



Suite 2, Level 1  
1 Rialto Lane  
Manly NSW 2095

# Sydney Opera House Lower Concourse Shade Covers, Minor Works and Uses

## Environmental Impact Statement

State Significant Development Application  
**SSD 9794**



Prepared for the Sydney Opera House Trust  
Submitted to the Department of Planning, Industry and  
Environment

**October 2019**

## Certification of Environmental Impact Statement

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### Proposed development

<b>Applicant</b>	Sydney Opera House Trust
<b>Applicant's address</b>	Bennelong Point, Sydney NSW 2000
<b>Land to be developed</b>	Lower Concourse, Sydney Opera House
<b>Legal description</b>	Lot 5 in DP 775888 Lot 4 in DP 787933
<b>Project description</b>	Relocation of existing glazing, removal and replacement of 16 existing shade structures, modification to back of house space near the Opera Bar's Meat and Cheese Room and the consolidation of all uses of the Lower Concourse

### Declaration

We certify that the contents of the Environmental Impact Statement, to the best of our knowledge, has been prepared in accordance with the requirements of clauses 6 and 7 of Schedule 2 of *Environmental Planning and Assessment Regulation 2000*; contains all available information that is relevant to the assessment of the development and that to the best of our knowledge the information contained in this report is neither false nor misleading.



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## List of Abbreviations

BCA	Building Code of Australia
CMP 4	Conservation Management Plan 4
CMP	Construction Management Plan
DP&E	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EPAR	Environmental Planning and Assessment Regulation 2000
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EP&A Act	Environmental Planning and Assessment Act 1979
ESD	Ecologically Sustainable Development
POM	Plan of Management
SLEP	Sydney Local Environmental Plan 2012
SEPP	State Environmental Planning Policy
SSD	State significant development
WHS	Workplace Health and Safety

## Executive Summary

This Environmental Impact Statement (EIS) supports a State significant development (SSD) application for Sydney Opera House Lower Concourse shade covers, minor works and uses under section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EPAR) and the Secretary's Environmental Assessment Requirements (SEARs) issued on 21 December 2018.

### The Site and Locality

The Sydney Opera House is located on the peninsula on the eastern side of Circular Quay known as Bennelong Point. The site is legally described as Lot 5 in DP 775888 and Lot 4 in DP 787933.

The Opera House is serviced by an underground loading dock below the forecourt, accessed via an entry ramp off Macquarie Street adjacent to the cliff face known as the Tarpeian Wall.

The Opera House comprises four main structures being:

- the broad flat platform comprising the Forecourt and Broadwalks
- the Concert Hall on the western side of Bennelong Point
- the Joan Sutherland Theatre (Opera Theatre) on the eastern side
- the Bennelong Restaurant, to the south of the two main venues.

The Proposal relates to the Lower Concourse, in the south-west part of the Opera House, adjacent to the eastern side of Circular Quay.

The Lower Concourse is below the Forecourt on the western side which forms part of the pedestrian access to the site. It includes an undercroft area containing food and drink premises, associated outdoor seating with shade structures, toilet facilities, retail space, an ATM and the visitor and interpretation centre (the Welcome Centre).

The Opera House precinct adjoins the Royal Botanic Garden to the east and Circular Quay to the south-east. A mixed-use residential apartment building (Bennelong Apartments) is located to the south of the site at 1 Macquarie Street.

### Proposed Development

The proposed development comprises the:

- extension and realignment of an existing glass line to enclose an underutilised area between the main bar and restaurant and a food outlet, known as the Meat and Cheese Room, both of which are part of the Opera Bar;
- replacement of the existing shade structures on the Lower Concourse with improved shade covers;
- refurbishment of an existing back of house area to create a new office and cool room for the Opera Bar; and
- consolidation of existing uses of the Lower Concourse within a single consent.

The proposal is classified as State significant development (SSD) under the provisions of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) as clause 1 of Schedule 2 of the SEPP states that all development within the Sydney Opera House is SSD. The Minister for Planning is the consent authority for SSD.

### **Strategic Context**

The strategic justification for the proposal is outlined in Section 4 of this EIS. The proposal seeks to consolidate existing uses of the Lower Concourse within a single consent. The proposal also seeks to undertake works to improve the amenity of patrons. These essential works will ensure the Opera House continues to provide world-class facilities and maintains its status and reputation as a cultural icon at both a national and international level.

Section 4 also outlines project alternatives and considers the proposals against key State and local strategic policies and documents and key Sydney Opera House documents.

### **Statutory Context**

Section 5 of the EIS considers relevant Commonwealth and State legislation:

- *Environment Protection and Biodiversity Conservation Act 1999* – the Sydney Opera House Trust (SOHT) has determined that approval under the EPBC Act is not required given the findings of the Heritage Impact Statement. Therefore, the proposal will not be assessed in accordance with the Commonwealth / NSW Governments' Bilateral Agreement.
- *Environmental Planning and Assessment Act 1979* and *Environmental Planning and Assessment Regulation 2000* – the proposal is SSD and the Minister for Planning is the consent authority. The proposal is consistent with the objects of the EP&A Act and has been assessed against the matters for consideration under section 4.15. As required by clause 288 of the Regulation, the provisions of the Management Plan for the Sydney Opera House have been considered in the HIS and in Section 4.4 of this EIS
- *Heritage Act 1977* – an application for approval for the proposed works will be made to the NSW Heritage Council under section 57(1) of this Act.
- *Biodiversity Conservation Act* – under section 7.9(2) of the BC Act, a proponent for SSD may seek a waiver from the requirement to lodge a Biodiversity Assessment Report (BDAR) with the SSD application. On 15 February 2019, the then Department of Planning and Environment (DP&E) and the Office of Environment and Heritage (OEH) advised that the proposed development is not likely to have any significant impact on biodiversity values and that there was no need for the SSD application to include a BDAR.

Section 5 of the EIS also considers relevant environmental planning instruments, including:

- *State Environmental Planning Policy (State Significant Precincts) 2005* – the proposed works are not considered to be exempt development under the provisions of this SEPP and therefore require development consent.
- *State Environmental Planning Policy (State and Regional Development) 2011* – the proposal is SSD under the provisions of this SEPP and the Minister for Planning is the consent authority.
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* – as outlined in Section 6.6.2, the proposal generally complies with the relevant provisions of the Harbour SREP.

- *Sydney Local Environmental Plan 2012 (SLEP 2012)* – the proposed works are permissible with consent in the B8 Metropolitan Zone. A detailed consideration of the proposal against the design excellence provisions of the SLEP 2012 is contained in Section 6.6.7.

### **Environmental Planning Assessment**

A detailed assessment of the potential environmental impacts of the proposal is contained in Section 6, which considers the following key issues:

#### *Heritage*

The EIS is supported by a detailed Heritage Impact Statement (HIS) which concludes that the improvements are considered positive to the heritage values of the Opera House. The proposed shade structures have been designed to have positive visual impacts and the adjustment of the glazing line will improve circulation within the Lower Concourse. The proposal includes effective measures to mitigate potentially negative impacts. The HIS notes that decisions made during the final design phase were based on the consideration of alternatives that received feedback from the Sydney Opera House Heritage Architect and the Design Advisory Panel.

The HIS finds that the use of the Lower Concourse for food and beverage, retail and service facilities supporting the Opera House is commended and should continue as per the recommendations in the HIS. Ongoing compliance with the Conservation Management Plan 4<sup>th</sup> edition (CMP4) and the Utzon Design Principles (UDP) are essential.

#### *Built form, urban design and visual impacts*

The proposed works are minor and do not result in any adverse built form, design or visual impacts. External works include the:

- extension and realignment of an existing glass line to enclose the space between the main Opera Bar restaurant and the Meat and Cheese Room
- replacement of the existing shade structures on the Lower Concourse with improved shade covers

These external elements do not add to the bulk or scale of the building and have been designed to be compatible with the materiality and design of the building. The Architectural Design Statement concludes that the proposed design is superior to the existing shade structures as the design is architecturally resolved with better integration of services and responds to the UDP criteria. Further, the structures will not obscure views to and or across the site from any public vantage point and the SOH. The proposal will not impact on the prominence of the SOH nor its roles as an icon/landmark.

The HIS concludes that these works will have an acceptable impact on the external architecture and setting of the Opera House and no adverse impact on the heritage values of the building.

### *Lighting Design Statement*

Section 7.6 outlines the proposed lighting design solutions for the site. The lighting design mitigates light spill to ensure the amenity of sensitive receivers surrounding the site are addressed.

### *Construction management*

Section 7.7 outlines how the following issues will be managed during construction:

- noise and vibration
- traffic and access
- air quality
- water quality
- waste and hazardous materials

Construction works are considered to be minor and will generally be serviced via the underground loading dock, reducing their impact on the general public.

A comprehensive Construction Management Plan (CMP) will be prepared outlining how construction will be managed and will demonstrate that no significant residual construction impacts are anticipated. A detailed Noise Impact Assessment (NIA) has been undertaken which outlined predicted construction noise levels associated with the proposed works and an extensive range of mitigation measures to reduce construction noise emissions.

### *Operational noise*

Section 7.5 outlines that there are no adverse operational noise impacts arising from the existing uses of the Lower Concourse, and the proposed minor works will not alter or intensify the existing operations in any way.

### *Building Code of Australia*

The EIS is supported by a BCA Capability Statement which concludes that compliance with the BCA for the proposed works will be able to be achieved by a combination of compliance with the deemed-to-satisfy (DTS) provisions and the Performance Requirements.

The Fire Engineering Design advice prepared by Arup accompanies the EIS and concludes that there are no issues that would affect the building layout arising from fire safety and no impediments to the approval of the application.

### *Ecologically sustainable development*

The EIS outlines the multiple sustainability principles to be implemented through the proposed works.

The assessment in Section 7 is summarised in an Environmental Risk Assessment and overview of key mitigation measures in Section 8.

## **Conclusion**

This EIS has been prepared in accordance with the final SEARs issued by the DP&E on 21 December 2018 and complies with all relevant statutory requirements.

The EIS assesses all potential environmental impacts associated with the proposed Lower Concourse shade covers, minor works and uses. It demonstrates that the proposal is in the public interest as it will improve the ability of the Opera House to cater for tourists as well as patrons. The proposal will thereby strengthen the Opera House's role in Australia's cultural vitality and as a world-renowned performing arts centre and tourist destination.

Further, this EIS demonstrates that the works can be undertaken without adversely impacting on the heritage significance of the building or the amenity of the surrounding environment.

Accordingly, the EIS concludes that the proposal warrants approval.

# 1 Introduction

This Environmental Impact Statement (EIS) supports a State significant development (SSD) application for the Sydney Opera House Lower Concourse works, under section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The proposal comprises the:

- extension and realignment of an existing glass line to enclose an underutilised area between the main Opera Bar restaurant and a food outlet, known as the Meat and Cheese Room, both of which are trading as the Opera Bar;
- replacement of all 16 existing shade structures on the Lower Concourse with improved shade covers;
- refurbishment of an existing back of house area to create a new office and cool room for the Opera Bar; and
- consolidation of all uses of the Lower Concourse within a single consent.

The proposal is classified as SSD under the provisions of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) as it involves development within the Sydney Opera House, which is identified as State Significant Development site under Schedule 2 of the SRD SEPP. The Minister for Planning is the consent authority for SSD.

The EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EPAR) and the Secretary's Environmental Assessment Requirements (SEARs) issued on 21 December 2018 (Appendix 1). This EIS should be read in conjunction with the supporting information and plans appended to this report.

This EIS provides a comprehensive environmental assessment of the proposed works. In doing so, it outlines the subject site, the proposed development, project justification and public benefits and assesses the proposal against relevant matters set out in legislation, environmental planning instruments and planning policies and strategies.

The structure of this EIS is summarised in **Table 1** below:

Section Number	Section Heading	Description
	<b>Executive Summary</b>	Concise summary of this report and its findings
<b>1</b>	<b>Introduction</b>	Overview of the EIS and the proposed development
<b>2</b>	<b>Site Analysis</b>	Description of the site and surrounding development
<b>3</b>	<b>Proposed Development</b>	Description of the project and consultation undertaken with key stakeholders
<b>4</b>	<b>Strategic Justification</b>	Need for the proposal and alternative options
<b>5</b>	<b>Strategic Framework</b>	Identifies the key strategic framework that this EIS must address
<b>6</b>	<b>Statutory Planning Framework</b>	Identifies the key legislation that this EIS must address and the criteria the project must comply with

<b>Section Number</b>	<b>Section Heading</b>	<b>Description</b>
<b>7</b>	<b>Environmental Planning Assessment</b>	Identifies key activities and assesses the potential impact on the environment
<b>8</b>	<b>Environmental Risk Assessment</b>	Identifies and assesses the potential environmental risks associated with the project and mitigation/ management measures to manage any impacts
<b>9</b>	<b>Conclusion</b>	Concise statement of key findings

Table 1: EIS Structure

## 1.1 Project Objectives

The proposal comprises the following:

- the extension and realignment of an existing glass line to enclose an underutilised area between the main Opera Bar restaurant and a food outlet, currently called the Meat and Cheese Room, both of which are trading as the Opera Bar;
- the replacement of the existing shade structures on the Lower Concourse with improved shade covers;
- the refurbishment of an existing back of house area to create a new office and cool room for the Opera Bar; and
- the consolidation of all uses of the Lower Concourse within a single consent.

The proposal seeks to consolidate all uses of the Lower Concourse within a single consent to ensure that there are no inconsistencies between the consents. The proposal will provide clarity and certainty in terms of the applicable development consents which govern individual uses. In addition, it will provide for ease of implementation and compliance for the SOHT.

The proposed minor works on the Lower Concourse will ensure that the Sydney Opera House continues to provide world-class facilities, as well as a revenue stream to assist funding other activities, and which meet operational and accessibility standards. The proposal will promote cultural, entertainment and tourism uses by improving the amenity for patrons.

Figure 1 provides a plan of the Sydney Opera House (SOH) and the location of the proposal.

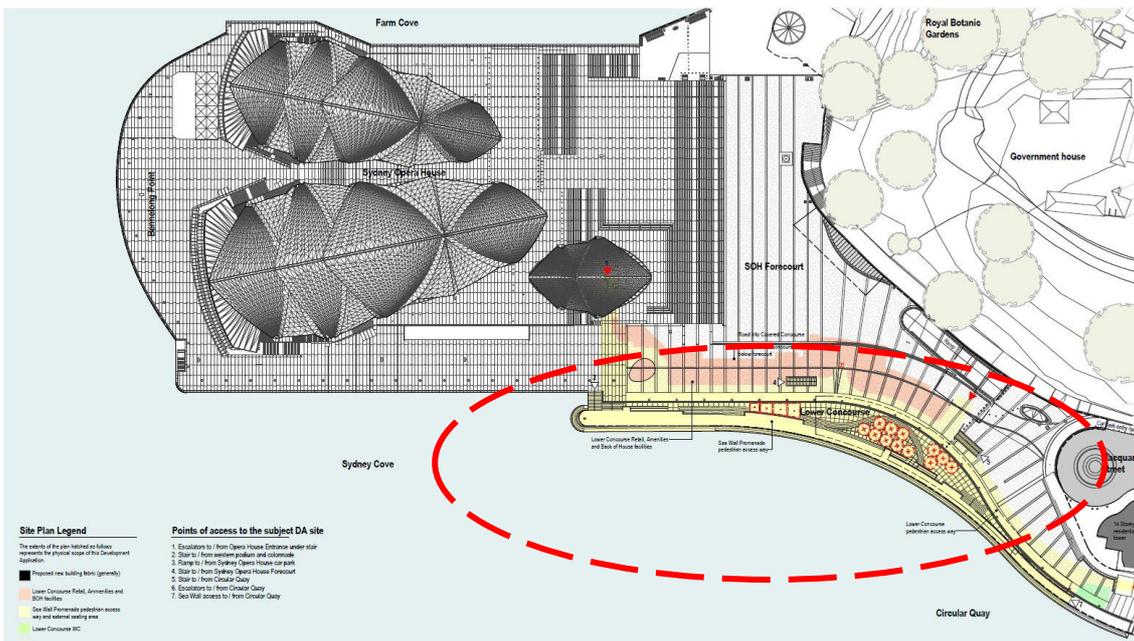


Figure 1: Location plan showing current operations and general area of proposed works (Source: H&E Architects).

The Lower Concourse is managed by the Opera House and its food and beverage and retail operators under several authorities, including development consents, liquor licenses, legislation and planning policies.

The proposal addresses and responds to the issues raised in submissions relating to DAs SSD 7430 and SSD 7431 (for the new shade covers and the glass line realignment). DAs SSD 7430 and SSD 7431 have been withdrawn.

If approved, the Sydney Opera House intends to surrender the existing consent for the Welcome Centre (SSD 6353) in accordance with section 4.63 of the EP&A Act.

## 1.2 Project Overview

An overview of the project is provided in Table 3:

<b>Address</b>	Sydney Opera House – Bennelong Point, Sydney
<b>Legal Description</b>	Lot 5 in DP 775888 and Lot 4 in DP 787933
<b>LGA</b>	City of Sydney
<b>Zoning</b>	B8 Metropolitan Centre
<b>Permissibility</b>	Permissible with consent
<b>Project</b>	Lower Concourse shade covers, minor works and uses
<b>Capital Investment Value</b>	\$1,795,473
<b>Employment (estimate)</b>	60 construction jobs 340 operational jobs

Table 2: Project Overview

## 1.3 SEARs

The Department of Planning and Environment (DP&E) issued SEARs (SSD 9794) for the Lower Concourse works on 21 December 2018 (**Appendix 1**).

These requirements and where they are addressed in this EIS are set out in **Table 4** below

<b>Environmental Assessment Requirement</b>	<b>EIS Reference</b>	<b>Supporting Study</b>
<b>General requirements</b>		
Address the <i>EP&amp;A Act 1979</i> and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> .	Page 2 'Certification of Environmental Impact Statement'	N/A refer to certification within the Executive Summary
The EIS must address matters outlined in Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000.	Sections 1-8 of the EIS	N/A
Environmental risk assessment	Section 8	Appendix 5 Heritage Impact Assessment  Appendix 7 Noise Impact Assessment
<b>Key issues</b>		
Environmental Planning Instruments, Policies and Guidelines	Section 5	Appendix 5 Heritage Impact Assessment  Appendix 8 Access Report  Appendix 3 Design statement and architectural drawings
General requirements	Section 1 to 8	Appendix 2 QS Report  Appendix 8 Access Reports

Environmental Assessment Requirement	EIS Reference	Supporting Study
		Appendix 3 Design statement and architectural drawings
Use	Section 7.3	N/A
Urban Design and Visual Impacts	Section 7.4	Appendix 3 Design statement and architectural drawings
Heritage	Section 7.2	Appendix 5 Heritage Impact Assessment
Access	Section 7.12	Appendix 8 Access Reports
Noise and Vibration	Section 7.5	Appendix 7 Noise Impact Assessment
Lighting	Section 7.6	Appendix 10 Lighting Design Statement
Traffic and Accessibility (Operation)	Section 7.7	
Construction Impacts	Section 7.7.2	
Waste Management	Section 7.8	Appendix 13 Construction Waste Management Plan
Contamination	Section 7.10	
Ecologically Sustainable Development (ESD)	Section 7.11	
Biodiversity	Sections 7.13	
Consultation	Section 3.2	Appendix 12 Future Consultation Framework
<b>Plans and documents</b>		
Plans and documents - site survey, locality/context plan and architectural drawings	Section 2	Appendix 3 Design statement and architectural drawings

Table 3: Secretary's Environmental Assessment Requirements

## 1.4 Commonwealth Approvals

As outlined in Section 6.1, there are no relevant approvals required from the Commonwealth.

## 1.5 Environmental Planning and Assessment Regulation 2000

This EIS has been prepared in accordance with form and content requirements of Schedule 2 of the EPAR. An overview of how the individual requirements of the EPAR have been satisfied is included in **Table 4**:

<b>Environmental Planning and Assessment Regulations 2000 (extract)</b>	<b>Area addressed in EIS</b>
(1) <i>An environmental impact statement must also include each of the following:</i>	
(a) <i>a summary of the environmental impact statement,</i>	Executive Summary
(b) <i>a statement of the objectives of the development, activity or infrastructure,</i>	Section 1.1
(c) <i>an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,</i>	Section 4.2
(d) <i>an analysis of the development, activity or infrastructure, including:</i> (i) <i>a full description of the development, activity or infrastructure, and</i> (ii) <i>a general description of the environment likely to be affected by the development, activity or infrastructure, together with a detailed description of those aspects of the environment that are likely to be significantly affected, and</i> (iii) <i>the likely impact on the environment of the development, activity or infrastructure, and</i> (iv) <i>a full description of the measures proposed to mitigate any adverse effects of the development, activity or infrastructure on the environment, and</i> (v) <i>a list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out,</i>	Sections 2, 3, 6 and 7
(e) <i>a compilation (in a single section of the environmental impact statement) of the measures referred to in item (d) (iv),</i>	Section 7
(f) <i>the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4).</i>  <i>Note. A cost benefit analysis may be submitted or referred to in the reasons justifying the carrying out of the development, activity or infrastructure.</i>	Sections 4.1 and 7.11
(2) <i>Subclause (1) is subject to the environmental assessment requirements that relate to the environmental impact statement.</i>	Noted
(3) <i>Subclause (1) does not apply if:</i>	
(a) <i>the Secretary has waived (under clause 3 (9)) the need for an application for environmental assessment requirements in relation to an environmental impact statement in respect of State significant development, and</i> (b) <i>the conditions of that waiver specify that the environmental impact statement must instead comply with requirements set out or referred to in those conditions.</i>	N/A

Table 4: Requirements of the Environmental Planning and Assessment Regulation 2000

## 1.6 Project Team

An expert project team has been formed to deliver the project and includes consultants listed in **Table 6**:

<b>Consultant</b>	<b>Role</b>
KEYLAN Consulting Pty Ltd	Town Planning
H&E Architects	Architects
Design 5	Heritage Impact Assessment
Group DLA	Accessibility & Building Code of Australia Assessment
Hibbs	Construction Waste Management Plan Odour Assessment
ARUP	Noise Impact Assessment Fire safety Structural Engineering
Lighting Steensen Varming	Lighting Design Statement
Cost Planner MBM	QS report

Table 5: Project Team

## 2 Site analysis

### 2.1 Site location and context

The Sydney Opera House is located on a peninsula on the eastern side of Circular Quay known as Bennelong Point, as shown in the Figure below. The site is legally described as Lot 5 in DP 775888 and Lot 4 in DP 787933.



Figure 2: Location Map (Source: Six Maps)

The Opera House comprises four main structures (**Figure 4**), being:

- the broad flat platform comprising the Forecourt and Broadwalks
- the Concert Hall on the western side of Bennelong Point
- the Joan Sutherland Theatre (Opera Theatre) on the eastern side
- the Bennelong Restaurant, to the south of the two main venues.

The Proposal relates to the Lower Concourse, in the south-west part of the Opera House, adjacent to the eastern side of Circular Quay, as illustrated in **Figures 2** and **3** the Lower Concourse is within Lot 4 in DP 787933.

The Lower Concourse is below the Forecourt on the western side which forms part of the pedestrian access to the site from Circular Quay. It includes an undercroft area containing food and drink premises, associated outdoor seating with shade structures, toilet facilities, retail space, an ATM and the visitor and interpretation centre (the Welcome Centre).

The Opera House precinct adjoins the Royal Botanic Garden to the east and Circular Quay to the south-east. A mixed-use residential apartment building (Bennelong Apartments) is located to the south of the site at 1 Macquarie Street.



Figure 3: Lower Concourse, late afternoon 2016 (Source: *Respecting the Vision Sydney Opera House - a Conservation Management Plan Fourth Edition (CMP4)*)

The Opera House is listed on the NSW State Heritage Register and the National and World Heritage Lists. The Opera House is the nation's premier tourist destination and one of the busiest performing arts centres in the world, attracting 10.9 million visitors a year. The Opera House presents more than 1,800 performances and events annually, attended by almost 1.4 million people. More than 564,000 patrons undertook a paid tour of the Opera House in the financial year 2019.

The Sydney Opera House Trust (SOHT) operates and maintains the Opera House for the Government of NSW. It generates around 89% of its operating revenue through on-site activities, including food and beverage operations. These activities support the main function of the Opera House by providing significant financial investment into artistic and community activities.

