 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005, establishes a set of planning principles for land within the Sydney Harbour Catchment and general matters for consideration for sites within the Foreshores and Waterways Area that consent authorities must consider before granting consent under Part 4 of the EP&A Act.

An assessment of the proposal against the Sydney Harbour REP is included at Section 6.

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

SEPP 55 provides controls and guidelines for the remediation of contaminated land. In particular, this policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

Clause 7 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. An assessment of the proposal against SEPP 55 is included at Section 6.

4.0 Consultation

In accordance with Part 3A of the EP&A Act consultation is required to occur at the following stages:

- the Director General of the Department of Planning is required to consult with relevant public authorities in preparing the environmental assessment requirements for the Concept Plan; and
- the Director-General is required to advertise and exhibit the Environmental Assessment and appended reports and documentation.

In preparing the DGRs for the Environmental Assessment, the Department of Planning consulted with the following authorities and groups:

- City of Sydney
- NSW Heritage
- Roads & Traffic Authority (RTA)
- NSW Health

Comments and issues raised by these authorities and groups were considered in preparing the DGRs and the Concept Plan (which included the public domain works concept) was publically exhibited, prior to its approval.

Furthermore in preparing the Project Application for bulk excavation and construction of buildings the proponent consulted with Sydney Water, the RTA, Energy Australia, Railcorp, Telstra and Agility. It is considered that it is not necessary to consult further with these bodies in regard to the proposed public domain works.

We note, that the proposed intersection designs and McDonalds drive-thru arrangements have already been agreed with the RTA and submitted to the Certifying Authority as required under the Project Application approval for the bulk excavation and construction of buildings.

4.1 Consultation with Sydney Harbour Foreshore Authority

In preparing this Public Domain Project Application, the proponent has consulted with the Foreshore Authority as landowner. **Table 3** summarises the meetings held during the consultation process.

Table 3 – Summary of Consultations

Date of Meeting	Attendees	Purpose of Meeting	Issues resolved / discussed
23 rd October 2008	Foreshore Authority, LLD, Aspect	Workshop 1: Aspect presentation of civic connector, pedestrian boulevard and village green design	
6 th November 2008	Foreshore Authority, LLD, Aspect	Workshop 2: Playground design Tumbalong park connections	<ul style="list-style-type: none"> - Additional play equipment for older age groups included in design
20 th November 2008	Foreshore Authority, LLD, Aspect	Workshop 3: Lighting, street furniture and signage	<ul style="list-style-type: none"> - Pumproom and water tank locations. - Opportunities for interpretive overlay. - Furniture re-use and details. - Lighting strategy for Darling Harbour. - Signage and way-finding requirements
11 th December 2008	Foreshore Authority, LLD, Aspect	Workshop 4: Staging option for public domain. Pricing and planning strategy	<ul style="list-style-type: none"> - Staging of playground. - Paving materials. - Flooding
20 th April 2009	Foreshore Authority, LLD, Aspect	Workshop 5: Sustainability NABERS / Greenstar, water recycling and lighting	<ul style="list-style-type: none"> - SHFA support sustainable design. - Water tank size and location. - Lighting design and integration with Darling Harbour Lighting Strategy.
4 th May 2009	Foreshore Authority, LLD, Aspect	Workshop 6: Technical review of water play	<ul style="list-style-type: none"> - Plant room locations and access. - Water play risk assessment. - Civic connector resolution of water feature.
14 th May 2009	Foreshore Authority, LLD, Aspect	Workshop 7: Public domain design update and kiosk design	<ul style="list-style-type: none"> - SHFA support design strategy and kiosk design sign-off process
25 th June 2009	Foreshore Authority, LLD, Aspect	Workshop 8: Public Domain EA workshop	<ul style="list-style-type: none"> - SHFA support of public domain design for EA submission

5.0 Proposed Project

This Project Application seeks approval for:

- the detailed design, layout and construction of the public domain works;
- augmentation works to the Bathurst Street pedestrian footbridge;
- roadworks (within the boundary of the site); and
- rebuilding of the male toilets by the northern Liverpool Street footbridge.

5.1 Public Design Principles

Aspect Studios have prepared a Landscape Design Statement and drawings illustrating the proposed landscaping treatments for the public domain at Darling Walk (**Appendix A**).

The principles underpinning the detailed design of the scheme are:

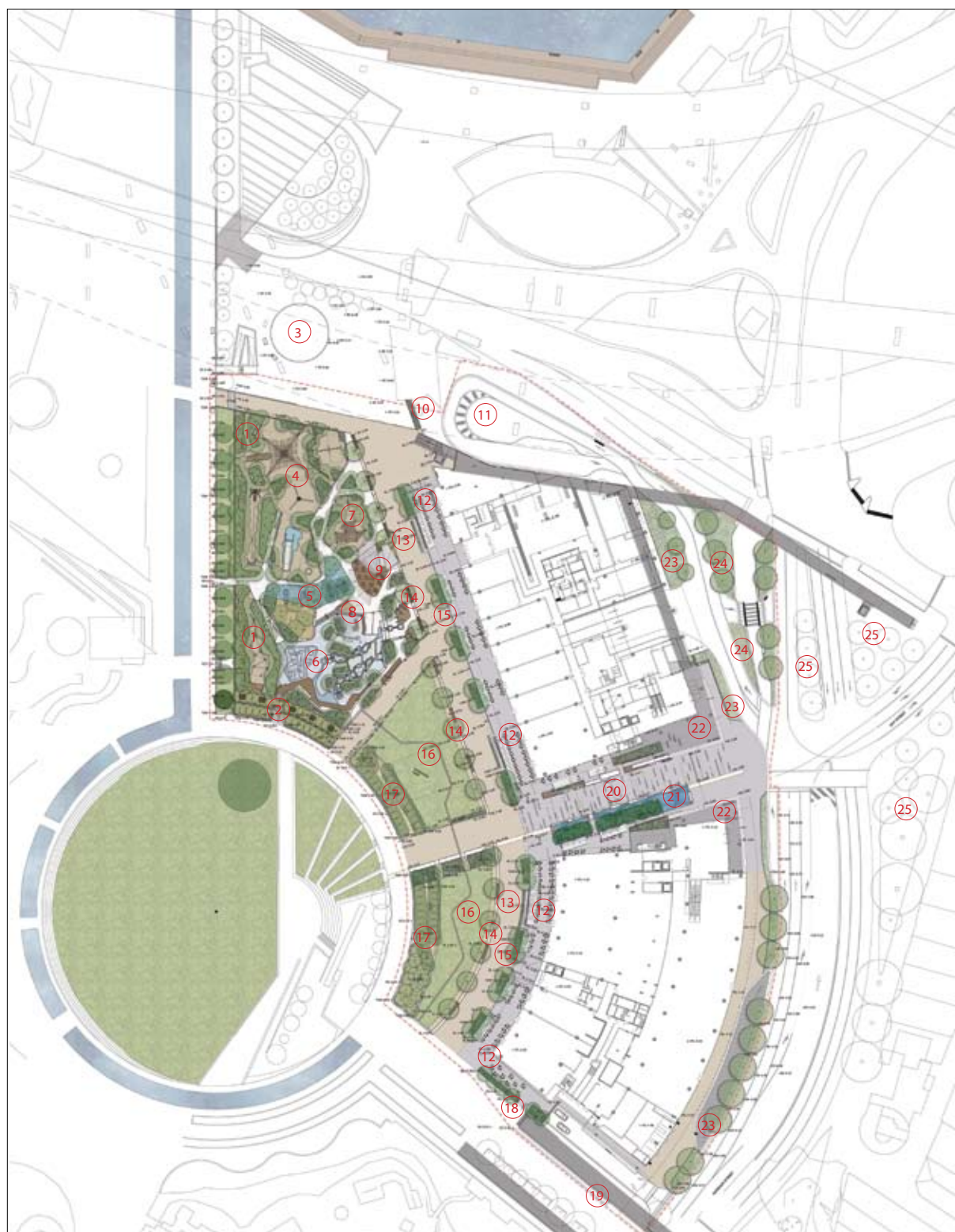
- improve pedestrian and visual connections to the site, specifically from the city and surrounding areas within Darling Harbour;
- enhance the quality, quantity and usability of public space;
- provide a public domain that encourages use by people of all ages;
- respond to existing site conditions including the geometry of Tumbalong Park and create increased connections to Tumbalong Park;
- employ best practice in landscape architecture to achieve sustainability objectives;
- improve biodiversity and environmental protection through choice of plant and hard materials;
- improve connections to waterways and ability to engage with the foreshore;
- ensure that the public domain is designed with regard to crime prevention through it's environmental design;
- provide a public domain that has been designed for longevity through use of robust materials;
- provide spaces that can cater to a multiplicity of uses; and
- be an exemplar of leading practice landscape architecture.

