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Sydney Opera House Building Renewal Function Centre and Related Works

Environmental Impact Statement State Significant Development Application SSD 7881



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

October 2016

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List of Abbreviations

BCA	Building Code of Australia
CMP	Conservation Management Plan
DP&E	Department of Planning and Environment
EAP	Eminent Architects Panel
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
JST	Joan Sutherland Theatre
OA	Opera Australia
POM	Plan of Management
SAVE	Safety, Accessibility and Venue Enhancement
SEPP	State Environmental Planning Policy
SLEP	Sydney Local Environmental Plan 2012
SOHT	Sydney Opera House Trust
SSD	State significant development
TAB	The Australian Ballet
TMP	Theatre Machinery Project
WHS	Workplace Health and Safety

Front Cover Image courtesy of Sydney Opera House Trust

Certification of Environmental Impact Statement

Authors

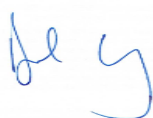
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Proposed development

Applicant	Sydney Opera House Trust
Applicant's address	Bennelong Point, Sydney NSW 2000
Land to be developed	Joan Sutherland Theatre, Sydney Opera House
Legal description	Lot 5 in DP 775888 Lot 4 in DP 787933
Project description	Function Centre and Related Works – Function Centre at the northern end of the eastern side of the building and the conversion of the existing rehearsal room to a new production kitchen supporting the function centre and other foyers and bars. Relocation of the rehearsal room to a space currently occupied by a staff training room on the south eastern side of the building.

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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Executive Summary

This Environmental Impact Statement (EIS) supports a State significant development (SSD) application for the Function Centre and Related Works, Sydney Opera House, under section 89E 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 23 August 2016.

The Site and Locality

The Sydney Opera House is located on the peninsular 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 building is serviced by a recently constructed underground loading dock below the forecourt, accessed via an entry ramp off Macquarie Street adjacent to the cliff face known as the Tarpeian Wall.

Immediately adjoining land uses include 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. 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.

Proposed Development

The Function Centre and Related Works form part of the *Sydney Opera House Building Renewal Program* and involve the adaption and enlargement of the current Function Centre at the northern end of the eastern side of the building (including removal of the existing, highly intrusive marquee on the Northern Broad Walk), conversion of the existing rehearsal room to a new production kitchen supporting the function centre and other foyers and bars, and the relocation of the rehearsal room to a space currently occupied by a staff training/meeting room on the south eastern side of the building.

The principal objective of the proposal is to provide a new premier function centre for commercial and private events offering enhanced food and beverage and entertainment opportunities at the Opera House, and which will assist funding performances at the House in the future via its revenue stream. The conversion of the existing rehearsal room to a new production kitchen is required to ensure appropriate functionality of the new kitchen to support the viable operation of the Function Centre. This will necessitate the relocation of the rehearsal room to an area that will still serve the operational requirements of events and performance, improving operations within the JST.

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 proposed works are part of the Building Renewal Program for the Sydney Opera House, which is aimed at maximising its economic and cultural contribution to NSW, improving the operational efficiency of the building and ensuring compliance with modern building, accessibility and WHS requirements.

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 and State and local environmental planning instruments, including:

- *Environment Protection and Biodiversity Conservation Act 1999* – the Heritage Impact Statement (HIS) recommends that, because the proposed works affect spaces and fabric of exceptional/considerable significance, a referral to the Commonwealth Government under the EPBC Act should be made. On this basis, the Sydney Opera House Trust is currently preparing a referral to the Commonwealth Department of the Environment for a decision on whether the proposed works will need assessment and approval under the EPBC Act.
- *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.
- *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 Act and has been assessed against the matters for consideration under section 79C. 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.
- *State Environmental Planning Policies (SEPPs)*, including:
 - *SEPP (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.
 - *SEPP (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 5.5.3, the proposal generally complies the relevant provisions of the Harbour SREP.
- *Sydney Local Environmental Plan 2012* (Section 5.6) – 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 LEP is contained in Section 5.6.

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 HIS which concludes that the proposed works will have negligible impact on the Outstanding Universal Values that enshrine Sydney Opera House on the World Heritage List. Further, proposed alterations within the Podium to accommodate the Function Centre will facilitate the removal of the present marquee on the Northern Broad Walk which will have a substantial and positive impact on these values.

The HIS also finds that while the relocation of the original rehearsal room from beneath the JST will potentially have a negative impact on the function of the Opera House, as this is a temporary

relocation until a more suitable location is found, this temporary negative impact is considered high but acceptable.

Built form, urban design and visual impacts

The proposed works are largely internal and do not result in any built form, design or visual impacts. External works include new doors on the northern façade, enlarged entry on the western façade and provision for temporary bollards and umbrellas within the adjacent Northern Broad Walk. These are relatively minor external elements which do not add to the bulk or scale of the building and which have been designed to be compatible with the materiality and design of the building. Further, the HIS concludes that these works will have an acceptable impact on the heritage values of the building.

Access and circulation

The EIS is supported by detailed access reports which conclude that the proposed works provide accessible access as nominated in the National Construction Code Performance Requirements. The reports generally demonstrate compliance with the statutory requirements of the Disability (Access to Premises – Buildings) Standard and provide a checklist of compliance for the project architects in the on-going detailed design process. The reports further conclude that if the works are constructed in accordance with this process, accessibility compliance will be achieved.

Construction management

Section 6.5 outlines how the following issues will be managed during construction activity:

- Noise and vibration
- Traffic and access
- Air quality
- Water quality
- Waste and hazardous materials

Construction works will largely occur within the Sydney Opera House and generally serviced via the underground loading dock, reducing their impact on the general public, throughout their construction. A comprehensive Construction Management Plan (CMP) has been prepared outlining how construction will be managed demonstrating 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 matters

Section 6.6 outlines how the operations of the Function Centre will be managed. A Plan of Management has also been prepared in relation to the operation of this area. The NIA identifies a potential residual exceedance of relevant noise management levels at the Kirribilli receivers for external functions with outdoor music and 500 patrons on the Northern Broad Walk and makes a number of recommendations to minimise potential for noise nuisance. These recommendations will be implemented during the operation of the proposal.

Building Code of Australia

The EIS is supported by a BCA Capability Statement which concludes that 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. An Overarching Fire Strategy has also been prepared to provide a guiding approach to fire safety and which concludes that the building's level of fire safety won't be diminished through the various renewals projects and further enhancement to safety can be achieved.

Ecologically sustainable development

The EIS is supported by a Sustainable Design Report which outlines the multiple sustainability principles to be implemented through the proposed works.

The assessment in Section 6 is summarised in an Environmental Risk Assessment and overview of key mitigation measures in Section 7.

Conclusion

This EIS has been prepared in accordance with the SEARs issued by the Department of Planning and Environment (DP&E) on 30 August 2016 and complies with all relevant statutory requirements.

The EIS assesses all potential environmental impacts associated with the proposed Function Centre and Related Works and demonstrates that the proposal is in the public interest as it will provide a new premier function centre for commercial and private events offering enhanced food and beverage and entertainment opportunities at the Opera House and assist in the funding of performances at the House in the future via its revenue stream.

The conversion of the existing rehearsal room to a new production kitchen is required to ensure appropriate functionality of the new kitchen to support the viable operation of the Function Centre. This will necessitate the relocation of the rehearsal room to an area that will still serve the operational requirements of events and performances.

Further, this EIS demonstrates that the works can be undertaken without adversely impacting on the heritage significance of the building or 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 Function Centre and Related Works, Sydney Opera House, under section 89E of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The proposed works form part of the *Sydney Opera House Building Renewal Program* and involve the construction of a Function Centre for commercial and private venue hire in the Joan Sutherland Theatre (JST), and the conversion and refurbishment of the Ballet Rehearsal Room.

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 a listed 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 30 August (Appendix 2). This EIS should be read in conjunction with the supporting information and plans appended to this report.

It is noted that certain other works being undertaken as part of the Function Centre and Related Works, including the development of a temporary kitchen in the existing Ballet Rehearsal Room, will be carried out as *exempt development* in accordance with the provisions of *State Environmental Planning Policy (State Significant Precincts) 2005* (SSP SEPP) and, therefore, do not form part of this EIS.

This EIS provides a comprehensive environmental assessment of the proposed upgrade 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
	Executive summary	Concise summary of this report and its findings
1	Introduction	Overview of the EIS and the proposed development
2	Site Analysis	Description of the site and surrounding development
3	Proposed development	Description of the project and consultation undertaken with key stakeholders
4	Strategic Justification	Need for the proposal and strategic framework
5	Statutory Planning Framework	Identifies the key legislation that this EIS must address and the criteria the project must comply with.
6	Environmental Planning Assessment	Identifies key activities and assesses the potential impact on the environment.
7	Environmental Risk Assessment	Identifies and assesses the potential environmental risks associated with the project and mitigation/management measures to manage any impacts..
8	Conclusion	Concise statement of key findings.

Table 1: EIS Structure

1.1 Project Objectives

The Sydney Opera House Trust (SOHT) has developed a Building Renewal Program to guide the transformation of the building over the next decade. This program includes a range of works aimed at maximising the Opera House's economic and cultural contribution to NSW and Australia as the nation's premier tourist destination and one of the world's pre-eminent performing arts centres.

It is also aimed at improving the operational efficiency of the building and ensuring compliance with modern building, accessibility and work health and safety (WH&S) requirements. The Renewal Program works will support the evolution of the Sydney Opera House as a key element of the overall renewal process in preparation for the building's 50th birthday in 2023.

The *JST Combined Projects* are a key component of the Building Renewal Program comprising of the following works packages and development applications (DAs) (Figures 1 and 2):

Works Package/DA	Description	Status
JST Theatre Machinery Project	<ul style="list-style-type: none"> Upgrade of the JST theatre machinery and associated infrastructure in the JST which has reached the end of its operational life and needs to be replaced. 	<ul style="list-style-type: none"> DA/EIS lodged 8 June 2016 DA/EIS publicly exhibited between 21 July to 19 August 2016 Response to Submissions lodged 5 September 2016
SAVE and Entry Foyer Refurbishment	<ul style="list-style-type: none"> A range of accessibility and operational upgrade works for the JST. Accommodation works and refurbishment of the Entry Foyer. 	<ul style="list-style-type: none"> Amended SEARs (SSD 7665) issued 23 August 2016 DA/EIS lodged 8 September 2016 DA/EIS on public exhibition 15 September to 31 October 2016
Function Centre and Related Works	<ul style="list-style-type: none"> <i>Works described in this EIS</i> 	<ul style="list-style-type: none"> SEARs request lodged 5 August 2016. Amended SEARs (SSD 7881) issued 30 August 2016
Under the Steps, Creative Learning Centre and Southern Foyers	<ul style="list-style-type: none"> Redefinition of the Under the Steps area as a primarily pedestrian. Demolition of internal walls and re-use of existing offices and staff meeting rooms to be used as a Creative Learning Centre space. Upgrade works to the Southern Foyers. 	<ul style="list-style-type: none"> SEARs request lodged 8 September 2016

Table 2: JST Combined Projects

The principal objective of the Function Centre and Rehearsal Room works is to provide a Function Centre offering a premier function centre with enhanced business opportunities, and to convert the existing rehearsal room to a new production kitchen supporting the Function Centre and other foyers and bars, improving operations within the JST.

The relocation and refurbishment of a new rehearsal room will facilitate this conversion.

The proposal therefore comprises essential works to ensure that the Sydney Opera House continues to provide world-class facilities for celebratory events, as well as a revenue stream to assist funding other activities, and which meet which meet operational, accessibility and WHS standards.

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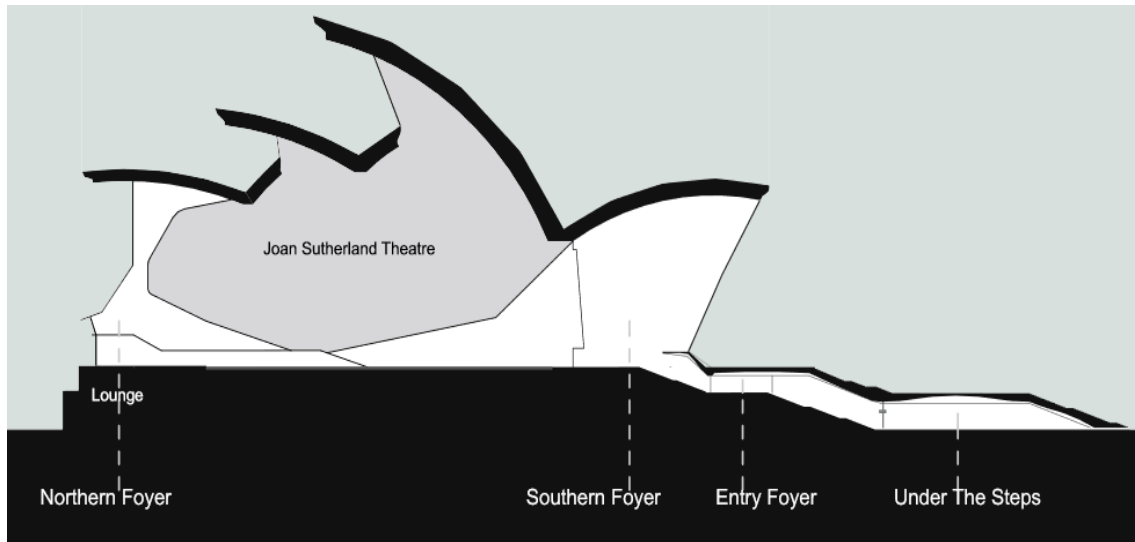


Figure 1. Sydney Opera House (Source: Sydney Opera House Trust/ TZG Architects)

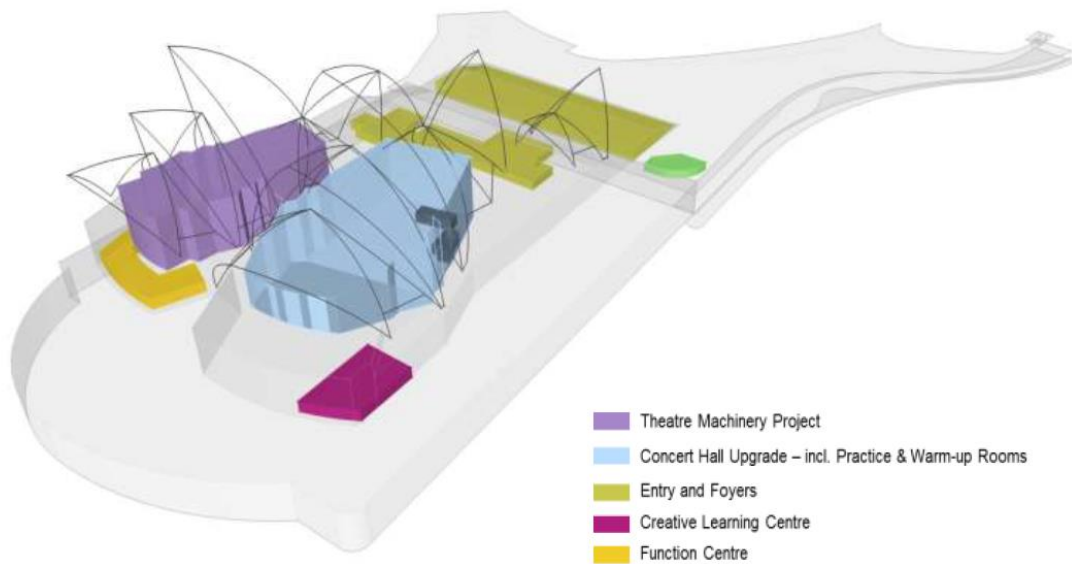


Figure 2. Sydney Opera House Building Renewal Program (Source: Sydney Opera House Trust)

1.2 Project Overview

An overview of the project is provided in Table 3:

Address	Bennelong Point, Sydney
Legal Description	Lot 5 in DP 775888; Lot 4 in DP 787933
LGA	City of Sydney
Zoning	B8 Metropolitan Centre
Permissibility	Permissible with consent
Project	Function Centre and Related Works
Capital Investment Value	\$16,770,534
Employment (estimate)	65 to 85 jobs

Table 3: Project Overview

1.3 SEARs

The Department of Planning and Environment (DP&E) issued SEARs (SSD 7665) for the *JST Accessibility and Additional Works and Front of House Works* on 10 June 2016.

Following the issue of these SEARs, the SOHT revised the scope and staging of works subject to the SEARs for SSD 7665 as follows:

- removal of certain elements from the proposed works which, following further consideration, had been determined to be exempt development, in accordance with *State Environmental Planning Policy (State Significant Precincts) 2005*;
- excising the proposed Function Centre works and progressing these through a separate DA; and
- excising the proposed Under the Steps works and progressing as part of a further, separate DA.

The description of the proposal was also amended to reflect these changes, with the Accessibility and Additional Works now known as the *Safety, Accessibility and Venue Enhancement (SAVE) and Entry Foyer* works.

On 30 August 2016, DP&E issued revised SEARs (SSD 7881) for the Function Centre and Rehearsal Room Works (Appendix 2).

