

Sydney Opera Housing Building Renewal Statement of Environmental Effects Section 4.55(1A) Modification



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

SSD 7665
Modification No. 1
August 2018

Contact



Cover image: Sydney Opera House (Source: Sydney Opera House Trust)

Dan Keary
Director
E: dan@keylan.com.au

Michael Woodland
Director
E: michael@keylan.com.au

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Appendix 3	BCA Report prepared by GroupDLA
Appendix 4	Heritage Impact Statement prepared by Design 5 Architects
Appendix 5	Archaeological Impact Statement prepared by GML Heritage
Appendix 6	Noise Impact Technical Note prepared by Arup

1 Introduction

This Statement of Environmental Effects has been prepared by Keylan Consulting Pty Ltd (Keylan) to accompany a Section 4.55(1A) application to modify the State significant development (SSD) consent SSD 7665 (the Development Consent) for Sydney Opera House – Safety, Accessibility, Venue Enhancement and Entry Foyer Refurbishment Works (SAVE).

The application has been prepared on behalf of the Sydney Opera House Trust (SOHT) and is submitted to the Department of Planning and Environment (DP&E) pursuant to Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This Statement should be read in conjunction with the following documents:

- Structural and architectural plans prepared by AECOM and Tonkin Zulaikha Greer Architects
- BCA Report prepared by GroupDLA
- Heritage Impact Statement prepared by Design 5 Architects
- Archaeological Impact Statement prepared by GML Heritage
- Noise Impact Technical Note prepared by Arup

This application is the first modification sought to SSD 7665, which was approved by DP&E on 24 May 2017. A copy of the original Development Consent is provided at Appendix 1.

The proposal seeks approval to modify the consent to enable additional works relating to the installation of the Utzon escalator (approved under SSD 7665). The additional proposed include:

- the cutting and modification of the north-south tie beams located beneath the floor of the lower lobby to allow for the installation of a new escalator pit
- the installation of a new below ground thrust block at the base of the Monumental Steps to prevent movement of the tie beams and to restrain the base of the Monumental Steps.

This Statement concludes that:

- the proposed modification is minor in nature and will result in substantially the same development as the development for which consent was originally granted
- is acceptable as the proposed works are an essential component of the Sydney Opera House Building Renewal Program to provide a range of accessibility enhancements for patrons and performers
- will not result in any significant environment impacts.

Accordingly, we recommend that the proposed modification be supported by DP&E and approved.

2 The site and locality

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



Figure 1: Site location (Base source: SIXMaps)

The Opera House comprises three main structures, being:

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

To the south of the above three structures are the main podium steps (the Monumental 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. 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.

3 Application history

On 24 May 2017, the Minister for Planning granted consent for SSD 7665. The approved works included:

- accessibility enhancements to the Joan Sutherland Theatre, comprising of:
 - accessible paths
 - accessible seating and passage ways
 - accessible toilet facilities
 - accessible upgrades to dressing rooms, orchestra pit
 - alterations to the fire curtain
 - upgrade to lift core and provision of lift lobby areas
 - refurbishment of seating
 - new storage plant, kitchen and back of house.
- refurbishment works in the entry foyer:
 - reconfiguring cloakroom, ticketing, seating, café, merchandise shop, upgrade to box office and provision of a bar and lounge
 - replacing the stairs from vehicle concourse to the entry foyer on level 1 with a new double escalator
 - provision of a new lift core
- new office accommodation.

A copy of the original Development Consent is provided at **Appendix 1**.

4 Strategic justification

The proposed modification forms 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.

As stated in the Sydney Opera House Accessibility Master Plan (AMP) 2015, *‘the Opera House was designed and built in a period when public expectations and requirements for public buildings did not involve planning access for all. Accordingly, the building has substantial limitations for access and mobility’*.

The approved works (SSD 7665) included replacing the stairs from the vehicle concourse to the entry foyer on level 1 with a new double Utzon escalator as illustrated in **Figure 2**.