5.2 Public Domain

The public domain works includes the creation and embellishment of the following components:

- Pedestrian Boulevard and Retail Terrace;
- Playground area consisting of modulated terrain, play equipment, sand and water play areas, kiosk, amenities and shade structures;
- Terraced Community Green;
- Melaleuca Grove;
- Civic Connector; and
- Harbour Street upgrades.

The detailed Landscape Master Plan for Darling Walk is included in **Appendix A** and also illustrated in **Figure 7** below.



KEY

- | | |
|--|--|
| 1. Exploratory forest play zone | 13. Pedestrian boulevard. Brick paving |
| 2. Proposed Melaleuca grove in gravel | 14. Seating edge and tree planting in gravel |
| 3. Existing carousel | 15. Raised planters, seating and steps along podium edge |
| 4. Dynamic and Net Play/Swing Zone | 16. Terraced community green |
| 5. Sand Play zone | 17. Existing Melaleuca grove retained and supplemented in gravel |
| 6. Water Play Zone | 18. Raised planters and steps through |
| 7. Junior Net Zone | 19. Reinstate male toilets under walkway |
| 8. Toddler Play with shade structure over | 20. Civic Connector - concrete unit pavers with inlay panels of text, lighting and water feature |
| 9. Kiosk / Toilet with shade structure over on timber decking - flush with surrounding playground paving | 21. Civic Connector 'water line' and feature planting |
| 10. Fence and raised planting bed | 22. Building lobby entrances. Stone paving |
| 11. McDonalds drive-through and loading dock | 23. New street planting to Harbour Street frontage |
| 12. Raised podium retail terrace. Concrete unit pavers and removable umbrellas | 24. New planting |
| | 25. Existing street planting to Harbour and Day Streets |

Figure 7 – Landscape Master Plan

Pedestrian Boulevard and Retail Terrace

The Pedestrian Boulevard is the main north-south pedestrian connection through the site, leading from the Liverpool Street pedestrian bridges in the south, along the western side of the new buildings and linking into the existing pedestrian walkway towards Cockle Bay. It is 7m wide and will be activated by cafes and the retail areas located at the ground floor of both buildings. The boulevard is to be paved in red brick paving to match and integrate with the wider Darling Harbour precinct and will include pre-cast concrete seating and canopy trees.

The Retail Terrace is to be elevated approximately 450mm above the pedestrian boulevard and will be 7.7m wide. It will provide seating areas overlooking the surrounding public domain areas and Tumbalong Park. Outdoor seating associated with the future retail uses will also be provided. Shade umbrellas are proposed to be provided to the outdoor seating that is not under the building awning as illustrated in Drawing LD 44527 at **Appendix A**.

It includes a series of ramps, stairs and seats at periodic intervals, providing access to the boulevard. Planters are also to be provided around the edge of the retail terrace to provide a vegetated zone at the base of the buildings. **Figure 8** provides a photomontage of the pedestrian boulevard. The Retail Terrace will be paved in mid grey colour concrete unit pavers in a combination of honed and shot blasted finishes.



Figure 8 – Pedestrian Boulevard

Children's Playground

The playground area has been designed to promote active and imaginative play for children of a wide range of ages and abilities. The playground utilises level changes within the area to create a diversity of play spaces and will include shade structures and trees, and softfall materials (sand, rubber and mulch). Within the Children's Playground a range of seating benches and informal seating will be provided.

The playground has been designed to provide three main play experiences:

- dynamic and interactive play including swings, climbing structures and sand pits;
- water play; and
- forest exploration.

The children's play area comprises the following spaces as illustrated in **Figure 9**.

1. **Dynamic Play Area (ages 5-12)** is designed to provide play experiences for older children. The dynamic play area includes:
 - a tall climbing net structure;
 - rope net bridge (that connects to a flying fox); and
 - four large swings; and
 - a rotating swing.
2. **Forest exploration area (2-12 years)** – a forest exploration area is proposed on the western edge of the playground, comprising groves of spotted gum and including:
 - a flying fox;
 - horizontal rope structure;
 - balancing beams;
 - salvaged sandstone blocks; and
 - small timber deck.
3. **Mogul Terrain zone** (ages 2-5) incorporates undulating moulded rubber soft fall terrain amongst cabbage tree palms for active play.
4. **Junior Dynamic Play Area** (ages 2-5) is designed to provide climbing, swinging and balancing play experiences for younger aged children. The dynamic play area includes:
 - medium sized climbing structure; and
 - double swing for babies and 2-5 year olds.
5. **Observation Zone** – a kiosk (35m²) and small amenities building (23m²) are proposed on the eastern side of the playground. The amenities are for playground visitors and include 2 unisex toilets and one accessible toilet with baby change facilities. The amenities block also provides access to the plant room which services the water play areas and water features.

Shade structures will be provided over the kiosk and amenities buildings and the baby and toddler play area. The structures will consist of galvanised steel and aluminium with timber battens. The spans of the shade structures are between 7m and 9m in length and up to 7.4m in height.
6. **Junior Slide and Sand Play Area** (2-5 years) includes two junior slides and two sand diggers. The space also includes an undulating rubber surface with trees to scramble through.
7. **Senior Slide and Spinning Area** (5-12 years) provides a number of active play elements including:
 - large spinning element; and
 - custom designed mound incorporating climbing wall, scramble hill, tunnel and slide.
8. **Baby Toddler and Play Area** (0-2 years) provides a sheltered space for young children to play with sand and water. A partially enclosed sandpit with low walls and carved sandstone with low velocity water providing puddles are the key elements of the play area.