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

Environmental Assessment Requirement	EIS Reference	Supporting Study
General Requirements		
Address the requirements of the EP&A Act 1979 and clauses 6 and 7 of Schedule 2 of the EP&A Regulation 2000	Pg. 6 'Certification of Environmental Impact Statement' Executive Summary	N/A
Environmental risk assessment	Section 7	N/A
Quantity surveyor report on capital investment value and jobs estimate	Section 1.2	Appendix 1 – <i>Quantity Surveyor's Certificate of Cost</i> , Altus Group Cost Management Pty Ltd
Key Issues		
Environmental Planning Instruments, policies and guidelines	Section 4.3, 5.5 and 5.6	N/A
Heritage	Section 6.2	Appendix 3 – <i>Heritage Impact Assessment</i> , Design 5 Architects
Built Form, Urban Design and Visual Impacts	Section 6.3	Appendix 11 – Architectural Drawings, Tonkin Zulaikha Greer
Access	Section 6.4	Appendix 4 – <i>Access Reports</i> , iAccess Consultants
Construction impacts	Section 6.5	Appendix 5 – <i>Construction Management Plan</i> , Sydney Opera House Trust Appendix 6 – <i>Noise Impact Assessment</i> – Arup Appendix 7 – <i>Building Code of Australia Capability Statement</i> , Group DLA
Noise	Section 6.5.2	Appendix 6 – <i>Noise Impact Assessment</i> , Arup
Waste Management	Section 6.5.6	See CMP
Use of Function Centre	Section 6.5.8	
Ecologically Sustainable Development (ESD)	Section 6.7	Appendix 9 – <i>Sustainable Design Report</i> , Cundall
Consultation	Section 3.2	N/A
Plans and Documents		
Plans and documents - Site survey, Locality/context plan and Architectural drawings	Section 2	N/A

Table 4: Secretary's Environmental Assessment Requirements

1.4 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 5:

Environmental Planning and Assessment Regulations 2000 (extract)	Area addressed in EIS
(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 6.7
(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>	N/A
(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>	

Table 5: Requirements of the Environmental Planning and Assessment Regulation 2000

1.5 Project Team

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

Consultant	Role
Keylan Consulting Pty Ltd	Urban Planning
Tonkin Zulaikha Greer	Architecture
Design 5 Architects	Heritage Impact Assessment
Group DLA	Building Code of Australia Assessment
iAccess	Accessibility Assessment
Arup	Noise Impact Assessment Fire Safety
Cundall	Ecologically Sustainable Development Assessment
Altus Page Kirkland	Quantity Surveyor

Table 6: Project Team

2 Site analysis

2.1 Site location and context

The Sydney Opera House is located on the peninsular on the eastern side of Circular Quay known as Bennelong Point, as shown in Figure 3. The site is legally described as Lot 5 in DP 775888 and Lot 4 in DP 787933.



Figure 3. Location Map (Source: SixMaps)

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

- The Concert Hall on the western side of Bennelong Point;
- The Opera Theatre (Joan Sutherland Theatre) on the eastern side; and
- The Bennelong Restaurant, to the south of the two venues.

To the south of the above three structures are the main podium steps and the southern forecourt. The Opera House precinct adjoins the Royal Botanic Gardens to the east and East Circular Quay to the south.

The Opera House building is serviced by a recently constructed 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 is listed on the NSW State Heritage Register and the National and World Heritage Lists (Section 5). It is the Nation's premier tourist attraction, hosting more than 8 million visitors each year, with more than 1.4 million attending about 1,900 performances and more than 350,000 people taking a guided tour of the building.

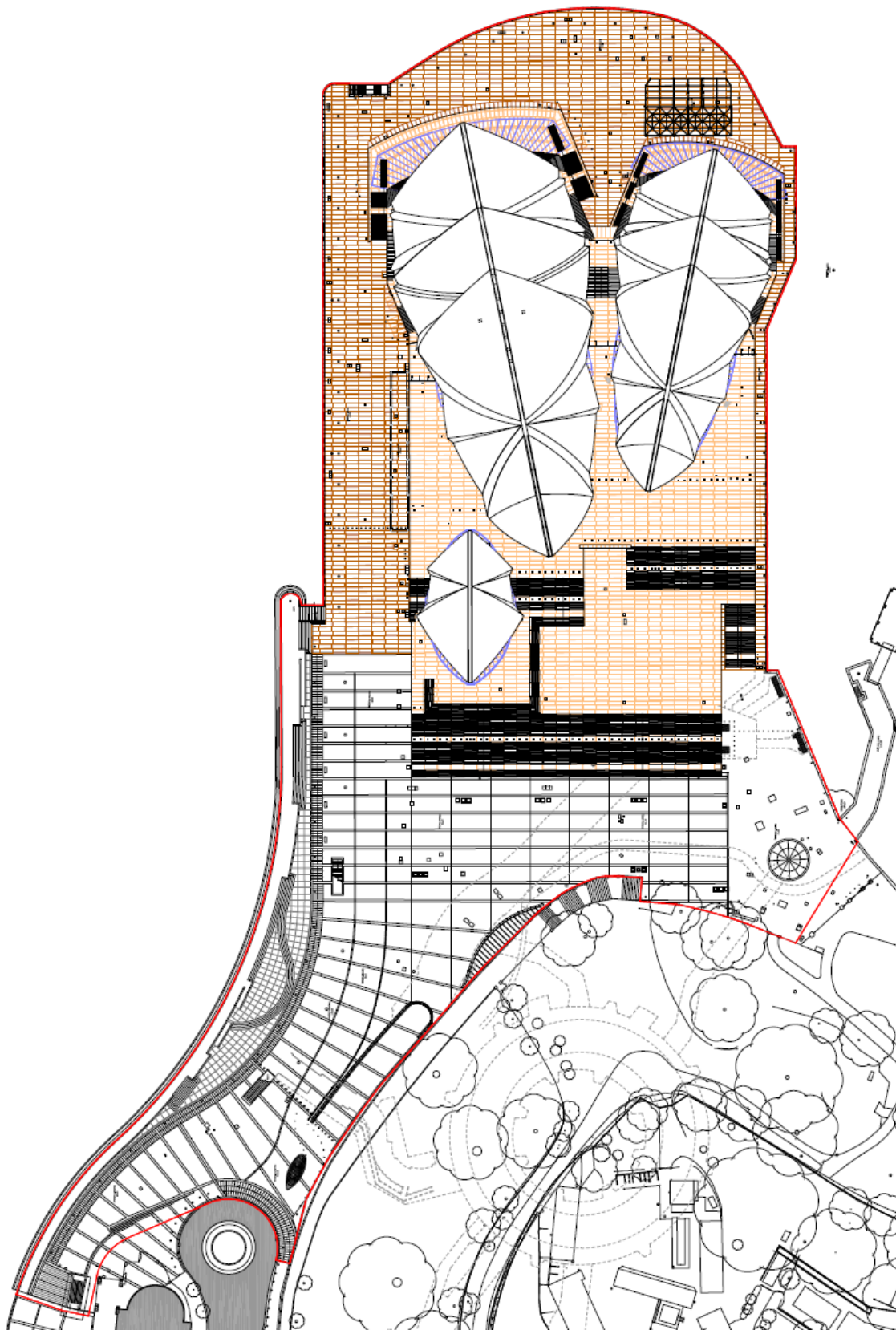


Figure 4. Sydney Opera House Site Plan (source: Sydney Opera House Trust)

2.2 Project area description

The project area is located in the following areas of the Sydney Opera House:

- Function Centre Area – located on the northern end of the eastern side of the site (Figure 5); and
- Proposed Ballet Rehearsal Room – located adjacent to Central Passage on the western side of the building (Figure 6).

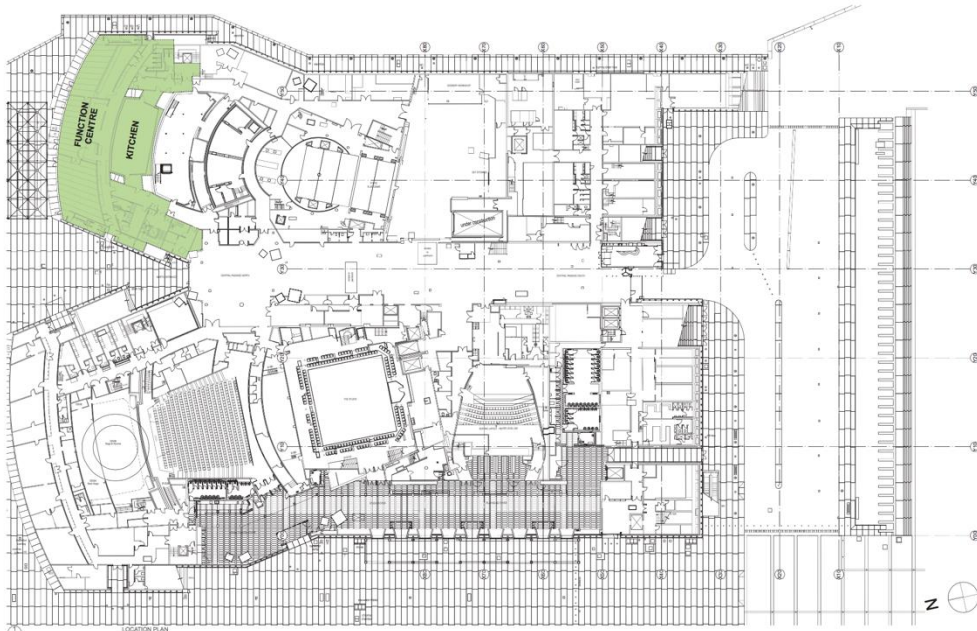


Figure 5. Project Area – Function Centre and existing Ballet Rehearsal Room (Source: TZG)

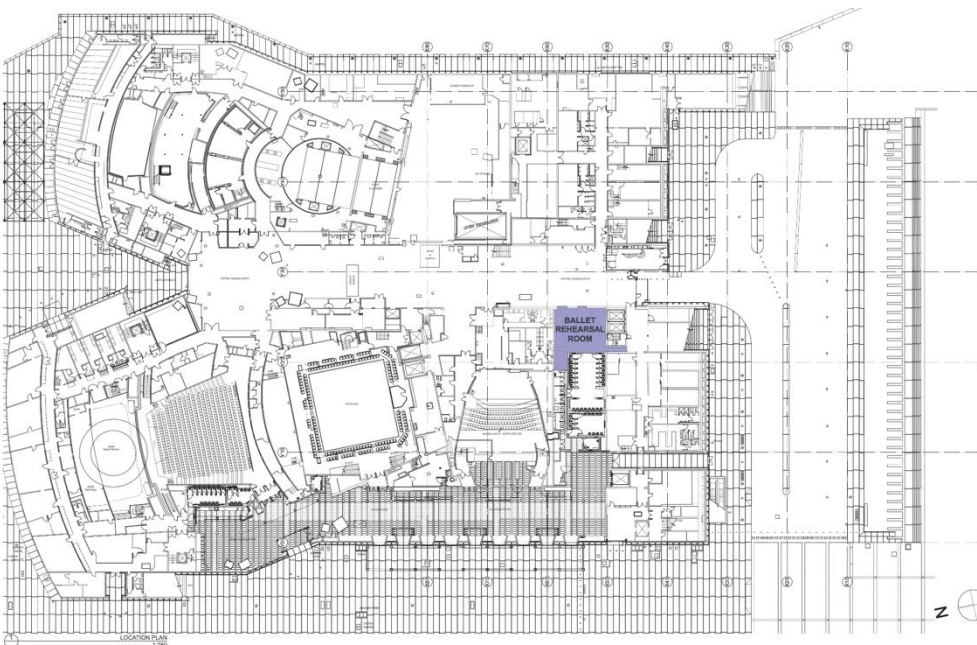


Figure 6. Project Area – Proposed Ballet Rehearsal Room location (Source: TZG)

Site photos of the project area are shown at Figures 7 to 10.



Figure 7. Northern facades showing area for Function Centre and existing marquee (Source: KEYLAN)



Figure 8. Existing marquee on Northern Broad Walk to be removed (Source: KEYLAN)



Figure 9. Existing western access and hood to be altered (Source: KEYLAN)

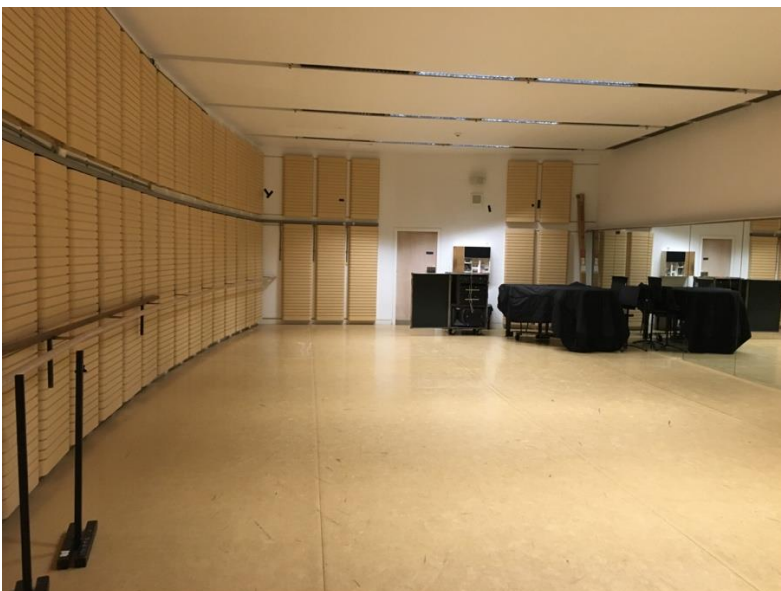


Figure 10. Existing Rehearsal Room to be replaced (Source: KEYLAN)

2.3 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 drink 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.

3 Proposed Development

3.1 Project Description

The works subject to this EIS are described in Table 7 and shown in Figures 11 to 17. Architectural drawings of the proposed works are included at Appendices 3 and 4.

Function Centre and Related Works	
Function Centre (Figures 11 – 15)	<p>Function Centre</p> <ul style="list-style-type: none"> Adapt and enlarge the space presently occupied by the Northern Function Room facility to house a fully internal function space to seat approx. 200 people, with full kitchen and associated facilities. Creation of new openings within the main interconnecting walls to provide a larger space that is capable of being operated as one space or 3 separate rooms as follows: <ul style="list-style-type: none"> Private Dining and Weddings- maximum seated capacity 230 Conferencing (e.g. talks/presentations/seminars)- maximum seated capacity 285 Cocktail Receptions- maximum capacity 500 Requires new interior finishes and services. Renew offices, kitchen and stores. Conversion of the existing ballet rehearsal room to a new production kitchen supporting the function centre and other foyers and bars The curved glass wall facing the Northern Broad Walk will be retained with two new pairs of bronze framed glazed doors added. Enlargement to existing western entry and hoods to match existing <p>External areas on Northern</p> <ul style="list-style-type: none"> Remove the existing marquee at the Northern Broad Walk. An area directly in front of the Function Centre will be demarcated on the Northern Broad Walk to be used in conjunction with events in the Function Centre. Removable bollards are proposed to be used to delineate the area and removable umbrellas provided for shade. The existing precast concrete paving panels will have bronze ferrules set into them for the placement of the removable bollards and umbrellas. The external area is not proposed to be hired separately from the Function Centre. In the event that amplified or live music on the northern Broad Walk (next to the Function Centre) this will be managed internally so as not to impact on events in the JST and other areas. Noise will be managed as per the proposed mitigation measures suggested by Arup Acoustic.
New Temporary Ballet Rehearsal Room (Figures 16 – 17)	<ul style="list-style-type: none"> As the Function Centre requires the existing Ballet Rehearsal Room space to be used as a kitchen, the rehearsal room is proposed to be temporarily relocated to a space on the western side of Central Passage, close to Stage Door. This space is presently occupied by two levels of meeting and training rooms.