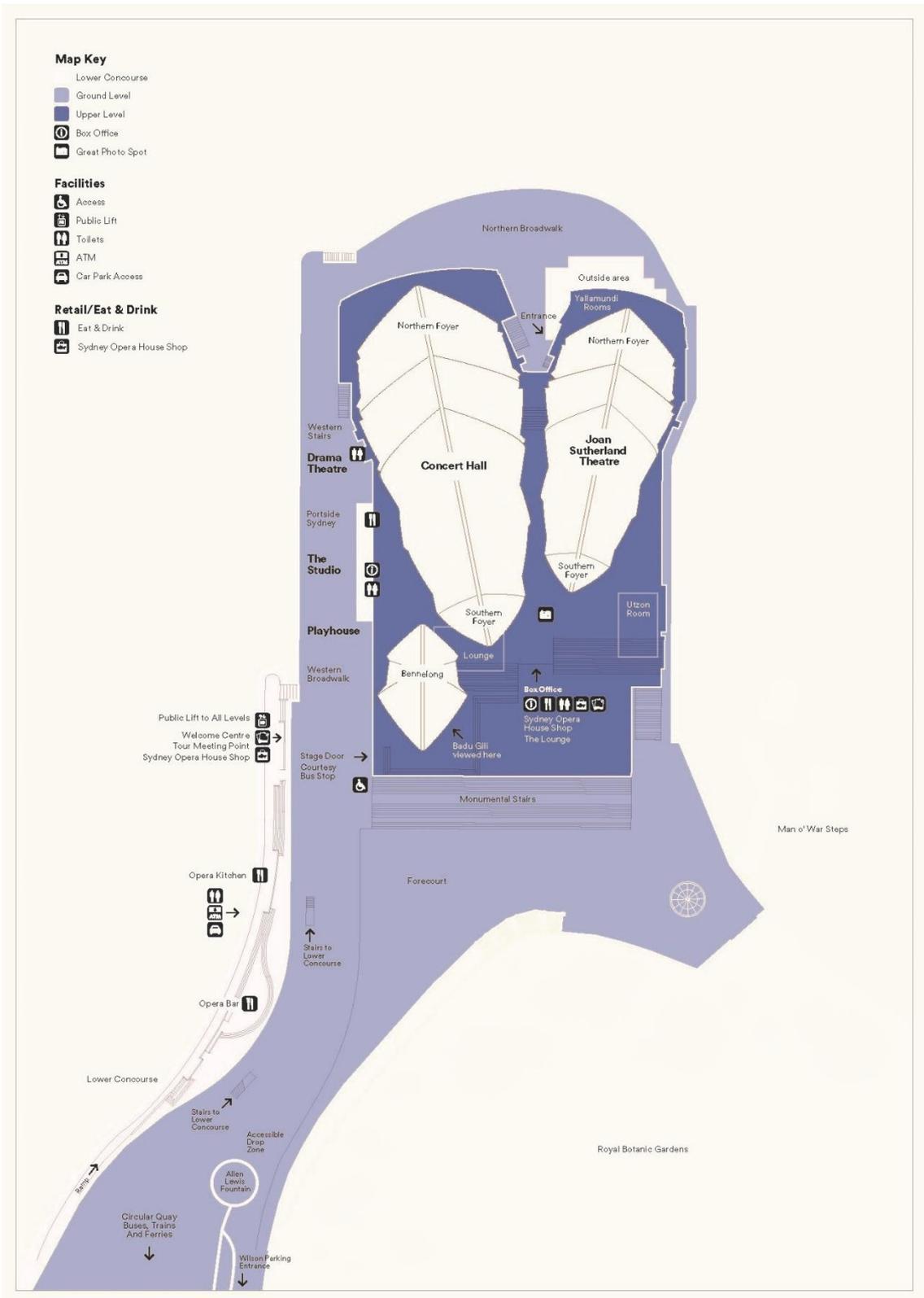


Figure 4: Opera House Site Plan (Source: SOH)

## 2.2 Surrounding development

Bennelong Point occupies the eastern peninsula of Circular Quay, with immediately adjoining land uses including the Royal Botanic Gardens to the south and southeast, Government House to the south and East Circular Quay to the South East. East Circular Quay is a pedestrian boulevard that links the Opera House with Circular Quay and the CBD.

Mixed use buildings mainly containing residential apartments above ground and first floor commercial premises are located to the south west of the Opera House along East Circular Quay. Many of the ground floor commercial premises include food and beverage premises with outdoor seating. The nearest residential premises are the Bennelong Apartments at 1 Macquarie Street, the northern end of Macquarie Street and East Circular Quay.

A roundabout at the northern end of Macquarie Street provides vehicular access to the southern forecourt of the Opera House and to the underground Opera House carpark, which is a separately owned commercial entity. Pedestrian access to the car park is provided via an underground tunnel from the Lower Concourse. Outdoor seating areas associated with commercial uses occupy the western part of the Lower Concourse.

To the north of the Sydney Opera House site on the opposite foreshore of Sydney Harbour is predominantly medium to high residential development in the North Sydney local government area, while to the west on the western foreshore of Circular Quay is the Overseas Passenger Terminal and mixed-use development in The Rocks.

## 2.3 Relevant planning history

### 2.3.1 Introduction

The Lower Concourse is part of the Opera House precinct. It provides an open, casual place for people to meet, eat, drink, learn about the Opera House's heritage, book a tour or buy a souvenir. In 2018, the Opera Bar on the Lower Concourse was voted the best restaurant in Australia in Tripadvisor's 'Everyday Dining' category.

Licensed food and beverage venues have operated on the Lower Concourse since Australia Day in 1988, when the Opera House was the main outdoor venue for Bicentennial celebrations. The existing food and beverage venues are currently managed by third party operators that are currently trading as the Opera Bar and Opera Kitchen. They are the busiest food and beverage venues at the Opera House, occupying prime harbour-side positions with views towards the Opera House, Sydney Harbour Bridge, Luna Park and Circular Quay. Sheltered seating in these venues is in high demand but is restricted by the narrow overhanging edge of the Forecourt above (refer to **Figures 5 and 6**).

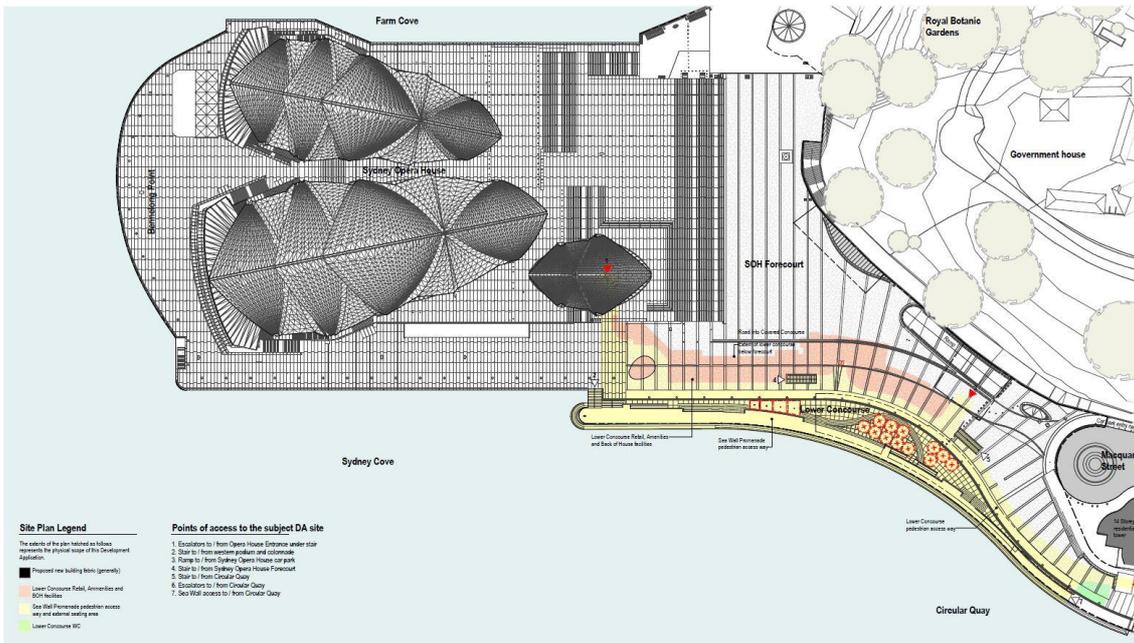


Figure 5: Existing site plan (Source: H&E)



Figure 6: The Forecourt Restaurant in 1988 on the Lower Concourse (Source SOH 1988 annual report)

The food and beverage offerings appeal to the wide cross section of Opera House visitors (including international and domestic tourists, theatre goers, children and families, and local residents and workers) while maintaining a safe, welcoming and inclusive atmosphere.

The Lower Concourse also offers visitor services through the Welcome Centre at the northern end. The Welcome Centre was awarded a National Trust Heritage Award for interpretation in 2016. The Welcome Centre acts as an introduction to the Opera House's heritage and history, a meeting and commencement point for tours, an information desk, an orientation and interpretation hub, a place to purchase tickets to a performance or a tour and a retail

store. The Welcome Centre includes a cloakroom, services counter and interpretative wall which provides information on the social, cultural and development history of the site.

The food and beverage venues and experiences on the Lower Concourse honour Jorn Utzon's design principles, Peter Hall's design elements and the building's standing as one of the world's pre-eminent works of architecture and performing arts venues. UNESCO's 2007 World Heritage assessment of the Opera House's Outstanding Universal Value noted the significant challenges involved in balancing the roles of *"the building as an architectural monument and as a state of the art performance centre, thus retaining its authenticity of use and function"*.

The Opera House Conservation Management Plan (CMP4) has been prepared to provide detailed guidance on how this can be achieved in an active, multi-purpose site. With regards to the Lower Concourse, the CMP4 notes the importance of maintaining access routes such as the seawall pathway, ensuring architectural features such as the mushroom columns are unobscured and protecting key views.

The Lower Concourse is managed by the SOHT, and the food, beverage and retail offerings operate under several authorities, including development consents, liquor licences and legislation which are summarised in the Table below.

Uses	Restaurant and Bar – currently trading as 'Opera Bar'	Food and Beverage Outlet, currently trading as 'Opera Kitchen'	Information Centre, Shop and Cloak room – also referred to as the 'Welcome Centre'.
Location	Lower Concourse, Sydney Opera House 1 Bennelong Point, Sydney NSW 2000 Lot 4 in DP 787933		
Summary of business types	Catering services, food and beverage outlets, tourist and cultural precinct including visitor information, tour departure point, ticket sales, cloaking, retail and amenities.		
Description of existing uses	The current operation at Opera Bar at the southern end of the Lower Concourse provides a food and beverage offering showcasing Australian suppliers and provenance, with a strong commitment to sustainability and seasonality.	The current operation at Opera Kitchen at the northern end of the Lower Concourse offers food and beverage services. The Opera Kitchen provides a wide range of cuisines on its menu, including Asian sushi and dumplings, and traditional pub food such as burgers and seafood.	The 'Welcome Centre' acts as a meeting hub for all tours, as well as offering general visitor information and a ticketing services to performances. Retail merchandise currently includes Opera House inspired gifts, keepsakes, and Danish design mementos paying homage to Danish architect Jørn Utzon.
Liquor Licence	Liquor License Number – LIQ0600779774	Liquor License Number - LIQ0660033112	N/A
Amenities	Sanitary facilities are provided for a maximum population of 2,700 patrons as follows: Toilets – 9 Male, 17 Female, 1 Disabled unisex Urinals - 16		
Total capacity	<b>2700</b> (based on amenities)		
Trading hours	<b>Sunday to Thursday</b>		<b>Monday to Sunday</b>

Uses	Restaurant and Bar – currently trading as ‘Opera Bar’	Food and Beverage Outlet, currently trading as ‘Opera Kitchen’	Information Centre, Shop and Cloak room – also referred to as the ‘Welcome Centre’.
	7:30am-12am <b>Friday and Saturday</b> 7:30am-1.30am <b>New Year’s Eve</b> 7:30am-2:30am		7am – 11pm (refer to SSD 6353 -Visitor and Interpretation Centre)
Parking and public transport	All staff & patrons have access to the Wilson Car Park (24/7 parking) Local public transport is located in Circular Quay.		
Capacity by area	1800 (as per liquor licence) (Internal 400 and External 1400, but some undercover) The internal number is limited by the 4m wide exit width (i.e. the 4m sliding doors are required to be open).	570 (External, but some undercover)	N/A
Noise	<p><b>1985 Consent</b> - The 1985 consent for the Lower Concourse stated that the ‘use’ of the premises shall not give rise to certain specific sound levels and also no ‘offensive noise’ as defined in the (repealed) <i>Noise Control Act 1975</i>.</p> <p><b>Opera Bar liquor Licence</b> – set noise limits for specific times of the day at the boundary of any affected residence and, specifically limits for inside affected residents including the Bennelong Apartments.</p> <p><b>Premises Management Plans</b> – (a requirement of the Liquor Licences) include management measures for protecting neighbourhood amenity and managing complaints.</p>		<p><u>SSD 6353 (Welcome Centre)</u></p> <ul style="list-style-type: none"> <li>• Noise may be no more than 5dB above background noise level; and</li> <li>• No offensive noise (as defined by the <i>Protection of the Environment Operations Act 1997</i>)</li> </ul>
Live music	Live music is permitted outdoors, however it must respect the décor and ambiance of the venue (and the limits in the Liquor licence).	No live music permitted. Recorded music must be at an acceptable level according to SOHT.	
Staff	Up to 250	Up to 90	<p><b>Around 125 made up of:</b></p> <p><b>SOH employees</b></p> <ul style="list-style-type: none"> <li>- 80 tour guides</li> <li>- 8 management</li> <li>- 7 in reservations</li> </ul> <p><b>External employees</b></p> <ul style="list-style-type: none"> <li>- 15 external retail staff.</li> <li>- 15 ‘Magic memories’ staff photographing a large % of guests prior to their tour.</li> </ul>

Uses	Restaurant and Bar – currently trading as ‘Opera Bar’	Food and Beverage Outlet, currently trading as ‘Opera Kitchen’	Information Centre, Shop and Cloak room – also referred to as the ‘Welcome Centre’.
Plan of Management (POM)	The liquor licence for each venue require a POM which covers management measures for general amenity, noise controls, complaints and incidents, signage, security, fire safety, responsible service of alcohol.		
Sustainability	The operator(s) must comply with the SOHT policies and procedures relating to the environmental management of the premises.		
Waste	Hibbs prepared the Construction Waste Management Plan in accordance with the SOH Waste Management Plan.		

Table 6: Summary of lower concourse existing and proposed operations (Base source: SOH)

The proposal seeks to consolidate all uses of the Lower Concourse within a single consent and reflects the existing uses of the Lower Concourse. The proposal addresses and responds to the issues raised in submissions relating to DAs SSD 7430 and SSD 7431 (for the new shade covers and the glass line realignment).

On 14 February 2019, the Sydney Opera House wrote to the then Department of Planning and Environment and withdrew SSD 7430 and SSD 7431.

If approved, the SOH intends to surrender the existing consent for the Welcome Centre (SSD 6353) in accordance with section 4.63 of the EP&A Act.

### 2.3.2 Physical description of the Lower Concourse

Aside from the food and beverage venues and the Welcome Centre, the Lower Concourse provides undercover pedestrian access to and from the Opera House, and public toilets.

An undercover passage enables patrons to access the Lower Concourse to and from the Wilson Car Park. Escalators at the northern end of the Lower Concourse provide access to the Stage Door and Covered Concourse, and escalators at the southern end provide access to east Circular Quay.

The use of the Lower Concourse spaces enables the open sweep and uncluttered presentation of the Forecourt above and the stark and dramatic presentation of the sculptural form of the Opera House building.

The physical characteristics of the Lower Concourse are fully described in the CMP4. Pink granite has been used to pave the Lower Concourse, with split setts used only on the seawall walkway. On the remainder of the Lower Concourse, the paving comprises solid sawn granite slabs with square edges, fixed with the same bronze screws as the precast panels of the Broadwalks and Podium, and spaced joints with drainage below.

The Lower Concourse area can be considered a Peter Hall space but it clearly defers to Jorn Utzon’s Design Principles (UDP) and ideas for the setting and Forecourt, and retains his external palette of materials (unpainted concrete, granite, bronze and glass).

The unpainted concrete mushroom columns and the louvered disc light fittings are a well-considered part of the total design and set a distinctive but sympathetic identified in **Figure 7** for this space.



Figure 7: Lower Concourse mushroom columns and louvered disc light fittings (Source: Keylan)

### 2.3.3 Summary of existing uses and approvals

The construction and uses of the Lower Concourse are authorised by the combined powers and approvals under:

- *Sydney Opera House Act 1960* (repealed in 2006) (SOH Act);
- *Sydney Opera House Trust Act 1961* (SOHT Act);
- Development consent granted by the Council of the City of Sydney in 1985 (DA 44/85/0511) for the “Opera House Forecourt Refurbishment” (1985 consent); and
- Development consent granted by the Minister for Planning (SSD 6353) in 2015 for the Welcome Centre (retail, ticketing etc).

The Lower Concourse, being part of Lot 4 DP 787933, falls within the application of the SOHT Act. It is proposed to consolidate all of the following existing on the Lower Concourse under one planning consent.

### 2.3.4 Food and Beverage

Of the 10.9 million annual visitors to the Opera House, approximately 1.5 million patrons attend a performance, and a large number of people choose to eat and drink on the Lower Concourse (on average, there are around 1.4 million food and beverage transactions annually on the Lower Concourse). Accordingly, these venues are required to be operated in a manner which maintains and enhances the reputation and iconic status of the Opera House.

The Opera House also employs 900+ staff who, together with staff of resident companies, hirers and contractors regularly visit the restaurants on the Lower Concourse.

### 2.3.5 Liquor licences

*The Liquor Act 2007* regulates and controls the sale and supply of alcohol and certain aspects of the use of premises on which alcohol is sold or supplied. Both venues of the Lower Concourse have their own liquor licences, and the venue Liquor Manager is responsible for compliance with the relevant requirements. These requirements are summarised in the venue Plan of Management (POM), and include the management of:

- venue capacity;
- local amenity (e.g. noise controls);
- responsible service of alcohol (RSA);
- complaints management; and
- security (see additional information below).

### 2.3.6 Security

Security on the Lower Concourse is flexible and currently includes a combination of Opera House security measures, as well as contracted security guards and RSA marshals engaged by the venue operators.

#### Opera House

The Opera House supports Lower Concourse venue security through the employment of:

- dedicated Lower Concourse security officers;
- 24-hour precinct physical security coverage;
- 2 User Paid NSW Police (high visibility) seven days per week;
- extensive CCTV coverage of all areas of the Lower Concourse, including all entry and exit points, the pedestrian tunnel into Wilson Car Park, and around bars, toilets and thoroughfares leading into and from the SOH building; and
- a control room manned by security operators 24 hours/seven days per week.

### Opera Bar

During the summer busy period, the Opera Bar provides around four security and RSA marshals on Mondays through to Thursdays from 5pm till close. From Friday through to Sunday, Opera Bar employs up to 13 security guards (over various shifts) between midday and closing.

During quieter periods (e.g. through Autumn/Winter, except during Vivid) security and RSA marshalling drops back to around three security and RSA marshals on Mondays through to Thursdays from 5pm till close. From Friday through to Sunday, Opera Bar employs up to nine security (over various shifts) between midday and closing.

### Opera Kitchen

During the summer busy period, the Opera Kitchen provides a security guard every night from 6pm until close. During quieter periods security drops back to the provision of one guard on Fridays, Saturdays and Sundays from 6pm till close (except during Vivid, when additional security is on site).

Security is also provided by the Opera Kitchen on public holidays from 6pm till close, and on New Year's Eve three security guards are engaged.

The venue POM's have more detailed information on security measures and RSA.

### **2.3.7 Patron Capacity**

In 2014, the Opera House commissioned a report by Arup Pty Ltd to calculate the maximum achievable safe occupant numbers for the Lower Concourse, broken into different use areas (as advised by the SOHT).

The Arup report found the limiting factor for patrons is not safety or egress, but amenities (specifically the total number of toilets). Importantly, the exit capacity currently exceeds the allowable occupant numbers (**Figure 8**), summarised as:

- Opera Bar: 1800 (1400 external, 400 internal)
- Opera Kitchen and shared areas (i.e. patrons at the Welcome Centre): 570
- Other 330 (e.g. patrons waiting to depart for a Tour).

Notwithstanding, it is up to the licensees and managers of the venues to ensure clear and obvious egress paths to exits as identified in **Figure 8**, and ensure venues do not exceed capacity, through the implementation of adequate crowd control measures. **Figure 8** does not reflect the existing Lower Concourse layout, the figure has been included in the EIS to demonstrate egress points.

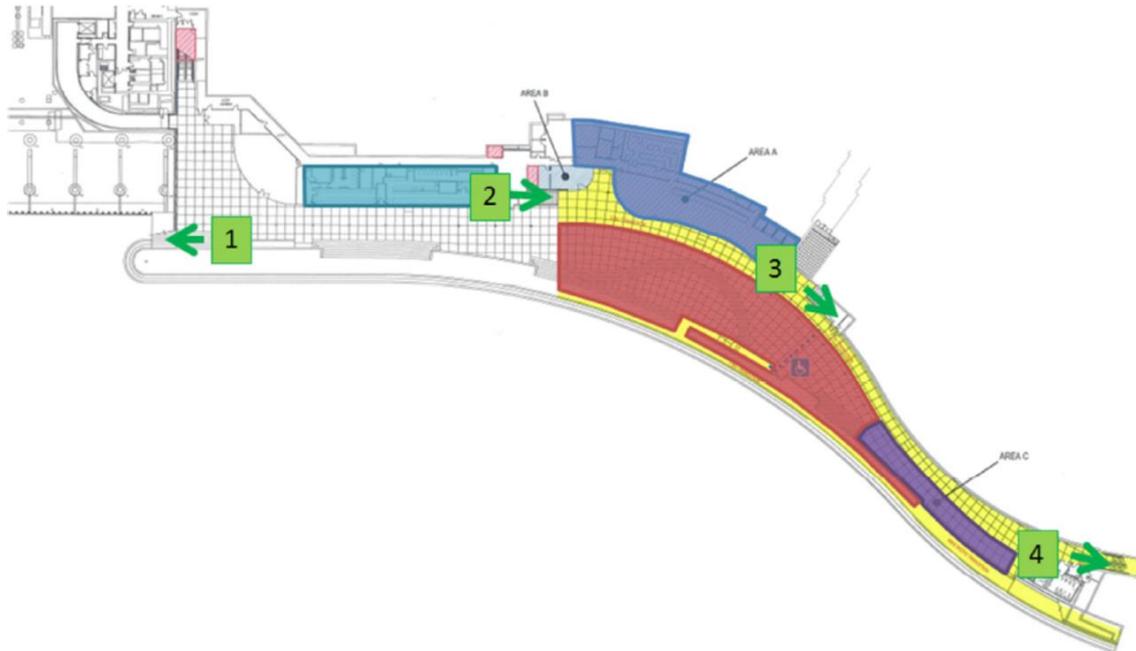


Figure 8: Existing egress points from Lower Concourse (Source: SOH)

### 2.3.8 Welcome Centre

The Welcome Centre was opened on the northern part of the Lower Concourse on December 9, 2015 in accordance with the development current for SSD 6353.

The Welcome Centre provides an information and ticketing facility and is the starting point for tours. It aims to improve visitor experience through:

- creating a welcoming ‘touch’ point on the visitor journey;
- the provision of basic visitor orientation and information;
- interpretive material for visitors and patrons to enhance understanding and appreciation of the cultural significance of the SOH;
- informing and encouraging exploration of the SOH and its site; and
- providing visitor ticketing and an Opera House gift shop.

The Welcome Centre has been designed to allow a free flow of pedestrian movement around the area with the ‘pod’ set back at least 4 metres from nearby interpretive walls. The retail outlet offers high quality retail products with an emphasis on design excellence.

A group check in desk opened in October 2018 at the Welcome Centre to enhance the arrival experience of guests and reduce queuing time.

#### ***Interpretative material***

The interpretive walls behind the Welcome Centre and digital interpretive screens enhance visitors and patrons understanding and appreciation of the cultural significance of the Opera House. The interpretation material presents a comprehensive selection of stories about the place, its history and heritage. In 2016, the Welcome Centre won the National Trust Heritage Award for Interpretation.

## **Tours**

The Opera House offers guided tours of the building and site as a busy and world renowned performing arts centre with world heritage significance. The standard, one hour tour includes an in depth explanation of the emotive history behind the conception and delivery of the building, a selection of theatres and anecdotal stories regarding performances and events.

The Opera House Tours are well patronised, with around 98 tours per day during peak season (summer). The number of people taking a guided tour of the building has increased 80% over the past five years to 564,000, with 52% taking an Asian-language tour. Tours account for around 14% of the Opera House's self-generated revenue.