9. Pumping Station (5 years plus) a pumping station is proposed at the south eastern area of the play ground which will include a series of hand pumps and constantly gurgling water. Water from the pumping station will flow through to the other water play spaces. The pumping station will include:

- 7 hand pumps
- 1 water wheel
- channels in the ground surface; and
- troughs above ground.

10. Water Play / Channels Area (2 years plus) – is a large area of sloping a sculptured concrete surfaces that provides a network of shallow channels and streams. The water play area utilises recycled roof water with chlorine treatment and includes the following:

- sluice gates, manual pumps, locks and flow diverters; and
- water switch devices.

11. Synchronised Jets Area (aged 0+) is part of the broader water play area that includes vertical and curved jets that operate in a synchronised sequence.

Terraced Community Green

The Terraced Community Green includes two large terraced lawn areas for passive recreation. The community green areas are bounded by the existing Melaleuca Grove.

Melaleuca Grove

An extension to the existing Melaleuca Grove is proposed at the southern end of the Children's playground. The area is to be planted out with *Melaleuca quinquenervia* (Broad leaved Paperbark). Benches will be provided beneath the trees, facing towards the playground and Tumbalong Park.

Civic Connector

The Civic Connector is the major east / west connection through Darling Walk site and has been designed as an extension of Day Street. A water feature at the eastern end of the Civic Connector will mark the entry into Darling Walk. The western end of the connector will be designed as a pedestrian street with plantings and informal seating. It is to be approximately 11.7m wide between the stairs at the western end of the Connector and 9m between the water feature and the planter opposite. Heritage interpretation is proposed to be integrated into the paving. Feature lighting will be incorporated into the paving, beneath benches and in planter walls.

Harbour Street Upgrades

The western side of the Harbour Street streetscape will be upgraded with new planting outside the new north and south buildings. Additional works include new kerbs and pavements. Existing road lighting along Harbour Street will be retained, with the exception at the new Harbour Street / Day Street intersection. At this intersection one existing road light is to be removed and replaced with a new intersection light.



KEY

- | | |
|--|--|
| 1. Senior Dynamic Play Area (5-12 years) | 7. Senior Slide and Spinning Area (5-12 years) |
| 2. Forest Exploration Area (2-12 years) | 8. Baby and Toddler Play Area (0-2 years) |
| 3. Mogul Terrain Zone (2-8 years) | 9. Pumping Station (5 years-adult) |
| 4. Junior Dynamic Play Area (2-5 years) | 10. Water Channels Area (2-Adult) |
| 5. Observation Zone (Kiosk and Toilets) | 11. Synchronised Jets (0-Adult) |
| 6. Junior Slide and Sand Play Area (2-5 years) | 12. Seating areas |

Figure 9 – Playground Master Plan

Public Domain Lighting

A public domain lighting plan has been prepared and is included at **Appendix A**. The lighting of the public domain has been designed in accordance with the following principles:

- meet the required lighting lux levels for public spaces;
- use of highly efficient fittings;
- use of visually unobtrusive poles and fittings during daylight hours;
- minimise lighting pollution;
- use of corrosion resistant poles.

The following lighting is to be provided:

- 6m high pole lighting in children's playground;
- single post top light (6m high) along the western side of the north-south boulevard and eastern edge of the Melaleuca Grove;
- under awning recessed lights on the retail terrace (western elevation of northern and southern buildings);
- under canopy downlight on the eastern elevations of the northern and southern building and along the Civic Connector; and
- footbridge lighting wall mounted on the northern elevation of the northern building.

5.2.1 Interpretation Strategy

Deuce Design has prepared an Interpretive Plan for the Darling Walk site (included at **Appendix G**). The interpretive plan aims instil an understanding and appreciation of the site and its history and encourage people to use the public domain areas.

Four areas within the public domain have been identified for interpretation:

- Civic Connector;
- Exploratory Forest Play Area;
- Water Pumping Station; and
- Public Foyers.

The interpretative methods proposed include:

- sculptured elements;
- water;
- text and graphics;
- pieces of former buildings (e.g sandstone blocks);
- interpretive signage; and
- showcasing of relics or objects.

5.3 Materials Palette and Planting

Materials Palette

The material palette for Darling Walk has been determined in close consultation with the Foreshore Authority. The materials selected have been chosen to match existing material where relevant as well as to provide distinctive elements to the new Darling Walk public domain.

The paving materials include stone, brick and concrete pavers of various colours and finishes as detailed on the Paving Materials drawing at **Appendix A**. The paving materials for the pedestrian boulevard, pathways connecting to Tumbalong Park and Palm Grove and the pavement in front of the southern building will be the reddish / brown brick paver that is currently used throughout Darling Harbour. Darker contrasting pavers will be used in through the Civic Connector, terrace and at the main entries to the buildings. Exposed aggregate concrete will also be used in and around the playground elements.

Seating throughout the public domain will comprise a mix of timber bench seats (with and without backs), precast concrete benches with recycled timber seats and concrete bench seating integrated into the playground structures.

Planting Strategy

Planting strategies for trees and understorey planting has been prepared by Aspect. They are included in the Aspect Landscape Drawings at **Appendix A**. The planting strategies include a mix of native and exotic species and the planting of advanced trees varying in heights. The tree planting strategy is illustrated below in **Figure 10**

Proposed tree plantings include:

- Spotted Gum;
- Cabbage Tree Palm;
- Kentia Palm;
- Crepe Mytle;
- Broad-leaved Paperbark;
- Eumundi Quondong;
- 'Luscious' Water Gum; and
- Brush Box.

5.4 Bathurst Street Pedestrian Bridge

The pedestrian bridge crossing Harbour Street (also known as the Harbour Street pedestrian bridge) is to be upgraded in accordance with the Concept Plan and previous Project Application approvals.

As illustrated on the architectural drawings and photomontages at **Appendix B** and **Figure 13** below, the bridge augmentation works include:

- the provision of a modern and elegant bridge design comprising awnings the length of the bridge from Harbour Street to it's integration with the Northern Building; and
- the provision of a new public lift at the western end of the bridge.

Metal cladding is to conceal the galvanised steel framework of the bridge and the awning is to be made from transparent polycarbonate roofing. These materials will complement the Darling Walk buildings.