Table 7: Function Centre and Related Works

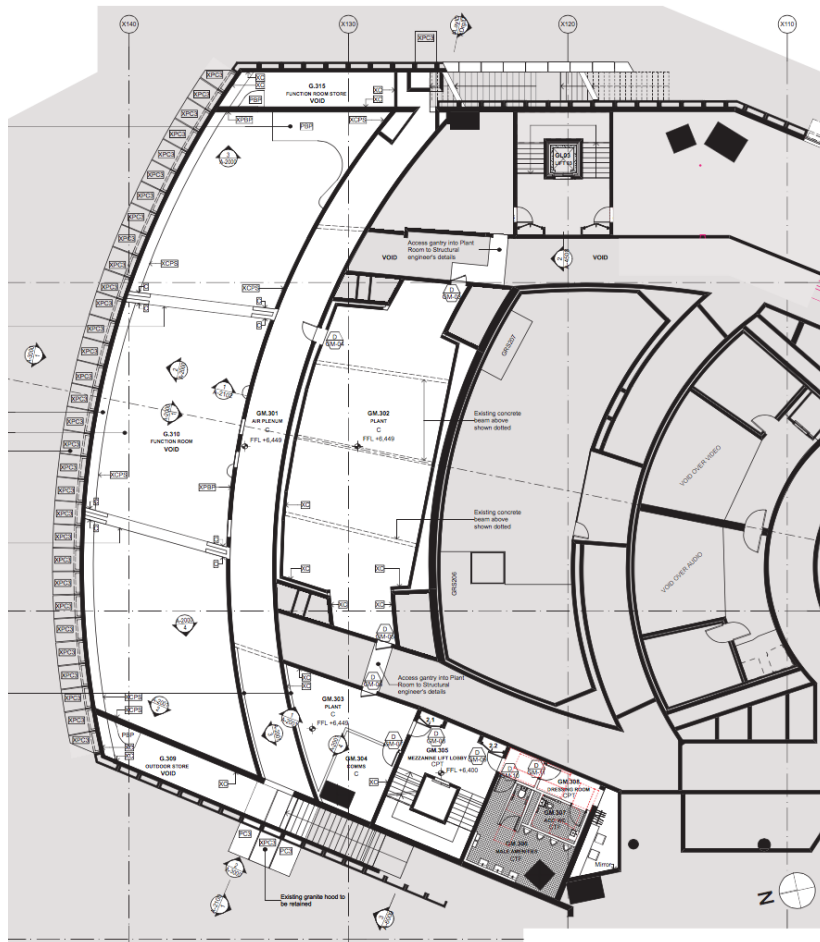


Figure 11. Proposed Function Centre (Source: TZG)

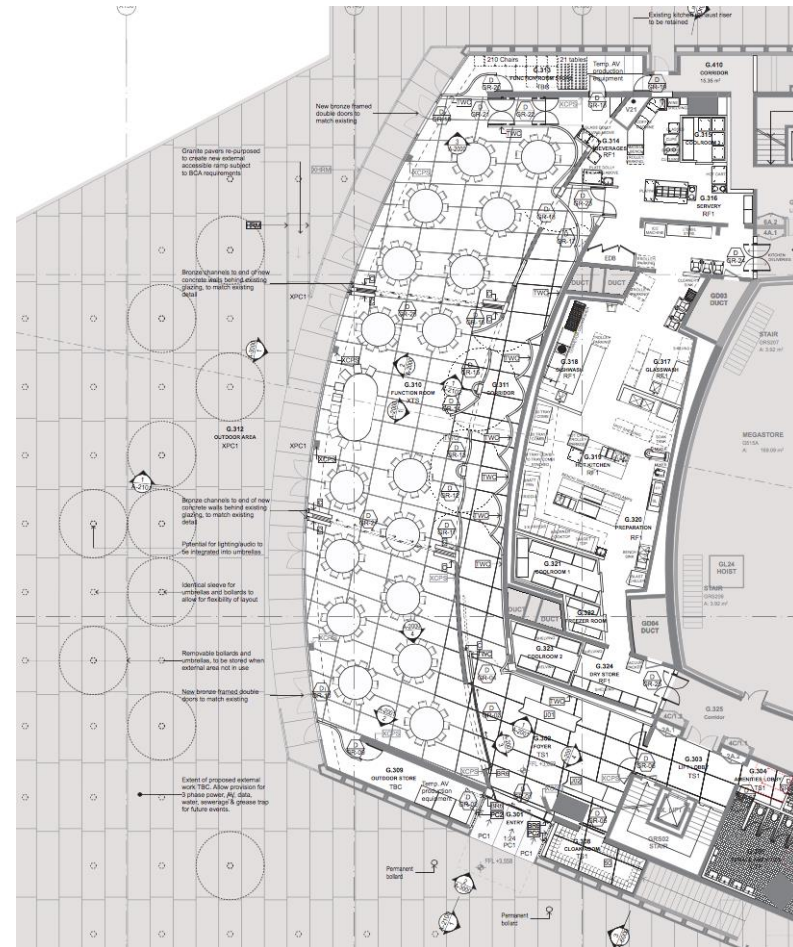


Figure 12. Proposed use of the adjoining outdoor area (Source: TZG)

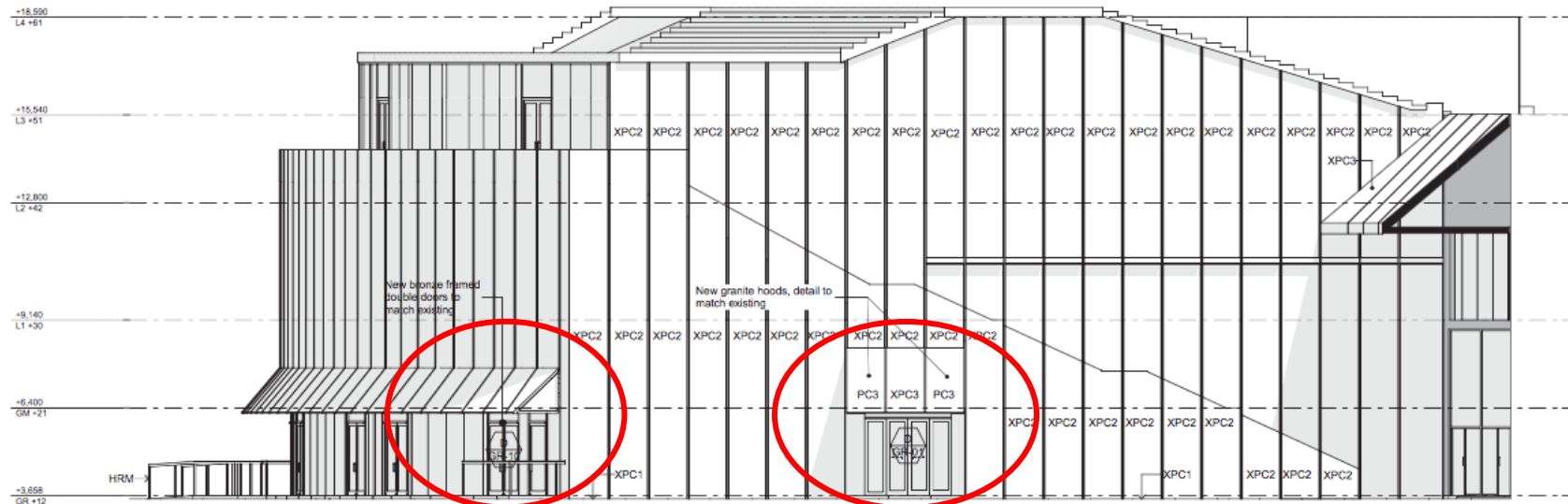


Figure 13. Proposed western elevation with new bronze framed doors and granite hoods to match existing details in RED (Source: TZG)

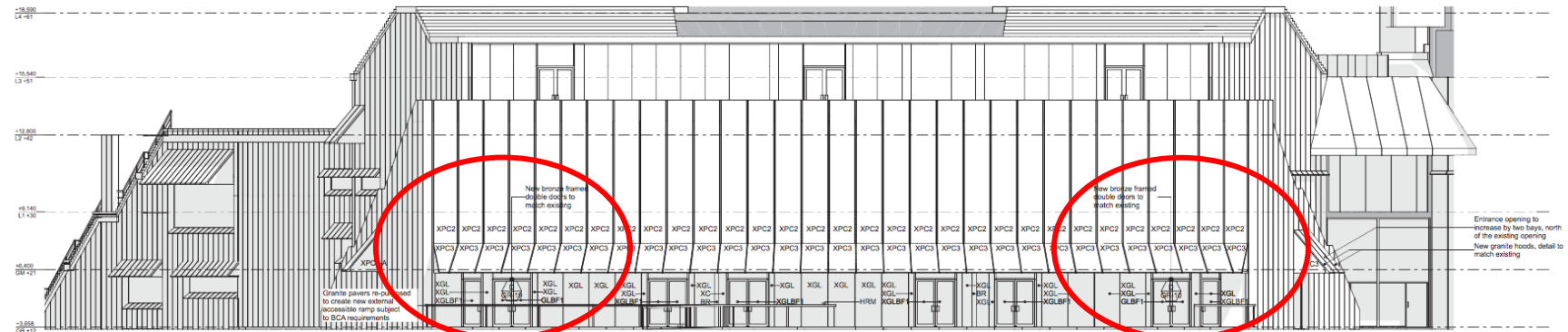


Figure 14. Proposed northern elevation with new bronze framed doors to match existing details in RED (Source: TZG)

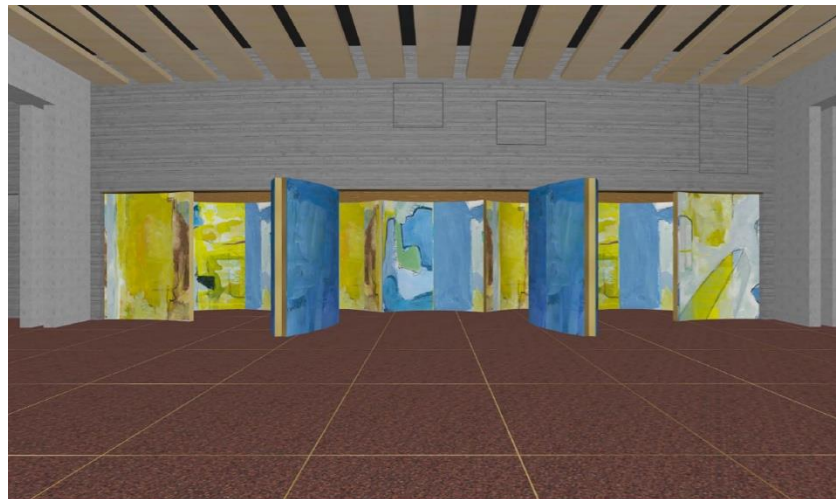
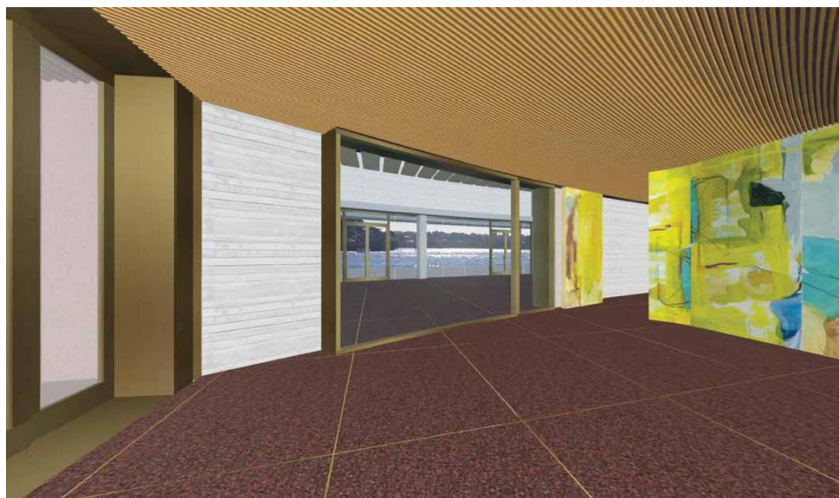


Figure 15. Perspectives of proposed Function Centre (Source: TZG)



Figure 16. Proposed new temporary Ballet Rehearsal Room Ground Floor Plan (Source: TZG)



Figure 17. Perspective of proposed new temporary Ballet Rehearsal Room (Source: TZG)

3.1.1 Construction program

The proposed Function Centre and Rehearsal Room works are scheduled to occur during the closure of the JST for the TMP works, estimated to be from May to December 2017.

To achieve the works within planned closure periods for the theatre and to mitigate disruption to the ongoing operations of the Opera House the works will be undertaken 24 hours a day and 7 days a week to align with on-going Opera House operations:

- 18:00-23:30 – planning and quiet activities which are compatible with live performances occurring in other venues within the site
- 23:30-10:30 – works which would otherwise be disruptive to SOH operations
- 10:30-18:00 – no major noise but general construction, allowing daily SOH operations (i.e. matinees)

The carrying out of works outside of standard construction hours is consistent with previous approvals granted for works on the site and is crucial to the delivery of the project within the closure timeframe. The delivery and collection of building materials and equipment will be managed so as not to unreasonably impact on the amenity of the patrons of Sydney Opera House and the surrounding neighbours.

3.2 Consultation

The SOHT has undertaken extensive consultation on the Building Renewal Program, including the proposed Function Centre and Related Works as summarised in Table 8:

Stakeholder	Consultation Summary
Opera Australia and The Australian Ballet	<ul style="list-style-type: none"> • The Opera House's Renewal program governance structure was established in late 2015, which includes: <ul style="list-style-type: none"> - Monthly senior management meetings with the resident companies - Quarterly meetings with the CEO of the Opera House and resident company CEOs – two of these meetings have been held to-date. • The relocated rehearsal room has been a standing agenda item on the monthly meetings, and a site tour of the proposed new location and workshop on layout was held in April 2016.
Eminent Architects Panel	<ul style="list-style-type: none"> • The EAP provides advice to the Sydney Opera House Trust and management on issues of architecture or design, and in relation to the management and conservation of the building. Four to five formal meetings are held each year. The EAP has been briefed regularly on the Function Centre and Rehearsal Room, and was involved in the design process. • Current members of the EAP include: <ul style="list-style-type: none"> - Mr Peter Poulet, Chair (NSW Government Architect); Mr Jan Utzon; Mr Peter Mould; Mr Ken Maher; and Ms Abbie Galvin.
Conservation Council	<ul style="list-style-type: none"> • The Conservation Council provides advice to the Sydney Opera House Trust and management team on conservation and heritage matters. Four to five formal Conservation Council meetings are held each year. It is chaired by an Opera House Trustee, and comprises representatives from key external organisations, heritage and architectural specialists, and a number of management representatives. The Conservation Council has been regularly briefed on the Function Centre and Rehearsal Room, and involved in the design process. • Members of the Conservation Council include: <ul style="list-style-type: none"> - The Hon Helen Coonan, Chair of Committee and Opera House Trustee - Mr Rajeev Maini, Acting Manager, Conservation, Heritage Division, OEH - Ms Tanya Koeneman, Aboriginal Heritage Officer, OEH - Ms Sheridan Burke, Conservation Heritage Specialist - Mr Peter Mould, Architectural Specialist

Stakeholder	Consultation Summary
	<ul style="list-style-type: none"> - Mr Peter Poulet, Government Architect - Ms Elizabeth Kinkade, DP&E
Commonwealth Department of the Environment	<ul style="list-style-type: none"> • The SOHT has been liaising with the Department of the Environment on the Building Renewal Program, including a formal briefing and extensive tour of the JST on 21 June 2016.
NSW Heritage Council	<ul style="list-style-type: none"> • On 30 May 2016, the Heritage Council was briefed on the Building Renewal Program and undertook an extensive site tour. A briefing on the Building Renewal DAs, including the Function Centre and Related Works, was provided to the Office of Environment and Heritage on 16 September 2016. The SOHT will continue engagement with the Heritage Council and the Office for Environment and Heritage regarding relevant approvals under the Heritage act 1977 for the proposed Building Renewal works.
City of Sydney Council	<ul style="list-style-type: none"> • The Opera House provided a high-level briefing to senior officers of the City of Sydney on Stage 1 Renewal projects on 8 February and 5 August 2016. A more detailed briefing on Stage 1 Renewal projects, including the proposed Function Centre and Related Works, was provided to City of Sydney planning and heritage representatives on 15 July 2016.
The National Trust	<ul style="list-style-type: none"> • The Opera House provided members of the National Trust with a formal briefing on the Building Renewal program, including the function centre and rehearsal room, and an extensive site tour on 18 August 2016.
Metropolitan Local Aboriginal Land Council	<ul style="list-style-type: none"> • The SOHT is in the process of scheduling a meeting with the MLALC in relation to Stage 1 Renewal projects.
Neighbours	<ul style="list-style-type: none"> • The Opera House provided a briefing on the Renewal Building Program to residents of the Bennelong Apartments.
Other key stakeholders	<p>The SOHT has also provided briefings on the Building Renewal Program to the following key stakeholders:</p> <ul style="list-style-type: none"> • Department of Premier and Cabinet • The Treasury • Infrastructure NSW • Arts NSW • Royal Botanic Gardens Sydney • Sydney Harbour Foreshore Authority • Circular Quay Precinct Steering Committee • Government Property NSW • Art Gallery of NSW • State Library of NSW • Artspace • The Museum of Contemporary Art • Committee for Sydney Opera House Tourism and Transport Forum
Resident companies and onsite commercial operators	<ul style="list-style-type: none"> • The Opera House provided a briefing on the Renewal Building Program to resident companies and onsite commercial operators on 12 August 2016.
Opera House donors and corporate sponsors	<ul style="list-style-type: none"> • The Opera House provided a briefing on the Renewal Building Program to donors and corporate sponsors on 12 August 2016. A further briefing is scheduled for September.
Business Events Sydney	<ul style="list-style-type: none"> • A renewal briefing is scheduled with senior representatives of Business Events Sydney, with a particular focus on the function centre, on 24 August 2016.
Further consultation	<p>In addition to the above, the SOHT will continue stakeholder and public consultation in relation to the Building Renewal Program over the next few months. This will include the following key stakeholder groups:</p> <ul style="list-style-type: none"> • Architectural and heritage community; performing arts community; and the general public

Table 8: Stakeholder Consultation (Source: Sydney Opera House Trust)

4 Strategic Justification

4.1 Need for the proposal

As outlined in Section 1.1, the proposed works are part of the Building Renewal Program for the Opera House, which is aimed at maximising its economic and cultural contribution to NSW, improving the operational efficiency of the building and ensuring compliance with modern building, accessibility and WHS requirements.