Currently, tours meet and commence at the Welcome Centre and generally move through the building depending on availability of the venues.

### ***Tours incorporating dining experiences***

The Opera House offers multiple tour packages that incorporate food and beverage operators on the Lower Concourse.

Some packages are sold directly to international markets with tour operators. In the 2019 financial year 13,000 people opted for a 'tour and dine' package, which incorporates a meal at the Opera Bar or Opera Kitchen before or after a tour. This contributed substantially to the Opera House's operating revenue, which supports the Opera House's programming, community activities and capital works program, such as the 2017 major upgrades to the Joan Sutherland Theatre (JST) upgrades, which were funded by the Opera House.

### **2.3.9 Special Events on the Lower Concourse**

Low impact, special events are held on the Lower Concourse from time to time in line with community or cultural events such as Mother's Day, Melbourne Cup and Chinese New Year. Such activities add to the range of visitor experiences offered to local and international visitors on the Opera House precinct. These special events 'activate' the Lower Concourse through the use of theming to engage patrons and customers. The theming of the activations typically includes the temporary use of new objects, furniture and/or decorations as well as special food and beverage offerings (in accordance with CMP4).

In addition, the Lower Concourse is a key New Year's Eve destination, activation and infrastructure in line with precinct-wide activities and entertainment.

Such special events make a positive contribution to visitor's appreciation of the site, adding to the value of the Lower Concourse as a domestic and international tourism destination, whilst contributing to the cultural and social life of the city.

Such events do not involve permanent physical changes to the building or the site and have no adverse impacts to the heritage significance of the Opera House.

### **2.3.10 Lower concourse – proposals for change**

As the Sydney Opera House is listed at a Local, State, National and World Heritage level, any proposal for change or development must undergo a rigorous assessment to determine its

compliance with the CMP4 and the UDP, both of which have been endorsed by the Heritage Council as the guiding management documents for the Opera House precinct. Certain development proposals are required to be submitted to the relevant authority for approval. The statutory framework for this approval process is complex and outlined in Section 6.

Such change is required to be 'deferential' to the building, to not distract from the dominance of the sails and cause as little change to building fabric as practically possible.

Key considerations for minor works and fit out on the Lower Concourse are detailed in the CMP4 and include whether:

- Impact on building fabric has been minimised and is reversible;
- Quality and finish are commensurate with a World Heritage Listed site;
- Views to and from the Opera House and its key architectural features are unencumbered;
- Structural elements of the building are unobscured and unpainted;
- Light spill is controlled;
- Fabric and furnishings align with the Opera House's natural, non-reflective palette of materials and colours;
- Sustainable and energy efficient building practices being implemented;
- The seawall and pathways are clear of obstructions and physical impediments; and/or
- The installations for special events are visually concealed from the Forecourt Level and West Circular Quay.

## **2.4 2016 Development Applications for Lower Concourse Works**

In February 2016, the SOHT lodged two development applications (DAs) and accompanying Environmental Impact Statements (EIS) with the DP&E seeking consent for minor works on the Lower Concourse. These two applications are detailed below.

### **2.4.1 SSD 7431 Opera Bar Glass Line**

DA reference SSD 7431 sought to extend and realign the existing glass line between the main bar of the Opera Bar and its Meat and Cheese Room. The proposal also included internal 'back of house' reconfigurations to create additional office and cool room spaces.

The EIS for this application was publicly exhibited from 3 March to 4 April 2016. Two agency submissions were received - one from the Heritage Council and one from City of Sydney Council.

The Heritage Council noted the EIS did not sufficiently detail how the office and cool room alterations were proposed to be constructed. City of Sydney Council recommended changes to the alignment of the glass line to reduce potential heritage impacts and improve access through the Lower Concourse.

In addition, eight public submissions were received, raising various issues regarding the use of the Lower Concourse, noise and access through the area.

#### **2.4.2 SSD 7430 Shade Cover improvements**

SSD 7430 sought to remove existing shade structures on the Lower Concourse and replace these with new purpose-built shade covers.

The EIS for this application was publicly exhibited from 3 March to 4 April 2016. Two agency submissions were received: one from the Heritage Council and one from City of Sydney Council – both recommending umbrella design modifications. In addition, nine public submissions were received, raising various issues regarding the use of the Lower Concourse, noise and access through the area.

#### **2.4.3 SSD 6353 Welcome Centre**

On 22 July 2015 the then Department of Planning and Environment granted consent to SSD 6353 for a new visitor information and interpretation centre in the Lower Concourse including:

- a new ticketing/information counter, retail gift shop, tour meeting points, interpretation display wall panels and associated service facilities
- removal of the existing temporary ticketing office, three signage pylons and flag poles on the southern forecourt
- installation of a new welcome signage blade on the southern forecourt

#### **2.4.4 Withdrawal of SSD 7431 and SSD 7430**

On 14 February 2019, the Sydney Opera House wrote to the then Department of Planning and Environment and advised it was withdrawing the following applications:

1. Lower Concourse Shade Cover Improvements (SSD 7430); and
2. Lower Concourse Visitor Flow and Amenity Improvements (SSD 7431).

The current proposal for the Lower Concourse Minor Works and Uses (SSD 9794) will replace the above SSDs.

If the current Lower Concourse proposal is approved, the Opera House intends to surrender the existing consent for the Welcome Centre (SSD 6353) in accordance with section 4.63 of the EP&A Act.

## 3 Proposed Development

### 3.1 Project Description

The works subject to this EIS are described in **Table 7** and shown in the following Figures. Architectural drawings of the proposed works are included at **Appendix 3**.

Summary of proposed works and uses	
<b>Glass line</b>	<ul style="list-style-type: none"> <li>It is proposed to demolish and extend the existing glazing which encloses the indoor section of the Opera Bar and extend it to the existing and isolated Meat and Cheese Room.</li> <li>This will provide additional enclosed restaurant floor space for indoor seating and will also streamline the external pedestrian pathway for more direct visitor flow.</li> <li>The space between these two enclosed areas is currently a dead space with little utility. The glass line change will enclose Opera Bar's boundary and provide clearer separation between the Opera Bar tenancy and the public walkway.</li> <li>There are no changes proposed to the overall patron capacity.</li> </ul>
<b>Shade covers</b>	<ul style="list-style-type: none"> <li>It is proposed to remove 16 existing shade structures over the outdoor seating area on the Lower Concourse and replace them with larger purpose-built shade covers to increase shade coverage, weather protection and acoustic attenuation.</li> <li>The proposed shade covers will not protrude above the balustrade along the western edge of the Forecourt.</li> <li>Plans, elevations and photomontages for the proposed shade covers have been included at <b>Appendix 3</b>.</li> </ul>
<b>Office, Storage Space and Fire Egress</b>	<ul style="list-style-type: none"> <li>It is proposed to increase back of house cool room and office space through the refurbishment of back of house space near the Meat and Cheese Room. This would enable the Opera Bar to meet current and future demands on trade particularly during peak times such as in summer and during VIVID.</li> <li>Associated fire egress amendments are required and are addressed in Section 7.12.</li> </ul>
<b>Use of the Lower Concourse Area</b>	<ul style="list-style-type: none"> <li>The SOHT is seeking to consolidate existing uses and approvals through the provision of a single consent. This will include the incorporation of all food and beverage outlets along the Lower Concourse into a single consent, including the Welcome Centre. No approval is sought for new uses.</li> <li>The existing use issues raised in submissions on DAs SSD 7430 and SSD 7431 have been addressed in Section 3.</li> <li>If the current Lower Concourse proposal is approved, the SOH intends to surrender the Welcome Centre consent SSD 6353.</li> </ul>
<b>Trading hours</b>	<ul style="list-style-type: none"> <li>The proposed trading hours of the Food and Beverage areas will generally be:           <p style="margin-left: 20px;"><b>Sunday to Thursday</b> 7:30am-12am</p> <p style="margin-left: 20px;"><b>Friday and Saturday</b> 7:30am-1.30am</p> <p style="margin-left: 20px;"><b>New Year's Eve</b> 7:30am-2:30am</p> </li> </ul>

Table 7: Summary of the Proposal (Source: SOHT)

### 3.1.1 Glass line

The photographs in **Figures 9** and **10** identify the existing form of the glass line and existing back of house fire egress.



Figure 9: Underutilised space between the Opera Bar and the Meat and Cheese Room (Source: Keylan)

The photos demonstrate the impractical separation of the main restaurant area of the Opera Bar and the Meat and Cheese Room, both of which are part of the Opera Bar.

The connection of these areas will provide additional enclosed restaurant floor space and new seating in front of the existing fire egress.

The existing space between the meat and cheese room is currently underutilised and does not form part of the main public thoroughfare. As such, the enclosure of the 'public' space will not impact on the public or its access to the Opera House.

The proposal will marginally improve pedestrian flow to the stairs to the Forecourt and/or the Opera Kitchen. It will also provide additional indoor seating which is always in high demand.

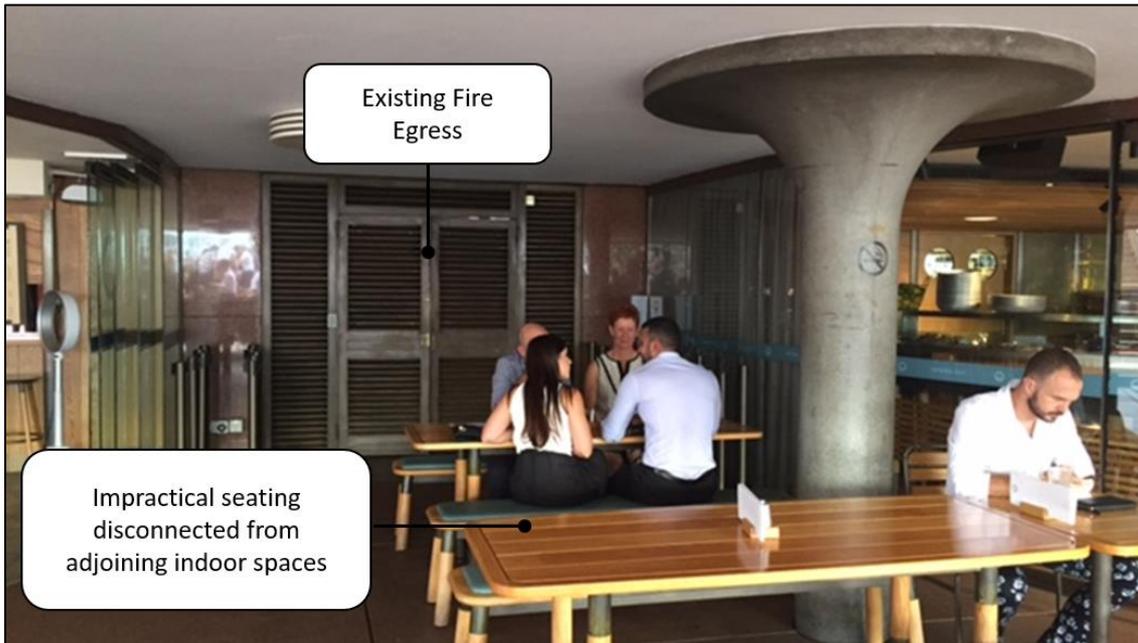


Figure 10: Photograph showing the existing, separated, enclosed areas of the Opera Bar (Source: Keylan)

The design has been refined to respond to issues raised in the submissions to SSD 7431.

The EIS for SSD 7431 was publicly exhibited from 3 March to 4 April 2016. Two agency submissions were received, one from the Heritage Council and one from City of Sydney Council.

The Heritage Council noted the EIS did not sufficiently detail how the office and cool room alterations were proposed to be constructed. The City of Sydney Council recommended changes to the alignment of the glass line to reduce potential heritage impacts and improve access through the Lower Concourse.

In addition, eight public submissions were received, raising various issues regarding the use of the Lower Concourse, noise and access through the area.

The current Lower Concourse proposal seeks to address and resolve the issues raised in these submissions. **Table 8** below details the 2016 proposal (SSD 7431) compared to the current Lower Concourse proposal. The Heritage Impact Assessment and Architectural Design Statement also discuss the 2016 proposal and the current Lower Concourse proposal.

Issue (SSD 7431) Opera Bar Glass Line	Proposed (SSD 9794)
Form of glass line and 'sightline' to stairs to Forecourt	Improved view corridors to the stairs to the Forecourt are proposed due to removal of clutter around the existing fire doors
Access to stairs	Proposal improves pedestrian flow and circulation due to the alteration of the glazing line which opens up the passage width. This reduces the 'pinch-point' in the walkway.
Reversibility	Easily reversible
Excavation	No excavation necessary

Issue (SSD 7431) Opera Bar Glass Line	Proposed (SSD 9794)
Privatisation of the of the public thoroughfare	The revised glazing line will create around 24m <sup>2</sup> of additional indoor space, allowing the removal of clutter (as per the CMP4). This has no impact on heritage values of SOH (as considered in the HIS, <b>Appendix 5</b> ). The newly enclosed area improves amenity for visitors.
Construction of the Back of House office and cool room	The proposed glass line amendment will assist in the proposed amendments to the back of house space located adjacent to the Opera Bar tenancy.

Table 8: Comparison of SSD 7431 (withdrawn) and proposed SSD 9794 (Source: HIS and Architectural Design Statement)

The proposed glass line alignment is demonstrated in **Figure 11**.

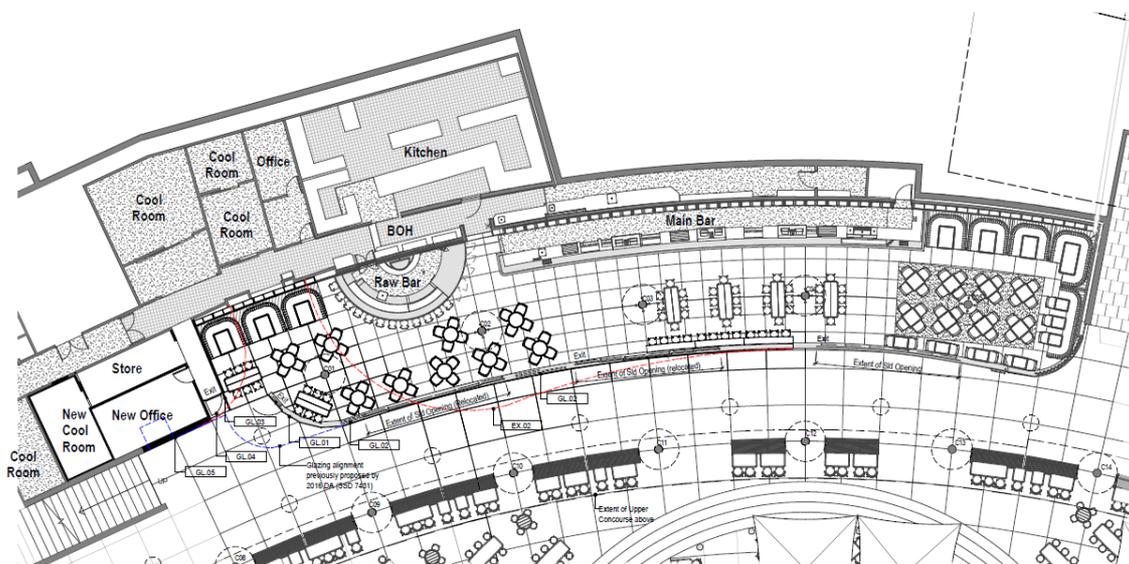


Figure 11: Proposed glass line alignment, the existing line is shown in red (Source: H&E Architecture)

### 3.1.2 Shade cover improvements

The proposed shade cover improvements are located in the outdoor seating area on the Lower Concourse adjacent to Circular Quay. This is one of the few places on the Broadwalks where shade structures are currently installed at the Opera House (except as permitted for temporary use).

The Proposal includes the removal of the 16 existing shade structures and their replacement with 16 new, marginally larger purpose-built shade covers. The maximum height of the proposed shade covers will generally be equal to the top of the solid upturn along the western edge of the Forecourt. This will ensure that there will be minimal obstruction of views of the water for pedestrians using the Forecourt. In addition, there is slightly more clearance between the ground and fabric, therefore slightly improving views from within the Lower Concourse. The colour, shape and general configuration of the new shade structures have also been designed to minimise their visual impact.

The new shade covers will be equipped with heaters and speakers and LED up-lighting. The design intent is to simplify and improve service integration, reducing clutter and improving

shade cover and weather protection generally for the outdoor seating area on the Lower Concourse (**Figures 12 to 14**).

The previous SSD 7430 sought to remove existing shade structures on the Lower Concourse and replace these with new purpose-built shade covers.

The EIS for SSD 7430 was publicly exhibited from 3 March to 4 April 2016. Two agency submissions were received: one from the Heritage Council and one from the City of Sydney Council, who recommended umbrella design modifications. In addition, nine public submissions were received, raising various issues regarding the use of the Lower Concourse, noise and access through the area.

The current Lower Concourse proposal has been revised to respond to the issues raised in the submissions to SSD 7430. **Table 9** below details SSD 7430 proposal compared to the current Lower Concourse proposal. The Architectural Design Statement also discuss the previous SSD 7430 and the current Lower Concourse proposal.

Issue (SSD 7430) Lower Concourse Shade Cover Improvements (2016)	Proposed (SSD 9794) shade structures
Consistency with Utzon Design Principles (UDP) and CMP4	The proposed shade structures respond to and are consistent with each of the UDP and CMP4. It is noted the proposal is relatively minor in scope.
Design – connecting cover between umbrellas	The proposed connections are necessary to provide continuity of weather protection to this section of the outdoor dining space. The connecting fabric is made of translucent material to give the appearance that the shade structures comprise of individual canopies.
Design – setbacks from the raised seating area	This proposal adopts this recommendation and differs from the original 2016 DA.
Material of drop-down sun screen	Retractable sun screens behind the outdoor bar: To maintain safety and comfort for patrons and staff it is necessary to use glare and UV reduction blinds at certain times. The screens are only used when required.
Branding on structures and signage branding not appropriate	The branding has been removed from the proposal.
View analysis – view loss from within the Lower Concourse	The Architectural Design Statement demonstrates that the proposed shade structures will result in no detrimental impact and will improve sight lines from the Lower Concourse.
Design – design displays a competing roof form to the sails of the SOH and is inconsistent with the UDP	The proposed shade structures are insignificant in scale, by comparison to the Opera House and its established context, could not be considered in any way to be in “competition” with the sail like form of the Opera House.
Design – canopy edge dominates the Lower Concourse seawall when viewed from the water	The proposal adopts a more umbrella like form with a significantly more articulated edge.
Custom modules used – contravenes UDP	The proposed shade structures respond to and are consistent with the UDP and CMP4.

Issue (SSD 7430) Lower Concourse Shade Cover Improvements (2016)	Proposed (SSD 9794) shade structures
LED lighting will emphasise larger roof form	The lighting proposed will be lit on the underside of the shade structure fabric using a low glare gentle ambient light
Floor of lower concourse observed from forecourt, making the structures appear bigger	The proposed shade structures do not appear any bulkier than the existing umbrellas and do not detrimentally impact on views to and from the adjacent public domain.
Obstruct view from forecourt	There are negligible impacts on views of Circular Quay from the public domain of the Upper Concourse
Extend over seawall walkway and clearance-obstructing views	The revised design ensures there is no point where the proposed shade structure extends over the Sea Wall Promenade.
Undesirable edge condition adjacent to parapet	The shade structures including the membrane fabric will be regularly cleaned and maintained as the existing umbrellas presently are.

Table 9: Comparison of SSD 7430 (withdrawn) and proposed SSD 9794 (Source: Architectural Design Statement)



Figure 12: View 03 Existing view overlooking Opera Bar outdoor area from Forecourt (Source: H&E Architects)



Figure 13: View 03 Proposed view of shade structures (Source: H&E Architects)

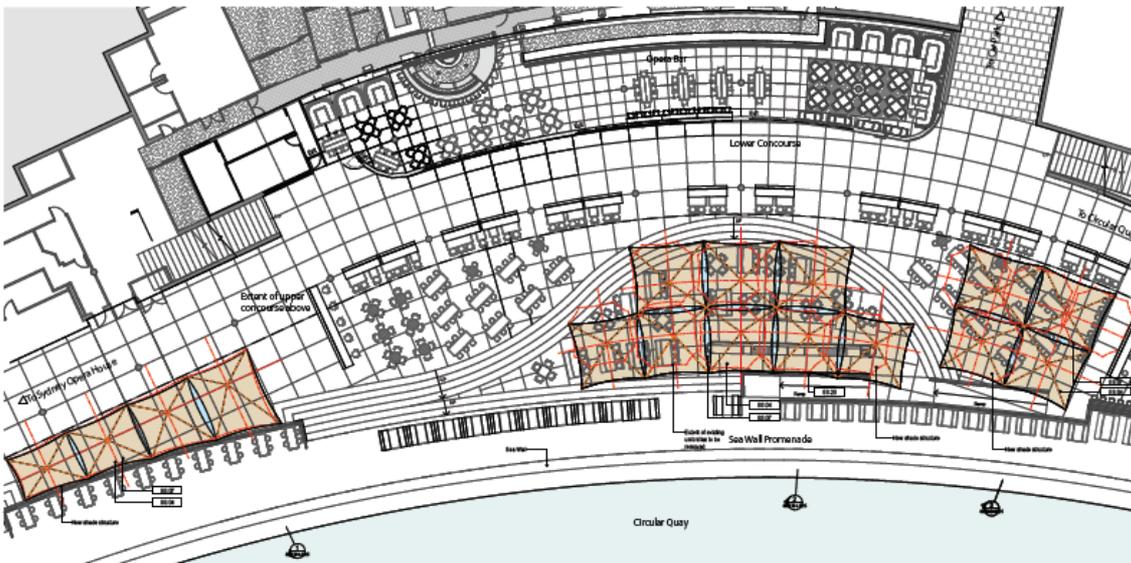


Figure 14: Plan view of proposed shade cover improvements (Source: H&E Architects)

### 3.1.3 Consolidation of the existing uses of the Lower Concourse

The Lower Concourse provides sheltered access from near the end of Macquarie Street to the Sydney Opera House below the western edge of the Forecourt.

The Lower Concourse area incorporates food, beverage, visitor services and retail as well as amenities and servicing. The food and beverage outlets offer some entertainment and special events, mostly in outdoor space.

Restaurant and bar uses have been operating since the Lower Concourse opened in May 1988 (Figure 6) in accordance with the 1985 Consent and consistent with the SOH Act and SOHT Act. These uses are also currently managed by the SOHT via agreements, liquor licences and management plans.

The Opera Bar is located towards the southern end of the Lower Concourse and comprises of bars and a restaurant. The Opera Kitchen is currently a separate business and is located towards the northern end of the Lower Concourse and comprises of a bar and dining area. The Welcome Centre is located at the northern end of the Lower Concourse corridor (see **Figure 15**).

As previously mentioned, the development consents applying to the Lower Concourse, include the:

- 1985 Consent; and
- SSD 6353 for the Welcome Centre (retail, ticketing etc.)

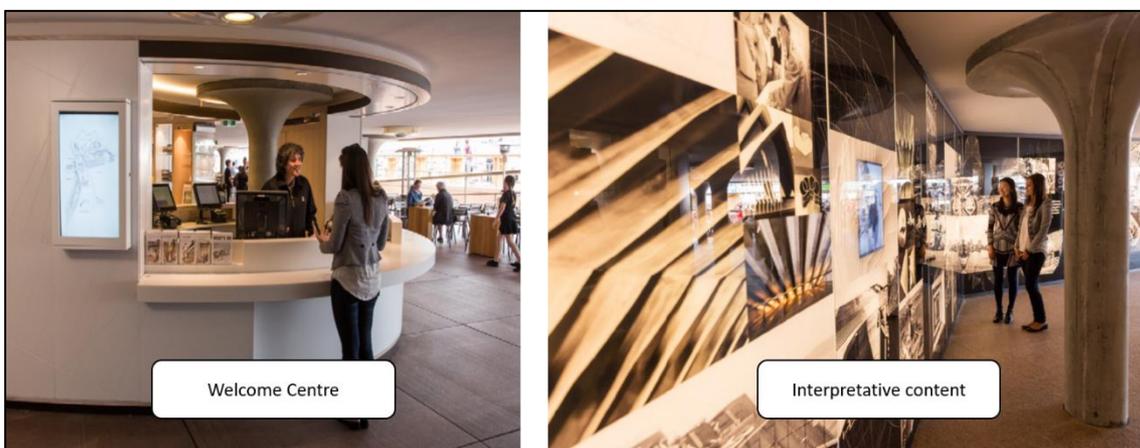


Figure 15: Welcome Centre and interpretative content (Source: CMP4)

In light of this and the works proposed to the Lower Concourse as part of the Proposal, the SOHT is taking the opportunity to consolidate all current uses of the Lower Concourse into a single consent incorporating:

- the Welcome Centre and amenities; and
- restaurants and bars (currently known as Opera Bar and Opera Kitchen).