1. Spotted Gum 2. Cabbage Tree Palm and Kentia Palm 3. Crepe Myrtle 4. Broad-leaved Paperbark 5. Eumundi Quondong 6. 'Luscious' Water Gum 7. Brush Box

Figure 10 – Darling Walk Tree Planting Strategy

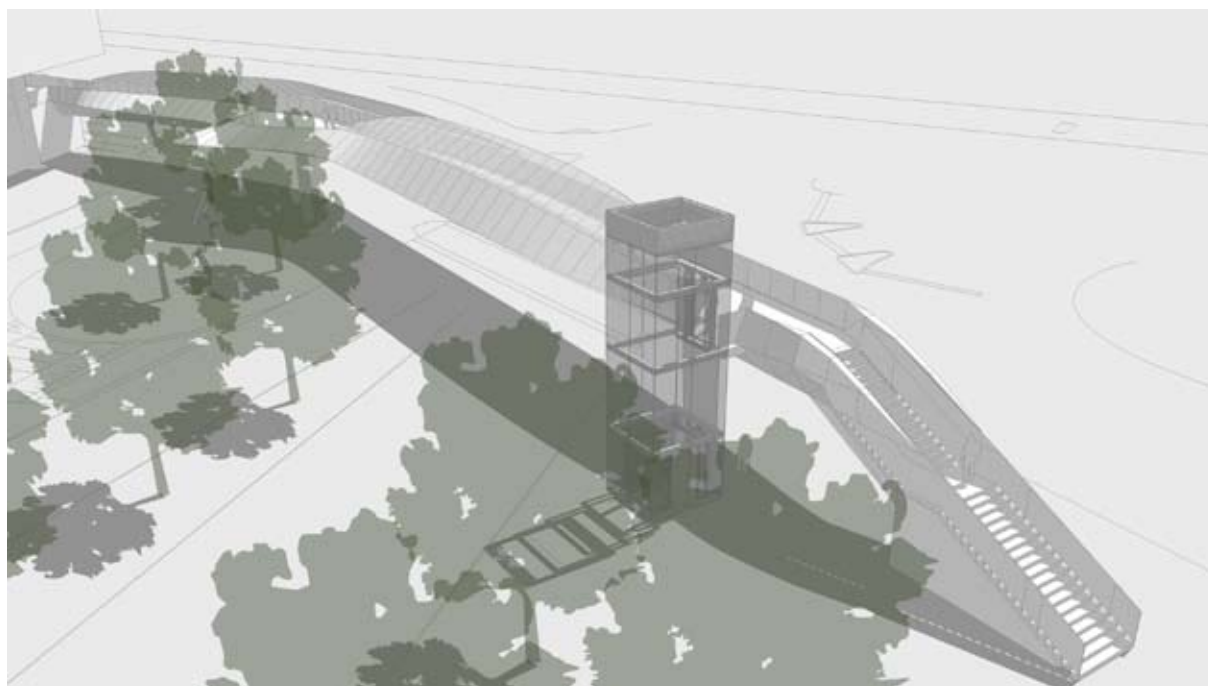


Figure 11 – Proposed pedestrian bridge

5.5 Roadworks

The following roadworks within the boundary of the site are proposed:

- a pick up and set down access lane along the Harbour Street frontage on the eastern side of the southern building (as set out in the Project Application for the base buildings);
- left-hand turn slip lane off Harbour Street into the site;
- entry / exit roads into and out of the site; and
- McDonalds Drive Thru (as set out in the Project Application for the base buildings) located at the northern end of the site.

The proposed works are illustrated in the drawings at **Appendix C** and **Figure 12** below.

As noted above, in accordance with the Project Application approval, details of the access and traffic management measures in relation to the entrance / exit to and circulation within the McDonalds drive thru have been agreed with the RTA and provided to the Certifying Authority. Furthermore, the RTA has also approved the intersection designs for Liverpool Street, Harbour Street and Day Street.

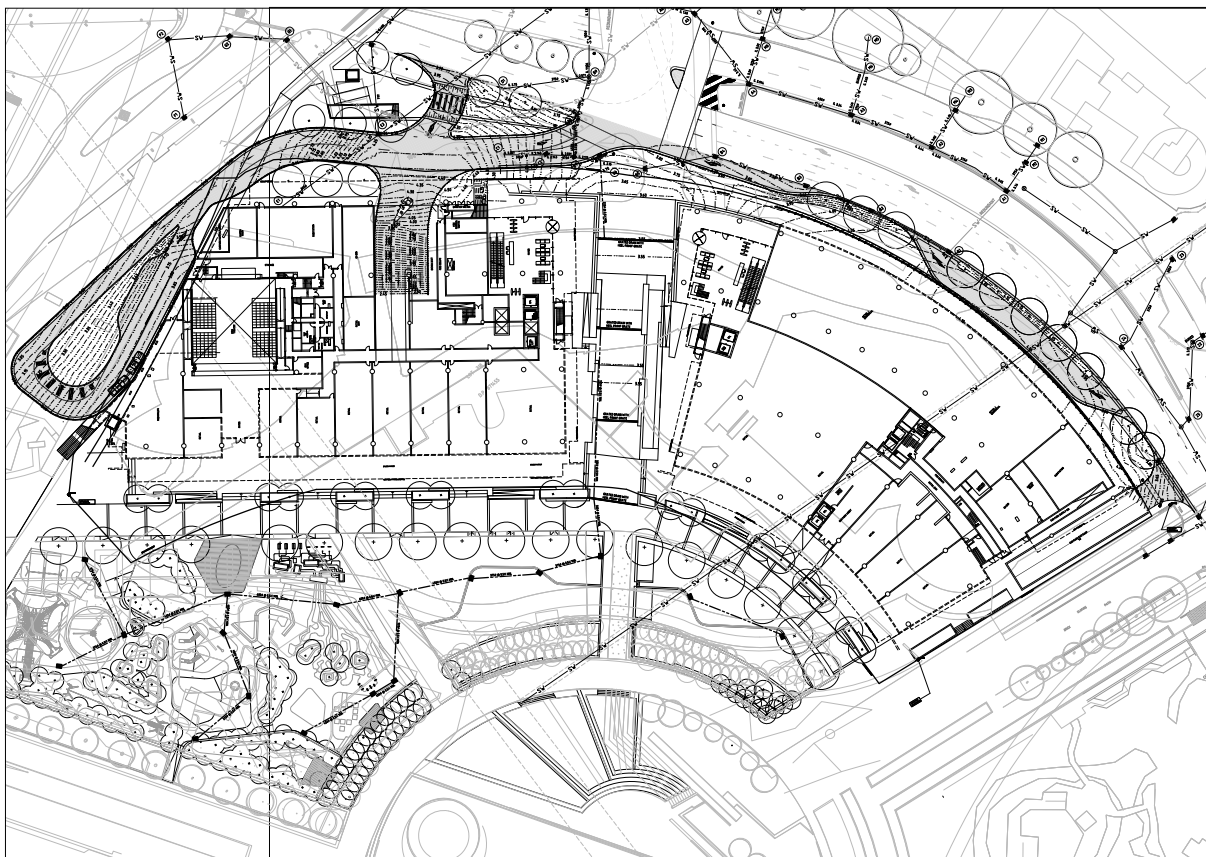


Figure 12 – Proposed roadwork

5.6 Reinstatement of Liverpool Street Footbridge Toilets

As noted at Section 1, the diversion of the James Street stormwater drain necessitated the demolition of the male toilets under the northern Liverpool Street footbridge. The consent granted for the stormwater drain diversion works did not include approval for the rebuilding of the toilets, therefore approval to reinstate these toilets is sought as part of this Project Application. Architectural drawings for the new toilets are included at **Appendix A**. The new toilets have been designed to match those previously demolished.