The proposed works primarily relate to building upgrades which will see the adaptation and enlargement of the space presently occupied by the Northern Function Room facility to house a fully internal function space to seat approximately 230 people, with full kitchen and associated facilities. The proposal includes the removal of the Marquee, which is considered a positive improvement.

The upgrades will also include a conversion of the existing rehearsal room to a new production kitchen supporting the function centre and other foyers and bars, and the temporary relocation of the rehearsal room to a space currently occupied by a staff training room on the south eastern side of the building.

The proposal therefore comprises essential works needed to ensure that the Sydney Opera House continues to provide world-class facilities for celebratory events, as well as a revenue stream to assist funding other activities, and which meet which meet operational, accessibility and WHS standards.

4.2 Proposal alternatives

4.2.1 Function Centre

The proposed development entails works that are essential to the Sydney Opera House complying with modern building, accessibility and WHS requirements as well as its on-going function as a world class performance venue with modern patron facilities.

The alternative to the proposed development is to not proceed with the works and retain the building's current Northern Function Room facility. The current facility is presently operated for catered functions and events and requires the use of an external marquee to accommodate the required seating. As outlined in the HIS prepared by Design 5 Architects (Appendix 3), the external marquee has been assessed as intrusive in the setting and external spaces of the Opera House and should be removed.

The present administration area to the north of the Western Foyers and Drama Theatre was considered, however the available space between the rear of the Drama Theatre stage and the exterior of the Podium is less than what is possible with the location proposed.

As also outlined in the HIS, it is apparent that there are no alternative locations for a function room facility on the site, and within the Podium that can accommodate 200+ seated guests and have direct access to the Broad Walks. With all of the projects included in this DA, there was a rigorous process of review amongst key stakeholder groups, specialist consultants, the Opera House's heritage architect, the Eminent Architects Panel and Conservation Council at both schematic and concept design stages. The proposed works are the result of this rigorous review process.

4.2.2 Rehearsal Room

As outlined in the HIS, the following options were considered as potential alternative locations for the Ballet Rehearsal Room:

1. *The adjacent central 'megastore' for theatre equipment, consolidated and moved to its present location in 2012. This store has been fitted with a mezzanine floor and lift and requires a large single space. It was originally designed and fitted out as an orchestra / chorus rehearsal room for the Opera Theatre (now JST) and its original timber 'wobbly' panel fitout removed to storage when it was altered for the megastore.*
2. *The present office / meeting room spaces immediately east of the Western Foyer toilet facilities, south east of the Playhouse, on the west side of Central Passage in close proximity to Stage Door. These spaces presently occupy a double height volume behind the Concert Hall and loading dock lifts and have been revised and fitted out since 1973.*

Option 1 would require relocation of the equipment megastore, possibly to the second location proposed for the rehearsal room – west of Central Passage. This option was not favoured as it did not provide the preferred functionality for either the megastore or the rehearsal room.

The space in the former orchestra / chorus rehearsal room (megastore) is longer and narrower than the existing rehearsal room, whereas the space available in Option 2 is wider and more regular. Its main functional disadvantage is its more remote location from dressing rooms and other facilities, requiring performers to cross Central Passage.

An important principle underpinning Jørn Utzon's original design was that all the processes for preparing a performance were contained within the Podium, beneath the auditorium they were to be presented in. There were originally four rehearsal rooms beneath the JST, and with this proposed relocation, none will remain.

While neither option was considered ideal, the SOHT preferred Option 2 on the basis that it could be a temporary location, until a better option presents itself or the full Opera Theatre Renewal project is undertaken and all associated backstage facilities are revised.

4.3 Strategic Planning Documents

4.3.1 NSW Making it Happen

NSW Making it Happen sets out the NSW Premier's priorities to grow the economy, deliver infrastructure, and improve health, education and other services across NSW. It includes the State Priority of Increasing Cultural Participation and the specific target of increasing attendance at cultural venues and events in NSW by 15% in 2019. It notes that increasing attendance at cultural venues will have flow-on benefits for job creation, the visitor economy and education.

The proposed development is consistent with this State Priority as it will contribute to the enhancement and modernisation of facilities, including use of areas as a Function Centre and areas for Ballet Rehearsal, as well as improved accessibility opportunities at the Sydney Opera House.

4.3.2 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 proposed works are consistent with this action of creating an arts precinct in the Sydney CBD as they will reinforce the capacity of the Sydney Opera House to continue to provide world class theatre facilities and spaces for celebratory events.

4.3.3 A Plan for Growing Sydney

A Plan for Growing Sydney sets out the NSW Government's vision for Sydney to be "a strong global city, a great place to live" and includes a number of supporting directions and actions. Relevant directions and actions include:

Direction 1.1: Grow a more internationally competitive Sydney CBD

Action 1.1.3: Diversify the CBD by enhancing the cultural ribbon which connects new and revitalised precincts including Barangaroo, Darling Harbour, Walsh Bay and the Bays Precinct.

This action references the creation of an arts precinct in the Sydney CBD and notes that the Opera House forms part of a broader cultural ribbon, which covers a collection of iconic buildings and attractions extending from the Australian Museum in the east, along the inner harbour foreshore, to Darling Harbour in the west.

Direction 3.4: Promote Sydney's heritage, arts and culture

Action 3.4.1 Continue to grow global Sydney's CBD as an international arts and cultural destination.

This action notes that the Government will support Sydney's world-class cultural institutions and venues by developing links between venues, adding vibrancy to arts and cultural life in Sydney's CBD.

4.3.4 Draft Sydney City Sub-Regional Strategy

The *Draft Sydney City Sub-Regional Strategy* provides a broad framework for long term development in Sydney and key directions including improving the quality of the built environment and enhancing the sub-region's prominence as a diverse global cultural centre.

The proposed works are part of the Building Renewal Program for the Opera House, which is aimed at maximising its economic and cultural contribution to NSW, improving the operational efficiency of the building and ensuring compliance with modern building, accessibility and WHS requirements.

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

4.3.5 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 proposed Function Centre and Related Works will promote the overall aims of the document as they will provide a new, highly accessible function space that will not result in any adverse impacts on pedestrian access to or circulation around the external areas of the Sydney Opera House.

4.3.6 Sustainable Sydney 2030 Community Strategic Plan 2014

Sustainable Sydney 2030 is the strategic plan for the City of Sydney Local Government Area 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, including the provision of contemporary, world class theatres at the Opera House, as well as improved accessibility opportunities 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; and
- will be part of global cultural networks and an active participant in global knowledge exchange.

4.4 Sydney Opera House Plans and Policies

4.4.1 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; and*
- *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 3rd Edition*, the *Utzon Design Principles* and the *Statement of National Heritage Values of the Sydney Opera House* (discussed below). These more detailed companion documents must also be considered as part of any proposed SSD process.

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 79C(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 CMP, 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 an unacceptable or unsustainable impacts (significant adverse impacts) on the National and World Heritage values of the Opera House.

A HIS accompanies this application (Appendix 3) which provides an assessment of the proposal's impact on National and World Heritage values. These considerations are discussed further in Section 6.2 of this report, where it is demonstrated that the proposal will not result in any significant adverse heritage impacts.

4.4.2 Sydney Opera House Conservation Management Plan 2003

This document 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. There are a number of conservation policies in the Conservation Management Plan (CMP) relating to the building's setting and exterior, access issues, internal spaces including the Opera Theatre, foyers, and removal or alteration of fabric.

The current adopted version of the CMP (3rd edition) was developed on 3 December 2003 in preparation for the listing of the Sydney Opera House on the NSW State Heritage Register.

The CMP 3rd edition has been formally endorsed by the authorities and is the version that has formal standing in any statutory assessment or approval.

The draft CMP 4th edition dated June 2015 retains and expands on the philosophical approach and policies of the 3rd edition, providing more detail on many aspects. It has also been updated to include the World Heritage Listing and consequent obligations. This draft has been on public exhibition and then reviewed by the NSW Heritage Division and via a rigorous peer review process, but has not yet been finalised or formally endorsed by the authorities.

The HIS assessment supporting this EIS is based on the 3rd edition, but informed by knowledge gained in preparing the 4th edition. The impacts on World, National and State heritage values are discussed separately to the CMP. This approach to heritage impact assessment has been agreed with the Office of Environment and Heritage, as this document is still at draft stage and not the applicable document for the purposes of this EIS.

This application has therefore been assessed against the CMP 3rd edition. Compliance with the relevant policies of the CMP 3rd edition is demonstrated in the HIS (Appendix 3) and Section 6.2 of this report.

4.4.3 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 relevant design principles is demonstrated in the HIS (Appendix 3) and Section 6.2 of this report.

4.4.4 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 3) and Section 6.2 of this report.

4.4.5 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 AMP identifies a total of 73 primary projects that will deliver improved compliance, improved visitor experience, improved separation of front and back of house, and a more equitable outcome for accessibility.

These projects have been prioritised in four categories as outlined below:

Item 1: Upgrade to the venues - to ensure that each and every venue or destination at SOH is accessible to all.

Item 2: Upgrade to the access ways – to provide an accessible path of travel that allows patrons, visitors and performers to access the venues from the principal pedestrian entrance to the building; and the continuous path to the venue or new work area.

Item 3: Upgrade to public amenities associated with the venue or destination, including sanitary facilities and food and beverage offers – to ensure that once patrons or visitors are at a venue, do they have equitable access to amenities, in order to provide a dignified experience.

Item 4: Upgrade to performer and back of house areas associated with the venue or destination – to ensure that once performers have reached the venues, do they have equitable access to amenities (including change rooms, practice rooms and the like) in order to provide a dignified experience.

Although works to implement these initiatives are subject to separate DAs, the proposed Function Centre and Related Works have been assessed as achieving accessibility compliance and are therefore generally consistent with the AMP.

5 Statutory Planning Framework

5.1 Relevant Commonwealth Legislation and Policy

The *Environment Protection and Biodiversity Conservation Act 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.

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 3) and Section 6.2 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 proposed works in this application will have negligible impact on the Outstanding Universal Values that enshrine Sydney Opera House on the World Heritage List and will respect the work of both Jørn Utzon and Peter Hall.

.... The impacts of these projects are high on the fabric of the Function Centre spaces, and on the functional and location significance of the existing ballet rehearsal room, but should not adversely affect the Opera House’s national or state heritage values. These impacts affect spaces and fabric of exceptional / considerable significance and it is our recommendation that a referral to the Commonwealth Government under the EPBC Act should be made.”

On this basis, the SOHT is currently preparing a referral to the Commonwealth Department of Environment for a decision on whether the proposed works will need assessment and approval under the EPBC Act.

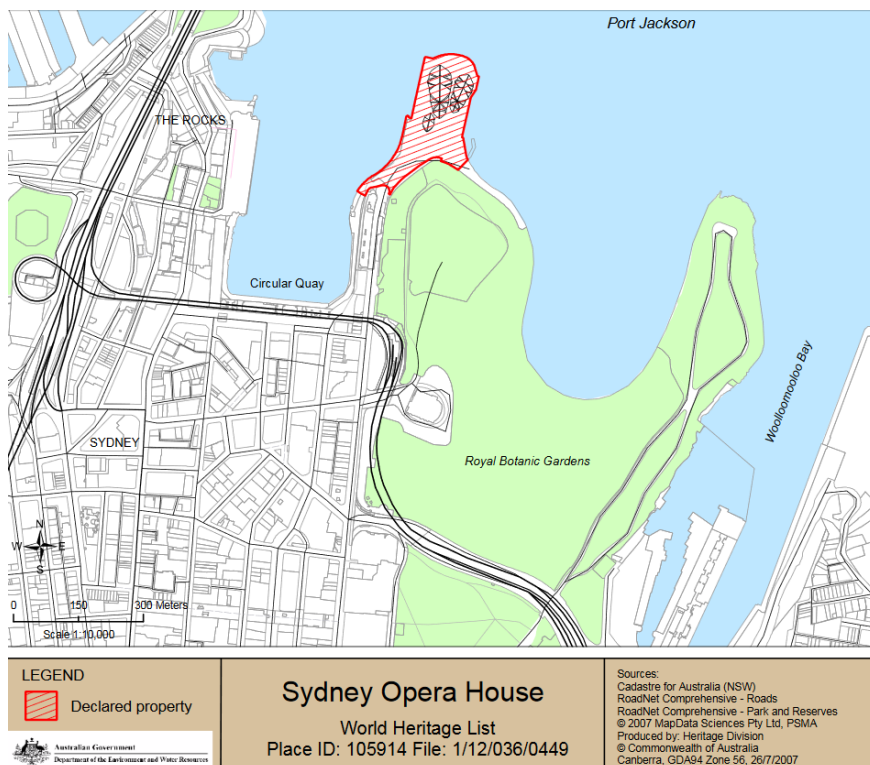


Figure 18. Sydney Opera House World Heritage Listing (Source: CDoE)

5.2 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.

Notwithstanding that the development comprises SSD, clause 90 of Schedule 6 and Clause 16A of Schedule 6A of the EP&A Act provide that approval under section 57(1) of the Heritage Act is required for development at the Opera House.

An Order under section 57(2) of the Heritage Act provides that a range of works at the Opera House are exempt from the requirement for approval under section 57(1). The proposed Function Centre and Related works subject to this EIS 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 3) and Section 6.2 of this report demonstrate the proposed works will not detract from the heritage significance of the Opera House and will be consistent with the provisions of the Heritage Act 1977 and should be supported.

5.3 Environmental Planning and Assessment Act 1979

The EP&A Act provides the statutory framework for planning in NSW. Section 89C 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 5.5.1). 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 78(8A) of the EP&A Act which requires the preparation of an EIS, Schedule 2 of the EP&A Act and the SEARs as outlined in Sections 1.3 and 1.4 above.

5.3.1 Objects

Development under the EP&A Act must have regard to the objects set out in Section 5 of the Act. The proposed development is considered to be consistent with the objects of the Act as follows:

5 Objects

The objects of this Act are:

(a) to encourage:

- (i) *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,***

The proposed development will promote the social and economic welfare of the community by providing enhanced patron facilities, improved accessibility and world-class facilities for celebratory events, without adversely impacting on the heritage significance of the building or the surrounding environment.

- (ii) *the promotion and co-ordination of the orderly and economic use and development of land,***

The proposed development will improve accessibility to and around the Sydney Opera House and provide for more contemporary patron facilities which will support its intended purpose of providing world-class theatre facilities and will contribute to the Opera House maximising its economic and cultural contribution to NSW. The relocation of the rehearsal room will ensure the on-going provision of essential spaces related to the use of the building for performances and events.

- (iii) *the protection, provision and co-ordination of communication and utility services,***

The proposed development will not impact on the provision of communication and utility services to the Opera House.

- (iv) *the provision of land for public purposes,***

During the proposed 7 month closure period of the JST, in which time the proposed works will be undertaken, the remainder of the Sydney Opera House will remain operational. Works are largely contained within the building and construction activities will be managed to minimise their interface with the public. The proposed development will also have minimal impacts on external publicly accessible land and areas. Deliveries and removal of materials will be mainly via the underground loading dock, except for any oversized items which may need to be transported across the forecourt.

Part of the Northern Broad Walk will be temporarily closed for safety reasons during the installation of the new double doors and removal of the existing marquee. However, these closures will be kept to a minimum and/or done overnight to minimise impacts on public access around the building.

- (v) *the provision and co-ordination of community services and facilities, and***

The proposed development will contribute to improved community facility provision by improved access, operational efficiency and patron facilities at the Sydney Opera House.

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

As the proposed works are largely internal, there will be no impacts on the natural environment. The proposed removal of the existing marquee at the Northern Broad Walk and proposed physical barriers and umbrellas (which are temporary and removable), are minor building works. These works will be carried out in accordance with the Construction Management Plan and are not considered to lead to any significant adverse impacts on the environment.

(vii) ecologically sustainable development, and

The proposed works will be carried out in accordance with the principles of ESD (Section 6.7).

(viii) the provision and maintenance of affordable housing, and

Not applicable.

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

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 DP&E during the preparation of the SEARs and will be consulted through the DA assessment process.

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

The proposed development will be publicly exhibited in accordance with the requirements of the EP&A Act.

5.3.2 Section 79C Assessment

The Minister (or the Minister's delegate) is required to take into consideration the matters listed under section 79C of the EP&A Act when determining the development application.

An evaluation of the proposal against the provisions of Section 79C(1) of the Act is provided below:

1) Matters for consideration—general

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

- (a) the provisions of:*
 - (i) any environmental planning instrument, and*

Relevant environmental planning instruments are addressed in Sections 5.5 and 5.6.

- (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 Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*

There are no draft instruments applicable to the proposed development.

- (iii) *any development control plan, and*

As the proposal is SSD, DCPs do not apply (clause 11 of the SRD SEPP).

- (iv) *any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*

Not applicable.

- (v) *the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and*

The requirements of the EPAR and addressed in Sections 1.4 and 5.4.