The Proposal will ensure that there are no inconsistencies between the consents and provide clarity and certainty in terms of the applicable development consent which govern all uses. In addition, it will provide for ease of implementation and compliance for the SOHT.

No additional uses or changes to the operation of the existing facilities (e.g. patron numbers, noise management, hours of operations) are proposed.

If the current Lower Concourse proposal is approved, the Opera House intends to surrender the existing consent for the Welcome Centre in accordance with section 4.63 of the EP&A Act.

## 3.2 Consultation

The SOHT has undertaken extensive consultation on the project as summarised in **Table 10** below:

Stakeholder	Consultation Summary
DAP (Design Advisory Panel, formerly Eminent Architect's Panel)	<ul style="list-style-type: none"> <li>• Concept Design - 18 March 2019</li> <li>• Schematic Design - 11 April 2019</li> <li>• Finalisation of DA Documentation - 3 June 2019</li> <li>• The panel supported the material presented for DA submission.</li> </ul>
SOH Conservation Council	<ul style="list-style-type: none"> <li>• Schematic Design was discussed on 11 April 2019.</li> <li>• CC endorsed and agreed DAP can resolve detailed design issues</li> </ul>
DPIE	<ul style="list-style-type: none"> <li>• DPE pre-SEARs initial DA briefing on 26 June 2018.</li> <li>• DPE detailed DA/EIS briefing on 19 June 2019</li> </ul>
City of Sydney Council	<ul style="list-style-type: none"> <li>• DA/EIS briefing 25 June 2019</li> </ul>
CBD Coordination Office within Transport for NSW	<ul style="list-style-type: none"> <li>• Given the minor nature of the proposal, the CBD Coordination Office was not contacted.</li> </ul>
Roads and Maritime Services	<ul style="list-style-type: none"> <li>• Given the minor nature of the proposal, the RMS were not contacted.</li> </ul>
Commonwealth Department of Environment	<ul style="list-style-type: none"> <li>• The Commonwealth Department of Environment was not contacted in relation to the proposal. As detailed in Section 6.1, the SOHT determined, based on the findings of the HIS, an approval under EPBC Act was not required.</li> </ul>
Office of Environment and Heritage	<ul style="list-style-type: none"> <li>• Heritage Division detailed DA/EIS briefing 24 June 2019</li> </ul>
NSW Heritage Council	<ul style="list-style-type: none"> <li>• Given the findings of the HIS, the NSW Heritage Council was not contacted.</li> </ul>
Place Management NSW (Property NSW)	<ul style="list-style-type: none"> <li>• Given the minor nature of the proposal, Property NSW was not contacted.</li> </ul>
Environment Protection Authority (EPA)	<ul style="list-style-type: none"> <li>• Given the minor nature of the proposal, the EPA was not contacted.</li> </ul>
NSW Police	<ul style="list-style-type: none"> <li>• The NSW Police were not contacted in relation to the proposal.</li> </ul>
Liquor and Gaming NSW	<ul style="list-style-type: none"> <li>• Given there are no proposed changes to the use or operation of the licenced premises, Liquor and Gaming NSW were not contacted in relation to the proposal.</li> </ul>
Botanic Gardens and Centennial Parklands	<ul style="list-style-type: none"> <li>• The Botanic Gardens and Centennial Parklands were contacted to offer a pre EIS lodgement meeting. At the time of preparing the EIS, a reply had not been received.</li> </ul>
Local Aboriginal Land Council and stakeholders	<ul style="list-style-type: none"> <li>• The Local Aboriginal Land Council and stakeholders were not contacted in relation to the proposal.</li> </ul>
Local Heritage Group/s	<ul style="list-style-type: none"> <li>• The Local Heritage Group/s was not contacted in relation to the proposal.</li> </ul>
Bennelong residents	<ul style="list-style-type: none"> <li>• Briefing with residents held on 31 July 2019</li> </ul>

Table 10: Stakeholder Consultation (Source: SOHT)

As part of SSD 8663 (Concert Hall and Creative Learning Centre), the SOHT has prepared a future consultation framework which proposes to establish a forum to provide local resident and interested members of the community with an update on the operations and management of SOH.

The forum will be held twice a year with the aim of informing and addressing any concerns raised by the Bennelong Apartments or residents of Kirribilli. A copy of the proposed future consultation framework is provided at **Appendix 12**.

## 4 Strategic Justification

### 4.1 Need for the proposal

As outlined in Section 1.1, the proposed development seeks to consolidate all uses of the Lower Concourse within a single consent. The proposal also seeks to undertake works to improve the amenity of patrons.

The proposal has been the subject of a rigorous process of review amongst key stakeholder groups, specialist consultants, the Opera House's heritage architect, the DAP and Conservation Council. The proposed works are the result of this rigorous review process.

The purpose for the enhancements to the Lower Concourse is to:

- consolidate all uses of the Lower Concourse
- improve the dining experience and enjoyment of the facility by visitors to and patrons of the Opera House
- improve the appearance and function of the existing structures

The proposal therefore comprises essential works needed to ensure that the Opera House continues to provide world-class facilities commensurate with its function as a performing arts venue and Australia's premier tourist destination; while sustaining a revenue stream which supports artistic and operational activities. The proposal also meets operational, accessibility and WHS standards, while ensuring there are no inconsistencies between the consents and providing clarity and certainty in terms of the applicable development consent which governs all uses. In addition, it will provide for ease of implementation and compliance for the SOHT.

### 4.2 Proposal alternatives

The opportunity for change at the Sydney Opera House was articulated by Jørn Utzon in the Utzon Design Principles (2002):

*“As the architect of the Sydney Opera House, as the creative force behind its character, I sincerely believe that a large multipurpose structure such as this building, in time will undergo many natural changes.*

*The ideas as they were developed in the sixties, evolved as the result of the needs and technique at the time.*

*As time passes and needs change, it is natural to modify the building to suit the needs and technique of the day.*

*The changes, however, should be such that the original character of the building is maintained.*

*That is to say, I certainly condone changes to the Sydney Opera House. Both changes due to general maintenance and changes done due to functional changes.*

*Had I completed the Sydney Opera House as the architect in charge, the building would have developed and changed with the time ever since.”*

As identified in Section 4.1 there is a clear need for change, the Opera House is a mecca for visitors from around Australia and overseas which continues to grow in popularity. **Table 11** below summarises the implications of a ‘do nothing’ approach.

<b>Case for Change</b>	<b>Do Nothing</b>
Consolidate existing uses into a single consent	<ul style="list-style-type: none"> <li>Continued inconsistencies between consents</li> <li>Difficulties in implementing consents and managing compliance</li> </ul>
Glass line alignment	<ul style="list-style-type: none"> <li>Inefficient layout of indoor dining space and unresolved covered dining space</li> <li>Demand for internal dining space ignored</li> </ul>
Replace shade structures with improved design shade structures	<ul style="list-style-type: none"> <li>The design of the existing shade structures has little architectural merit</li> <li>The shade structures do not provide good weather protection</li> <li>The ancillary features on the shade structures such as heaters and speakers are not integrated into the design of the shade structures leading to a cluttered appearance</li> </ul>

Table 11: Assessment against clause 6.21(4) of Sydney LEP 2012

Detailed design analysis has been undertaken in consultation with the SOHT’s Heritage Architect and the EAP to determine the opportunities and constraints associated with the proposal.

### Options and alternatives analysis

Consideration of alternative designs for the proposed glass line and shade structures were explored by the SOHT in conjunction with its architects and the Heritage Architect and is provided in Appendix 3 in the Architectural Design Statement. The HIS, which is provided at Appendix 5 notes that alternatives were considered for the proposal.

A summary of the options and alternatives analysis is provided below, for the detailed assessment refer to Appendices 3 and 5.

### Glass line amendments

- Various combinations of concentric and tangential arcs were considered. The combinations varied only slightly from the current proposed scheme
- The issues raised with the 2016 scheme (in submissions to SSD 7431) were also considered. The current scheme significantly increases the space at the bottom of the stair to the Forecourt and provides a better relationship between the proposed glazing line and the existing mushroom columns and light fittings

### Shade Structures

- A number of shade structure alternatives were considered in order to determine the most integrated strategy that would meet the intended performance criteria with the least visual and heritage impact
- A variety of fixed structures were considered in various shapes and proportions
- The option chosen was deemed to achieve the best balance of design criteria

- The issues raised in the 2016 scheme (in submissions to SSD 7430) were also considered. The proposed scheme achieves a simpler approach to the design and responds to urban design and heritage considerations

## 5 Strategic Planning Context

### 5.1 NSW 2021

NSW 2021 is the former 10-year plan to guide policy and budget decision making for NSW. It set long term goals and measurable targets and outlines immediate actions to achieve these goals.

The former plan has been replaced with the Premier's Priorities, as discussed in Section 5.2 below, however notwithstanding this, the proposal is consistent with NSW 2021, as it supports the Sydney Opera House in promoting cultural, entertainment and tourism uses by improving the amenity for patrons.

The Sydney Opera House contributes to realising NSW's potential as a global tourism and event destination, creating a more vibrant place to live and supporting economic growth.

### 5.2 Premier's Priorities

On 28 June 2019, the Premier announced her 14 Premier's Priorities for this term of government. These Priorities are an ambitious set of targets to improve the lives of the citizens of NSW and include challenging, complex social issues.

- Bumping up education results for children
- Increasing the number of Aboriginal young people reaching their learning potential
- Protecting our most vulnerable children
- Increasing permanency for children in out-of-home care
- Reducing domestic violence reoffending
- Reducing recidivism in the prison population
- Reducing homelessness
- Improving service levels in hospital
- Improving outpatient and community care
- Towards zero suicides
- Greener public spaces
- Greening our city
- Government made easy
- World class public service

There are no directly relevant Priorities to the proposal.

### 5.3 State Infrastructure Strategy

The *State Infrastructure Strategy* sets out the NSW Government's Rebuilding NSW Plan, which involves the investment of \$20 billion in new infrastructure across the state.

The Strategy states that as part of a new cultural infrastructure plan, the Government will focus future investments on creating an arts precinct in the Sydney CBD. This is aimed at re-affirming Sydney as a major centre for the arts. The Strategy states that priority will be given to investment in the Sydney Opera House, Walsh Bay Arts Precinct, and the Art Gallery of NSW.

The proposal is consistent with the strategic objective to deliver world class institutions to maintain strong cultural and sporting sectors and support the visitor economy.

The proposed minor works will improve visitor amenity and will support the on-going functions of the Opera House as premier performing arts venue within the CBD arts precinct.

## **5.4 NSW Future Transport Strategy 2056**

The *NSW Future Transport Strategy 2056* was published in March 2018 and outlines the strategic direction for Transport in NSW. It is an update of the 2012 Long Term Transport Master Plan for NSW.

The Transport strategy focuses on the role of transport in delivering movement and place outcomes that support the character of the places and communities for the future. It emphasises technology-enabled mobility and its role in transforming the mass transit network.

The proposal relates to minor works and does not involve any construction or operational elements that will impact on the strategic objectives of the State. Traffic and Transport issues are addressed in Section 7.7 of this EIS.

## **5.5 Better Placed – An integrated design policy for the built environment of NSW**

NSW is rapidly growing and changing, and our built environments must remain liveable, productive, healthy and sustainable.

*Better Placed* was prepared by NSW Government Architect in May 2017 and aims to assist in the creation of better places for the future heritage of NSW by advocating the importance of design for better places, spaces and outcomes, supporting industry and government to deliver good design for people and enabling effective design processes to be established and supported in the planning system.

The policy outlines what the NSW Government means by good design in the built environment and outlines a framework for examining places and reviewing proposals from a good design perspective. This includes formal processes such as Design Excellence and Design Review.

Detailed design analysis has been undertaken in consultation with the SOHT's Heritage Architect and the DAP to determine the most appropriate design. The proposal is therefore consistent with the aims of *Better Placed* as it exhibits a high level of design quality that is the result of a comprehensive and consultative design development process.

## **5.6 Draft Better Placed: Design Guide for Heritage guidelines**

*Draft Better Placed: Design Guide for Heritage* was prepared by NSW Government Architect and the NSW Heritage Council of NSW in early 2019 and is part of the suite of documents developed by Government Architect NSW to support *Better Placed*. The guide details the *Better Placed* design objectives in the context of heritage and identifies the processes and principles that ensure good design supports the significance of heritage places.

The Design Guide for Heritage supports the Burra Charter, the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), and the NSW Heritage Act 1977.

Detailed design analysis has been undertaken in consultation with the SOHT's Heritage Architect and the DAP to determine the most appropriate design for the proposed works. The

proposal is consistent with the aims of Better Placed Design Guide for Heritage as it represents good design and responds to the heritage significance of the SOH. The EIS and supporting reports evaluates the proposal against the requirements of the EP&A Act 1979 and the NSW Heritage Act 1977 and finds that the proposal involves minor works and will have an overall positive impact on the heritage values of the SOH as discussed further in Section 7.2.

## 5.7 Greater Sydney Region Plan

The *Greater Sydney Region Plan* (Region Plan) outlines how Greater Sydney will manage growth and change in the context of social, economic and environmental matters. It sets the vision and strategy for Greater Sydney, to be implemented at a local level through District Plans.

The overriding vision for Greater Sydney in the Region Plan is to rebalance Sydney into a metropolis of three unique but connected cities; an Eastern Harbour City, the Western Parkland City and the Central River City with Greater Parramatta at its heart.

The Region Plan provides broad *Priorities and Actions* which focus on the following 4 key themes:

- *Infrastructure and collaboration*
- *Liveability*
- *Productivity*
- *Sustainability*

The Region Plan recognises that artistic and creative expression is central to Greater Sydney's identity and international image and is also a hallmark of an innovative economy. In addition, growing the arts sector will draw greater participation from both residents and visitors, contributing to the economy and attracting visitors. The Region Plan seeks to support opportunities for creative and artistic expression and participation, wherever feasible, with minimal regulatory burden.

The Region Plan confirms that sympathetic adaptive re-use of heritage is an important way to conserve significance. Respectfully combining history and heritage with modern design achieves an urban environment that demonstrates shared values and history and contributes to a sense of place and identity.

The Region Plan seeks to foster the visitor economy and supports the development of places for artistic and cultural activities, protecting heritage to enhance cultural tourism and supporting the appropriate growth of the night-time economy.

The proposed works are consistent with the Directions and Objectives of the Region Plan. The Proposal supports and improves existing Lower Concourse dining and entertainment venues, which sustain the broader operations of the Opera House. The proposal also further fosters the visitor economy by improving the amenity of the Opera House resulting in a richer experience for local and international visitors.

## 5.8 Eastern City District Plan

The District Plans guide the implementation and 40-year vision of the Regional Plan, and to connect local planning with the longer-term metropolitan planning for Greater Sydney Region.

The Plans set overall Planning Priorities including liveability, productivity and sustainability, which give effect to the draft Regional Plan.

The Sydney Opera House is located within the Eastern City District.

The Sydney Opera House is identified in the District Plan as one of the major cultural facilities in the District. The proposed works will improve visitor amenity and the functionality of the lower concourse area of the Sydney Opera House and will assist in maximising the Opera House's economic and cultural contribution to NSW by improving the operational efficiency of the lower concourse and enhancing its appeal to visitors.

On this basis the proposal is consistent with the intent of the strategy of enhancing and promoting part of Sydney's cultural heritage and tourism.

## **5.9 Sustainable Sydney 2030**

*Sustainable Sydney 2030* is the strategic plan for the City of Sydney Local Government Area (LGA) and contains a vision and set of goals to be a Green, Global and Connected city. The proposal will contribute to the enhancement and modernisation of facilities, as well as a consolidated consent which regulates and maintains the current uses of the Lower Concourse, which is consistent with the global goal which aims to ensure Sydney:

- remains a significant global city and international gateway with world-class tourism attractions and sustained investment in cultural infrastructure, icons and amenities
- supports social, cultural and recreational facilities to nurture, attract and retain global talent
- embraces innovation and new generation technologies
- will be part of global cultural networks and an active participant in global knowledge exchange.

## **5.10 Sydney's Cycling Future**

The key objective of Sydney's Cycling Future is to ensure, for short trips, that cycling is a convenient and safe transport option. Achieving this will reduce road congestion and increasing capacity on the transport system. Sydney's Cycling Future also aims to increase the mode share of cycling around (metropolitan) Sydney for trips that can be made within a 20 to 30-minute ride.

The proposal does not seek to alter patron capacity of existing Lower Concourse tenancies or change any uses that would have implications for the mode share of trips made by bicycle.

## **5.11 Sydney's Walking Future**

*Sydney's Walking Future* is a NSW Government document aimed at encouraging walking in Sydney through actions to make it a more convenient, better connected and safer mode of transport. It aims to promote walking in Sydney through three pillars of activity:

- promote the benefits of walking and provide quality information to customers
- connect communities by delivering safe walking infrastructure and completing networks
- engage with partners across the NSW Government, with local government, non-government organisations and the private sector to develop initiatives and policies

Although none of the actions outlined in *Sydney's Walking Future* directly relate to the Sydney Opera House, it is noted that the Sydney Opera House is well-connected in terms of walkability to the major transport interchange of Circular Quay and to other key sites such as the Botanic Gardens.

The proposal does not seek to alter patron capacity of existing Lower Concourse tenancies or change any uses that would have implications for the mode share of trips made via walking.

## 5.12 Sydney Opera House Plans and Policies

### 5.12.1 Sydney Opera House Management Plan

The *Management Plan for the Sydney Opera House* was prepared in 2005 and aims to:

- *protect and conserve the National and World Heritage values of the Sydney Opera House*
- *minimise duplication in the environmental assessment and approval of actions that may impact on the National and World Heritage values of the Sydney Opera House*
- *ensure there will be adequate environmental assessment of actions that may impact upon the National and World Heritage values of the Sydney Opera House*
- *ensure that actions that will have unacceptable or unsustainable impacts on the National and World Heritage values of the Sydney Opera House will not be approved*

The Management Plan incorporates the *Sydney Opera House Conservation Management Plan*, the *Utzon Design Principles* and the *Statement of National Heritage Values of the Sydney Opera House* (these documents are discussed separately below).

It is given legal effect through clause 288 of the EPAR, which requires consideration of the management plan in the assessment of any development at the Opera House under section 4.15(1) of the EP&A Act, including consideration of the proposal with the objectives of the Management Plan. The Management Plan describes the regulatory requirements affecting development of the Opera House and requires a Section 60 approval under the *NSW Heritage Act 1977* to be obtained for the proposed works.

A Statement of Heritage Impact must accompany the application which analyses the proposal in terms of its impact on the heritage significance of the site, and against the policies outlined in the Conservation Management Plan (CMP4), showing whether the impact of the proposal will compromise the heritage significance of the Sydney Opera House. The Statement must also include a consideration of the way in which the National and World Heritage values (if any) are likely to be affected.

In determining the application, the Minister must consider any potential impacts on the National and World Heritage values of the Opera House and take account of the precautionary principle. Activities should not be approved if they will have unacceptable or unsustainable impacts (significant adverse impacts) on the National and World Heritage values of the Opera House.

A HIS accompanies this application (**Appendix 5**) which provides an assessment of the proposal's impact on National and World Heritage values. These considerations are discussed further in Sections 7.2.1 and 7.2.2 of this report, where it is demonstrated that the proposal will have no long-term impact on the significance of the Opera House.

### **5.12.2 Respecting the vision – Sydney Opera House, a Conservation Management Plan (CMP4)**

The Conservation Management Plan (CMP4) provides an understanding of the place and its history. It also assesses the significance of the place and provides conservation policies based on the identified heritage values of the Sydney Opera House.

The HIS states that:

*The Management Plan for the Sydney Opera House (prepared in 2005 as part of the bilateral agreement negotiations) references the CMP 3rd edition, (Sydney Opera House, A Revised Plan for the Conservation of the Sydney Opera House and its Site, by James Semple Kerr, third edition 2003) and the Utzon Design Principles and provides a framework for protection of the World and National Heritage values of the Sydney Opera House site and gives effect to the CMP. It was endorsed by the Heritage Division, Department of Planning & Environment (formerly the NSW Heritage Office). The Management Plan states that approval of actions in relation to the Sydney Opera House site may only be made in accordance with the Management Plan, which defers to the CMP 3rd edition for an assessment of heritage impact of proposals. Since this Bilateral Agreement was put in place, the CMP 4th edition has been formally endorsed by the Heritage Council of NSW on 2 August 2017, and now replaces the CMP 3rd edition.*

*The HIS uses the CMP 4th edition as the basis for assessment.*

The Sydney Opera House Conservation Management Plan 4th Edition (CMP4) was endorsed by the Heritage Council of NSW in July 2017 and identifies and defines the significant values of the Sydney Opera House and then formulates policies framed to retain these values.

The proposed works are all are located on the Lower Concourse (also referred to as the Lower Forecourt). The key points of significance relating to the Lower Concourse, which are also set out in CMP4 are the need for:

- unencumbered views to and from the Sydney Opera House;
- unobscured and unpainted structural concrete columns;
- visual concealment from the Forecourt level and from West Circular Quay, including control of light spill;
- pedestrian access via the under-cover pedestrian route and sea wall path; and
- the 'natural' palette of materials for external fabric is to be retained.

The HIS accompanying the EIS demonstrates the Proposal's consistency with the relevant policies in CMP4 (Appendix 5).

### **5.12.3 Utzon Design Principles, 2002**

The *Utzon Design Principles* outline Jørn Utzon's vision for the building and its setting, his comments on the future of the building, and the fundamental principles underlying his designs. It is a permanent reference document for the conservation of the building and its

setting and to clarify original design intent, manage proposals for change and influence planning controls for the precinct.

Compliance with the UDP is also comprehensively addressed in the Architectural Design Statement relevant design principles is demonstrated in the HIS (**Appendix 5**) and Section 7.2.5 of this report.

#### **5.12.4 Statement of National Heritage Values of the Sydney Opera House**

This document describes the heritage significance of the Opera House and details its history. Its focus is construction of the main buildings on the design of Jørn Utzon that took place between 1957 and 1973. Compliance with the relevant provisions is demonstrated in the HIS (**Appendix 5**) and Section 7.2.2 of this report.

#### **5.12.5 Sydney Opera House Accessibility Master Plan**

The Sydney Opera House Accessibility Master Plan (AMP) outlines accessibility initiatives for the Sydney Opera House Building Renewal Program and provides an overall plan for accessibility upgrades that can then be progressively implemented via discrete Renewal Projects.

The AMP demonstrates the SOHT's commitment to the implementation of the *NSW Government Disability Policy Framework*, which is underpinned by the *Commonwealth Disability Discrimination Act 1992*, the *NSW Anti-Discrimination Act 1977*, the *NSW Disability Inclusion Act 2014*, *Australian Standard AS 1428 Design for Access and Mobility*, and the *Disability (Access to Premises - Buildings) Standards 2010*.

The proposed works have been assessed in the BCA and Access Statement (**Appendix 8**) as achieving accessibility compliance and are therefore generally consistent with the SOHT's Accessibility Management Plan.

## 6 Statutory Planning Context

### 6.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation 1999* (EPBC Act) provides for the protection of Matters of National Environmental Significance, including National and World Heritage listed sites. The Sydney Opera House was inscribed on the National Heritage List in 2005 and the World Heritage List in 2007.