5.7 Construction Management

A Construction Management Plan (CMP) has been prepared by Bovis Lend Lease and is included at **Appendix H**. The CMP sets out how appropriate management of the public domain areas and Harbour Street will be achieved during the construction works, including security and hoarding management, site clearing, construction methodology, loading and unloading areas and site access.

The CMP includes environmental management plans for:

- Traffic and Pedestrian Management;
- Noise and Vibration Management;
- Stormwater, Erosion and Sediment Control; and
- Waste Management.

These plans set out the objectives and measures for managing the environmental impacts of the construction works.

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposal. It addresses the matters for consideration set out in the Director-General's Environmental Assessment Requirements (DGRs), relevant to this application (refer to Section 1).

The draft Statement of Commitments at Section 7 complements the findings of this assessment.

6.1 Director General's Environmental Assessment Requirements

Table 4 provides a detailed summary of the individual matters listed in the Director General's Environmental Assessment Requirements (DGRs) and identifies where each of these requirements has been addressed in this report.

Table 4 – Director General's Environmental Assessment Requirements

Director General's Requirements		Location in Report
1	Relevant EPI's Policies and Guidelines	Section 3 and 6.2
2	Concept Plan	Section 6.3
5	Urban Design	Section 5 and 6.4
7	Safety / Public Domain / Landscaping	Section 6.4, 6.6 and 6.7
10	Environmental Management	Section 6.9
11	Ecologically Sustainable Development	Section 6.8 and 6.9
12	Drainage (Stormwater)	Section 6.8
14	Flooding	Section 6.8
15	Infrastructure	Section 6.10
17	Consultation	Section 4

6.2 Compliance with Relevant Statutory Plans

The proposed works are permissible in accordance with the Darling Harbour Development Plan.

Table 5 provides a summary of consistency with key relevant strategic and statutory plans.

Table 5 – Table of Compliance with Relevant Statutory Plans

Instrument	Comment
Darling Harbour Development Plan	<p>The objectives of the Darling Harbour Development Plan No.1 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.</p> <p>The provision of recreation and landscaping works are permissible uses and meet the objectives of the Plan. The proposed development therefore is in accordance with the Plan.</p>
Major Development SEPP	<p>The Darling Walk site is located within the Sydney Harbour Foreshore area, identified at Clause 10 of Schedule 2 of the Major Development SEPP. On these sites, developments with a capital investment value of greater than \$5m (and declared by the Minister) are subject to the provisions of Part 3A of the EP&A Act.</p> <p>This Project Application is subject to assessment under Part 3A.</p>
Sydney Harbour Catchment REP	<p>Within the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP), the Darling Walk site is identified as being within the:</p> <ul style="list-style-type: none"> - Sydney Harbour Catchment Area; - Foreshores & Waterways Area Boundary; and - City Strategic Foreshores Area. <p>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.</p> <p>The proposed Darling Walk Development is generally consistent with the relevant provisions and matters for consideration set out in Clauses 20 to 27 of the Sydney Harbour REP.</p>
Infrastructure SEPP	<p>The Infrastructure SEPP requires that applications for specific types of developments are referred to the Roads and Traffic Authority (RTA) for its comments prior to determination. As part of the process in formulating the Concept Plan and the Project Application for bulk excavation and construction of the buildings, the RTA has been consulted.</p>
SEPP 55 – Remediation of Land	<p>Clause 7 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.</p> <p>An Environmental Site Assessment of the site has previously been undertaken and an RAP has been prepared. The Environmental Site Assessment considered that the site can be made suitable for the proposed uses on it (including a children's playground) and remedial works have been undertaken.</p>

6.2 Compliance with Concept Plan

The proposed development is consistent with the Concept Plan, as required under condition A3 of the Concept Plan determination, as follows:

- the proposal embellishes the 20m wide 'view corridor' between the two buildings which is referred to as the 'Civic Connector';
- the proposed development integrates the Bathurst Street pedestrian bridge with the northern building and is generally in accordance with the requirements of Condition B2;
- the proposal complies with SEPP 55 and the site is considered suitable for the proposed development; and
- the proposed development provides details of roadworks to Harbour Street, which have been previously agreed with the RTA.

An overview of the project's compliance with the Concept Plan's Statement of Commitments is provided in **Table 6** below.

Table 6 – Compliance with Concept Plan's Statement of Commitments

No.	Commitment	Comment
2	The detailed design of the building and public domain will generally adhere to the Concept Plan parameters formulated for the project to ensure that the intended development outcome will be achieved.	The design of the public domain is consistent with the design objectives of the Concept Plan.
12	The project proponent will consult with the RTA in relation to any required intersection and pedestrian crossing improvements along Harbour / Day Street.	The RTA has been consulted in relation to the intersection designs and Bathurst Street bridge works.
16	A future Project Application is required to detail public domain improvements in accordance with the Concept Plan and any relevant Sydney Harbour Foreshore Authority public domain and / or landscaping measures.	Project Application for Public Domain works prepared
17	The Project Application proponent must execute public domain works detailed in a future Project Application, to the satisfaction of the Sydney Harbour Foreshore Authority. The works will be completed by the Project Application proponent at no cost to the Sydney Harbour Foreshore Authority. No further contributions for public amenities and public services within the site will be required. The Project Application proponent will lodge with the Authority a bank guarantee as security against the successful completion of the works to the value of the works. The bank guarantee, in a form acceptable to the Authority, will be submitted with the first Project Application. The standard of the public domain works within the site area (technical and general performance / design criteria) will be to the satisfaction of the Authority.	SHFA has been consulted during the detailed design development of the public domain and have provided a letter confirming consultation and general acceptance of the public domain design. A bank guarantee has been lodged as part of the bulk excavation and construction of buildings works.
25	All future development is to be designed with reference to the principles of CPTED.	The proposed public domain works have been designed in accordance with the principles of CPTED, refer to Section 6.7.

6.4 Public Domain and Landscape Design

The Darling Walk Concept Plan set out objectives and design controls for the Darling Harbour Public Domain and Landscaping. These are set out in **Table 7** below. It is considered that the proposed works are in accordance with the objectives and design controls within the Concept Plan.