- (vi) *any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates,*

Not applicable.

- (b) *the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*

The impacts of the proposal are addressed in Section 6.

- (c) *the suitability of the site for the development,*

As the proposed works generally relate to enhanced patron facilities, the on-going provision of essential performance-related uses (ie, the relocation of the rehearsal room) and accessibility improvements 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.

- (d) *any submissions made in accordance with this Act or the regulations,*

Any submissions made on this subject development application will be duly considered and addressed by *Keylan Consulting Pty Ltd*.

In addition, DP&E will consider any public submissions relating to the proposal during its assessment.

- (e) *the public interest*

The proposal is considered to be in the public interest as it will provide enhanced patron facilities and accessibility improvements at the Sydney Opera House without adversely impacting on the heritage significance of the building or the surrounding environment.

5.4 Environmental Planning and Assessment Regulation 2000

As outlined in Section 1.4, 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 – see Sections 4.4.1 and 6.2 of this EIS.

5.5 State Environmental Planning Policies

5.5.1 State Environmental Planning Policy (State Significant Precincts) 2005

The SSP 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.

5.5.2 State Environmental Planning Policy (State and Regional Development) 2011

The 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.

5.5.3 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 Function Centre and Related Works are largely internal works within the Sydney Opera House. External works include new bronze framed double doors on the northern elevation, enlarged entry and granite hood to existing access on the western elevation. The proposed works to the adjoining external areas including installation of physical barriers (which are temporary and removable) will delineate this area. Sleeves (fixing points recessed in the precast panels) will be identical for the placement of umbrellas and bollards in a grid system in front of the function Centre.

As outlined in Section 6.3, 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. The removal of the existing Marquee is a positive impact on the views to the Sydney Opera House.

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 largely contained within the Sydney Opera House and construction activities will be managed to minimise their interface with the public. The proposed development will also have minimal impacts on external publicly accessible land and areas of the Sydney Opera House. Part of the Northern Broad Walk will need to be temporarily closed for safety reasons during the installation of the new doors on the northern and western façades of the building and external works. However, these closures will be kept to a minimum and/or done overnight to minimise impacts on public access around the building.

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 6.2, 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.
- *Public access to and use of the foreshores and waterways (clause 22)* - the proposed works are largely contained within the Sydney Opera House and will have minimal impacts on external publicly accessible land and areas of the Sydney Opera House. Part of the Northern Broad Walk will need to be temporarily closed for safety reasons during the installation of the doors on the northern and western façades of the building and external works. However, these closures will be kept to a minimum and/or done overnight to minimise impacts on public access around the building.
- *Maintenance of a working harbour (clause 23)* – not relevant
- *Use of the waterways (clause 24)* – not relevant

- *Scenic quality (clause 25)* – 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 proposed removal of the existing Marquee is a positive impact on the views to and the visual setting of the Sydney Opera House.
- *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 6.2, 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.

5.6 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 “function centre” they are permissible with consent in the B8 Metropolitan Zone.

Clause 6.21 of SLEP 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 9 below:

Matter	Comment
(a) <i>whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,</i>	<p>The proposed works are largely internal alterations, with the exception of the new double doors on the Northern facade, Western entry and temporary bollards and umbrellas on the Northern Broad Walk.</p> <p>As outlined in Section 6.3, these are relatively minor external elements which will employ a consistent design language and materials with the existing building. and, as outlined above, 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>The removal of the existing marquee will remove a highly intrusive built element. As noted in the HIS:</p> <p><i>...the proposal will not have any negative impact on the aesthetic qualities and characteristics of the architecture and setting of the Opera House however, the removal of the highly intrusive marquee on the Northern Broad Walk will have a very positive impact on these qualities and improve the public esteem and standing of the building...</i></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>The removal of the existing marquee will improve public views to the Sydney Opera House,</p>
(d) <i>how the proposed development addresses the following matters:</i> (i) <i>the suitability of the land for development,</i> (ii) <i>the existing and proposed uses and use mix,</i> (iii) <i>any heritage issues and streetscape constraints,</i> (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> (v) <i>the bulk, massing and modulation of buildings,</i> (vi) <i>street frontage heights,</i> (vii) <i>environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity,</i>	<p>(i) As the proposed works generally relate to enhanced patron facilities and a place for celebratory events 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.</p> <p>(ii) The proposed works do not alter the existing uses of the Sydney Opera House.</p> <p>(iii) Heritage impacts are considered in detailed in the HIS at Appendix 3 and Section 6.2 of the EIS.</p> <p>(iv) N/A</p> <p>(v) The proposed works do not add to the bulk or mass of the building. The proposed new doors and amended entry and hood are consistent with the existing northern and western façade in terms of scale, form and use of matching materials. The new doors will comprise of bronze frames, with precast granite hoods to match existing western entry</p> <p>(vi) N/A</p> <p>(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</p>

Matter	Comment
(viii) <i>the achievement of the principles of ecologically sustainable development,</i>	mitigation measures are considered in detail in Section 6.5.
(ix) <i>pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network,</i>	(viii) A detailed consideration of ESD measures to be incorporated into the proposal and ESD principles is contained in Section 6.8. (ix) The proposed works will not negatively impact on pedestrian, cycle or vehicular access and movement.
(x) <i>the impact on, and any proposed improvements to, the public domain,</i>	(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.
(xi) <i>the impact on any special character area,</i>	(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.
(xii) <i>achieving appropriate interfaces at ground level between the building and the public domain,</i>	(xii) The proposed works and improved access directly improve interfaces at ground level and the public domain at the North Broad Walk.
(xiii) <i>excellence and integration of landscape design.</i>	(xiii) The proposal does not entail any landscaping works.

Table 9: Assessment against clause 6.21(4) of Sydney LEP 2012

Clause 6.21(5) of SLEP 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. In this regard, it is noted that the project architects were appointed through a competitive tender process and that the proposed works have been subject to a rigorous review process by the Opera House's heritage architect, the Eminent Architects Panel and Conservation Council at both schematic and concept design stages.

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 internal works, with only minor external alterations to 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

As detailed in Section 6.3, the removal of the existing marquee will result in the removal of a highly intrusive built element. This will improve the visual setting of the Opera House and public views to the building.

Further, the proposed new doors and amended entry and hood are consistent with the existing northern and western façade in terms of scale, form and use of matching materials. The new doors will comprise of bronze frames, with precast granite hoods to match existing western entry. Accordingly, these works will not adversely impact on views to the building and its setting from public places.

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

5.7 Development Control Plans

In relation to *Sydney Development Control Plan (DCP) 2012*, which supplements SLEP 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.

6 Environmental Planning Assessment

6.1 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.

6.2 Heritage

The HIS prepared by *Design 5 Architects* contained in Appendix 3 provides a detailed assessment of each of the key elements of the Function Centre and Related Works and the impact of the works 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;*
- *Sydney Opera House Conservation Management Plan, 3rd Edition*
- *Utzon Design Principles*

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).

6.2.1 World Heritage Values

The HIS notes that the Sydney Opera House was inscribed on UNESCO's World Heritage List (WHL) 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 further notes that many components of the proposed works will greatly improve access to the JST side of the Opera House to a wider section of society – particularly those with reduced mobility, many of whom will never have experienced some of these spaces before.

Whilst the removal of the existing marquee and its associated infrastructure, and proposed wall works will have a substantial impact on affected spaces and their fabric, the functional benefits will be substantial and the impacts will not adversely affect the OUV that underpin its World Heritage Listing.

Combined with the JST TMP and SAVE and Entry Foyer (subject to a separate development applications), these projects will enhance the patron experience and performance and operational capability of the Sydney Opera House to continue to host and celebrate world standard performance art. The proposal will therefore help sustain the iconic international standing of this Opera House – a key part of its OUV.

The HIS concludes that with fine and detailed resolution during the design development stage, and then excellence in execution, all in accordance with the Utzon Design Principles and the CMP, the proposed works will have significant but ultimately positive impacts and thus not threaten or diminish the OUV that enshrine it on the World Heritage List.

6.2.2 National Heritage Values

The HIS considers the proposed works against the relevant National Heritage Criteria, as summarised in Table 10 below:

NHL Criteria	Comment
<p>NHL Criterion A Events, Processes <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 values:</p> <ul style="list-style-type: none"> • <i>"The Sydney Opera House represents a masterpiece of modern architectural design, engineering and construction technology in Australia."</i> • <i>"The challenges involved in executing the design inspired innovative developments in technologies, construction engineering and building methods in Australia, creating the building's distinctive form, fabric and structural systems."</i> • <i>"a seminal role in Australia's performing arts history, enhancing the cultural vitality of the nation and continuously attracting nationally and internationally recognised performers from around the world"</i> 	<p>The proposed alterations to accommodate the Function Centre will have negligible impact on the external architecture of the Opera House. The removal of the intrusive marquee on the Northern Broad Walk will have a positive impact on its architecture and setting.</p> <p>The internal alterations to the original structure to form the main spaces for the Function Centre affect significant elements within the Podium but not the unique folded and cranked beams or the ribbed shell roof structure. Further refinement of the design of these alterations should be undertaken to reduce their impacts in the design development and documentation stages.</p> <p>Most major performing arts centres internationally now boast a range of venues within their complexes that are available for hire for non-performance events and celebrations. The proposed Function Centre at the Opera House will upgrade the present facility to provide a dedicated signature function venue within the Podium that is worthy of this nationally significant place, strengthening it as a symbol of modern Australia.</p> <p>The use of the Function Centre will form part of the suite of unique venues on offer attracting national and international performers.</p>
<p>NHL Criterion B Rarity <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: <i>"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></p>	<p>The projects included in this application will not have any adverse impacts on these values. The removal of the intrusive marquee on the Northern Broad Walk will have a positive impact on its architecture and setting.</p>
<p>NHL Criterion E Aesthetic characteristics</p>	<p>The projects included in this application will not have any adverse impacts on these values. The</p>

NHL Criteria	Comment
<p><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></p> <p>Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> • <i>"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."</i> • <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> • <i>"...the majestic quality of the soaring internal spaces including the folded concrete beams throughout the building, and the reinforced radial cranked beams in the northern foyers. These are complemented by the vast coloured glass panels in the main foyers of the Concert Hall and Opera Theatre wings, through which the harbour and city views reinforce the building's magnificent setting."</i> • <i>The distinctive interiors including the foyers surrounding the major auditoria, the Reception Hall (now the Utzon Room), the Box Office foyer, and the Bennelong Restaurant designed by Utzon and Peter Hall, enhance the relationship between the interior and exterior of the building."</i> 	<p>removal of the intrusive marquee on the Northern Broad Walk will have a positive impact on its architecture and setting.</p> <p>The proposed design and fitout of the Function Centre is very likely to result in a signature space with strong aesthetic qualities consistent with these values.</p>
<p>NHL Criterion F Creative or technical achievement</p> <p>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.</p> <p>Relevant key values from National Heritage values:</p> <ul style="list-style-type: none"> • <i>The 'hybrid' interior spaces of the Sydney Opera House reflect the creative genius of both Utzon and Todd, Hall and Littlemore, who completed the building and interior finishes after Utzon's departure. The major public spaces with outside views, for example were designed by Utzon (and completed by Peter Hall) to be finished in natural materials, textures and colours similar to those on the exterior of the building in order to bring the outside inside (Kerr 2003, 69)."</i> • <i>"the creation of sensory experiences to bring pleasure to the building's users, particularly the experience of approaching, mounting the</i> 	<p>The pink granite floor finish, proposed for retention in the Function Centre spaces, was introduced by Hall and was consistent with Utzon's concepts.</p> <p>This and other aspects of this proposal to retain significant features by both Utzon and Hall, including unpainted off-form concrete walls and the white birch moulded timber 'wobbly' panels, will retain and respect these national values.</p> <p>The proposed design and fitout of the Function Centre is consistent with Utzon's design techniques including counterpoint of colour, texture and materials.</p>

NHL Criteria	Comment
<p><i>grand staircase to the podium, passing through the low ribbed box office, up to the foyers flanking the auditoria with their harbour views, and the climax of the performance itself. 'Both ideas were...reinforced by Utzon's application of counterpointing techniques using light and dark tones, soft and hard textures and richly treated warm and cool interior colours.'</i></p> <ul style="list-style-type: none"> <i>"The interior spaces designed by Peter Hall, including the major auditoria known as the Concert Hall and Opera Theatre, and the minor performance spaces, performers' and staff areas, and rehearsal rooms, known collectively as 'Wobbly Land' because of the distinctive 'U' shaped timber panelling, demonstrate the distinctive design solutions that made the Opera House a functioning performing arts centre in the 1970s, and reflect the prevailing aesthetic values, building standards, and financial constraints of the day."</i> 	
<p>NHL Criterion G Social value <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></p> <p>Relevant key values from National Heritage values: <i>"building's role as a cultural icon is also derived from the numerous performances conducted there (100,000 since 1973)"</i></p>	<p>The proposed Function Centre, while not a performance venue, will provide another signature space for the enjoyment of those who attend a function there.</p> <p>It is important that the area within the Podium to be occupied by the Function Centre and its associated facilities is not further increased.</p>
<p>NHL Criterion H Significant people <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: <ul style="list-style-type: none"> <i>"The Sydney Opera House is directly associated with Jørn Utzon"</i> <i>"The peninsula on which the Sydney Opera House now stands has a special association with Bennelong"</i> </p>	<p>The proposed suite of projects will not have any adverse impacts on these values.</p>

Table 10: Assessment against National Heritage Values (Source: Design 5 Architects)

In summary, following as assessment of the proposal against the National Heritage Values the HIS concludes:

The proposed Function Centre and the relocated Ballet Rehearsal Room will have negligible impact on the external architecture and setting of the Opera House, however the works will include the removal of the highly intrusive marquee on the Northern Broad Walk – used in conjunction with the existing function facility. This will improve the setting and clarity of the Opera House as an architectural icon within its harbour setting.

The internal alterations to the original structure to form the main spaces for the Function Centre affect significant elements within the Podium but not the unique folded and cranked beams or the

ribbed shell roof structure. Further refinement of the design of these alterations should be undertaken to reduce their impacts in the design development and documentation stages.

Original Utzon and Hall features and characteristics will be retained and respected in these works. These include the pink granite terrazzo paving in the Function Centre and the white birch moulded plywood ‘wobbly’ ceiling panels.

The relocation of the Ballet Rehearsal Room to allow space for the Function Centre kitchen will involve fitting out the new space with Peter Hall’s white birch plywood ‘wobblies’ salvaged from the existing rehearsal room.

The Function Centre itself, while not a performance venue, will play a minor role in the identity of the Opera House as a performing arts centre and will assist funding performances at the House in the future via its revenue stream.

It is important that the area within the Podium to be occupied by the Function Centre and its associated facilities is not further increased. If that were to happen, then this non-performance facility could potentially threaten the Opera House’s primary use as a performing arts centre.

In summary, the proposed projects in this application will not have an adverse impact on the national heritage values of the Opera House.

6.2.3 State Heritage Values

The HIS also considers the proposed works against the State Heritage Register criteria, as summarised in Table 11 below. The HIS notes that as the draft CMP 4th Edition has not yet been formally adopted, the CMP 3rd Edition is used as the basis for the assessment of the proposal against State Heritage values.