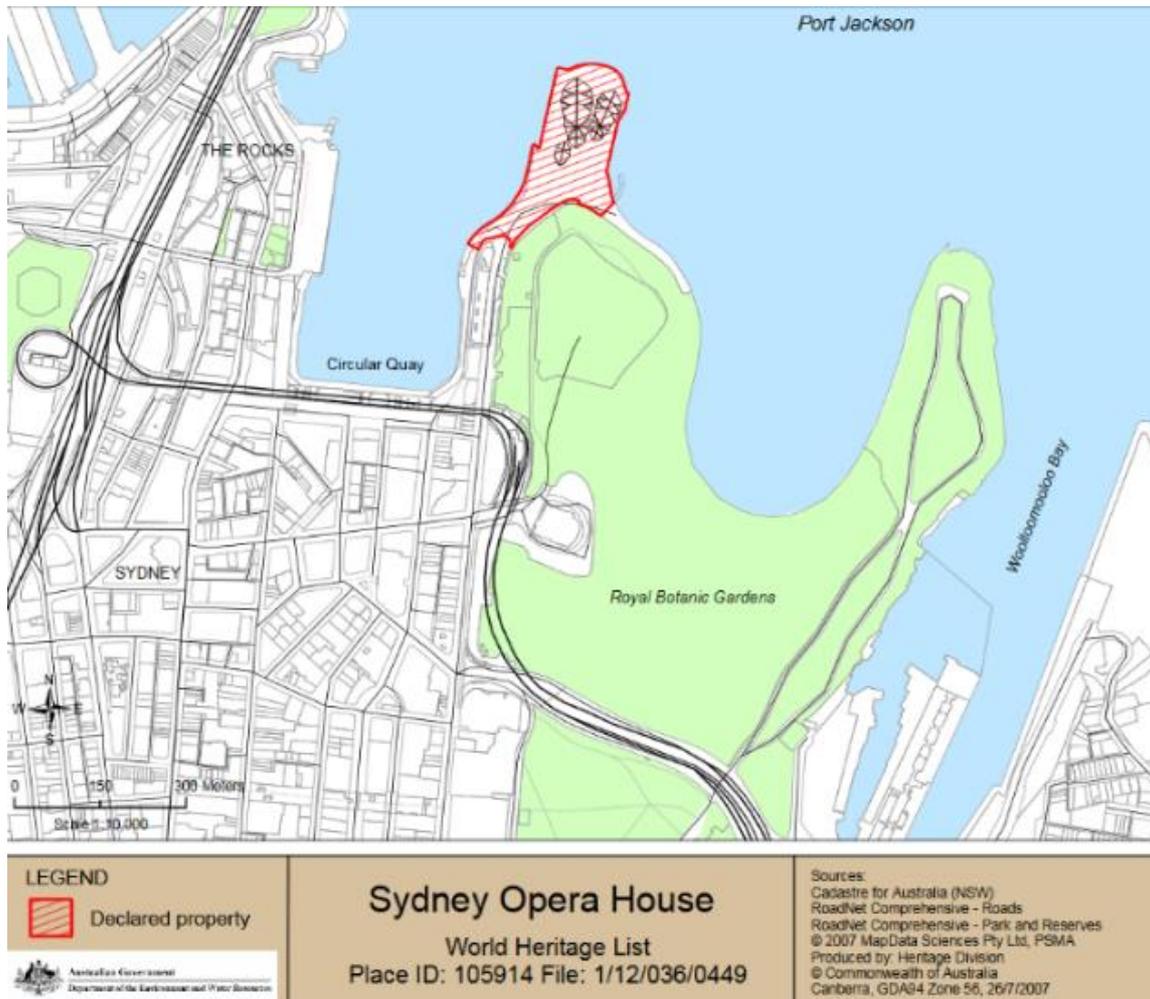


Figure 16: Sydney Opera House World Heritage Listing (Source: Commonwealth Department of Environment)

Actions that will or are likely to have a significant impact on matters of environmental significance under the EPBC Act require the approval of the Commonwealth Minister for the Environment. The HIS (**Appendix 5**) and Section 7.2 of this report considers the impact of the proposed works will have on the fabric, setting, significance and cultural function of the Opera House and concludes the following:

- ...the existing uses and proposed improvements on the Lower Concourse will have no adverse impacts on the significant architectural or aesthetic qualities of the Opera House
- ...the minor works at Opera Bar, including the adjustment of the glazing line and internal venue fitout are not visible in views to and from the Opera House. The new shade structures

however, will be seen as part of the uncovered part of the Lower Concourse and views across the harbour to the Opera House, on approach from Circular Quay as well as looking over the Lower Concourse from the Forecourt towards the water. These shade structures will replace the existing umbrellas in the same location but with a finer profile and simplified structure to minimise impacts in views by aligning with key horizontal lines such as the railing and granite overhang of the western perimeter of the Forecourt. Their design, colour and materials mean they should not dominate the significant presentation of the Opera House as a monumental sculpture set within a waterscape setting...

On this basis, the SOHT has determined that approval under the EPBC Act is not required.

## 6.2 Environmental Planning and Assessment Act 1979

The EP&A Act provides the statutory framework for planning in NSW. Section 4.36 of the EP&A Act enables certain developments to be declared SSD by means of a State Environmental Planning Policy (SEPP) or by order of the Minister for Planning.

The project is SSD as Clause 1 of Schedule 2 of the SRD SEPP states that all development on land identified as being within the Sydney Opera House site is SSD (see Section 6.2). As the works described in this report do not meet the exempt development categories of the SSP SEPP, they are considered to be SSD.

The project will be assessed under Part 4 Division 4.1 of the EP&A Act. The Minister for Planning is the consent authority for SSD.

This report responds to the requirements of section 4.12 of the EP&A Act which requires the preparation of an EIS, Schedule 2 of the EPAR and the SEARs as outlined in Sections 1 to 8.

### 6.2.1 Objects

Development under the EP&A Act must have regard to the objects set out in Section 1.3 of the Act. The proposed development is considered to be consistent with the objects of the Act as follows:

The Objects of the Act	Response
<i>The objects of this Act are as follows:</i>	
<i>(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,</i>	The proposed development will promote the social and economic value of the community and a better environment as the proposal will make improvements to the Sydney Opera House building and ancillary structures without adversely impacting on the heritage significance of the building or the surrounding environment.
<i>(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,</i>	The proposed works will be carried out in accordance with the principles of ESD, as outlined in Section 7.11.
<i>(c) to promote the orderly and economic use and development of land,</i>	The proposed development will improve the operational efficiency of the Sydney Opera House for its intended purpose of providing world-class theatre facilities and will contribute

The Objects of the Act	Response
	to the Opera House maximising its economic and cultural contribution to NSW.
<i>(d) to promote the delivery and maintenance of affordable housing,</i>	The proposal does not comprise affordable housing.
<i>(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,</i>	The proposed works are minor and will be carried out in accordance with the CMP4. The proposal is not considered to lead to any significant adverse impacts on the environment.
<i>(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),</i>	The HIS prepared by Design 5 Architects concludes: <ul style="list-style-type: none"> <li>• impacts of the improvement works are considered positive and include effective measures to mitigate potentially negative impacts</li> <li>• The use of the Lower Concourse for food and beverage, retail and service facilities supporting the Opera House is commended and should continue</li> </ul>
<i>(g) to promote good design and amenity of the built environment,</i>	The HIS concludes that the works proposed in this application will result in positive change and are supported
<i>(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,</i>	The proposed development will provide improved patron facilities at the Sydney Opera House.
<i>(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,</i>	The proposed development is SSD and therefore the Minister for Planning is the consent authority. However, the City of Sydney Council has been consulted by the DPI&E during the preparation of the SEARs and has been consulted through the DA assessment process.
<i>(j) to provide increased opportunity for community participation in environmental planning and assessment.</i>	The proposed development will be publicly exhibited in accordance with the requirements of the EP&A Act.

Table 12: Objects of the EP&A Act

### 6.2.2 Section 4.15 Assessment

The Minister (or the Minister's delegate) is required to take into consideration the matters listed under section 4.15 of the EP&A Act when determining the development application.

An evaluation of the proposal against the provisions of Section 4.15(1) of the Act is provided below:

<b>Matters for consideration</b>	<b>Response</b>
<i>(a) the provisions of:</i>	
<i>(i) any environmental planning instrument, and</i>	Relevant environmental planning instruments are addressed in Section 6.
<i>(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and</i>	<p>The draft State Environmental Planning Policy (Environment) applies to the site.</p> <p>The draft SEPP was exhibited from 31 October 2017 to 31 January 2018.</p> <p>The proposal has been assessed against the draft Environment SEPP and the conclusions of the assessment against the Harbour SEPP (Section 6.6.3) are considered to continue to apply.</p>
<i>(iii) any development control plan, and</i>	As the proposal is SSD, DCPs do not apply (clause 11 of the SRD SEPP).
<i>(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and</i>	Not applicable.
<i>(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),</i>	The development application meets the relevant requirements of the EP&A Regulation, including Clause 288 that requires the provisions of the SOH Management Plan be taken into consideration by the consent authority. The procedures relating to development applications, public participation procedures for SSDs and Schedule 2 of the EP&A Regulation relating to environmental impact statements have been satisfied.
<i>(v) (Repealed)</i>	Not applicable.
<i>that apply to the land to which the development application relates,</i>	
<i>(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts I the locality,</i>	<p>The HIS concludes the proposal should not threaten or diminish the outstanding universal values that underpin this World Heritage Listing.</p> <p>The proposed works will improve amenity and comfort, maintain existing acoustic performance within the SOH.</p>
<i>(c) the suitability of the site for the development,</i>	The proposed development is suitable for the site as it relates to and does not alter existing uses of the site and involves design alterations which have been assessed as having no significant adverse impacts on the site or its locality., Potential impacts of the proposal on the site and surrounds are considered in Section 6.

Matters for consideration	Response
(d) any submissions made in accordance with this Act or the regulations,	<p>Any submissions made on this subject development application will be duly considered and addressed by SOH.</p> <p>In addition, DPI&amp;E will consider any public submissions relating to the proposal during its assessment.</p>
(e) the public interest.	<p>The proposal is considered to be in the public interest as it will provide improvements to the operational infrastructure of the Sydney Opera House and the consolidation of the existing uses within a single consent, without adversely impacting on the heritage significance of the building or the surrounding environment.</p>

Table 13: Section 4.15 Assessment

### 6.3 Environmental Planning and Assessment Regulation 2000

As outlined in Section 1.5, this EIS responds to the requirements set out in Schedule 2 of the EP&A Regulation.

Clause 288 of the EP&A Regulation requires the provisions of the Management Plan for the Sydney Opera House to be considered in the determination of this application. Section 7.2.4 details the applicable components of the Management Plan relevant to the Opera House.

### 6.4 Heritage Act 1977

The *Heritage Act 1977* makes provisions to conserve the State's environmental heritage. It provides for the identification, registration and protection of items of State heritage significance and constitutes the Heritage Council of New South Wales.

The Sydney Opera House is listed on the State Heritage Register.

An Order under section 57(2) of the Heritage Act 1977 provides that a range of works at the Opera House are exempt from the requirement for approval under section 57(1). The proposed works subject to this EIS, with the exception of the glass line as identified in the HIS, are considered to be beyond the scope of these exemptions and will therefore require approval under section 57(1) of the Heritage Act. This process is intended to ensure that any changes or additions on site do not detract from the heritage significance of the place.

An application for approval for the works will therefore be made to the Heritage Council under section 57(1) of the Heritage Act.

The HIS (**Appendix 5**) and Section 7.2 of this report demonstrate the proposed works will not detract from the heritage significance of the SOH and will be consistent with the provisions of the Heritage Act 1977 and should be supported.

## 6.5 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017, changing the way in which biodiversity impacts are assessed and addressed in the development and use of land throughout the State.

Under the new BC Act (Section 7.3 and 7.9), SSD proposals require an accredited ecologist to prepare a biodiversity development assessment report (BDAR). The BDAR reflects the current 7-part test in section 5A of the EP&A Act and the assessment must include the following:

- *assesses the biodiversity values (as defined in s1.5 of the BC Act) of the land the subject of the proposed DA, in accordance with the BAM*
- *assesses the impact of the proposed DA, proposed activity or proposed clearing on the biodiversity values of that land*
- *sets out the measures the proponent proposes to take to avoid or minimise the impact*
- *specifies the number and class of biodiversity credits that are required to be retired to offset the residual impacts on biodiversity values of actions to which the BOS applies.*

The consent authority must consider if the proposed development is likely to have serious and irreversible biodiversity impacts when assessing SSD or SSI and determine any additional and appropriate measures that would minimise the impacts, if a consent or approval was to be granted.

Notwithstanding, under section 7.9(2) “the Planning Agency Head and the Environment Agency Head [may] determine that the proposed development is not likely to have any significant impact on biodiversity values”. If this determination is made, a BDAR is not required.

On 21 December 2018, a request to waive the requirement for a biodiversity development assessment report under section 7.9(2) was submitted to DP&E and the Office of Environment and Heritage (OEH) for consideration.

On 13 February 2019 OEH advised that the proposed development is not likely to have any significant impact on biodiversity values and that there is no need for the SSD application to include a BDAR (Appendix 6).

On the 15 February 2019 DPE advised that the Environment Agency Head in OEH has been consulted and on 13 February 2019 confirmed that the proposed development is not likely to have any significant impact on biodiversity values. Therefore, under section 7.9(2) of the BC Act, the requirement to submit a BDAR has been waived for the proposed SSD 9794 (Appendix 6).

## 6.6 State Environmental Planning Policies

### 6.6.1 State Environmental Planning Policy (State and Regional Development) 2011

The *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) declares certain types of development and infrastructure to be of State and regional

significance. As clause 1 of Schedule 2 of the SRD SEPP identifies all development within the SOH as SSD, the proposal is SSD.

Clause 11 of the SRD SEPP excludes the application of development control plans to SSD, meaning the provisions of the Sydney Development Control Plan (DCP) 2012 do not apply to this application.

### **6.6.2 State Environmental Planning Policy (State Significant Precincts) 2005**

The *State Environmental Planning Policy (State Significant Precincts) 2005* (Precincts SEPP) seeks to broadly facilitate the development, redevelopment and protection of State significant precincts and to ensure the service delivery outcomes for a range of public purposes. The SSP SEPP identifies a number of State significant precincts and provides planning controls relating to the carrying out of development in these precincts.

The SPP SEPP identifies the Sydney Opera House as a State significant precinct and provides exempt development provisions for the precinct.

Due to the scope of works and their potential heritage impacts, the proposed works are not considered to fall within the exempt development provisions of the SSP SEPP and therefore require development consent.

### **6.6.3 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005**

The *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* (Harbour SREP) sets out objectives and planning principles for the Sydney Harbour Catchment.

The Sydney Opera House site is within the Sydney Harbour Catchment Area designated in the SREP. It is within the Foreshores and Waterways Area and City Foreshore Area designated as a Strategic Foreshore Site. It is also identified as a Heritage Item in the SREP.

An analysis of the proposal against relevant provisions of the SREP is outlined below:

#### ***Clause 13 Planning principles for the Sydney Harbour Catchment***

Clause 13 sets out the planning principles which apply to land within the Sydney Harbour Catchment. These principles generally relate to the protection of the natural environmental qualities and scenic character of the harbour and its catchment.

The proposed works are minor and comprise of replacement of the shade structures with new refined shade structures and the realignment of the existing glass line of the Opera Bar.

As outlined in Section 6.6.2, these are relatively minor external elements which do not add to the bulk or scale of the building and which will not impact on views to or from the Opera House or the scenic character of the harbour.

#### ***Clause 14 Planning principles for the Foreshores and Waterways Area***

Clause 14 sets out the planning principles for the Foreshores and Waterways Area. These principles generally supplement the principles of Clause 13 and, in addition, to the protection

of the natural environment and scenic qualities of the harbour, includes principles relating to public access to and along the foreshore and opportunities for maritime related uses and public boating facilities along the foreshore.

The proposed works are minor and will also have minimal impacts on external publicly accessible land and areas of the SOH.

#### ***Clause 15 Planning principles for heritage conservation***

Clause 15 sets out the principles for the protection of heritage items and places and views associated with heritage items in and around Sydney Harbour. As outlined in Section 7, the heritage impacts of the proposed works have been considered in detail in a HIS and have been assessed as acceptable.

#### ***Clause 21 – 27 Matters for consideration***

These clauses set out the matters to be addressed prior to the grant of consent for development within the Foreshores and Waterway Area and relate to a range of matters, including:

- *Biodiversity and environmental protection (clause 21)* – the development site does not contain any threatened or vulnerable species, populations, communities or significant habitats. Construction and ongoing operations will be managed in accordance with the Mitigation Measures outlined in this EIS, ensuring no significant indirect impacts on the surrounding environment. As discussed in Section 6.5 a biodiversity assessment (BDAR) waiver was granted
- *Public access to and use of the foreshores and waterways (clause 22)* - the proposed works will have no impacts on external publicly accessible land and areas of the Sydney Opera House.
- *Maintenance of a working harbour (clause 23)* – not relevant
- *Use of the waterways (clause 24)* – not relevant
- *Scenic quality (clause 25)* – the proposed external works are minor elements which do not add to the bulk or scale of the building and which will not impact on views to or from the Opera House or the scenic character of the harbour as discussed in Section 7.4
- *Protection of views (clause 26)* – as above.
- *Boat storage facilities (clause 27)* – not relevant.

#### ***Part 5 Heritage Provisions***

This Part sets out provisions relating to the protection of the World Heritage values of the Sydney Opera House, including the establishment of a buffer zone around the site and protection of views and vistas to the Opera House.

As outlined in Section 7.2, the HIS accompanying this EIS addresses the proposed development against the World Heritage Values of the Sydney Opera House and concludes that the proposed works will not threaten or diminish the Outstanding Universal Values that enshrine the Sydney Opera House on the World Heritage List.

#### **6.6.4 State Environmental Planning Policy (Coastal Management) 2018**

The Coastal Management SEPP 2018 applies to land within the coastal zone and aims to promote an integrated and coordinated approach to land use planning in the coastal zone in a manner that is consistent with the objects of the *Coastal Management Act 2016*.

Divisions 3 and 14 are relevant to the SOH and these are addressed below.

### *Division 3 – Coastal Environment Area*

#### *Clause 13 Development on land within the coastal environment area*

This clause states that:

(1) *Development consent must not be granted unless the consent authority has considered whether the proposed development is likely to adversely impact on:*

- *The integrity and resilience of the biophysical, hydrological and ecological environment*
- *Coastal environmental values and natural coastal processes*
- *The water quality of the marine estate*
- *Marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms*
- *Existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public*
- *Aboriginal culture heritage, practices and places*
- *The use of the surf zone*

(2) *Development consent must not be granted unless the consent authority is satisfied:*

*The development is designed, sited and will be managed to avoid/minimise/mitigate an adverse impact*

The SOH is identified as being located within the Coastal Environment Area.

The proposed development works are considered to be minor and will be contained within the footprint of the SOH. Access to public open space and marine vegetation will not be impacted as a result of the proposal.

The EIS considers environmental risks and recommends mitigation measures to ensure potential risks or impacts are avoided (Section 8).

### *Division 4 – Coastal Use Area*

#### *Clause 14 Development on land within the coastal use area*

This clause states that:

(1) *Development must not be granted unless the consent authority*

(a) *has considered whether the proposed development is likely to cause an adverse impact on:*

- *Existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public including persons with a disability*
- *Overshadowing, wind funnelling and loss of views from public places to foreshores*
- *The visual amenity and scenic qualities of the coast, including coastal headlands*
- *Aboriginal cultural heritage, practices and places*
- *Cultural and built environment heritage*

(b) *Is satisfied that the development is designed, sited and will be managed to avoid/minimise/mitigate an adverse impact*

(c) *Has taken into account the surrounding coastal and built environment, the bulk, scale and size of the proposed development*

The SOH is identified as being located within the Coastal Environment Area.

The proposed development works are considered to be minor and will be contained within the footprint of the SOH. The proposed shade structures will replace the existing shade structures which are considered to be a poor design solution. Access to the foreshore and other public areas will not be impacted as a result of the proposal. The proposal will not result in overshadowing, wind tunnelling and loss of view above that already experienced as a result of the SOH on adjoining public spaces. The Visual Impact Assessment (VIA), Heritage Impact Statement (HIS) and Architectural Design Statement accompanying this SSD conclude that the proposed works will not detract from the significance of the SOH.

As discussed above, the EIS considers environmental risks and recommends mitigation measures to ensure potential risks or impacts are avoided (Section 8).

#### **6.6.5 State Environmental Planning Policy No. 55 – Remediation of Land**

*State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55) applies to the State and states that where a DA is made concerning land that is contaminated, the consent authority must not grant consent unless:

- (a) *it has considered whether the land is contaminated, and*
- (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

The proposed works are not proposed to extend beyond the existing concrete pad in which the lower concourse pavers sit on. As such, the proposed works will not disturb the ground. Further, the site is not identified on the EPA's contaminated public land record as a contaminated site. Accordingly, it is considered that the proposal will not result in any contamination issues that would preclude its approval in accordance with SEPP 55.

#### **6.6.6 Draft State Environmental Planning Policy (Environment)**

*Draft State Environmental Planning Policy (Environment)* (Environment SEPP) proposes to:

- consolidate seven existing SEPPs relating to the environment (including the Harbour SEPP) into one SEPP
- simplify the planning rules for a number of water catchments, waterways and urban bushland
- update planning rules to reflect changes that have occurred since the creation of the original policies.

The draft SEPP was exhibited from 31 October 2017 to 31 January 2018.

The proposal has been assessed against the draft SEPP and the conclusions of the assessment against the Harbour SEPP (Section 6.6.3) are considered to continue to apply.

#### **6.6.7 Draft Remediation of Land State Environmental Planning Policy**

*Draft Remediation of Land State Environmental Planning Policy* (Remediation SEPP) aims for better management of remediation works by aligning the need for development consent with the scale, complexity and risks associated with the proposed works.

Once adopted, the Draft Remediation SEPP will:

- Provide a state-wide planning framework for the remediation of land
- Require consent authorities to consider the potential for land to be contaminated when determining DAs
- Clearly list the remediation works that require development consent
- Introduce certification and operational requirements for remediation works that can be undertaken without development consent

As discussed above in this Section, the site is not identified as being contaminated and the proposed works will not extend beyond the existing concrete pad.

### 6.6.8 Sydney Local Environmental Plan 2012

The proposal is located on land zoned B8 Metropolitan Centre under the *Sydney Local Environmental Plan 2012* (SLEP 2012). The relevant provisions of the B8 zone are detailed below:

#### *Zone B8 Metropolitan Centre*

##### *1 Objectives of zone*

- *To recognise and provide for the pre-eminent role of business, office, retail, entertainment and tourist premises in Australia's participation in the global economy.*
- *To provide opportunities for an intensity of land uses commensurate with Sydney's global status.*
- *To permit a diversity of compatible land uses characteristic of Sydney's global status and that serve the workforce, visitors and wider community.*
- *To encourage the use of alternatives to private motor vehicles, such as public transport, walking or cycling.*
- *To promote uses with active street frontages on main streets and on streets in which buildings are used primarily (at street level) for the purposes of retail premises.*

##### *2 Permitted without consent*

*Nil*

##### *3 Permitted with consent*

*Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Information and education facilities; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Respite day care centres; Restricted premises; Roads; Tourist and visitor accommodation; Any other development not specified in item 2 or 4*

##### *4 Prohibited*

*Nil*

As the proposed works primarily relate to development for the purposes of a “entertainment facility” they are permissible with consent in the B8 Metropolitan Zone.

Clause 6.21 of SLEP 2012 relates to design excellence and states that development consent must not be granted to development unless, in the opinion of the consent authority, the proposed development exhibits design excellence.

In considering whether development to which this clause applies exhibits design excellence, the consent authority must have regard to a range of matters (clause 6.21(4)). These are addressed in **Table 14** below.