Table 7 – Concept Plan Public Domain and Landscape Design Criteria

Public Domain	Landscaping
<p>Objectives</p> <ul style="list-style-type: none"> - Encourage activities which compliment Darling Harbour. - Provide access for people with disabilities. - Public and private spaces should be safe and secure. - Ensure public access to view corridors during normal business hours. - Co-ordinate signage through the development in accordance with Sydney Harbour Foreshore Authority – Commercial Signage Policy. - Public art should complement and enhance the public domain and private open space. <p>Controls</p> <ul style="list-style-type: none"> - Prevent creation of a wall or back-door relationship between Darling Harbour and Harbour Street. - Create a view corridor between Harbour Street and Tumbalong Park. - Design building forecourts to visually and physically extend the street and pedestrian areas. - Integrate existing elevated pedestrian bridges with the development. - Provide activated family orientated spaces at ground level. - Provide ground floor retail at a contiguous level to the finished footpath level. - Provide paving of arcades and colonnades (if applicable) and forecourts, as extensions of the public domain. - Provide outdoor seating contained within a specified area which extends no more than a maximum of 5m from the line of the development footprint. - Concentrate public domain interface at areas of maximum retail and commercial activity. - Upgrade and integrate water body and, playground into the development. - Integrate Carousel into the development. - Provide active water feature. - Design public interface zone facing Darling Harbour to accommodate large crowds for Darling Harbour events. 	<p>Objectives</p> <ul style="list-style-type: none"> - Create a quality urban landscape area consistent and compatible with Tumbalong Park, Palm Grove and the general Darling Harbour open space. - Use trees to create and define recreation areas and activities within the public domain, and ameliorate environmental conditions. - Use landscape to screen and highlight views and vistas and reinforce the perimeter of Darling Harbour. - Articulate entry and egress points such as building entries and pedestrian circulation areas. <p>Controls</p> <ul style="list-style-type: none"> - Select trees to provide summer shade, winter sun and wind protection to the public domain. - Select trees not heavily dependent on a regular water regime. - Select native trees where practical and exotic trees only where their use will improve environmental outcomes and/or special visual features. - Provide grand and ceremonial trees along Harbour Street. - Provide all soft landscape areas with a permanent subsurface irrigation system.

Public Domain

The Public Domain improvements deliver a diverse range of active and passive spaces which complement and broaden the public domain elements within Darling Harbour.

In accordance with the Concept Plan Design Criteria, the Civic Connector creates a view corridor and through-site pedestrian link extending Day Street to Tumbalong Park. It is to contain a water feature, heritage interpretation elements and planting to enhance this principal entrance.

The Pedestrian Boulevard and Retail Terrace strengthens the north / south link towards Cockle Bay and activates the ground floor of the buildings by providing outdoor dining areas for utilisation by the ground floor uses. As noted in Section 5, outdoor seating along the boulevard will also be provided along with appropriate lighting to ensure the area provides a safe and secure evening destination.

Furthermore, the Children's Playground area has been designed as a family orientated space, offering play facilities for a wide range of children. It incorporates a number of features which meet the Design Criteria requirements, including active water features and outdoor seating and will integrate with the existing carousel.

Landscape Design

In accordance with the Landscaping Design Criteria objectives the proposed works will create high quality open spaces with tree planting used to soften the Harbour Street boundary of the site and define the Pedestrian Boulevard. Planting and landscaping is also used to amalgamate the hardstand areas with the Terrace Community Green and Children's Playground and also define Tumbalong Park as a key open space within Darling Harbour.

Kiosk and Shade Structures

The low scale small kiosk building will provide a café and public amenities to support the Children's Playground. It has been sympathetically designed with materials to integrate playground area. The design of the shade structures have been derived from a leaf form and provide shade to the kiosk seating area and toddler sandpit. Together with the kiosk, the shade structures and amenities are sited to provide an entrance feature for the playground, but also define a linkage with the Children's Theatre within the Northern Building.

Photomontages of the proposed kiosk, public amenities and shading structures are set out in **Figure 13** below.



Figure 13 – Kiosk and Shade Structures

6.5 Playground and BCA Certification

Philip Chun & Associates Pty Ltd have prepared a BCA Review Report (**Appendix I**). The reports assessed the compliance of the proposed building and structural elements of this application including the pedestrian bridge, kiosk, toilet amenities and shade structure against the deemed to satisfy provisions of Building Code of Australia 2009 (BCA).

The report confirms that the proposed works comply or are able to comply with the relevant BCA provisions in terms of:

- Use and class of buildings;
- Construction and fire resistance ratings;
- Access and egress;
- Health and amenity issues; and
- Energy Efficiency.

Furthermore, accessUTS Pty Ltd have assessed the proposed children's playground equipment and surfacing against the requirements contained within Australian Standards AS/NZS 4422:1996; AS/NZS 4486.1:1997 and AS4685:2004 Parts 1 to 6. **Appendix I** includes a statement from accessUTS Pty Ltd which confirms that the playground design is generally in accordance with the relevant Australian Standards and the equipment and play spaces are appropriate for the proposed age groups.

6.6 Accessibility

Morris-Goding Accessibility Consulting have prepared an Accessibility Review Report (refer to **Appendix J**) to assess the proposed works to ensure that paths of travel and circulation areas comply with relevant Australian Standards and the Commonwealth Disability Discrimination Act (DDA).

The report confirms that the development has accessible paths of travel that are continuous throughout the site and the proposed external domain demonstrates an appropriate degree of accessibility. In addition, the proposed drawings indicate compliance with the statutory requirements pertaining to site and common area access can be achieved.

In addition, Morris-Goding provide recommendations in relation to stairs, lifts and the Liverpool Street Accessible Toilet to ensure that the proposed works fully comply with Australian Standards AS1428.1, AS1735.12 and AS1428.2 respectively.

6.7 Safety and Security

The Darling Walk development including the public domain areas have been designed with regard to Crime Prevention Through Environmental Design (CPTED) principles in order to minimise the opportunity for criminal activity. In regard to the public domain works, the Landscape Statement identifies the following CPTED principles as those which the design is based upon:

- Surveillance;
- Access Control;
- Territorial Reinforcement; and
- Space management.

In addition, it is intended that the Darling Walk site will be policed by the Foreshore Authorities standard safety and security management measures for Darling Harbour, such as CCTV and patrolling security officers.

6.8 Stormwater and Flooding

Stormwater

The public domain areas of Darling Walk have been designed to manage and reuse stormwater. The stormwater management strategies outlined in Aspects Landscape Masterplan include:

- capture, storage and filtration of roof water for landscape irrigation and water supply to the water play areas and water features;
- directing pavement run-off towards soft landscaped areas;
- minimising storm water drainage structures; and
- minimising the possible flow of stormwater run-off into the storm water mains.

Figure 14 illustrates that proposed stormwater management and water re-use strategy.

As illustrated on **Figure 14** below, roof water from the northern building will be diverted to a 300,000 litre water tank located under the Terraced Community Green. There will be an underground pipe connection between the rainwater tank and the water plant room in the children's playground. The tank has the capacity to provide 80-90% of the water required for the landscape irrigation, water feature and water play area.

The captured water will be filtered to be removed particles and passed through a UV treatment system to control bacteria and is of potable water quality.

The water for the water features and play area will be treated with chlorine to swimming pool standard. All filtration and chlorination treatment will be located in the plant room under the kiosk and amenities building.