SHR Criteria	Comment
SHR criterion a) Historical significance <i>An item is important in the course, or pattern, of NSW’s cultural or natural history.</i> Relevant key values from SHR values: none relevant	There are no significant historical values from the SHR listing that are impacted by this proposal.
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> Relevant key values from SHR values: <i>“its success as a performing arts centre has been described as ‘spectacular’ partly because of the building’s ‘ability to attract great artists from all over the world’</i>	There are no significant associative values from the SHR listing that are impacted by this proposal.
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> Relevant key values from SHR values: <ul style="list-style-type: none"> • <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> • <i>“Its aesthetic quality is largely attributed to the 1957 prizewinning design by Jørn Utzon.”</i> • <i>“Its aesthetic quality was also enhanced by the high quality completion work by Hall,</i> 	The proposed Function Centre will provide a double height venue space with majestic qualities and broad views towards the harbour on its north side. This will make it more consistent with the original spaces in the Opera House. The proposed finishes will retain and respect the work of both Utzon and Hall. The alterations internally to form the three interconnected double height spaces for the Function Centre affect significant structural elements within the Podium but not the unique folded and cranked beams or the ribbed shell roof

SHR Criteria	Comment
<p><i>Todd & Littlemore, by the technical support given throughout by the internationally renowned engineering firm of Ove Arup & partners, and finally by M.R. Hornibrook, the contractor of stages two and three (Kerr, 2003, 32)."</i></p> <ul style="list-style-type: none"> • <i>"Widely recognised as a masterpiece of twentieth century architecture, the Sydney Opera House combines an expressive freedom of form with the precise technology of the machine age."</i> 	<p>structure. Further refinement of the design of these alterations should be undertaken to reduce their impacts in the design development and documentation stages.</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"> • <i>"As a world-class performing arts centre, the Sydney Opera House has enhanced the cultural vitality of the nation."</i> • <i>"In offering this remarkable 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>The Function Centre itself is not a performance venue, however it will host private events and this facility may contribute to its reputation and standing as a tourist attraction as well as contribute to some degree to its sense of place. Its success will be in large part dependant on the finesse of its detailed resolution and execution, and the selection of the signature art work to be applied to the folding door arrangement on the south wall.</p> <p>Through the revenue stream it should provide, the Function Centre will assist funding future performances and cultural activities at the Opera House.</p> <p>The Function Centre may potentially introduce members of the public to the Opera House that may not have attended performances at the place.</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>Relevant key values from SHR values: <i>none relevant</i></p>	<p>There are no significant research potential values identified from the SHR listing that are impacted by this proposal.</p>
<p>SHR criterion f) Rarity <i>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.</i></p>	<p>There are no significant rarity values from the SHR listing that are negatively impacted by this proposal.</p> <p>The removal of the marquee from the Northern Broad Walk will have a positive impact on the setting of the Opera House.</p> <p>The proposed design and fitout of the Function Centre should provide a unique venue for events and celebrations that will be sought after and admired by the public.</p>
<p>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></p> <p>Relevant key values from SHR values:</p> <ul style="list-style-type: none"> • <i>"... an internationally recognised building representative of major performance arts centres."</i> • <i>"It is outstanding because of its innovative design appropriate both to its entertainment functions and to its harbour-side setting, and</i> 	<p>Most major performing arts centres internationally now boast a range of venues within their complexes that are available for hire for non-performance events and celebrations. The proposed Function Centre at the Opera House will upgrade the present facility to provide a dedicated signature function venue within the Podium that is worthy of this internationally significant place.</p> <p>The removal of the intrusive marquee will improve the setting and views of the Opera House,</p>

SHR Criteria	Comment
<i>because of the esteem in which it is held in Australia and internationally."</i> <ul style="list-style-type: none"> <i>"Its success as a performing arts centre has been described as 'spectacular' partly because of the building's 'ability to attract great artists from all over the world'."</i> 	<p>particularly from the harbour and thereby enhance the building's esteem at all levels.</p> <p>It is important that the area within the Podium to be occupied by the Function Centre and its associated facilities is not further increased.</p>

Table 11: Assessment against State Heritage Values (Source: Design 5 Architects)

Based on this assessment, the HIS draws a similar conclusion to its assessment against National Heritage Values, ie, while there will be some negative impacts (specifically, the creation of new openings, and blocking of others in the main curved loadbearing wall, the possible change of character due to an installation of fine curved timber battened lining to lower height ceilings in public areas, and the removal of the original rehearsal room and its relocation), the overall impact of these projects will be positive.

6.2.4 Conservation Management Plan

The Sydney Opera House Conservation Management Plan (CMP) 3rd Edition identifies and defines the significant values of the Sydney Opera House and then formulates policies framed to retain these values. The HIS assesses in detail the impact of the proposed Function Centre and Rehearsal Room works in terms of significant values, significant elements of the place and relevant policies.

The HIS finds that the suite of proposed works will affect a number of very significant parts of the Sydney Opera House. A summary of the impacts of the proposal as detailed in the HIS are as follows:

Function Centre

...The assessment of this proposal against the CMP concludes that the proposal constitutes a major change as defined in Policy 1.5, and therefore the Utzon character and design regime should be strengthened. The main spaces are essentially hybrid 'outside' spaces and the proposal retains, respects and strengthens the work of both Jørn Utzon and Peter Hall. This balance is supported.

The proposed alterations within the Podium to create three interconnecting double height function spaces defined by the exposed original off-form concrete walls will facilitate the removal of the existing intrusive marquee and its associated infrastructure (planter boxes, screens, bollards etc. This is considered a very positive improvement and emphasises one of the primary objectives of this revised facility.

The proposed design and configuration of the Function Centre will reintroduce a sense of the original majestic qualities and powerful structural forms that define this part of the Podium. The proposed design retains a very strong Opera House 'character', and should strive for excellence in its fitout and presentation. This excellence in design and its signature unique character make it worthy of being located on this site and should enable it to play an important role in the revenue stream for the place.

The proposed alterations will have a range of impacts and it is recommended that further analysis and resolution be carried out in the detail design and documentation stage to minimise these....

...The proposed tapestry / artwork cladding for the curved door system will provide an important focal art piece in the main function space. It is acknowledged that the commissioning and execution of such an artwork may extend beyond the timeframe for the completion of these works, however ideally it should be in place when this Function Centre is opened.

Removal of existing Ballet Rehearsal Room with all its fittings and finishes to another location in the Podium, and construction of new function centre kitchen is considered a high impact as it removes the last remaining rehearsal room beneath the JST...

Ballet Rehearsal Room

The relocation of the last remaining original rehearsal room from beneath the JST will potentially have a negative impact on the function of the Opera House, requiring performers to cross the Central Passage to access it. This potential impact may not be fully understood until this new rehearsal room is operational. It has been agreed by the Opera House that this new location is temporary until a more suitable location is found, or the Utzon designed Opera Theatre renewal project is carried out as described in the Gold Book 2007. Whilst not ideal, this possibly temporary negative impact is considered high but acceptable.

The works to create the new Ballet Rehearsal Room generally affect fabric and spaces of little significance (C), however, proposed openings for a door and window on the east side will affect the Central Passage, ranked as having exceptional significance (B). These impacts are considered moderate and acceptable.

The proposed fitout of the rehearsal space with white birch moulded plywood ‘wobbly’ panels salvaged from the existing ballet rehearsal room, retains Hall’s regime for performers’ areas and is considered a positive impact.

It is essential that all details for both these projects, including those listed above, be resolved in close consultation with the Opera House’s heritage architect, Eminent Architects Panel and Conservation Council. Design excellence and adherence to the Utzon Design Principles and the CMP should be paramount considerations.

6.2.5 Utzon Design Principles

The HIS’s assessment of the proposal against the Utzon Design Principles is summarised in Table 12 below:

Utzon Design Principle Quote	Comment
Danger in too many functions – building has limited size <i>“But the inherent danger in large buildings, which have become popular, is that there is a tendency to want to fill too many functions and rooms into those buildings.”</i> <i>“It is not a good idea to fit more rooms inside the building... more functions than it can hold.”</i> (UDP Page 50)	<p>Jørn Utzon cautions against introducing additional functions into the Opera House and the proposed Function Centre could be considered one of those functions. While acknowledging this caution, the north-east corner of the Podium has always been considered an ideal location for some form of food and beverage or function centre. With the ready availability of other food offerings in Circular Quay and along the Lower Concourse, a public restaurant in this location has limited viability, whereas a function centre is viable here.</p> <p>Nonetheless its use of this space must be considered and balanced with the higher priority need for facilities to support the ongoing operation of the performance venues themselves. It should therefore not be expanded beyond the area proposed.</p>
Care needed before change <i>“So I really advise the future decision makers to carefully contemplate all aspects of the intended modifications before changing the Opera House as such.”</i> (UDP page 52)	<p>All aspects of this proposal have been considered and reviewed by Opera House decision makers and the proposal is now supported.</p>
People with knowledge of the building important <i>“Concerning – the remodelling and maintenance of the Opera House. I feel there are a number of people who have known and followed this building throughout its existence. I think it would be a good idea to place in the hands of these people and</i>	<p>Arup and Steensen Varming (original consultants on the Opera House) are engaged as structural and services consultants on these current projects.</p>

Utzon Design Principle Quote	Comment
<p><i>their companies the maintenance and the possible renovations, as they know the Opera House intimately through their work on the building.”</i> <i>“Arup’s office is of course of key importance as they know where things are, what parts of the building can take certain loads, what has been hung in different places, the way the walls, materials etc, which are important for the total structure of the house have been constructed and applied”</i> (UDP page 52)</p>	<p>Thus they bring their knowledge of the construction of the building with them to inform the current works and other consultants.</p>
<p>Objective is to bring joy <i>“The architects’ gift to society is to bring the people a big joy from the surroundings that architects create”</i> (UDP page 59) Succession of visual and audio stimuli <i>“So going to the Opera House is a succession of visual and audio stimuli, which increase in intensity as you approach the building, as you enter and finally sit down in the halls, culminating with the performance.”</i> (UDP page 68) Beautiful experience oriented in the harbour <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.”</i> (UDP page 59)</p>	<p>The proposed design and finishes for the Function Centre are intended to align with these principles and establish its spaces as worthy of the Sydney Opera House. Its success will be in large part dependant on the finesse of its detailed resolution and execution, and the selection of the signature art work to be applied to the folding door arrangement on the south wall.</p>
<p>Consideration of details like doors <i>“So if you open that butterfly door it opens, much faster than this door, it’s closed but halfway, and then you open it, giving you a feeling of easier access.”</i> (UDP page 59) Neutral and rich colours <i>“Exterior colours were nature’s colours. Within this landscape you had the halls which were to be richly decorated in festive colours.”</i> (UDP page 71)</p>	<p>The proposed Function Centre aligns with these principles.</p> <p>Although not a copy of Utzon’s original butterfly doors, the proposed curved folding doors are an ingenious solution to provide access, privacy and flexibility to the main spaces. This will be enhanced by the proposed artwork / tapestry to be applied to them, providing a visual focus to the space as well as richness and colour.</p>
<p>Cultural symbol <i>“The conception and the design of the Sydney Opera House is based on... the desire to create a building which will form a home for those activities essential to the cultural life of a big city.”</i> (UDP page 62)</p>	<p>Presentation of the performing arts is at the very heart of this building, as is the pursuit of excellence.</p> <p>The Function Centre itself is not a performance venue, however it will host private events and may contribute to the Opera House’s reputation and standing as a cultural centre.</p> <p>The proposed design and finishes for the Function Centre are intended to establish this facility as worthy of the Sydney Opera House. Its success will be in large part dependant on the finesse of its detailed resolution and execution, and the selection of the signature artwork to be applied to the folding door arrangement on the south wall. These could potentially differentiate it from other venues in the city, making it unique and much sought after, and consistent with Utzon’s design principles.</p> <p>It is important that the area within the Podium to be occupied by the Function Centre and its associated</p>

Utzon Design Principle Quote	Comment
	facilities is not further increased. If that were to happen, then this non-performance facility could potentially threaten the Opera House's primary use as a home for the performing arts.
Functional concept of base and shells <i>"Within its mass (the plateau), could house all the facilities for preparing the performances with stage sets etc." (UDP page 65)</i>	<p>There are two aspects to this particular principle. The first is the preparation for performance taking place within the Podium. At present the available space is minimal and many service and administrative functions are now housed in other buildings in the city to allow the core performance preparation and administrative functions to take place on the site. The proposed Function Centre (which is not performance related) increases the strain on available space and requires the relocation of the Ballet Rehearsal Room in order to accommodate appropriate kitchen facilities.</p> <p>The second is Utzon's concept of grouping these preparation spaces beneath their related auditorium (major and minor halls). In his original design, (and as executed by Hall), there were 4 rehearsal rooms beneath the minor hall (now JST), and a much larger rehearsal hall beneath the major hall (now Concert Hall). This project will remove the last remaining rehearsal room from beneath the minor hall and relocate it to the other side of Central Passage and more remote from the performers' dressing room and other facilities. Whilst not ideal, the Opera House considers this as a temporary location pending the implementation of the full Opera Theatre Renewal project (described in the Gold Book 2007), or an alternative location should one be identified in the future.</p>
Concrete and ply <i>"The walls will show the concrete as it was constructed, contrasting with the moulded plywood panels which form the components of the furniture fixings." (UDP page 71)</i>	The proposed design and fitout of the Function Centre and relocated Ballet Rehearsal Room will comply with this principle. Where paint has been applied to significant concrete structure, it will be stripped off, further strengthening the adherence to Utzon's intent.
Under control by strict geometry <i>"... the only way to attach 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)</i> Surfaces comprehended because of geometric order <i>"All large surfaces are easily read or comprehended because of the geometric order." (UDP page 75)</i>	<p>The design and fitout of the Function Centre and relocated Ballet Rehearsal Room respect this principle, retaining the dominant reading of curved and radial walls with openings and subdivisions carefully considered to respect their geometry. The retention of the 'wobbly' plywood ceiling panels in the main spaces respects Hall's work in trying to adhere to these same principles. The proposed use of the curved timber battens in the lower ceilings should also reflect these, however the details and finer resolution of these ceilings could take place during the detail design and documentation phases of the project.</p>

Table 12: Assessment against Utzon Design Principles (Source: Design 5 Architects)

6.2.6 Conclusion and recommended mitigation measures

The HIS concludes that the negative impacts of the proposed works on fabric and spaces at the Opera House should not threaten or diminish the outstanding universal values that underpin its World Heritage Listing or substantially affect the Opera House's National or State heritage values.

It further concludes that, combined with the TMP and SAVE and Entrance Foyer works (subject to separate development applications), the subject works will enhance the patron experience and performance and operational capability of the Sydney Opera House to continue to host and celebrate world standard performance art. In this respect this proposal will help sustain the iconic international standing of this Opera House.

The impacts of these projects are high on the fabric of the Function Centre spaces, and on the functional and location significance of the existing Ballet Rehearsal Room, but should not adversely affect the Opera House's heritage values. However, because these impacts affect spaces and fabric of exceptional / considerable significance, the HIS recommends that a referral to the Commonwealth Government under the EPBC Act should be made.

The key mitigation/management measure recommended in the HIS is that all details are to be carefully coordinated, resolved and detailed as part of the design development and documentation process. This should be done with continued advice and input from the Opera House's heritage architect and the approval of the Eminent Architects Panel and Conservation Council.

6.3 Built Form, Urban Design and Visual Impacts

The proposed works are largely internal, with the exception of:

- Double doors on the northern facade
- Revised entry and hood on the western façade
- Removal of the existing marquee and inclusion of physical barriers, bollards and umbrellas

Issues regarding potential built form, urban design and visual impacts of these elements are considered below.

6.3.1 Proposed external amendments to the northern and western façades

Function Room – new double doors and enlarged entry

The proposed works to adapt and enlarge the space presently occupied by the Northern Function Room facility largely consists of internal works to create a more efficient space to accommodate a variety of functions. These works include the careful consideration of the form and function of the immediate areas and adjoining areas to improve existing kitchen and other back of house areas and general accessibility. The proposal includes the use of appropriate materials to match the existing interior and exterior materials.

These works maintain the existing curved glass wall facing the Northern Broad Walk, with external amendments limited to two new pairs of double bronze doors. In addition, the existing single entry on the western side of the Function Room area will be enlarged with a new hood to match existing materials and details.

The proposed works to the external façade of the Sydney Opera House are minor in nature and will facilitate the improved internal layout of the Northern Function Centre by providing improved

access to the area and greater permeability to this space. The improved access will ensure a better relationship between internal and external spaces in an area highly visible to the public.

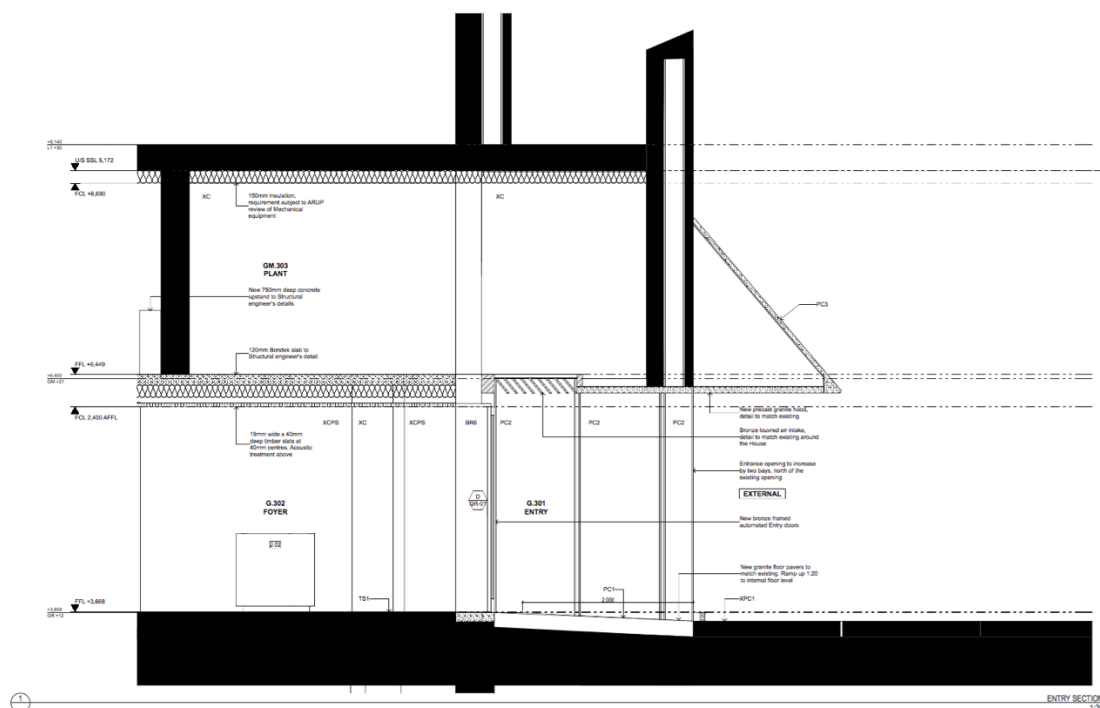


Figure 19. Section of proposed amended entry (Source: TZG)

The proposed new doors and entry will match the existing design and scale used throughout the Sydney Opera House, including a new hood to the western façade to match existing structures and materials.