<b>Matter</b>	<b>Comment</b>
(a) <i>whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,</i>	<p>As outlined in Section 7.4, the proposed works are relatively minor external elements which will employ a consistent design language and materials used with the existing building and ancillary structures. The proposed structures are an improved architectural design response to the SOH.</p> <p>As, outlined above, the works will not adversely impact on the built form or visual character of the Opera House.</p>
(b) <i>whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,</i>	<p>The proposed works will not add to the bulk or scale of the building or result in any encroachments on or loss of the public domain.</p> <p>Accordingly, there will be no negative impacts on the quality or amenity of the public domain.</p>
(c) <i>whether the proposed development detrimentally impacts on view corridors,</i>	<p>The proposed works will not add to the bulk or scale of the building and will not detrimentally impact on views to or from the Sydney Opera House.</p>
<p>(d) <i>how the proposed development addresses the following matters:</i></p> <ul style="list-style-type: none"> <li>(i) <i>the suitability of the land for development,</i></li> <li>(ii) <i>the existing and proposed uses and use mix,</i></li> <li>(iii) <i>any heritage issues and streetscape constraints,</i></li> <li>(iv) <i>the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,</i></li> <li>(v) <i>the bulk, massing and modulation of buildings,</i></li> <li>(vi) <i>street frontage heights,</i></li> <li>(vii) <i>environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity,</i></li> <li>(viii) <i>the achievement of the principles of ecologically sustainable development,</i></li> <li>(ix) <i>pedestrian, cycle, vehicular and service access and circulation requirements, including the</i></li> </ul>	<ul style="list-style-type: none"> <li>(i) As the proposed works generally relate to enhanced patron facilities at the Sydney Opera House, the site is suitable for the proposal. Potential impacts of the proposal on the site and surrounds are considered in Section 6.</li> <li>(ii) The proposed works do not alter the existing uses of the Sydney Opera House.</li> <li>(iii) Heritage impacts are considered in detailed in the HIS at Appendix 5 and Section 7.2 of the EIS.</li> <li>(iv) N/A</li> <li>(v) The proposed works do not add to the bulk or mass of the building. The new shade structures are consistent with the existing shade structures and will sit below the balustrade of the Forecourt. The realignment of the glass line of Opera Bar represents a minor increase in the indoor space for the Bar.</li> <li>(vi) N/A</li> <li>(vii) The proposed works will not result in any adverse environmental impacts such as overshadowing, visual and acoustic privacy, noise, wind or reflectivity. Construction impacts and proposed mitigation measures are considered in detail in Section 6.5.</li> <li>(viii) A detailed consideration of ESD measures to be incorporated into the proposal and ESD principles is contained in Section 6.9.</li> <li>(ix) The proposed works will not negatively impact on pedestrian, cycle or vehicular access and movement.</li> </ul>

Matter	Comment
<p><i>permeability of any pedestrian network,</i></p> <p>(x) <i>the impact on, and any proposed improvements to, the public domain,</i></p> <p>(xi) <i>the impact on any special character area,</i></p> <p>(xii) <i>achieving appropriate interfaces at ground level between the building and the public domain,</i></p> <p>(xiii) <i>excellence and integration of landscape design.</i></p>	<p>(x) The proposed works will not add to the bulk or scale of the building or result in any encroachments on or loss of the public domain. Accordingly, there will be no negative impacts on the quality or amenity of the public domain.</p> <p>(xi) The Sydney Opera House is located to the immediate north of the Circular Quay Special Character Area. The proposed works are minor and will not impact on this area.</p> <p>(xii) The proposed works will improve upon the ground level interfaces and the public domain.</p> <p>(xiii) The proposal does not entail any landscaping works.</p>

Table 14: Assessment against clause 6.21(4) of Sydney LEP 2012

Clause 6.21(5) of SLEP 2012 also states that consent cannot be granted for certain development unless a competitive design process has been held. However, under clause 6.21(6), a competitive design process is not required under subclause (5) if the consent authority is satisfied that such a process would be unreasonable or unnecessary in the circumstances or that the development meets certain criteria.

As the proposal involves only minor external alterations which have been assessed as having no significant impact on the design character or heritage values of the Sydney Opera House, it is considered that a competitive design process is unreasonable or unnecessary.

The proposal has been subject to a rigorous review process by the Opera House's heritage architect, the Eminent Architects Panel and Conservation Council.

It is also noted that in terms of clause 6.21(6), the proposal:

***(a) involves only alterations or additions to an existing building***

The proposed works largely comprise minor works, with only minor external alterations to the lower concourse of the Sydney Opera House.

***(b) does not significantly increase the height or gross floor area of the building***

The proposed works do not add to the height or gross floor area of the building.

***(c) does not have significant adverse impacts on adjoining buildings and the public domain***

As outlined in this EIS, the proposal involves only minor external works which will not impact on any nearby buildings or areas of public domain.

***(d) does not significantly alter any aspect of the building when viewed from public places***

The proposed external works are relatively minor elements which do not add to the bulk or scale of the building and which will not impact on views to or from the Opera House or the scenic character of the harbour. The installation of the proposed shade structures are fully reversible.

On the basis of the above, it is submitted that a competitive design process is not warranted for the proposal.

## **6.7 Development Control Plans**

In relation to *Sydney Development Control Plan (DCP) 2012*, which supplements SLEP 2012 and provides more detailed guidance, clause 11 of the SRD SEPP states that DCPs do not apply to SSD. Accordingly, as the Sydney DCP does not apply to the proposal, it has not been specifically considered in this EIS.

## 7 Environmental Planning Assessment

### 7.1 Overview

In assessing the potential impacts of the development and merits of the proposal the following matters were considered:

- the Secretary's Environmental Assessment Requirements (SEARs);
- agency comments;
- relevant environmental planning instruments, policies and guidelines;
- relevant provisions of the EP&A Act, including the objects of the Act; and
- relevant documents related to the project including the technical documents forming this Environmental Impact Statement.

### 7.2 Heritage

The Heritage Impact Statement (HIS) prepared by Design 5 contained in Appendix 5 provides a detailed assessment of the proposal including the impact of the proposed works and existing uses on the site's significant heritage values, including its World Heritage status.

The following key documents form the basis for the HIS:

- *Matters of National Environmental Significance – Significant Impact Guidelines 1.1, EPBC Act 1999, Department of the Environment 2013*
- *Respecting the Vision - Sydney Opera House, A Conservation Management Plan (CMP 4)*
- *Utzon Design Principles (UDP 2002)*

Further, the HIS has been prepared in accordance with the principles and processes of the *Australia ICOMOS Burra Charter 2013* and the NSW Heritage Office guideline *Statements of Heritage Impact* (revised 2002).

#### 7.2.1 World Heritage Values

The HIS notes that the Sydney Opera House was inscribed on UNESCO's World Heritage List (WHL) in 2007 for its Outstanding Universal Value (OUV) and as a “*masterpiece of human creative genius*” under criterion (i) of the Operational guidelines for the implementation of the World Heritage Convention.

The HIS notes that the

*...The continuation of existing uses on the Lower Concourse and proposed improvement works will not cause the World Heritage values of the Sydney Opera House to be lost, degraded or damaged, notably altered, modified, obscured or diminished.*

*It is therefore not considered to be a 'controlled action' under the EPBC Act and as such a referral to the Commonwealth Minister for the Environment with regard to impacts on World and National Heritage values is not required...*

## 7.2.2 National Heritage Values

The HIS concludes that none of the National Heritage values of the Sydney Opera House will be lost, degraded, damaged, altered, modified, obscured or diminished through either the continuing use of the Lower Concourse for food and beverage, retail, ticketing and tours, or the proposed improvement works.

The HIS considers the proposal against the relevant criteria of the National Heritage List, as summarised in **Table 15** below.

National Heritage List (NHL) Criteria	HIS Comment (Design 5 Architects)
<p><b>NHL Criterion A Events, Processes</b>  <i>The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history.</i></p> <p>Relevant key values from National Heritage value:</p> <ul style="list-style-type: none"> <li>• <i>“a monumental sculpture in the round, and its inspired design solution in response to its prominent setting on Bennelong Point in Sydney Harbour”</i></li> </ul>	<p><i>The proposed works in this proposal retain and respect the sculptural qualities of the Opera House and will have a potentially positive impact on its setting.</i></p>
<p><b>NHL Criterion B Rarity</b>  <i>The place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.</i></p> <p>Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> <li>• <i>“The Sydney Opera House is a cultural icon that has no counterpart in Australia. With its distinctive sail-like concrete shell roofs standing boldly upon a massive granite-faced platform, located prominently on the Sydney Harbour foreshore, the Sydney Opera House is the most widely recognised building in Australia, and one of the most definitive national architectural icons of the twentieth century. It is also a rare example of a national cultural centre that has gained widespread recognition and respect as a performing arts venue.”</i></li> <li>• <i>“distinctive sail-like concrete shell roofs standing boldly upon a massive granite-faced platform, located prominently on the Sydney Harbour foreshore”</i></li> </ul>	<p><i>The proposed continuation and management of existing uses and improvement works will not have any adverse impacts on these values and will potentially enhance the visitor experience at the Sydney Opera House, supporting the primary use of the Sydney Opera House as a performing arts centre.</i></p>

<b>National Heritage List (NHL) Criteria</b>	<b>HIS Comment (Design 5 Architects)</b>
<p><b>NHL Criterion E Aesthetic characteristics</b>  <i>The place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.</i>            Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> <li>• <i>"Its landmark qualities are enhanced by the building's juxtaposition with Sydney Harbour, its relationship with the Sydney Harbour Bridge, the garden landscape of Bennelong Ridge, the sandstone cliff face of Tarpeian Rock, and the vistas and views to and from The Rocks, Circular Quay, East Circular Quay, Macquarie Street, the Botanic Gardens and the harbour"</i></li> <li>• <i>"The building's ability to emotionally move people and invoke a strong aesthetic response is enhanced by the experience of approaching, entering and moving around the building and surrounds."</i></li> </ul>	<p><i>The proposed shade structures will have a positive impact on views towards the Opera House, which are enhanced by the design, scale, height and colour of the new elements. The new structures should be recessive against the granite parapet of the Forecourt, provide improved amenity and patron comfort and not have an adverse impact on the landmark qualities of the Sydney Opera House.</i></p> <p><i>The proposed minor works to the glazing line at Opera Bar will enhance the experience of approaching the building via the undercover pedestrian walkway on the Lower Concourse by providing improved access, visual harmony and less clutter.</i></p>
<p><b>NHL Criterion F Creative or technical achievement</b>  <i>The place has outstanding heritage value to the nation because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period.</i>            Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> <li>• <i>"finished in natural materials, textures and colours"</i></li> <li>• <i>"the creation of sensory experiences to bring pleasure to the building's users, particularly the experience of approaching"</i></li> <li>• <i>"It epitomizes the extraordinary creative potential of the assembly of prefabricated, repeated components"</i></li> </ul>	<p><i>The proposed materials, form and colour of the proposed shade structures have been sensitively designed in accordance with Utzon's design principles and to respect the existing material palette.</i></p> <p><i>The experience and pleasure of approaching the building via the Lower Concourse will be enhanced with the improved circulation along the covered public passageway and realignment of the glazing at Opera Bar.</i></p> <p><i>The shade structures and glazing panels forming part of the works proposed in this application both rely on the prefabrication and assembly of repeated components.</i></p> <p><i>As such the proposed Lower Concourse Improvement works will retain and respect these values.</i></p>
<p><b>NHL Criterion G Social value</b>  <i>The place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.</i>            Relevant key values from National Heritage value:</p> <ul style="list-style-type: none"> <li>• <i>"building's role as a cultural icon is also derived from the numerous performances conducted there (100,000 since 1973),</i></li> </ul>	<p><i>The proposed works included in this application will strengthen the Sydney Opera House's role as a cultural icon accessible to all, and potentially enhance its ability to attract both national and international visitors with the improvement of the undercover Lower Concourse approach and its supporting catering outlets that have become a destination in themselves.</i></p> <p><i>It is important that noise generated by activities on the Lower Concourse does not detract from</i></p>

<b>National Heritage List (NHL) Criteria</b>	<b>HIS Comment (Design 5 Architects)</b>
<p><i>and the place's role as a focal point for community events. The Sydney Opera House is a mecca for both Australian and international visitors to Sydney, attracting over 100 million visitors since the opening in 1973".</i></p>	<p><i>ambience of the Forecourt above, particularly for patrons arriving and departing a performance. The proposed removal of the acoustic barrier behind the band stage on the uncovered part of the Lower Concourse at Opera Bar will have negligible impact on noise generated from the existing uses. The noise report commissioned for this DA titled Sydney Opera House, Lower Concourse DA, Operational and Construction Noise Impact Assessment confirms that removal of this acoustic barrier will only marginally increase noise, i.e. by up to 1dBA. Identified as an intrusive item, the removal of the barrier is considered to have a positive impact on the setting and therefore values of the Sydney Opera House by removing clutter from the Lower Concourse. Compliance with the noise limits will still be achieved.</i></p> <p><i>It is recommended to monitor and maintain any infrastructure or loose furniture that forms part of this use and review and adjust the lease or operational areas in the longer term to strengthen the overall experience and appreciation of public spaces as well as minimise encroachment on public access routes in order to eliminate any negative impacts on the primary role of the Lower Concourse.</i></p>
<p><b>NHL Criterion H Significant people</b>  <i>The place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.</i></p> <p>Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> <li>• <i>"The Sydney Opera House is directly associated with Jørn Utzon"</i></li> <li>• <i>"The peninsula on which the Sydney Opera House now stands has a special association with Bennelong"</i></li> </ul>	<p><i>Although not specifically mentioned under this criteria, Peter Hall played an important role in the design of the Lower Concourse. His work and palette of materials is retained and respected in this proposal. The works proposed in this application will not affect these associations.</i></p> <p><i>The proposed improvement works to the Lower Concourse will not have any adverse impacts on the distinctive design of the Lower Concourse by Peter Hall.</i></p>

Table 15: Assessment against National Heritage Values (Source: HIS)

In summary, the HIS acknowledges that the minor works to the glazing at the Opera Bar will enhance and strengthen the covered southern approach to the SOH via the Lower Concourse.

The visual impacts from the proposed shade structures will be positive and will have less impact on views to and from the Opera House. The shade structures will enhance amenity, accessibility and patron comfort and are necessary for the operation of the food and beverage outlets in this space, an important supporting function and use to the Opera House performing arts venue and tourist destination.

### 7.2.3 State Heritage Values

The HIS also considers the proposed works against the State Heritage Register criteria, as summarised in the table below. The extracts from the SHR values, under each of the criteria below, summarise and draw attention to those aspects of significance that are relevant to the assessment of heritage impact of existing uses, the proposed change to the Opera Bar glazing line and new shade structures in the Lower Concourse.

SHR Criteria	HIS Comment (Design 5 Architects)
<p>SHR criterion a) Historical significance  <i>An item is important in the course, or pattern, of NSW's cultural or natural history.</i></p> <p>Relevant key values from SHR values:</p> <ul style="list-style-type: none"> <li>• <i>The Sydney Opera House has historical significance as a modern architectural masterpiece, recognised internationally as a symbol of Sydney and Australia</i></li> </ul>	<p><i>The continued use of and improvements to the 1988 Lower Concourse, will not have any adverse visual and functional impacts on the significant architectural qualities of the Opera House or the ability of the Opera House to be recognised as a modern architectural masterpiece.</i></p>
<p>SHR criterion b) Associative significance  <i>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.</i></p> <p>Relevant key values from SHR values:</p> <ul style="list-style-type: none"> <li>• <i>None relevant</i></li> </ul>	<p><i>There are no significant associative values from the SHR listing that are impacted by this proposal.</i></p>
<p>SHR criterion c) Aesthetic significance  <i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.</i></p> <p>Relevant key values from SHR values:</p> <ul style="list-style-type: none"> <li>• <i>"... exceptional aesthetic significance because of its quality as a monumental sculpture in the round, both day and night, and because of the appropriateness of its design to its setting and the picturesque quality of the setting."</i></li> <li>• <i>"Its public spaces and promenades have a majestic quality endowed by powerful structural forms and enhanced by vistas to the harbour and the city"</i></li> </ul>	<p><i>The proposed change to the glazing line of the Opera Bar on the Lower Concourse has no negative impact on the Lower Concourse's High significance. The pink granite used on the Lower Concourse was chosen to match the Broadwalks and Podium and it is proposed to retain it for external areas, salvaging and altering panels from areas to be enclosed to suit the revised configuration.</i></p> <p><i>Aesthetically the changes to the alignment follow the existing curvature of the floor panels of the Lower Concourse and allow for improved visitor circulation and visibility along the space. The proposal will not have any adverse impacts on the setting of the Opera House or its ability to be read as a monumental sculpture in the round.</i></p> <p><i>Any internal works of the extension of the dining area fitout, air-conditioning and lighting will match the existing finishes and materials within the Opera Bar and should be practically imperceptible visually and aesthetically.</i></p> <p><i>The majestic quality of the powerful structural forms, referred to in the criteria applies to the major public spaces above the Forecourt but they are relevant here when considering the</i></p>

SHR Criteria	HIS Comment (Design 5 Architects)
	<p><i>mushroom columns. The proposed glazing realignment respects the space around the visually powerful ‘mushroom’ heads to the columns and retains and possibly strengthens the visual power of their curved alignment. The new glazing alignment will enable removal of the present visual clutter at the base of the stairs to the Forecourt. The proposed change to the glazing alignment will have no impact on the vistas to or from the harbour and the city.</i></p> <p><i>While acknowledging that any permanent structure on the uncovered part of the Lower Concourse will have some visual impacts on the exceptional aesthetic significance of the Sydney Opera House as a monumental sculpture in the round, the overall impacts of the proposed structures will be less than the existing as a result of their reduced depth and finer design. With regard to visitor comfort and minimisation of clutter, the impacts will be positive. The colour, configuration and shape have been designed to minimise negative impacts as much as possible and are considered more elegant compared to the existing shade structures. The chosen colour Dulux ‘Coconut Husk’ is one of the colours from the Sydney Opera House approved colour palette as outlined in the Sydney Opera House Outdoor Event Guide. Furthermore the new shade structures will not feature the currently displayed intrusive branding and logo on the fabric, minimising distractions.</i></p>
<p>SHR criterion d) Social significance  <i>An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</i></p> <p>Relevant key values from SHR values:</p> <ul style="list-style-type: none"> <li><i>The Sydney Opera House is of social significance as an internationally recognised symbol of Sydney, one of Australia’s leading tourist attractions and a focal point for community events. It is also widely admired by Sydneysiders, and can be seen to contribute importantly to the sense of place in the Sydney CBD.</i></li> <li><i>As a world-class performing arts centre, the Sydney Opera House has enhanced the cultural vitality of the nation.</i></li> <li><i>“Of the 85,000 people estimated to visit each week in 2003, about a quarter came for performance-related reasons while the rest came to experience the building and its environment. In offering this remarkable</i></li> </ul>	<p><i>The Lower Concourse provides sheltered access to the Sydney Opera House below the western edge of the Forecourt, connecting East Circular Quay with the Covered Concourse and parking station and incorporates food, beverage, retail outlets, the Welcome Centre and lavatories. All of these support the primary function of the Sydney Opera House as a world-renowned centre for the performing arts. Visitors to performances often use the services provided before and after the shows.</i></p> <p><i>As food and beverage outlets, Opera Bar, Opera Kitchen and their associated outdoor seating areas are major drawcards for tourists and residents alike, and are destinations in themselves for patrons to deliberately take in the environment and enjoyment of experiencing the Sydney Opera House from the water’s edge.</i></p> <p><i>The Lower Concourse improvements concerned with providing better circulation along the</i></p>

SHR Criteria	HIS Comment (Design 5 Architects)
<p><i>accessibility to a broad public, Sydney Opera House can be seen to be fulfilling Cahill's hope that it would be "a monument to democratic nationhood."</i></p>	<p><i>undercover walkway and increased seating and back of house facilities within the Opera Bar in a currently underutilised space contribute to a more positive experience of the space and along with the new shade structures continue to provide enhanced visitor comfort.</i></p> <p><i>A space for socialising, the existing Lower Concourse activities and facilities contribute to the cultural vitality of the city and the improvements proposed should enhance the experience of the Opera House as an internationally recognised symbol of Sydney.</i></p> <p><i>It is important that noise generated by activities on the Lower Concourse does not detract from ambience of the Forecourt above, particularly for patrons arriving and departing a performance. The proposed removal of the acoustic barrier behind the band stage on the uncovered part of the Lower Concourse at Opera Bar will have negligible impact on noise generated from the existing uses. The noise report commissioned for this DA titled Sydney Opera House, Lower Concourse DA, Operational and Construction Noise Impact Assessment confirms that removal of this acoustic barrier will only marginally increase noise, i.e. by up to 1dBA. Identified as an intrusive item, the removal of the barrier is considered to have a positive impact on the setting and therefore values of the Sydney Opera House by removing clutter from the Lower Concourse. Compliance with the noise limits will still be achieved.</i></p> <p><i>As demand and popularity increases, the continued use of the Lower Concourse for food and beverage outlets, as well as tours and ticketing must ensure that potential adverse impacts on the primary purpose of the space for public circulation are avoided. The food and beverage outlets in particular have encroached on and restricted the use of sections of the pedestrian paths. Careful management is needed to avoid this and some lease or operational areas may need future clarification and adjustment when the opportunity arises. Such adjustments should follow the recommendations in Section 7.2 of this HIS.</i></p>
<p>SHR criterion e) Research potential <i>An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.</i></p>	<p><i>There are no significant research potential values from the SHR listing impacted by this proposal.</i></p>

SHR Criteria	HIS Comment (Design 5 Architects)
Relevant key values from SHR values: <i>none relevant</i>	
SHR criterion f) Rarity <i>An item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history.</i>  Relevant key values from SHR values: <ul style="list-style-type: none"> <li>• <i>“The Sydney Opera House has significance for its rarity as a twentieth century architectural masterpiece sited on a prominent peninsular in Sydney Harbour.”</i></li> <li>• <i>It is an exceptional landscape (and seascape) monument because of its quality as a sculpture in the round, both day and night, and because of the appropriateness of its design to its setting and the picturesque quality of the setting</i></li> <li>• <i>“It is also unique in so far as it has become an internationally recognised symbol of Sydney and Australia, which is also widely admired by local citizens.</i></li> </ul>	<i>The ability of the Sydney Opera House, (as an exceptional architectural monument in response to its harbour setting and its quality as a sculpture in the round), to attract visitors and performers from all over the world will be enhanced with the Lower Concourse improvement works by the improved amenity, accessibility and patron comfort offered by the proposed works.</i>
SHR criterion g) Representativeness <i>An item is important in demonstrating the principal characteristics of a class of NSW’s cultural or natural places; or cultural or natural environments.</i>  Relevant key values from SHR values: <ul style="list-style-type: none"> <li>• <i>It is outstanding because of its innovative design appropriate both to its entertainment functions and to its harbour-side setting, and because of the esteem in which it is held in Australia and internationally.</i></li> <li>• <i>“As an icon of modern architecture it combines an expressive, sculptural freedom of form with the precise technology of the machine age.”</i></li> </ul>	<i>Like the rarity values discussed above, the ability of the Sydney Opera House to attract visitors and performers from all over the world should be enhanced by the Lower Concourse Improvement works. Supporting functions like Opera Bar and other facilities in the Lower Concourse need to reflect the outstanding and innovative design standards of the Opera House itself by providing appropriate amenity, functionality, accessibility, patron comfort and public engagement. The improved experience of these hospitality facilities should enhance the esteem in which The Sydney Opera House is held nationally and internationally.</i>

Table 16: Assessment against State Heritage Values (Source: HIS)

In summary, the HIS considers that the continuing existing uses and proposed improvements will have no adverse impacts on the significant architectural or aesthetic qualities of the Opera House. The HIS notes that accessibility and visitor circulation will be improved via the adjustment of the glazing line on the Lower Concourse, eliminating the narrowing that is presently impacting the flow of visitors and visibility of the stairs to the Forecourt along the walkway. The HIS also notes the adjustments to the glazing line are considered to be exempt under the Heritage Act site specific exemptions. Other pinch points and encroachment resulting from existing furniture and bar placement may still impact on the unobstructed flow of circulation. Therefore, careful management and a future review of the lease or operational boundaries are recommended in order to continue to retain the primary use of the Lower Concourse as a public circulation space.

The HIS notes that it is important that noise generated by activities on the Lower Concourse does not detract from ambience of the Forecourt above, particularly for patrons arriving and departing a performance. The HIS finds that the proposed removal of the acoustic barrier behind the band stage on the uncovered part of the Lower Concourse at Opera Bar will have negligible impact on noise generated from the existing uses. The noise report commissioned for this DA confirms that removal of this acoustic barrier will only marginally increase noise, i.e. by up to 1dBA. Identified as an intrusive item, the removal of the barrier is considered by the HIS to have a positive impact on the setting and therefore values of the Sydney Opera House by removing clutter from the Lower Concourse. Compliance with the noise limits will still be achieved.

The HIS finds that there will be some impacts on original fabric in the Lower Concourse as part of the works, where the bronze framed glazing and pink granite panels are affected. The HIS notes that these impacts are minimised by reusing glazing elements and large granite panels. The HIS finds that there should be no adverse impact on the aesthetic quality of the space with regard to fabric.

The HIS finds the aesthetic quality of the structural forms on the Lower Concourse, namely the mushroom columns are currently in part isolated or encroached upon. These qualities will be improved by incorporating the isolated column into the enclosed area and improving the adjacent circulation space. The HIS finds that the adjustment of the glazing to more closely follow the curved paving alignment will have a positive impact on visibility within the space and how it is perceived and used.

The HIS finds that the visual impacts of the new shade structures should be positively improved by using the approved colour Dulux 'Coconut Husk' as well as not branding the new shade structures with oversized logos. The HIS also finds that the improved simplicity and alignment of the new shade structures, their slimmer profile and the minimisation of clutter and services should improve how they are perceived in views from and to the Sydney Opera House, as well as from within the Lower Concourse itself.