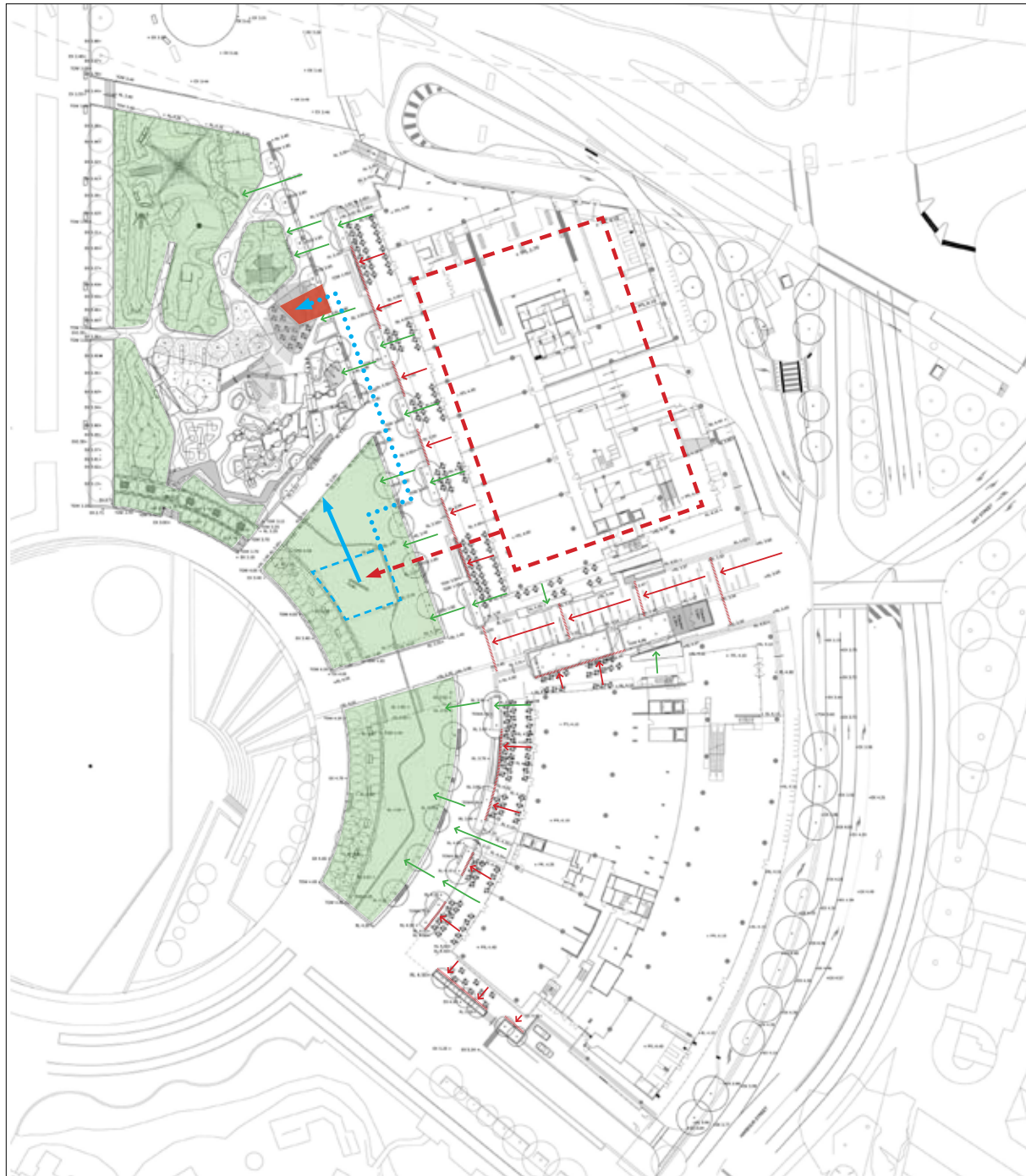
The grading of the paved areas has been designed to drain water away from the buildings towards the soft landscape areas of the Terraced Green and Children's Playground. The playground includes large areas of permeable surface to allow run-off to soak into the soil.

Flooding

A Preliminary Flood Study was prepared by Worley Parsons (**Appendix K**) and submitted with the Concept Plan. This report assessed the likelihood of flood impacts from the stormwater drainage systems in proximity of the site. The assessment found that the trunk drains surrounding the site have good to excellent capacity between the 20 year ARI and 100 Year ARI and that stormwater flooding is unlikely to impact on the site in a 100 year ARI event.

An addendum report (Addendum 1) (**Appendix K**) was also prepared and submitted with the Project Application to address sea level rise and increases in rainfall intensity. This concluded that overland flood flows would generally not pose a significant flood hazard, the potential for future sea level rise would not be expected to greatly impact upon flood levels at the site and an increase in rainfall intensity would also be unlikely to adversely impact upon the development.

Worley Parsons have prepared an additional addendum report (Addendum 3) (refer to **Appendix K**) to assess the configuration of the public domain. Revised flood level modelling found that the majority of the flood depth is shallow however there are some localised areas where significant ponding is likely to occur, in particular the water feature play area at the southern end of the children's playground. In addition the flow path of the Urban Stream (i.e. from Tumbalong Park towards the harbour) is considered to have a high to very high flood hazard.



Key:










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|---|---|---|---|
|  | Permeable landscape areas |  | Water collection tap overflow to storm water culvert (Hay Lackey drain) |
|  | Subsurface rainwater collection tank (from roof water) |  | Connection between stored water and plant room |
|  | Subsurface plantroom (under kiosk/ amenities structure) for treatment of collected roof water prior to use in water features and irrigation | | |
|  | Trench grates connected to SW mains | | |
|  | Pavement run-off directed to grated drains/ SW system | | |
|  | Pavement run-off directed to permeable landscape areas | | |
|  | Roof water catchment | | |

Figure 14 – Water re-use and stormwater management strategy

However, Worley Parsons consider that the playground generally contains low to medium hazard flood waters and the flood hazard for the civic connector is low, which can potentially allow for the civic connector to be used as part of a public evacuation route during extreme flooding events (i.e. the 100 year Average Recurrence Interval). Furthermore, it is concluded that the public domain design provides mitigation of flood damage and is compliant with the previously recommended freeboard requirements for the buildings.

It is recommended that the raised seating / picnic area at the southern end of the playground to function as a wall at RL3.7m AHD to provide protection from flood flows spreading from the Urban Stream.

6.9 Ecologically Sustainable Development

Aspects Landscape Masterplan outlines the following sustainable design principles, which have been incorporated into the design and material selection for the proposed works and will be included in the construction.

Environmental

- water sensitive urban design – pavement design that facilitates run-off minimisation (see Section 6.8 above);
- use of plants that require low levels of irrigation;
- biodiversity – use of predominantly native plants to encourage fauna;
- carbon sinking – planting of trees;
- use of recycled site water for irrigation;
- use of recycled site water for the water play area and water feature;
- use of recycled materials (mulch, aggregates and soil);
- use of robust hard materials (material life cycle management); and
- use of energy efficient lights.

Social

- well-designed public domain that will provide a variety of programmed and multi-use spaces for changing recreation needs over time; and
- a public domain that creates safe, attractive and vibrant recreation and entertainment opportunities.

Economic

- carefully planned combination of uses (retail / entertainment / commercial / recreation) to ensure long term viability of the buildings and surrounding public domain.

6.10 Utilities

The measures proposed for the Darling Walk development (as set out in the Project Application for the bulk excavation and construction of the buildings ensures that the entire Darling Walk site can be adequately serviced. Specifically, the public domain works will be serviced in the following manner:

- the proposed amenities will connect into the existing Sydney Water sewerage system;
- recycled site water is to be used for irrigation of the water play and water features. Potable water supply for the kiosk and amenities will be connected to the existing water supply system; and
- the project will be serviced by the upgraded electricity infrastructure provided as part of the redevelopment of Darling Walk.