The HIS has also carefully considered these external impacts in relation to the heritage impacts and concludes that these external works will have a negligible impact on the architecture and setting of the Opera House.

The application also proposes to commission a contemporary Australian artist, selected by a SOHT Renewal Art Committee, to undertake the tapestry located at the centre of the concrete wall within the main function space. The proposed tapestry will be visible from the Northern Boardwalk and contribute to Sydney Opera House when viewed from this highly visible public area as a contemporary space for the arts. The current proposal shows an Anton James artwork as a visual place holder.

6.3.2 Proposed treatment of Northern Broad Walk

The key component of the works on the Northern Broad Walk is the removal of the existing Marquee. As noted in the HIS, this marquee is currently used in conjunction with the existing Northern Function Centre and is considered to be a highly intrusive element.

The HIS has assessed this component of the proposal and determined that the removal of the marquee will considerably improve the setting and clarity of the Opera House as an architectural icon.

It is proposed to continue the use of this area in conjunction with the Northern Function Room to enhance the use of this space, although through a more sensitive, temporary and less intrusive measures such as umbrellas and demountable bollards. These measures will be set out in a uniform grid formation, centred in the existing precast panels, to allow for flexibility of external layout and only utilise the space required on the Northern Broad Walk as required by each event. The maximum area required is indicated in **GREEN** in Figure 19 below.

The HIS undertakes an assessment of the impact from the proposed treatment of the Broad Walk adjacent to the Function Centre. This assessment notes the temporary nature of the umbrellas, bollards to be designed in a uniform grid pattern with ability to be stored when not in use. In this regard the HIS concludes that the proposal is acceptable as detailed below:

...The fabric (paving, railing etc) of the Broad Walk remain substantially unaffected by this proposal.

The potential impacts on the open character of the Broad Walk from the selection and design resolution of the temporary umbrellas, bollards and outside furniture items could range from very positive, to negative. It is therefore essential that these items, regardless of who provides them, be designed and selected in close consultation with the Opera House's heritage architect, Eminent Architects Panel and Conservation Council. Design excellence and adherence to the Utzon Design Principles and the CMP should be paramount considerations.

These temporary elements will be removed and stored when not required for events leaving the Broad Walk uncluttered...

...The proposed configuration of fixings in the paving for temporary umbrellas and bollards is supported. It will allow flexibility in the arrangement of these items and potentially provide a sense of informality. There should be no opportunity to connect up the umbrellas, either to each other, or to the Podium, or provide drop down weather protection...

This external area will be appropriately managed and is not proposed to be hired separately from the Function Centre. Any amplified or live music within this area on the Northern Broad Walk will be managed internally so as not to impact on events in the JST and other areas. Noise will be managed as per the proposed mitigation measures outlined in the Noise Report by Arup. This issue is further discussed in Section 6.6 of this report.

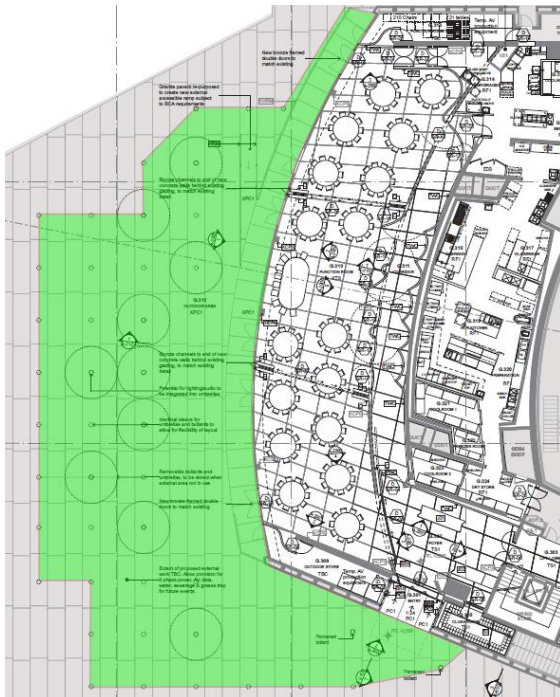


Figure 20. Proposed treatment of the Northern Broad Walk with bollards and umbrellas (Source: TZG)

6.3.3 Conclusion and recommended mitigation measures

The proposed new entries and hood are relatively minor external elements and, as outlined above, will not adversely impact on the built form or visual character of the Opera House.

The key recommended mitigation measures are:

- The use of consistent design language and materials for the new elements
- On-going advice and input from the Opera House's heritage architect and the approval of the Eminent Architects Panel and Conservation Council during the design development and documentation process
- Any approved external furniture, including umbrellas and bollards, will be stored within the Podium when not in use
- There should be no opportunity to connect up the umbrellas, either to each other, or to the Podium, or provide drop down weather protection at any time
- External furniture items associated with the Function Centre do not form part of this application and are yet to be selected. Selection of all proposed external furniture is to be carried out with the consultation and approval of the Opera House's heritage architect, Eminent Architects Panel and Conservation Council. Sample pieces of each furniture item be trialed and tested in location, before full orders are placed. The emphasis should be on simplicity, fine design, and adherence to the Utzon Design Principles and the CMP.

6.4 Access and Circulation

iAccess Consultants have prepared access reports (Appendix 4) for following components of the proposal:

- Function Centre
- Ballet Rehearsal Room

These access reports review the proposed works against relevant legislation, codes and standards, including:

- *Disability Discrimination Act 1992*
- *Disability (Access to Premises - Buildings) Standards 2010*
- *National Construction Code (NCC 2015)*
- *AS1428.1:2009 Design for access and mobility - General requirements for access - New building work*
- *AS1428.2:1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities*
- *AS1428.4.1:2009 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators*
- *AS1428.5:2010 Design for access and mobility - Communication for people who are deaf or hearing impaired*

These reports conclude that the implementation of the proposed works provide accessible access as nominated in the NCC Performance Requirements. The reports generally demonstrate compliance with the statutory requirements of the Disability (Access to Premises – Buildings) Standard and provide a checklist of compliance for the project architects in the on-going detailed design process. In relation to the Ballet Rehearsal Room, the Access report relies on an alternative solution for a threshold ramp into the space. This is supported by a separate report prepared by iAccess Consultants (Appendix 4) which demonstrates that the alternative solution for the threshold ramp is acceptable.

6.5 Construction Management

The SOHT has prepared a *Construction Management Plan* (Appendix 5) which addresses the key construction activities, waste management and safety aspects of the projects.

The key elements of the Construction Management Plan are summarised below:

6.5.1 Public safety and access

The Sydney Opera House will continue normal operations during the construction period. However, as the majority of the works will be confined to the existing Northern Function Room Facility and back of house areas, there will be minimal interface with and effect on publicly accessible areas.

The CMP states that the successful contractor will be required to address the detailed requirements of circulation and pedestrian interfaces with the construction work faces throughout the program of works.

The proposed works will also have minimal impacts on external publicly accessible land and areas of the Sydney Opera House. Deliveries and removal of materials will be mainly via the underground loading dock, except for any oversized items which may need to be transported across the forecourt. Public areas affected by the works such as the Northern Broad Walk will be enclosed by construction hoardings and sealed off from public access.

Prior to commencing construction, the successful contractor will be required to prepare a fully detailed works staging strategy which addresses appropriate access and circulation impacts which ensures safety of public and patrons.

6.5.2 Noise and vibration

Arup has undertaken a Noise Impact Assessment (NIA) of the proposed Function Centre and the associated outdoor area within the Northern Broad Walk (Appendix 6). The NIA identifies the nearest noise sensitive receivers potentially affected by the works as residential properties at Kirribilli to the north of the site, the Bennelong Apartments to the south of the site and residential properties to the east at Potts Point.

The assessment has shown that construction as a result of the modifications is not likely to have any adverse impact on noise sensitive receivers around the site.

The SOH has recognised noise issues affecting nearby neighbours during external construction works in the past. Prior to commencing construction, it is recommended that a Construction Noise Management Plan (CNMP) be prepared to identify mitigation measures for work being undertaken during construction.

6.5.3 Traffic and access

Traffic and access during construction is a key consideration for the proposal. The CMP proposes the following measures in order to appropriately manage traffic and access issues during construction:

- Vehicle movements will generally be within standard construction hours (7am-6pm).
- The impact of traffic on Macquarie Street is limited to construction deliveries and removals. There will be no contractor parking provided on site, with contractors directed to public transport or the nearby Opera House carpark.
- All deliveries and removals from site will be via the underground loading dock, accessed from Macquarie Street, with the exception of oversized items. Oversized items which will be delivered to the site will be undertaken at off peak periods (i.e. overnight) at time periods agreed with the contractor and the SOH facilities.
- There will be no standing of construction vehicles along Macquarie Street; this will be monitored by the Opera House gatehouse.
- General public access will still be maintained via the vehicle concourse, via controlled entry at the gatehouse, for the duration of the works to provide less mobile person's access to the site.
- A Construction Traffic Management Plan will be prepared by the successful contractor.

6.5.4 Air quality

The proposed works may generate dust from demolition and construction works. A dust management plan will be prepared by the Contractor engaged to undertake the works prior to commencing construction to ensure appropriate measures are taken to ensure that the dust is localised within the construction zone

Construction plant and equipment selected will be suitable for an internal construction environment to ensure no impact on air quality within the work site, or the Opera House.

6.5.5 Water quality

As the proposed works are largely internal with only limited works to the exterior of the Sydney Opera House, there is no expected run off or sedimentation that would impact on the water quality of Sydney Harbour.

Notwithstanding, all necessary measures will be taken to control potential construction impacts on the Harbour. A Construction Environmental Management Plan will be prepared by the contractor which will be required to 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 potential contaminants.

6.5.6 Waste and hazardous materials

Wastes that may be generated during construction include:

- Brick / concrete materials
- Steel
- Lighting, fittings and electrical equipment
- Redundant control equipment, plant and electrical boards
- Services waste such as wiring, pipe cut offs and sheet metal cut offs
- General waste from construction activities such as packaging, scraps and paper

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*.

6.5.7 Conclusion and recommended mitigation measures

Construction works will largely occur within the Sydney Opera House and generally serviced via the underground loading dock, reducing their impact on the general public, throughout demolition and construction periods.

A comprehensive CMP has been prepared by the SOHT to outline how construction will be managed and no significant residual construction impacts are anticipated. The key mitigation measures proposed for construction activity include:

- Prior to commencing construction, the successful contractor will be required to prepare a fully detailed works staging strategy which addresses appropriate access and circulation impacts which ensures safety of public and patrons.
- All mitigation measures outlined in the NIA be implemented.
- The scheduling of external demolition works during the night time period will be minimised to whenever it can be considered 'feasible and reasonable'.
- The successful contractor will be required to prepare a Construction Noise Management Plan.

- A noise logger will be installed at Bennelong Apartments throughout construction to monitor noise levels during construction.
- Nearby residents will be provided with a notice that informs them of the nature of the works, the duration and the extent of works being undertaken.
- 24 hour contact details will be provided nearby residents to allow complaints to be logged and addressed as soon as possible by the Opera House.
- Vehicle movements will generally be within standard construction hours (7am-6pm).
- All deliveries and removals from site will be via the underground loading dock, accessed from Macquarie Street, with the exception of oversized items. Oversized items which will be delivered to the site will be undertaken at off peak periods (i.e. overnight) at time periods agreed with the contractor and the SOH facilities.
- There will be no standing of construction vehicles along Macquarie Street; this will be monitored by the Opera House gatehouse.
- General public access will still be maintained via the vehicle concourse, via controlled entry at the gatehouse, for the duration of the works to provide less mobile person's access to the site.
- A Construction Traffic Management Plan will be prepared by the successful contractor.
- Construction plant and equipment selected will be suitable for an internal construction environment to ensure no impact on air quality within the work site, or the Opera House.
- A Dust Management Plan will be prepared by the contractor engaged to undertake the works prior to commencing construction.
- The Construction Environmental Management Plan prepared by the contractor which will be required to outline construction techniques to avoid potentially affecting the water quality of the harbour.
- Prior to the commencement of works, a Waste Management Plan will be prepared 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.
- All works will be undertaken in accordance with Sydney Opera House's Asbestos Risk Management Plan and the Sydney Opera House Hazardous Materials Action Plan.
- 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.

6.6 Use of Function Centre

The proposed Northern Function Centre adapts and enlarges the space presently occupied by the Northern Function Room facility to house a fully internal function space to seat approximately 230 people, with ability for a standing function of approximately 500 patrons. The Function Centre requires a full commercial kitchen and associated back of house facilities and serving areas.

The existing Northern Function Room is operated for catered functions and events and requires the use of the existing external marquee to accommodate the required seating. This marquee will be removed as part of the proposed works.

Key operational details for the proposed new Function Centre are as follows

Hours of operation	6:00am to 1:30am 7 days
Capacity	maximum 500 patrons within the licence area boundary
Staff	approximately 50 for a 500 person function

The Function Centre is proposed to be used for three major uses:

- Private Dining and Weddings (approximate maximum seated capacity 230)
- Conferencing (e.g. talks/presentations/seminars) (maximum seated capacity 285)
- Cocktail Receptions (maximum capacity 500)

Potential layouts for this multi-functional space are detailed in Figure 21 below.

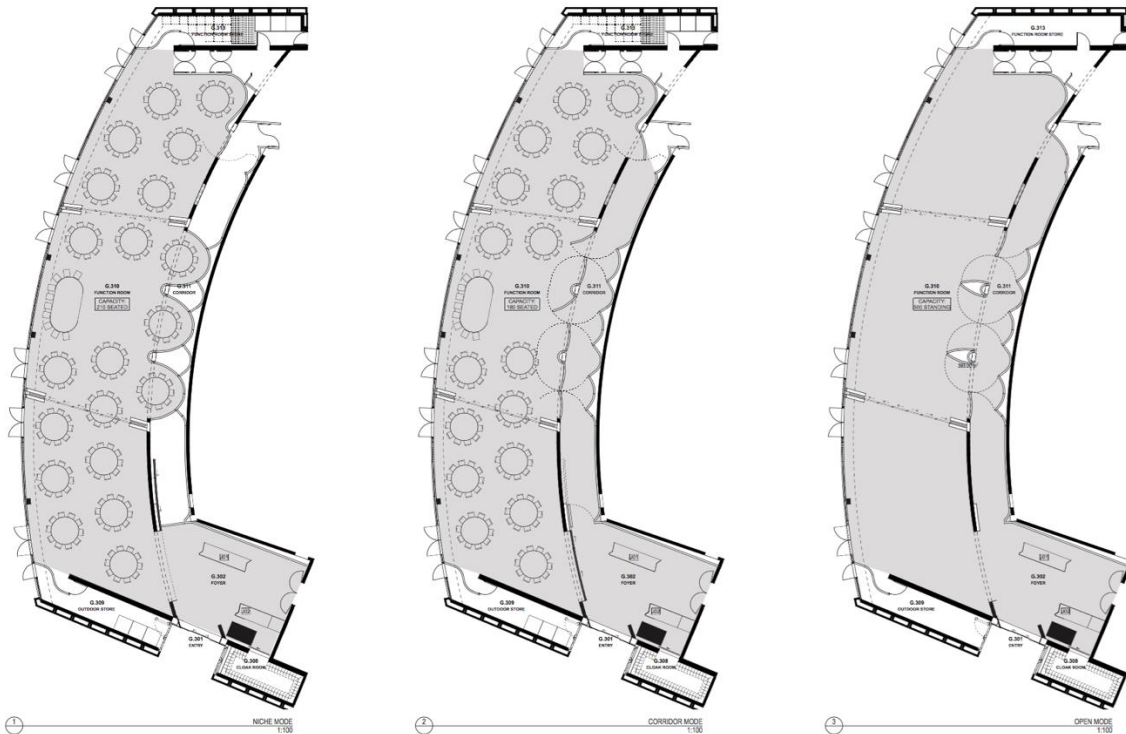


Figure 21. Different modes for the Function Centre to accommodate a variety of events (Source: TZG)

These configurations will also have the ability to function with the proposed external areas currently utilised by the existing Marquee.

The SOHT has prepared a *Draft Plan of Management* (POM) (Appendix 10) to establish performance criteria for the various aspects of the operations of (*the Premises*) having regard to the relevant matters under the *Liquor Act 2007* and any relevant Regulation under that legislation.

The draft POM outlines clear policies and guidelines in relation to the following matters for the use of the Function Centre and associated external areas on the Northern Broad Walk to ensure any impacts on adjoining properties and the public domain is appropriately managed:

- | | |
|----------------------------------|---------------------------------------|
| • Operational details | • Complaints |
| • Trading hours | • Signage |
| • Capacity | • Security |
| • Responsibly Service of Alcohol | • Crime Scene Preservation Guidelines |
| • General amenity | • Drugs and Drink Spiking |
| • Noise controls | • Fire Safety and Essential Services |

6.6.1 Potential Operational Noise Impacts

The NIA prepared by Arup (Appendix 6) undertakes a detailed assessment of potential noise impacts resulting from the operation of the Function Centre on the surrounding locality in relation to both internal and external events.