The impact of the existing uses are considered in the HIS as acceptable and appropriate for a supporting function to achieve a high level of visitor comfort that will maintain the Opera House's status as a world-class performing arts centre, attracting the wider community and enhancing the cultural vitality of the nation.

#### **7.2.4 Conservation Management Plan**

The Sydney Opera House Conservation Management Plan (CMP4) was endorsed by the NSW Heritage Council in 2017. The CMP identifies and defines the significant values of the Sydney Opera House and then formulates policies framed to retain these values. The HIS has assessed in detail the impact of the proposed works and existing uses in terms of significant values, overarching policies, significant elements and operation and management considerations.

The HIS notes the following key points in relation to the proposed works' consistency with the CMP4:

- the Lower Concourse provides sheltered access to the Sydney Opera House below the western edge of the Forecourt, connecting East Circular Quay with the Covered

Concourse and parking station and incorporates food, beverage, retail outlets, the Welcome Centre and lavatories. All of these support the primary function of the Sydney Opera House as a world-renowned centre for the performing arts. Visitors to performances often use the services provided before and after the shows.

- there is high demand for sheltered seating due to the popularity of the setting and the existing space is restricted by the narrow overhanging edge of the Forecourt above. The proposed improvements respond positively to these constraints by reducing clutter and the visual impact on the character of the Lower Concourse.
- the improvement works proposed in this application will involve minor but acceptable changes to the Opera Bar glazing line, associated granite paving and replacement of the shade structures on the Lower Concourse. These changes will have a positive impact on the functionality and circulation of the passageway adjacent to the stair to the Forecourt.
- Hall’s design intent and palette of materials and the quality and character of the Lower Concourse with its open uncovered spaces will be retained and respected.
- the proposed improvement works comply with the policies and guidelines in the CMP4.
- the impacts of this proposal are considered positive, however the following condition is recommended:

**Condition:**

1. Sydney Opera House to review existing lease and operational areas, including furniture and infrastructure placement, and where necessary revise them when the opportunity arises to minimise encroachments onto public walkways and circulation spaces and retain the intended open and uncluttered character of the Lower Concourse. Any revisions and ongoing management are to be in accordance with the CMP policies, (the edition current at the time).

### 7.2.5 Utzon Design Principles

Utzon and Hall were both of the opinion that modifications or changes are possible to address functional demands if done with caution and careful consideration. The HIS’s assessment of the proposal against the relevant Utzon Design Principles is summarised in the table below. The Design Statement provided in Appendix 3 also considers the UDPs.

Relevant Utzon Design Principle Quote	HIS Comment (Design 5 Architects)
<p><i>Keep the approach, the openness and fluidity of movement</i></p> <p><i>“One of the great features of the Opera House is the approach, the openness, the fluidity of people’s movements through the house, and once you clutter this you have a problem.” (UDP Page 49)</i></p> <p><i>Beautiful experience oriented in the harbour</i></p> <p><i>“...People have a beautiful experience entering and walking up the stairs and entering the auditoria, while they are all the time oriented in the beautiful harbour and have the views of the spectacular Sydney Harbour setting.” (UDP page 59)</i></p> <p><i>Buildings and surroundings</i></p> <p><i>“It is the interplay between the building and its surroundings... that is important.” (UDP Page 70)</i></p>	<p><i>The proposed changes to the glazing line at Opera Bar improve the sense of openness and fluidity allowing visitors to visually experience the full width of the main walkway in the Lower Concourse free from clutter. Patrons inside the main bar area will continue to be connected with the passageway and uncovered part of the Lower Concourse that looks out over the harbour and city.</i></p> <p><i>The replacement of the existing umbrellas with finer profiled and less intrusive shade structures, will reduce their impact on views to and from the Sydney Opera House itself. They will be visible in views, however the flat and low profile of the design is in line with the parapet and railing of the Forecourt above and with use of the recessive colour, Dulux “Coconut Husk” complies with the a</i></p>

Relevant Utzon Design Principle Quote	HIS Comment (Design 5 Architects)
	<p>approved palette in the Sydney Opera House Outdoor Event Guide. There will be no adverse impact on the setting of the Sydney Opera House.</p> <p>To maintain the approach, openness and fluidity of pedestrian movement, it is recommended to review and adjust the layout of furniture and infrastructure associated with existing uses. In the longer term this will strengthen the overall experience and appreciation of public spaces as well as minimise encroachment on public access routes such as the sheltered walkway and raised walkway along the sea wall.</p>
<p>Expression of elements, produced industrially          “The exteriors of the building stand as an expression for something basic in the concept - the idea of dividing the various parts up into equal components, which can be produced industrially and afterwards put together to form a structure of the desired form.” (UDP Page 72)</p> <p>Colour in harmony geometric concept          “By using this same form we have harmony and uniformity throughout giving the intrinsic whole to the building.” (UDP Page 73)</p> <p>Modular coordination/ standardisation          “According to our way of working the glass panels were to be of equal size, facilitating production.” (UDP Page 74)</p> <p>Under control by strict geometry          “...the only way to attack the ...major parts of the building would be to bring them under control by a strict geometry and then divide them into uniform components, which can be produced by machine under strict control both as regards dimensions and quality.” (UDP Page 75)</p>	<p>The proposed Improvement works to the Lower Concourse use standard elements that follow the existing geometry and materials. Both the glazing and umbrellas are made up of individual components that can be modified in a variety of different shapes and forms to create a desired outcome.</p> <p>The form of the glazing relates to the established geometry of the site, i.e. the granite cladding and paving and follows the curve of the Lower Concourse, providing for a more harmonious visual experience of the space.</p>
<p>Natures colours          “In my project for the Sydney Opera House I had what you would call nature’s colours on the exterior” That was the general idea-concrete, granite and ceramics. (UDP Page 80)</p> <p>Practical glare          “I agree (white outdoor furniture is wrong because only the sails should be white). Because white is no good for outdoor furniture as my eyes can’t tolerate white when I eat.” (UDP Page 81)</p>	<p>The off-white covering on the umbrellas on the Lower Concourse were identified as intrusive items in the CMP 4th edition and were recommended to be recovered in a different colour to appear more recessive when seen against the natural colours of the granite cladding of the Forecourt. Those umbrellas in front of Opera Bar have already been recovered in Dulux “Coconut Husk”, one of the tested and approved colours outlined in the Sydney Opera House Outdoor Event Guide.</p>

Table 17: Assessment against relevant Utzon Design Principles (Source: HIS)

## 7.2.6 Conclusion and recommendations

The HIS makes the following conclusion and recommendations with regards to the improvements works:

*...The impacts of the improvements are considered positive to the cultural heritage values of the Opera House. Decisions made during the final design phase were based on the consideration of alternatives that received feedback from the Sydney Opera House Heritage Architect, Design Advisory Panel, City of Sydney Council and the OEH.*

*The proposed replacement of existing umbrellas with new shade structures of a finer design and profile will have a positive visual impact. There will be no intrusive logo on the shade structure cloth.*

*The colour of the cloth for all shade structures will be Dulux "Coconut Husk" which is an approved colour outlined in the Sydney Opera House Outdoor Event Guide. The height and profile of these structures is no higher than the bronze railing and no lower than the granite parapet panels. This ensures views to and from the Opera House will remain as open as possible as well as being a slight improvement on the existing. The incorporation of services within the shade structure minimises visual clutter in this open space.*

*The Lower Concourse is the only sheltered entry and exit point for patrons and visitors to the Sydney Opera House and unobstructed crowd flow must be maintained. The adjustment of the glazing line at Opera Bar will improve the circulation at one of the critical points near the steps up to the Forecourt as well as enhance the visual quality of the space, responding more to the established geometry of this part of the site. The existing pink granite panels outside the existing Charcuterie will be salvaged and reused externally for the proposed extension to the main internal bar area...*

The HIS makes the following conclusion and recommendations with regards to the general use and operation:

*...The placement of infrastructure and loose furniture has been identified in the past as another factor that impacts on the crowd flow. The existing lease area plans for Opera Bar and Opera Kitchen show furniture can be placed forward of the centreline of the mushroom columns at the edge of the passageway. This present lease and operational alignment encroaches into public space and must be reviewed and re-aligned when the opportunity arises to comply with the CMP 4th edition. A clear public accessway must be maintained at all times and be planned and managed accordingly.*

*All tables and seating next to the sea wall must also be reviewed when the opportunity arises, in order to maintain a public thoroughfare on this walkway.*

*It is important that noise generated by activities on the Lower Concourse does not detract from ambience of the Forecourt above, particularly for patrons arriving and departing a performance. The proposed removal of the acoustic barrier behind the band stage on the uncovered part of the Lower Concourse at Opera Bar will have negligible impact on noise generated from the existing uses. The noise report commissioned for this DA titled Sydney Opera House, Lower Concourse DA, Operational and Construction Noise Impact Assessment confirms that removal of this acoustic barrier will only marginally increase noise, i.e. by up to 1dBA. Identified as an intrusive item, the removal of this barrier is considered a positive impact on the setting and therefore values of the Sydney Opera House by removing clutter from the Lower Concourse. Compliance with the noise limits will still be achieved.*

*The proposed improvements and continued use of the Lower Concourse for food and beverage, retail and service facilities supporting the primary function of the Sydney Opera*

*House as a performing arts centre as well as its values as an architectural icon and heritage site is commended. Compliance with the CMP 4th edition and the Utzon Design Principles are essential.*

*The impacts of this proposal are considered positive, however the following condition is recommended:*

**Condition:**

- 1. Sydney Opera House to review existing lease and operational areas, including furniture and infrastructure placement, and where necessary revise them when the opportunity arises to minimise encroachments onto public walkways and circulation spaces and retain the intended open and uncluttered character of the Lower Concourse. Any revisions and ongoing management are to be in accordance with the CMP policies, (the edition current at the time).*

*It is our conclusion that the works proposed in this application and the continued use of the Lower Concourse for food and beverage, retail, ticketing and tours will result in no adverse heritage impacts. They will have a positive impact on the State, National and World Heritage values, comply with the CMP 4th edition and the UDP and are therefore supported with the above recommended condition.*

### **7.3 Use**

The uses within the Lower Concourse are proposed to continue to operate as detailed in Section 2.3 of the EIS. There are no changes proposed with regards to the existing patron numbers or existing amenities in the lower concourse.

The Proposal will ensure that there are no inconsistencies between the consents and provide clarity and certainty in terms of the applicable development consent which governs all uses. In addition, it will provide for ease of implementation and compliance for the SOHT. The proposal seeks to consolidate the existing uses operating in the Lower Concourse. This proposal does not change the range of uses, operational parameters or management of the uses and therefore does not give rise to any new or increased environmental, social or economic impacts or issues.

### 7.3.1 Plans of Management

The Lower Concourse venues will continue to operate under their existing Plans of Management (POMs) as required by their Liquor Licences. These POMs address:

- Relationship with the NSW Police and the Liquor Accord
- Operating hours and the use of the premises
- Capacity of the premises
- Responsible Service of Alcohol
- General amenity
- Complaints process
- Signage
- Security measures

It is considered that the existing uses can continue to operate in accordance with the existing POMs employed at the SOH.

## 7.4 Urban Design and Visual Impacts

The Architectural Design Statement provides a summary of the proposed works as compared to the existing structures (**Appendix 3**) and the VIA provides a visual comparison between the existing shade structures and proposed shade structures (**Appendix 4**). The HIS also considers views in the context of the heritage listings of the Opera House (**Appendix 5**). The key findings of Statement and VIA are summarised below:

### 7.4.1 Shade Structures

As part of the ongoing commitment to improve facilities it is proposed to replace the existing shade structures in the Outdoor Seating areas of the Opera Bar and Opera Kitchen with larger, more functional and aesthetically integrated shade and weather protective structures.

The proposed shade structures improve on the design of the existing shade structures. The structures are better integrated with services, respond to the Utzon Design Principles (UDPs) criteria and provide for improved weather protection for patrons.

Whilst the proposed shade structures will be mast and structural steel members will be finished in satin stainless steel. The shade structure fabric is a PVDF colour to closely match the existing 'Dulux Coconut Husk' shade structures and the background of the concourse structure. The fabric will be non-reflective. The proposed shade structures are approximately 2690mm above the intermediate terrace level. This represents a minor increase in height from the existing shade structures of 2900mm. The proposed fabric component of the shade structures are shallower in depth than the existing shade structures.

The integrated heaters will be finished in stainless steel to generally match the structure.

The proposed shade structures will result in a 16% increase in coverage from the existing shade structures from 260.3m<sup>2</sup> to 303.5m<sup>2</sup>, the Visual Impact Assessment (VIA) prepared by H&E Architecture provides a comparison between the existing shade structures and the proposed shade structures. The VIA and **Figures below** demonstrate, due to the relative size

of the SOH, the proposed shade structures are an insignificant feature when compared to the SOH building itself.

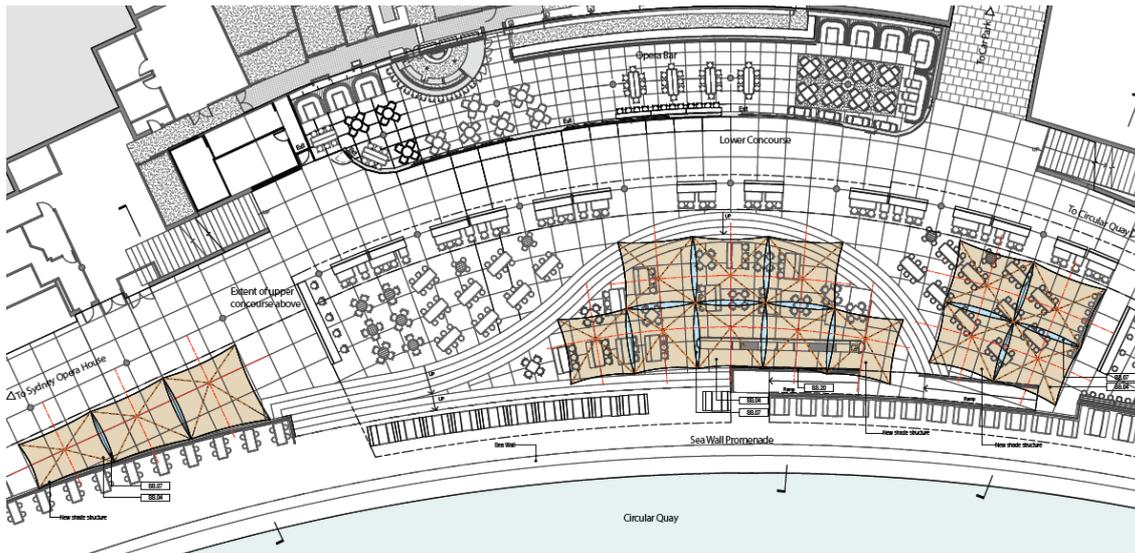


Figure 17: Proposed shade structures plan (Source: H&E Architecture)

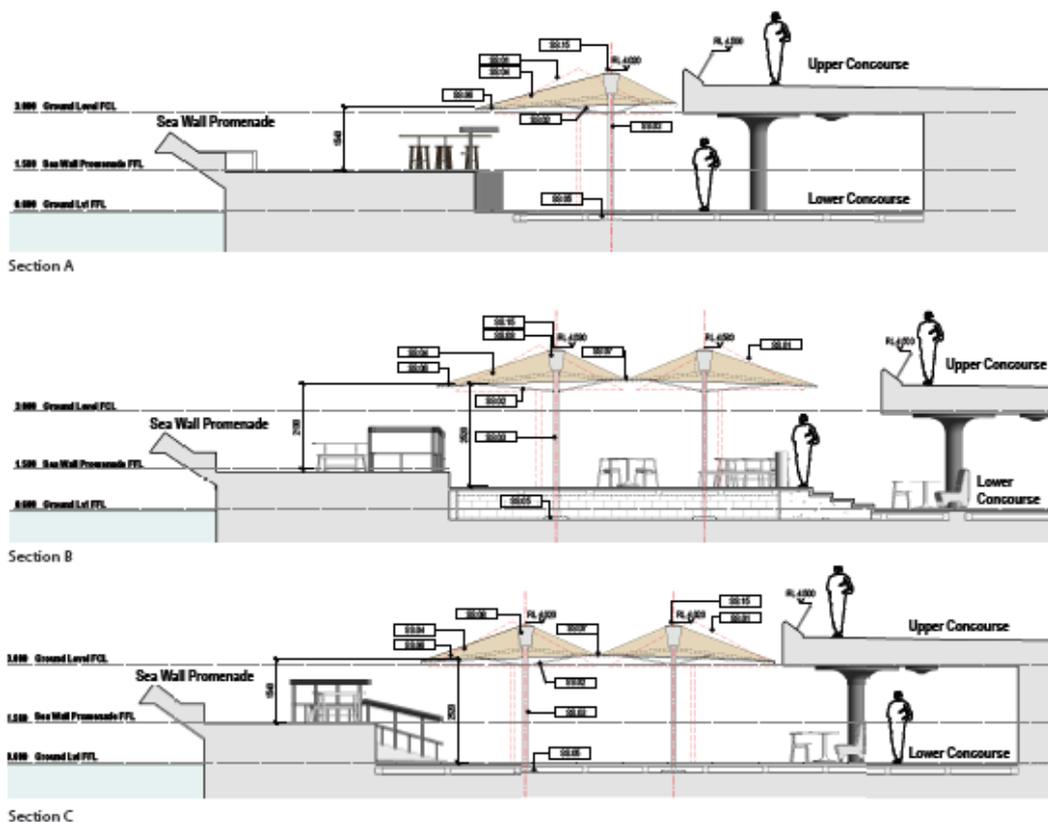


Figure 18: Section B of the proposed structures detailing the extent of the existing shade structures in red (Source: H&E Architecture)

As evident in **Figure 18**, the proposed structures are lower in height than the existing shade structures.

**Figures 19 and 20** demonstrate the existing and proposed views from key surrounding sites the North Shore and West Circular Quay.



Figure 19: View 02 Existing view from West Circular Quay (Source: H&E Architects)



Figure 20: View 02 Proposed view from West Circular Quay (Source: H&E Architects)

**Figures 21 and 22** demonstrate the existing and proposed views from within the SOH site towards the Harbour, views along the lower concourse.



Figure 21: View 05 Existing view to Sydney Opera House from Lower Concourse (Source: H&E Architects)



Figure 22: View 05 Proposed view to Sydney Opera House from Lower Concourse (Source: H&E Architects)

As can be seen in the above figures, the shade structures do not interfere with the form or continuity of the curvature of the existing concourse and provide an improved architectural and functional response. The visual connection between the forecourt and the lower concourse will not be obscured.

Despite the increase in size, the structures will appear smaller than the existing shade structures. The proposed structures will sit below the balustrade of the Forecourt. The existing shade structures include gaps between each umbrella which is inefficient for

weather protection for patrons. The existing shade structures also display the Opera Bar logo on the fabric of the structures. The proposed structures seek to improve on these design issues through ensuring there is a connection between each structure and the SOH logos are removed from the structures. This is a fundamental objective of the proposal to improve the amenity of patrons visiting the outdoor area of the Opera Bar. The proposal will provide for a safe and comfortable environment with an improved level of weather protection. The fabric selected to be used for the shade structures is a minor change from the existing colour palette and has been selected as it will not detract from the Lower Concourse structure.

The Architectural Design Statement provides an assessment of the proposed shade structures against the UDP criteria. The Statement finds that the proposed shade structures represent an improved design response and aesthetic experience because the proposal uses a simplified and homogenous design which employs less obtrusive structures than the existing shade structures. The Statement finds that the proposed structures will have no detrimental impact on the visual setting of the SOH because the proposed structures do not obscure any views to and or across the site from any public vantage point at the SOH. The proposal will therefore not impact on the prominence of the SOH or its role as an icon/landmark.

In addition, the HIS concludes that the proposed shade structures will have an improved design with slimmer profile and better services integration, minimising visual clutter. The colours and form are designed to be more recessive when viewed against the granite parapet of the Forecourt. Overall, the new shade structures will have a positive impact on the heritage values of the Opera House.

#### **7.4.2 Glass line**

The proposed works will adjust the alignment of the glazing line to increase usable internal area by 24m<sup>2</sup>. The proposed glass line amendment is minor and when viewed externally will be imperceptible (**Figures 23** and **24**). The proposal has no impact on significant views to and from the SOH and its precinct.



Figure 23: View 01 Existing glass line (Source: H&E Architects)

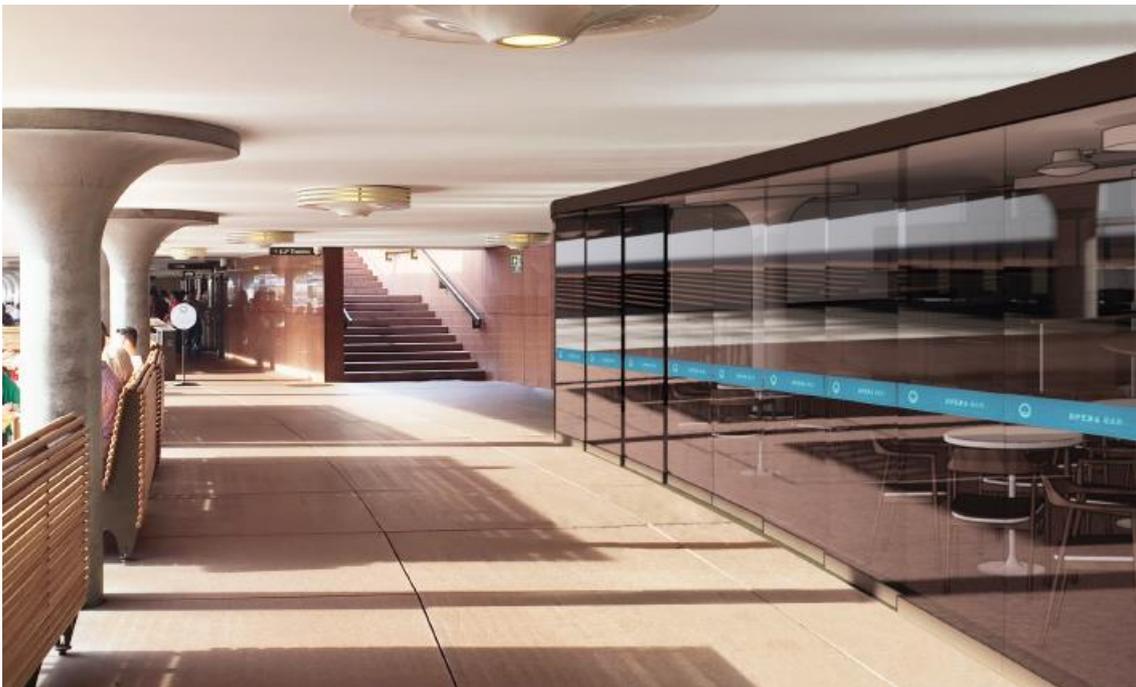


Figure 24: View 01 Proposed glass line (Source: H&E Architects)

The proposal will improve pedestrian flow through the removal of the existing pinch point between the existing glazing line and the outer ring of the mushroom columns. The proposed alignment will maintain sufficient clearance at the bottom of the existing adjacent stair to the Forecourt (**Figures 25 and 26**).



Figure 25: View 02 Existing glass line (Source: H&E Architects)



Figure 26: View 02 Proposed glass line (Source: H&E Architects)

The Architectural Design Statement provides an assessment of the proposed glass line against the UDP criteria. The Statement finds that the proposal is consistent with the criteria because the proposal is minor in nature, is confined to a relatively small area and does not significantly impact on existing and/or original fabric.

The proposed alternative design options for the proposed works are discussed in Section 4.2 and are detailed in **Appendix 3** in the Architectural Design Statement and within the HIS (**Appendix 5**).

## 7.5 Noise and Vibration

Arup has prepared an Operational and Construction Noise Impact Assessment (NIA) of the proposed Lower Concourse works and existing uses (**Appendix 7**). The NIA identifies the nearest noise sensitive receivers potentially affected by the works as residential properties at Kirribilli to the north of the site, and the Bennelong Apartments. The residential receivers at the Kirribilli apartments, are located around 700m across the harbour to the north of the site.

The NIA demonstrates the new loudspeakers will be carefully aligned to optimise sound distribution over patrons. SOH will ensure there is a coordinated commissioning and testing period to ensure the use of the new loudspeakers and PA systems will not exceed existing noise limits. The uses of the Lower Concourse will continue to have no adverse impact on the amenity of neighbouring properties and the surrounding area.

### 7.5.1 Operational Noise

The NIA demonstrates the proposal is not expected to result in any increase in noise from operation compared with current conditions.