6.11 Construction Management

A Construction Management Plan (CMP), prepared by Bovis Lend Lease is included at **Appendix H**. The CMP includes the following management plans:

- Pedestrian and Traffic Management Plan
- Noise and Vibration Management Plan
- Sediment and Erosion Control Plan
- Waste Management Plan

The proposed construction hours for the project are 7.00am to 7.00pm on Mondays to Fridays, 7.00am to 5.00pm on Saturdays. No work is to be carried out on Sundays or public holidays. This is in accordance with the construction hours of the previous approvals. The existing site hoardings are to be extended to enclose the public domain and the entry / exit gates and pedestrian access ways (apart from the Bathurst Street Pedestrian Bridge), established for the existing construction activities are to also be utilised for the public domain works.

The CMP sets out the construction methodology for the project and includes the management plans as listed above to manage the potential environmental impacts of the project. The construction activities for the public domain works have been broken down into the following stages:

- site clearing works
- excavation (cut and fill)
- construction and embellishment of children's playground, kiosk, shade structures, terraced community green, civic connector, pedestrian boulevard and reinstatement of the male Liverpool Street toilets
- Bathurst street footbridge
- Harbour Street roadworks
- McDonalds Drive-thru

Pedestrian and Traffic Management

Construction Traffic Management Plans for earlier stages of the Darling Walk redevelopment have previously been prepared and submitted to the Department of Planning. This CMP includes an updated version of the previous Pedestrian and Traffic Management Plan incorporating the scope of works proposed within this Public Domain Project Application and a separate Traffic Management Plan specifically for the augmentation works to the Bathurst Street Pedestrian Bridge.

Halcrow MWT have incorporated the public domain and pedestrian bridge works into the 29 month construction programme and consider that the works will require an additional five trucks per month between February 2010 to January 2011.

Additional impacts as a result of this minor increase in trucks upon the intersection performance of Harbour Street / Liverpool Street and Harbour Street / Day Street are expected to be minimal considering the traffic visiting the former Sega World building has been eliminated and the number of additional trucks arriving and departing the site is low in the context of traffic already travelling through the area.

To ensure that the proposed works do not incur any additional adverse traffic impacts, it is proposed that the Traffic Control Plans detailed within the Pedestrian and Traffic Management Plan will be implemented by the proponent.

The pedestrian bridge works require the progressive closure of traffic lanes in Harbour Street. At worst case reducing Harbour Street to one lane northbound or one lane southbound.

In consultation with the RTA it has been agreed that the lane reductions to Harbour Street will generally be undertaken at night, during the hours specified for each section / zone of the bridge. Halcrow MWT consider that if the proposed lane closures are carried out in accordance with the hours specified, the closures would not have any significant impacts on traffic operations on Harbour Street.

During the pedestrian bridge works, the Bathurst Street footbridge will also be closed to pedestrians. Way-finding signage will direct pedestrians via the IMAX cinema to provide continued access to Tumbalong Park and Darling Harbour. The Pedestrian Way Finding Signage Plan will be updated and implemented by the proponent.

Noise and Vibration Management

Wilkinson Murray have undertaken a peer review of the Noise and Vibration Assessment and Management Plan prepared by Acoustic Logic which formed part of the CMP for the Project Application for the bulk excavation and constriction of buildings. They confirm that Acoustic Logic's assessment findings, recommendations and management procedures are applicable to the proposed Public Domain works.

Therefore in order to effectively manage noise emissions from the construction works, the noise following noise goals are adopted:

- Between 7.00am and 8.00am – $L_{av\ max} \leq \text{Background} + 5\ \text{dB(A)}$
- Between 8.00am and 7.00pm – $L_{av\ max} \leq \text{Background} + 10\ \text{dB(A)}$

Mitigation measures as specified in the Noise management Plan will be undertaken, which includes the use of equipment that generates the least noise, use of noise barriers, screens and silencing devices, regular noise checks and monitoring of noise management measures.

In addition, the vibration criteria within the CMP will be applied and vibration monitoring will be implemented to manage any vibration emanating from the proposed works.

Sediment and Erosion Management

To manage sedimentation and erosion during the construction works of the Darling Walk redevelopment, a Sediment and Erosion Control plan was prepared by Hyder Consulting. This is appended to the CMP. The plan outlines the use of a sediment control basin to collect sediment generated. This will operate in accordance with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual*.

Waste Management

The Waste Management Plan appended to the CMP has been prepared by Bovis Lend Lease. Its key objective is to re-use and / or recycle a minimum of 80% of all hard Waste material and Soft Waste material generated and thus minimise the volume of waste to landfill.

A Waste Management Contractor (WMC) will co-ordinate the waste management procedures such as waste recycling, recovery, and disposal and a Waste Storage and Handling Diagram will be prepared showing details of the designated storage locations of segregated waste / wash out waste etc. The WMC will undertake monthly reports detailing the amount of waste disposed off site and amount recycled. Destinations of all waste materials from the site will be approved by the receiving waste facility prior to commencement of works.

7.0 Draft Statement of Commitments

In accordance with Part 3A of the EP&A Act the following are the commitments made by LLD to manage and minimise potential impacts arising from the Darling Walk development.

7.1 Construction Management

LLD commits to implementing the following plans during the construction phase:

- Pedestrian and Traffic Management Plans
- Noise and Vibration Management Plan
- Sediment and Erosion Control Plan
- Waste Management Plan

7.2 BCA and Accessibility

- The proposed works will comply with all relevant BCA requirements and Australian Standards.
- LLD commit to implementing the recommendations within the Accessibility Report.

7.3 Stormwater Management and Water Re-Use

The stormwater management strategies outlined within Aspects report will be adopted and implemented.

7.4 Flooding

Landscaping and Public Domain works are to be undertaken in accordance with the recommendations contained within Worley Parsons flood studies.

7.5 Landscape and Public Domain

The proposed works are to be undertaken in accordance with the Aspect Landscape Masterplan and FJMT design statement and drawings.

7.6 Bathurst Street Bridge Augmentation Works

The Bathurst Street Pedestrian Bridge Works are to be augmented in accordance with the FJMT design statement and drawings.

8.0 Conclusion

The proposed development seeks approval for the detailed design, layout and construction of the public domain works, augmentation of the Bathurst Street Pedestrian Bridge, roadworks and the reinstatement of the Liverpool Street male toilets.

The proposed development is consistent with the approved Concept Plan for Darling Walk. This Public Domain works will provide a high quality Civic Connector which consequently extends Day Street to Tumbalong Park. In addition, a retail terrace, pedestrian boulevard, terraced community green and children's playground will also be provided to complement the high quality buildings and provide a range of outdoor relaxation, leisure and play spaces.

This development contributes to the reactivation of Darling Walk as a vibrant, family orientated precinct, and also improves the Harbour Street streetscape. The proposed works will have minimal adverse environmental impacts and potential construction impacts will be effectively managed by measures as outlined within the Construction Management Plan.

It is considered that this development be granted consent under Part 3A of the EP&A Act.