The NIA notes that the development consent for DA 444-10-2003 includes conditions which set noise criteria for the use of the Northern Broad Walk. These criteria are used for reference in the NIA. However, the NIA further notes that as DA 444-10-2003 relates to less regular, special events such as New Years Eve, the more frequent operations of the proposed Function Centre should be assessed against more onerous criteria in order to protect the amenity of nearby residential receivers. Accordingly, the NIA compare the predicted 'worst case' event noise levels with measured background noise levels during the 'worst case' time range at the receivers.

This assessment is summarised below.

It is also noted that as the consent sought for SSD 7881 (subject to this EIS) will specifically relate to the operations of the Function Centre, it does not seek to supersede the consent for DA 444-10-2003 which will continue to operate in parallel in relation to special events such as New Years Eve.

Internal Events

In relation to operations within the Function Centre (with external doors closed), the NIA notes that noise levels at nearby residential receivers at Kirribilli and Bennelong Apartments are within the relevant guidelines and therefore are acceptable.

The report also notes that even when the doors are open, the noise levels are likely to increase up to 49 dBLA10 which is still below the precedent criteria and also below the 'worst case' existing background noise of 51 dBLA90. This is also considered acceptable for all indoor event types although recommendations are provided to manage the use of doors during the late evening.

Based on this noise assessment, the proposed use of the Northern Function Centre is considered appropriate for the site, particularly in the context of the existing functions and use of the Sydney Opera House.

External Events

The proposed use of the Northern Broad Walk as part of the Function Centre includes some external audio infrastructure to allow for temporary Public Address systems connected to the Function Centre. The infrastructure allows for the installation of loudspeakers, potentially mounted on poles firing downward or side-firing loudspeakers that could be located close to a small stage pointing east or west. Any external PA system would only be a temporary installation.

The NIA considers the potential noise impacts from external events. In this regard, the NIA undertakes a detailed assessment of various Function Centre Event Types including indoor and outdoor functions with a variety of predicted noise level impacts on surrounding residential receivers including:

1. Loud music within the Function Centre
2. Loud music within the Function Centre with one door open
3. Loud music within the Function Centre with all doors open
4. Loud music outside Function Centre on Broad Walk
5. Light foreground music plus unamplified speech noise from 500 and 200 guests outside Function Centre on Broad Walk

6. Background music plus unamplified speech noise from 500 and 200 guests outside Function Centre on Broad Walk
7. Amplified speech noise plus unamplified speech noise from 500 and 200 guests outside Function Centre on Broad Walk
8. Unamplified speech noise from 500 and 200 guests outside Function Centre on Broad Walk

Function Centre Event Type	Sound Pressure Level at Kirribilli Receivers, L10 (dB re 20 µPa)			
	dB(A)	dB(C)	Complies with DA Precedent Criteria?	Also less than 'worst case' existing background noise? (51 dB LA90 is 'worst case' RBL from 10pm-Midnight)
Indoor Loud Music - All Doors Closed	31	43	Yes	Yes
Indoor Loud Music - One Double Door Open	41	49	Yes	Yes
Indoor Loud Music - All 6 Double Doors Open	49	55	Yes	Yes
Outdoor Loud Music	64	75	No	No
Outdoor "Light Foreground" Music				
200 people	50	58	Yes	Yes
500 people	54	61	Yes	No ¹
Outdoor "Background" Music or an Amplified Speech:				
200 people	48	54	Yes	Yes
500 people	52	57	Yes	No ¹
Outdoor:				
200 people	46	50	Yes	Yes
500 people	50	54	Yes	Yes

1. Considered acceptable for events held no more frequently than 15 times per month

Table 13: Predicted sound pressure levels at Kirribilli receivers (Source: ARUP)

The only area of potential exceedance is for loud outdoor music at receivers at Kirribilli. There are also potential exceedances for gatherings of 500 people on the Broad Walk with light foreground music or outdoor background music or an amplified speech. However, the NIA finds that these exceedances are considered acceptable for events held no more frequently than 15 times per month.

All other activities modelled (light foreground music, background music and gatherings of over 200 people on the Broad Walk with announcements) are all shown to be acceptable with regards to noise to Bennelong Apartments and Kirribilli under 'worst case' assumptions.

In relation to loud music in the external areas, it proposed to implement a number of mitigation and management measures including design and management of PA systems, limiting hours of external events to midnight as detailed in Section 6.6.2.

As noted above, it is proposed that Special events (e.g. New Year's Eve) will be managed as part of the existing Northern Broad Walk Development Consent (DA 444-10-2003) and therefore do not form part of this application.

Function Centre Event Type	Sound Pressure Level at Bennelong Receivers, L10 (dB re 20 µPa)			
	dB(A)	dB(C)	Complies with DA Precedent Criteria?	Also less than 'worst case' existing background noise? (56 dBLA90 is 'worst case' RBL from 10pm-Midnight)
Indoor Loud Music - All Doors Closed	13	29	Yes	Yes
Indoor Loud Music - One Double Door Open	21	34	Yes	Yes
Indoor Loud Music - All 6 Double Doors Open	28	40	Yes	Yes
Outdoor Loud Music	* Based on review of the other Kirribilli predictions and the lower levels at Bennelong receivers, it can be deduced that sufficiently low noise levels are predicted in these instances.		Yes	Yes
Outdoor "Light Foreground" Music - 500 people			Yes	Yes
Outdoor "Background" Music or an Amplified Speech - 500 people			Yes	Yes
Outdoor 500 people			Yes	Yes

Table 14: Predicted sound pressure levels at Bennelong Apartments receivers (Source: ARUP)

6.6.2 Conclusion and recommended mitigation measures

The operation of the Function Centre will be managed through the draft POM and recommendations in the NIA. The key mitigation measures proposed for operation of the Function Centre include:

- All operations to be in accordance with the approved Plan of Management
- SOH to manage audio at events in the Function Centre. This is recommended primarily to control noise to sensitive spaces within SOH but would also help ensure that doors are not left open, etc. when high noise levels are being generated.

- If there are loud events within the Function Centre after 10 pm, it is recommended that only one door be allowed to be opened at a time to allow access to the outdoor area.
- If there are loud events within the Function Centre after midnight, it is recommended that all doors on the northern façade shall be closed and entry/exit shall only be allowed through the entry foyer doors on the western side of the Function Centre (with those doors remaining closed when not in use).
- SOH to manage audio at external Function Centre events on the Northern Broad Walk. This would allow control on overall noise levels and also help with the choice and orientation of Public Address (PA) systems.
- PA systems to be set up with directional loudspeakers facing east/west rather than north/south.
- Any outdoor activities finish by Midnight.
- Outdoor functions with up to 500 people externally to be limited to a maximum of 15 per month.

6.7 Building Code of Australia

The EIS is supported by a *Building Code of Australia (BCA) Capability Statement* prepared by Group DLA (Appendix 7). 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.

While the report notes that there is potential to include further Performance Solutions with regard to specific items (relating to fire safety), it confirms that matters pertaining to compliance with the BCA will be suitably assessed by the appointed Certifying Authority prior to the issue of the Crown Building Works Certificate in accordance with Clause 98 of the EPAR and Section 109R of the EP&A Act.

6.8 Ecologically Sustainable Development

The EIS is supported by a *Sustainable Design Report* (SDR) prepared by Cundall (Appendix 10).

The SDR outlines that the *Sydney Opera House Environmental Sustainability Plan* (ESP) 2017-2019 sets out sustainability targets to be achieved by 2023, with the key relevant targets including:

- 20% energy saving by 2023.
- 7% reduction in carbon footprint by 2019.
- Water efficiency ratings for all fitouts equal or above NSW Government Resource Efficiency Policy.
- 80% construction waste reduction.

All stages of the Building Renewal projects demonstrate industry best practice in environmental sustainability.

The SDR outlines that in order to achieve these targets, the following key sustainability principles have been considered throughout the Building Renewal Program, including the subject works:

Sustainability Principle	Initiatives
Minimise greenhouse gas emissions and provide low carbon energy sources	<ul style="list-style-type: none"> • Upgrade existing or install new energy efficient LED light fittings. • Install lighting control system to reduce energy consumption • Select fans with variable speed drives (VSD) motors to reduce fan energy consumption. • Connect to upgraded building control management system (BCMS) to control HVAC systems efficiently. • Connect heating and cooling equipment to the Sydney Opera House central plant system which is being renewed in 2017 to improve energy efficiency.
Improve indoor environment quality	<ul style="list-style-type: none"> • The project aims to achieve industry best practice in IEQ in line with Green Star Performance criteria for indoor air quality, internal noise levels, thermal and lighting comfort.
Reduce environmental impact by sourcing sustainable building materials	<ul style="list-style-type: none"> • The project will use CFC free polyurethane insulation and low PVC insulation for cabling and conduits. • The project team will consider the sourcing and forest certification schemes of timbers used for the Renewal Projects.
Promote environmental management	<ul style="list-style-type: none"> • The Contractor will be required to have an Environmental Management System (EMS) certified in accordance with the NSW Government EMS standard, • A detailed and project specific Environmental Management Plan (EMP) will be developed by the Contractor engaged to undertake the project. • The project aims to demonstrate best practice environmental risk management in contracts and implementation.
Reduce demolition waste from site	<ul style="list-style-type: none"> • The project team will work towards a fully integrated demolition waste management strategy and target to achieve a minimum 80% diversion from landfill for all waste resulting from the project works in construction. • The project will undertake an audit of existing materials and identify which materials can be reused or recycled. The project team will work towards reuse of existing building materials or services whenever possible to reduce the volume of demolition waste. • A detailed Waste Management Plan will be developed by the Contractor engaged to undertake the project. The plan will be prepared 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.
Responsibly manage and dispose hazardous materials.	<ul style="list-style-type: none"> • The project will implement the Sydney Opera House Asbestos Risk Management Plan (Hibbs & Associates Pty Ltd 2013) and the Sydney Opera House Hazardous Materials Action Plan (2015) for management and disposal of hazardous materials. • Sydney Opera House will maintain a Hazardous Materials Register which documents all asbestos contaminated materials (ACM), hexavalent chromium and lead paints within the building. • 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

Sustainability Principle	Initiatives
	Operations (Waste) Regulation 2014 and Protection of the Environment Operations (Illegal Waste Disposal) Act 2013.
Reduce potable water consumption	<ul style="list-style-type: none"> Water efficiency ratings for all fixtures and fittings equal to or better than NSW Government Resource Efficiency Policy requirements in line with the SOH ESP.
Protect culture and heritage	<ul style="list-style-type: none"> All proposed design initiatives will consider the impact of all works in respect of the Utzon Design Principles and Sydney Opera House's Conservation Management Plan.

Table 15: Sustainability principles and initiatives (Source: Cundall)

In addition, the proposed development is considered to be consistent with the 5 key ESD principles as shown in Table 16:

ESD Principle	Consistency
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.	The 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 7 the proposal will not result in serious impact to the environment.
Integration Principle	
The decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	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 continues to provide world class patron events and spaces for celebratory events, which meet modern access requirements.
Intergenerational Equity	
Present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generation	The proposal has been developed to directly benefit current and future generations in that it provides for on-going use of the Sydney Opera House for events and functions and will provide a revenue stream for the funding of performances and other events at the site, without adversely impacting on the heritage significance of the building.
Biological Diversity	
The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.	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, ensuring no significant indirect impacts on the surrounding environment.
Valuation and Pricing of Environmental Resources	
Improved valuation, pricing and incentive mechanisms and environmental factors should be included in the valuation of assets and services.	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 works. In addition, the level of waste will be appropriately managed during the construction stage.
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.	The 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 7 the proposal will not result in serious impact to the environment.

Table 16: 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 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"> All design details are to be carefully coordinated, resolved and detailed as part of the design development and documentation process. This should be done with continued advice and input from the Opera House's heritage architect and the approval of the Eminent Architects Panel and Conservation Council.
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"> New external elements including the new doors and western entry will use consistent design language and materials. On-going advice and input from the Opera House's heritage architect and the approval of the Eminent Architects Panel and Conservation Council during the design development and documentation process.
Public safety and access	Disruptions to pedestrian circulation and potential safety impacts from demolition and construction works	<ul style="list-style-type: none"> Public areas affected by the works such as the external marquee on the Northern Broad Walk will be enclosed by construction hoardings and sealed off from public access. Prior to commencing construction, the successful contractor will be required to prepare a fully detailed works staging strategy which addresses appropriate access and circulation impacts which ensures safety of public and patrons. 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.
Traffic and Access	Impacts on network efficiency, surrounding amenity and pedestrian circulation	<ul style="list-style-type: none"> Vehicle movements will generally be within standard construction hours (7am-6pm). All deliveries and removals from site will be via the underground loading dock, accessed from Macquarie Street, with the exception of oversized items. Oversized items which will be delivered to the site will be undertaken at off peak periods (i.e. overnight) at time periods agreed with the contractor and the SOH facilities. There will be no standing of construction vehicles along Macquarie Street; this will be monitored by the Opera House gatehouse. General public access will still be maintained via the vehicle concourse, via controlled entry at the gatehouse, for the duration of the works to provide less mobile person's access to the site.

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
		<ul style="list-style-type: none"> A Construction Traffic Management Plan will be prepared by the successful contractor.
Air Quality	Potential dust and odour generation	<ul style="list-style-type: none"> Construction plant and equipment selected will be suitable for an internal construction environment to ensure no impact on air quality within the work site, or the Opera House. Further, a dust management plan will be prepared by the contractor engaged to undertake the works prior to commencing construction.
Water quality	Works impact on the waters of Sydney Harbour	<ul style="list-style-type: none"> 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.
Noise and vibration	Works impact on the amenity of neighbouring properties	<ul style="list-style-type: none"> Construction works will be generally contained within the building and therefore generally not audible outside of the building. Works will be scheduled to minimise impacts on the on-going operations of the Opera House. Construction vehicles will utilise the underground loading dock and movements will generally be scheduled to occur within standard construction hours. Operation noise will be carefully managed by the SOHT in accordance with the findings of the Noise Report PA systems to be set up with directional loudspeakers facing east/west rather than north/south. Any outdoor activities finish by Midnight. Function Centre events with loud music located outside on the Broad Walk are unlikely to be acceptable as regular operations. Any one off events, such as New Year's Eve, would be managed under the Northern Broad Walk DA and are therefore not part of this application. Outdoor functions with 500 people externally to be limited to a maximum of 15 per month.
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"> 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>. Waste will be recycled where possible and a fully detailed Waste Management Plan will be prepared by the successful contractor.

Risk Type	Potential Impact/s and Risk/s	Mitigation Measures
		<ul style="list-style-type: none"> Any hazardous materials will be managed in accordance with the <i>Sydney Opera House Asbestos Risk Management Plan</i> (Hibbs & Associates Pty Ltd 2013) and the <i>Sydney Opera House Hazardous Materials Action Plan</i> (2015). Removal and disposal of any hazardous materials will comply with all relevant laws, regulations and guidelines including, but not limited to, <i>Protection of the Environment Operations Act 1997</i>, <i>Protection of the Environment Operations (Waste) Regulation 2014</i> and <i>Protection of the Environment Operations (Illegal Waste Disposal) Act 2013</i>.

Table 17: Environmental Risk Assessment

8 Conclusion

This EIS has been prepared to assess the environmental, social and economic impacts of the Function Centre, Rehearsal Room and related works at the Sydney Opera House.

This EIS addresses the matters outlined in the SEARs issued by the DP&E on 30 August 2016 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.

These works will provide a new premier Function Centre with enhanced business opportunities, and the conversion of the existing rehearsal room to a new production kitchen supporting the Function Centre and other foyers and bars, improving operations within the JST. The relocation and refurbishment of a new rehearsal room will facilitate this conversion and ensure the on-going provision of essential spaces related to the use of the building for performances and events.

The proposed Function Room and the relocation of the Ballet Rehearsal Room to a temporary location will not have any negative impact on the aesthetic qualities and characteristics of the architecture and setting of the Opera House however, the removal of the highly intrusive marquee on the Northern Broad Walk will have a very positive impact on these qualities and improve the public esteem and standing of the building.

The proposed works are therefore essential to the Sydney Opera House's ability to provide a world class function venue and performance rehearsal spaces that meet contemporary operational, accessibility and WHS standards.

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

- The proposed works are an essential component of the Sydney Opera House Building Renewal Program, which is aimed at maximising its economic and cultural contribution to NSW, improving the operational efficiency of the building and ensuring compliance with modern building, accessibility and WHS requirements.
- The proposed works are supported by a detailed HIS which concludes that they will not impact on the World, National or State Heritage values of the Sydney Opera House and will comply with the Sydney Opera House CMP and the *Utzon Design Principles*.
- The proposal will facilitate the removal of the existing marquee which will considerably improve the setting and clarity of the Sydney Opera House as an architectural icon.
- The Function Room 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, hazardous materials, pedestrian access and safety, traffic and access and air quality.
- The proposal will also incorporate several ESD measures and will comply with the BCA.