The NIA undertook surveys of the existing noise levels at the nearest noise sensitive receivers have been conducted. Unattended noise logging measurements by Auditoria were undertaken to determine the noise levels at the Bennelong Apartments, East Circular Quay on Levels 4 and 9. Further details of the noise surveys carried out are provided in the NIA.

#### **Plant Noise Criteria**

No changes in plant are proposed and therefore there are no changes in plant noise are proposed.

#### **Noise from Lower Concourse Activity**

The NIA advises there are successful existing precedents regarding noise limits from the uses of the SOH Lower Concourse as defined in the approved Conditions of Consent from previous Key Liquor licences for the Opera Bar and Opera Kitchen. The Licences set out various noise criteria which are reproduced below. These limits are used as a reference for assessment against within this report.

#### **Opera Bar**

*...The NSW Independent Liquor and Gaming Authority states in Key liquor licence details recorded as at 21 October 2016 (Licence number: LIQ0600779774) the following under condition reference 3040:*

*The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) by more than 5dB between 07:00 AM and 12:00 midnight at the boundary\* of any affected residence.*

*The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) between 12:00 midnight and 07:00 AM at the boundary\* of any affected residence.*

*Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible\* within any habitable room in any residential premises between the hours of 12:00 midnight and 07:00 AM.*

*Interior noise levels which, although restricted in accordance with the above condition, still exceed safe hearing levels, are in no way supported or condoned by the Authority.*

*\*For the Bennelong Apartments the above noise condition criteria is to be applied inside any habitable spaces in the building complex with doors and windows closed and mechanical ventilation in operation...*

### **Opera Kitchen**

*...There are no conditions related to noise criteria for the operation of the Opera Kitchen however, condition reference 3060 of Key liquor licence details recorded as at 26 October 2016 (Licence number: LIQ0660033112) states:*

#### *Neighbourhood Amenity*

*The management of the premises:*

- i Shall ensure patrons do not crowd or loiter in the vicinity of the premises in such manner that pedestrian movement is obstructed or hindered.*
- ii Shall ensure that the manner in which the business of the premises is conducted and/or the behaviour of persons entering and leaving the premises does not cause undue disturbance to the amenity of the neighbourhood. In this regard, the management shall be responsible for the control of noise and litter generated by persons and/or premises operations. If so directed by Council, the Management is to employ private security staff to ensure that this condition is complied with.*
- iii Shall record in a Register full details of any disturbance complaint/s made by a person to management or staff in respect to the manner in which the business of the premises is conducted and/or the behaviour of persons entering or leaving the premises. Such recording will include time, date, nature of the complaint/s and any complainant details if provided.*
- iv Shall respond to any disturbance complaint/s in a timely and effective manner. All actions undertaken by management / staff to resolve such complaint/s shall be recorded in the Register. An adequate queuing system for patrons must be implemented at the main entrance of the licensed restaurant so as to ensure that if patrons are queuing to gain entry they do not obstruct or impede pedestrian traffic flow...*

### **Welcome Centre**

The Development Consent (SSD 6353) under condition F5 Noise control – General states:

*Noise associated with the use of the building including any mechanical plant and equipment shall not give rise to any one or more of the following:*

*...(1) Transmission of an 'offensive noise' as defined in the Protection of the Environment Operations Act 1997 to any affected receiver; and*

*(2) A sound pressure level at the boundary of any affected receiver that exceeds the background (LA90,15minutes) noise level by more than 5dB.*

*The background noise level must be measured in the absence of noise emitted from the use in accordance with Australian Standard AS1055...*

Live entertainment in the form of amplified music (usually consisting of two or three musicians, including a singer) is permitted at the Opera Bar.

Currently, musicians perform live on a small stage with a vertical barrier at the southern end of the Opera Bar. However, as the barrier is considered unsightly and non-compliant with SOH heritage policies, the proposal seeks to remove this barrier. Accordingly, this acoustic assessment predicts worse-case noise impacts with the barrier removed.

Only recorded music is provided at the Opera Kitchen. The Opera Kitchen uses a PA system to direct recorded music towards patrons.

The Liquor Act also has monitoring and enforcement provisions to regulate alcohol and service and consumption.

The NIA has undertaken prediction calculations to analyse potential noise breakout through the area of the Lower Concourse. The analysis includes the new shade structures, loud speakers and the removal of the existing small barrier behind the live performance stage. The NIA confirms that the noise model results are consistent with the current activities and noise levels measured from normal uses in the lower concourse. The analysis shows that it is not expected that the new glazing line nor the new shade structures will significantly impact the noise emissions from patrons or music.

The NIA advises the predicted noise levels inside the Bennelong apartments are predicted to comply with the internal noise criteria. This is consistent with measurements undertaken by The Acoustic Group (as referenced in the NIA) that have shown that activity at the Opera Bar complies with the requirements of the respective licensing requirements. This is an expected conclusion given that there is no material change to the external activity and that the architectural changes would actually marginally reduce noise.

The predicted results were calculated without the small barrier behind the current live performance stage in front of the opera bar and with the new shade structures in place. These elements provide only a small reduction in the noise levels predicted at the noise sensitive receivers. The NIA advises the difference in noise levels with and without these elements was less than 1 dB. This is because much of the total overall sound power from the concourse comes from the speech from patrons rather than music and that many of the tables will remain unshaded.

Noise generated by live and recorded music will continue to be managed through the design of the system itself and by controlling the hours of operation. The amenity impacts from patrons coming and going to the premises are managed through the existing management plans required under the liquor licences.

Patron numbers will continue to be managed in accordance with the venue liquor licences and management plans.

### 7.5.2 Construction Noise

The NIA considers impacts on receivers external to the SOH from construction works at the SOH. Impacts to internal sensitive spaces within the SOH will be managed via administrative controls by scheduling of noise-generating activities outside of the operational hours of the SOH venues.

For external receivers, the NSW *Interim Construction Noise Guideline* (ICNG) provides recommended noise levels for airborne construction noise at sensitive land uses for State-controlled projects in NSW. The guideline provides construction management noise levels above which all feasible and reasonable work practices should be applied to minimise the construction noise impact. The ICNG works on the principle of a “screening” criterion – if predicted or measured construction noise exceeds the ICNG levels then the construction activity must implement all “feasible and reasonable” work practices to reduce noise levels. As such, the noise targets set by the ICNG are “management levels” for noise rather than strict “noise limits”.

The ICNG sets out management levels for noise at noise sensitive receivers, and how they are to be applied. These management noise levels for residential receivers are reproduced within the NIA. Noise levels apply at the worst affected property boundary of the residence, at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residences, the noise levels apply at the most noise-affected point within 30 m of the residence.

For work within standard construction hours, if after implementing all “feasible and reasonable” work practices to reduce noise levels the site still exceeds the Noise Affected Level, the ICNG does not require any further action – since there is no further engineering scope for noise mitigation.

For out-of-hours work, the ICNG uses a level 5 dB above the noise-affected level as a threshold where the proponent should negotiate with the community.

Indicative construction activity noise source levels have been assumed and used within the NIA for the construction works, based on previous construction noise assessments for building projects conducted by Arup and detailed discussions with construction specialists on the likely construction methodology for the project. The NIA notes many of the deliveries/removals are expected to use the underground route to the site so as not to disturb the nearest residential receivers from these activities. A maximum of two trucks per night are expected. Therefore, no external queuing of vehicles will occur. The site facilities will mostly be located on the lower concourse, screened by the Forecourt. The facilities are thus screened from the nearest residential locations.

The majority of site work will be undertaken during normal site working hours (7am to 6pm Monday to Friday and 8am to 1pm on Saturday). Some works associated with the construction of the glazing line realignment, the construction of the new egress from the back of house, and the construction of the new office and cool room, may be undertaken outside of standard construction hours. These works would be behind a full height acoustic hoarding, and underneath the overlying concrete slab of the Forecourt. There would be no external works. No sound emission to external receivers will occur. This would allow the works to be undertaken concurrently with ongoing operation of the Opera Bar during the construction period. There will be no work on Sundays or Public Holidays.

The assessment of construction noise has been based on worst-case assumptions. Under these worst-case conditions and with some operations being screened by the Forecourt, the predicted noise levels are 3dB over the 'noise affected level'. The NIA considers this to be a negligible exceedance given the pessimistic assumptions made.

Despite this, the SOH has recognised noise issues affecting nearby neighbours during external construction works in the past. Therefore, the SOH intends that contractors who are undertaking noisy external works identify mitigation measures for this work in their Construction Noise Management Plan (CNMP), which they will be required to prepare before work starts on site. This CNMP will be reviewed by the SOH and their noise consultants prior to approval and implementation on site.

However, to minimise potential for noise nuisance, the following recommendations are made:

- the noise mitigations recommended within the NIA be adopted
- limiting external works at night to only those that are required because they cannot be accommodated at other times
- prior to commencing construction, a Construction Noise Management Plan (CNMP) be prepared to identify mitigation measures for work being undertaken during construction.

## 7.6 Lighting

A Lighting Design Statement has been prepared by Lighting Design and is provided in **Appendix 10**. The Lighting Design Statement addresses the requirements of the SEARs including to:

- *identify the location, design and luminescence specifications for all lighting proposed onsite*
- *identify the measures to mitigate light spill and potential impacts on the amenity of sensitive receivers surrounding the site*

In response to the SEARs, the Lighting Design Statement provides the following advice:

### *Lighting proposed for the Shade structures:*

- the lights provide indirect and reflected light, creating a soft, glare-free and diffused light
- most of the light is reflected downwards, minimising upwards spill
- uncontrolled light spill is prevented because the shade structure acts as a physical barrier and blocks the light reaching the surrounding properties
- the lights are dimmable and tuneable

### *Lighting proposed for the exterior bar area:*

- a series of downlights are mounted to the underside of the shade structure to directly light the bar
- the lights incorporate a high degree of optical control to provide lighting only where it is needed. This prevents light spill beyond the immediate vicinity of the bar
- the lights are dimmable
- there is no upward light spill

#### *Existing heritage soffit lights in the Lower Concourse*

- no alterations are proposed for the locations, design or luminescence characteristics of these luminaries
- there is no concern in regards to obstructive light spill associated with these items

#### *Existing lighting within the handrails*

- no alterations are proposed for the locations, design or luminescence characteristics of these luminaries
- the lights are fully concealed within the handrail profile and there is no concern of obtrusive light spill associated with these items

#### *Existing interior lighting (various areas)*

- no alterations are proposed for the locations, design or luminescence characteristics of these luminaries
- these spaces are deeply recessed into the Lower Concourse and under the concrete Forecourt. This provides cover to ensure illumination is contained within the area and avoids obtrusive light spill
- the elevated Sea Wall provides a barrier to prevent light spill towards the harbour
- no light source is aimed outwards towards the public circulation area or surrounds

The proposed lighting has been developed with consideration to the sensitive and significant nature of the SOH and the principles and methods applied in this site. The Lighting Design Statement incorporates design solutions and adjustable lighting mechanisms. These measures mitigate light spill to ensure the amenity of sensitive receivers surrounding the site are addressed.

## **7.7 Traffic and Accessibility**

### **7.7.1 Operational Traffic and Pedestrian Arrangements**

The proposal does not incorporate changes to the existing traffic and accessibility arrangements. Patrons will continue to access the site via public transport, walking and via private vehicles. Patrons will continue to use the existing SOH car park.

The proposal does not seek to increase patrons numbers at the Lower Concourse tenancies.

The existing service vehicle access, delivery and loading/unloading arrangement via the underground car park also remains unchanged.

No changes are proposed to the existing amenities.

### 7.7.2 Construction Pedestrian and Traffic Management Plan

A CPTMP will be prepared by the SOH based on the SOH's previous CTPMP and will address potential traffic and pedestrian impacts during construction and mitigation measures in order to appropriately manage traffic and access issues during construction which are likely to include:

- Vehicle movements will be in accordance with the construction hours (refer to NIA) and would be split approximately between day and night works, in compliance with working hour restrictions and will be managed to occur outside of 6:00am to 10:00am and 3:00pm to 7:00pm to minimise disruption to the local road network;
- All construction traffic shall enter and leave the site from Macquarie Street. Construction vehicle access along the boardwalk and forecourt areas (if required) would be limited to night-works where practical. There will be no contractor parking provided on site, with contractors directed to public transport or the nearby Opera House carpark;
- Delivery of the shade structures, and similar large/heavy materials will be delivered to the Forecourt above the Lower Concourse. Cranes will be used to position large/heavy items into the Lower Concourse. All other deliveries and removals from site will be via the underground loading dock, accessed from Macquarie Street, and no trucks will be queued or parked in the surrounding public streets;
- General public access will be maintained along Macquarie Street and the entire Sydney Opera House public perimeter. Vehicle spotters would be used to escort each truck movement across any pedestrian areas and caution signs shall be erected prior to any truck movements in these areas;
- The majority of construction vehicles are predicted to range from small to heavy rigid vehicles up to 12.5 m. The Applicant will apply for special permit from the City of Sydney for the use of any vehicles that may exceed 12.5 m in length;
- Works sites shall be appropriately barricaded, separated and supervised while works are occurring, and work compounds, materials and equipment shall be secured when not in use; and
- The Applicant will consult with the businesses and residents within the immediate locality (500 m radius), via mail drops, to provide an overview of the construction activities and appropriate contact details.

The final CPTMP will be prepared prior to the construction certificate stage.

## 7.8 Waste management

A Construction Waste Management Plan (CWMP) has been prepared by Hibbs and is provided in **Appendix 13**. The CWMP addresses the requirements of the SEARs including:

- waste minimisation
- waste management
- waste collection, storage and disposal
- staff awareness
- documentation of procedures

Waste will be managed in accordance with relevant NSW legislation and the principles of the waste management hierarchy as set out in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*.

Waste will be recycled where possible and a fully detailed Waste Management Plan (WMP) will be prepared by the successful contractor.

The SOH maintains an Asbestos Management Procedure, which will be implemented during construction works, and maintains a Hazardous Materials Register, which documents all asbestos contaminated materials (ACM), hexavalent chromium and lead paints within the building. Any hazardous materials are managed by the *Sydney Opera House Asbestos Risk Management Plan* (Hibbs & Associates Pty Ltd 2013) and the *Sydney Opera House Hazardous Materials Action Plan (2015)*.

Removal and disposal of any hazardous materials will comply with all relevant laws, regulations and guidelines including, but not limited to, *Protection of the Environment Operations Act 1997*, *Protection of the Environment Operations (Waste) Regulation 2014* and *Protection of the Environment Operations (Illegal Waste Disposal) Act 2013*.

## 7.9 Potential Odour and Emissions

The EIS is accompanied with an Odour and Emissions Assessment prepared by Hibbs (**Appendix 12**). The Assessment notes given the absence of any odour complaints in relating to the existing ventilation system and the carbon filters to manage odour, it is not considered that further mitigation measures are required to manage odour and emissions. The Assessment recommends that an odour complaints register should be maintained in the event of any complaints being received. The SOH has a general complaints procedure in place for all Lower Concourse operations.

## 7.10 Contamination

As discussed in Section 6.6.5 in relation to *SEPP 55*, the site is not identified on the EPA register of contaminated sites. Further, the proposed works are not proposed to extend beyond the existing concrete slab.

The WMP is discussed in Section 7.8 addresses any potential contamination management including asbestos and hazardous materials.

## 7.11 Ecologically Sustainable Development

The proposed works are minor in nature and include the:

- replacement of shade structures with improved architecturally designed shade structures
- realignment of the glass line of the Opera Bar
- relocate the existing fire escape

A variety of sustainability measures have been devised to ensure the proposal is developed and operated in a sustainable manner, the key sustainable features include:

- removal and disposal of any hazardous materials will comply with all relevant laws, regulations and guidelines
- minimising all waste from the construction phase of the development ending up as landfill
- segregation of waste for recycling;
- preparation and implementation of a CWMP and OWMP

The proposed development is considered to be consistent with the 4 key ESD principles as shown in **Table 18** below:

<b>ESD Principle</b>	<b>Consistency</b>
<b>Precautionary principle</b>	
<i>...if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:</i> (i) <i>careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and</i> (ii) <i>an assessment of the risk-weighted consequences of various options</i>	The proposal is supported by technical reports which conclude that there is no risk of adverse environmental impacts, subject to appropriate management, during construction and operational stages. It is considered that through adherence to the Mitigation Measures outlined in Section 8 the proposal will not result in serious impact to the environment.
<b>Inter-generational equity</b>	
<i>...the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations</i>	The works have been developed to integrate the short and long term effects of economic, environmental and social considerations for the Sydney Opera House. In particular, the works will ensure the Opera House has the necessary facilities to provide modern facilities to patrons.
<b>Conservation of biological diversity and ecological integrity</b>	
<i>...conservation of biological diversity and ecological integrity should be a fundamental consideration,</i>	The proposal has been developed to directly benefit current and future generations in that it improves the operational efficiency of the building while ensuring the heritage significance of the building is protected and does not cause significant impact to the environment.
<b>Improved valuation, pricing and incentive mechanisms</b>	
<i>...environmental factors should be included in the valuation of assets and services, such as:</i>	The cost of infrastructure and measures to ensure an appropriate level of environmental performance on the site has been incorporated into the cost of the

ESD Principle	Consistency
<p>(i) <i>polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,</i></p> <p>(ii) <i>the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,</i></p> <p>(iii) <i>environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.</i></p>	<p>proposal. In addition, all waste will be appropriately managed during the construction stage.</p>

Table 18: Consideration of the proposal against ESD principles

On this basis of the above assessment, the proposal is considered to be consistent with the principles of ESD.

## 7.12 Building Code of Australia, Access and Fire Egress

The EIS is supported by an *Accessibility and Capability Statement* prepared by Group DLA (**Appendix 8**). The Statement notes that compliance with the BCA for the proposed works will be able to be achieved by a combination of compliance with the deemed-to-satisfy (DTS) provisions and the Performance Requirements.

The statement also provides an assessment of existing building identified as an affected part of the DDA Access to Premises Standards and new works with respect to the BCA and DDA.

The EIS is also supported by Fire Engineering Design advice from Arup (**Appendix 9**) which considers the fire safety design of the proposal, specifically the reorientation of the means of egress from the back of house.

The Arup advice confirms that the fire safety design of the proposed works will generally satisfy the Performance Requirements of the BCA by complying with the DTS provisions. There are some aspects of the design that are developed using performance-based fire engineering to achieve compliance with the Performance Requirements of the BCA. DTS non-compliances required to be addressed via fire engineering Performance Solutions will be documented in the Fire Engineering Brief and Fire Engineering Report as part of the formal fire strategy approvals process in NSW.

### **7.13 Biodiversity**

As there is no vegetation, threatened flora or fauna on site and as the proposal would not have any impact beyond the site of the works it is concluded that the proposal will not have a significant impact on biodiversity values. Accordingly, DP&E and OEH have formally advised that under section 7.9(2) of the BC Act a BDAR is not required as part of this SSD application (**Appendix 6**).

### **7.14 Construction Management Plan**

A detailed Construction Management Plan (CMP) will be prepared by the appointed contractor once the SSD is determined and prior to the commencement of construction activities. This project will not result in major deliveries given the nature of the proposed works. The CMP will address:

- Public safety
- Noise and vibration
- Traffic and access
- Air quality
- Water quality
- Waste and hazardous materials
- Mitigation measures

Construction works will be serviced via the underground loading dock, reducing their impact on the general public, throughout demolition and construction periods.

A comprehensive CMP will be prepared and will outline how construction will be managed to ensure no significant residual construction impacts are experienced.

## 8 Environmental Risk Assessment

This section provides an environmental risk analysis to identify potential environmental impacts associated with the proposal and proposed mitigation measures, as required by the SEARs.

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
Heritage conservation	Works impact on the heritage values of the Sydney Opera House.	<ul style="list-style-type: none"> <li>All design details are to be carefully coordinated, resolved and detailed as part of the design development and documentation process.</li> </ul>
Built form, urban design and visual impacts	The proposed works will adversely impact on the built form and surrounds of the Opera House and negatively impact on views to the Opera House	<ul style="list-style-type: none"> <li>On-going advice and input from the Opera House's heritage architect and the approval of the DAP and Conservation Council during the design development and documentation process.</li> </ul>
Public safety and access	Disruptions to pedestrian circulation and potential safety impacts from demolition and construction works	<ul style="list-style-type: none"> <li>Public areas affected by the works such will be enclosed by construction hoardings and sealed off from public access.</li> <li>Prior to commencing construction, the successful contractor will be required to prepare a CMP which addresses appropriate access and circulation impacts which ensures safety of public and patrons.</li> <li>Vehicle deliveries and movements will be via the underground loading dock to ensure no impact on public movement and circulation in areas external to the building.</li> </ul>
Traffic and Access	Impacts on network efficiency, surrounding amenity and pedestrian circulation	<ul style="list-style-type: none"> <li>Vehicle movements will be in accordance with the construction hours and where appropriate would be split approximately between day and night works to limit disruption to the local road network</li> <li>All deliveries and removals from site will where possible be via the underground loading dock</li> <li>There will be no standing of construction vehicles along Macquarie Street</li> <li>General public access will still be maintained via the vehicle concourse for the duration of the works</li> <li>A Construction Traffic Management Plan will be prepared by the successful contractor</li> </ul>
Air Quality	Potential dust and odour generation	<ul style="list-style-type: none"> <li>Construction plant and equipment selected will be suitable for an internal construction environment to ensure no</li> </ul>

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
		impact on air quality within the work site, or the Opera House. <ul style="list-style-type: none"> <li>Further, a dust management plan will be prepared by the contractor engaged to undertake the works prior to commencing construction.</li> </ul>
Water Quality	Works impact on the waters of Sydney Harbour	<ul style="list-style-type: none"> <li>A Construction Environmental Management plan will be prepared by the contractor and outline construction techniques to avoid potentially affecting the water quality of the harbour and include, where relevant, mitigation measures such as sediment controls, 'wet-vacuuming' or off-site removal of the item to undertake the works.</li> </ul>
Noise and Vibration	Works impact on the amenity of neighbouring properties	<ul style="list-style-type: none"> <li>Works will be scheduled to minimise impacts on the on-going operations of the Opera House and interface with sensitive noise receivers</li> <li>Construction vehicles will utilise the underground loading dock.</li> <li>Operation noise will be carefully managed by the SOHT in accordance with the findings of the NIA</li> </ul>
Waste and hazardous materials	Volumes and types of waste generated by works generate adverse environmental and/or health impacts	<ul style="list-style-type: none"> <li>Waste will be managed in accordance with relevant NSW legislation and the principles of the waste management hierarchy as set out in the <i>NSW Waste Avoidance and Resource Recovery Strategy 2014-21</i>.</li> <li>Waste will be recycled where possible and a fully detailed Waste Management Plan will be prepared.</li> <li>Any hazardous materials will be managed in accordance with the Waste Management Plan.</li> <li>Removal and disposal of any hazardous materials will comply with all relevant laws, regulations and guidelines.</li> </ul>

Table 19: Environmental Risk Assessment

## 9 Conclusion

This EIS has been prepared to assess the environmental, social and economic impacts of the Lower Concourse proposal at the Sydney Opera House.

This EIS addresses the matters outlined in the SEARs issued by DPI&E on 21 December 2018 and has been prepared in accordance with the requirements of Schedule 2 of the EPAR. It addresses all relevant strategic and statutory documents, policies and instruments, assesses potential environmental impacts and outlines proposed mitigation measures to address these impacts.

This assessment demonstrates that the proposed works can be undertaken without any significant impact on the heritage values of the Sydney Opera House or on the amenity and environment of the locality.

This proposal will consolidate the existing uses of the Lower Concourse into a single consent and will improve the design of the existing glass line of the Lower Concourse and its shade structures. In particular the proposal will provide for:

- improved design and function of the indoor dining facilities in the Lower Concourse
- improved design of the shade structures which will provide for better amenity for patrons and represent an improved architectural design
- consistency and certainty in the development consent
- ease of implementation and compliance for the SOHT

The proposed works will enable the Lower Concourse to continue to function as a World Class venue which provides a high quality experience for patrons.

It is therefore concluded that the proposal is in the public interest and warrants approval for the following key reasons:

- the proposal is supported by a detailed HIS which concludes it will have a positive impact on the World, National and State Heritage values of the Sydney Opera House and will comply with the Sydney Opera House CMP4 and the *Utzon Design Principles*;
- the proposal will not lead to any unacceptable impacts on residential properties in terms of noise or other amenity impacts;
- the proposed works will have no significant impacts in terms of waste management, pedestrian access and safety, traffic and access and air quality; and
- the proposal will also incorporate several ESD measures during construction and operation and will comply with the BCA requirements.