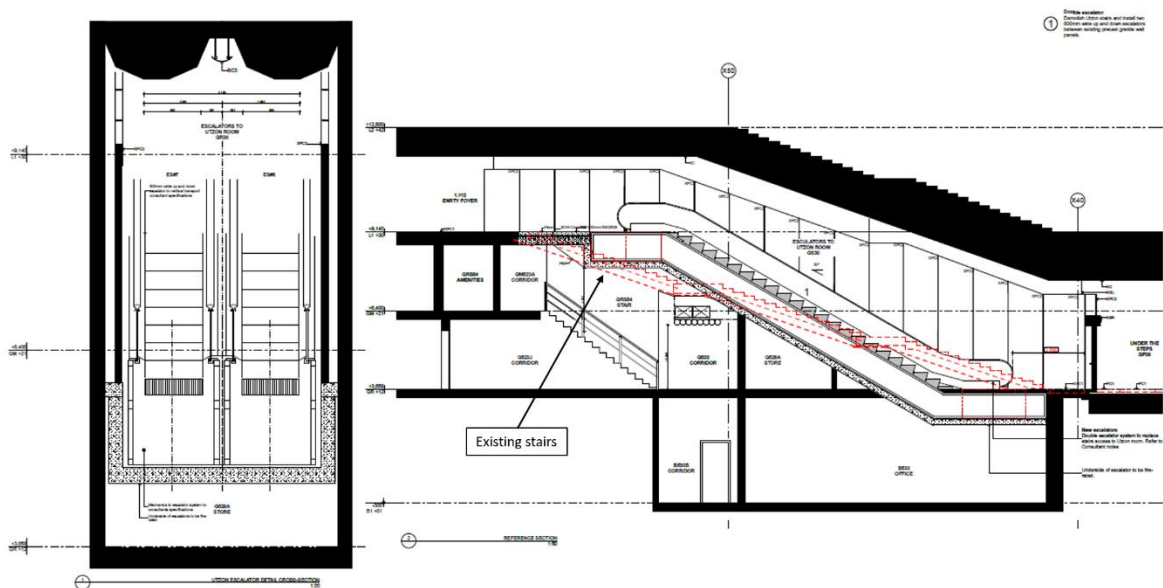


Figure 2: Utzon escalator detail section SSD 7665 (Source: Tonkin Zulaikha Greer Architects)

The detailed design process identified the requirement for installation of a ‘thrust block’ under the forecourt to prevent movement of the tie beam that will be cut to allow the installation of the escalator.

The modification primarily relates to building upgrades which will implement the accessibility initiatives outlined in the AMP aimed at achieving compliance with relevant disability access standards and legislation.

5 Proposed modification

5.1 Proposed works

The approved Utzon escalator (SSD 7665) requires a pit at the base of the existing stairs (Figure 3 - 4). The proposed modification has arisen from further detailed engineering design work.

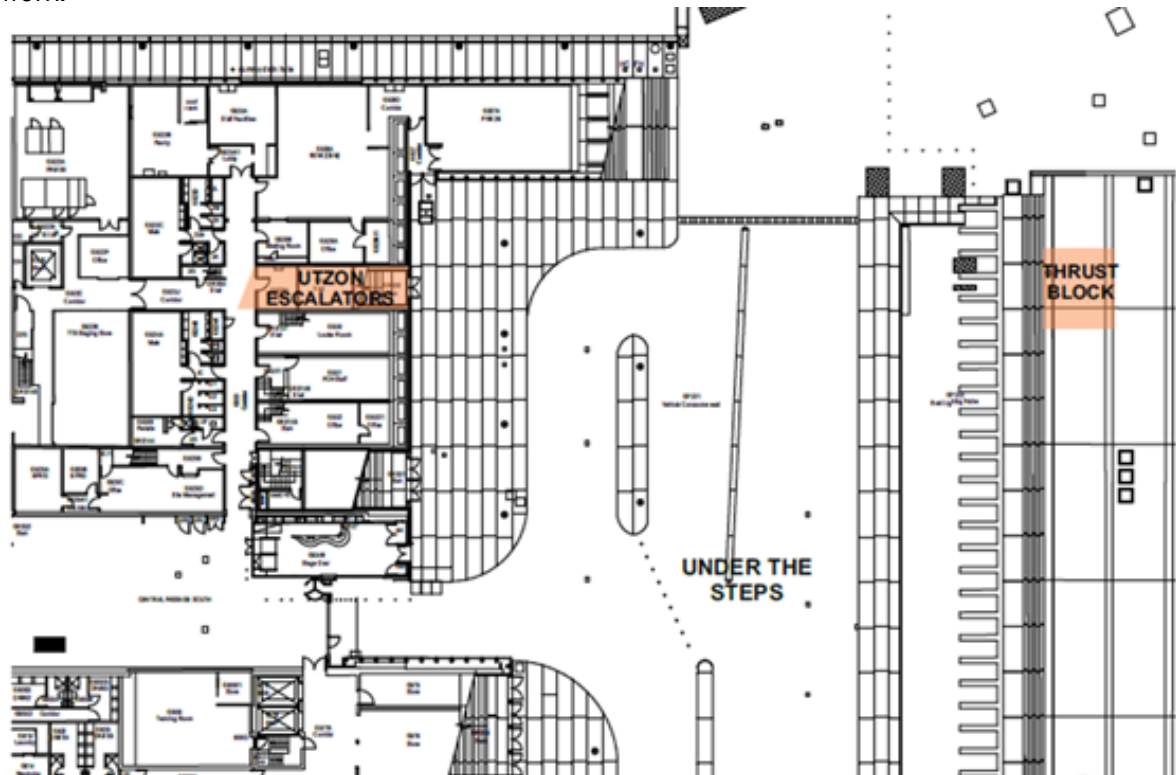


Figure 3: Location of proposed works (Source: Tonkin Zulaikha Greer Architects)

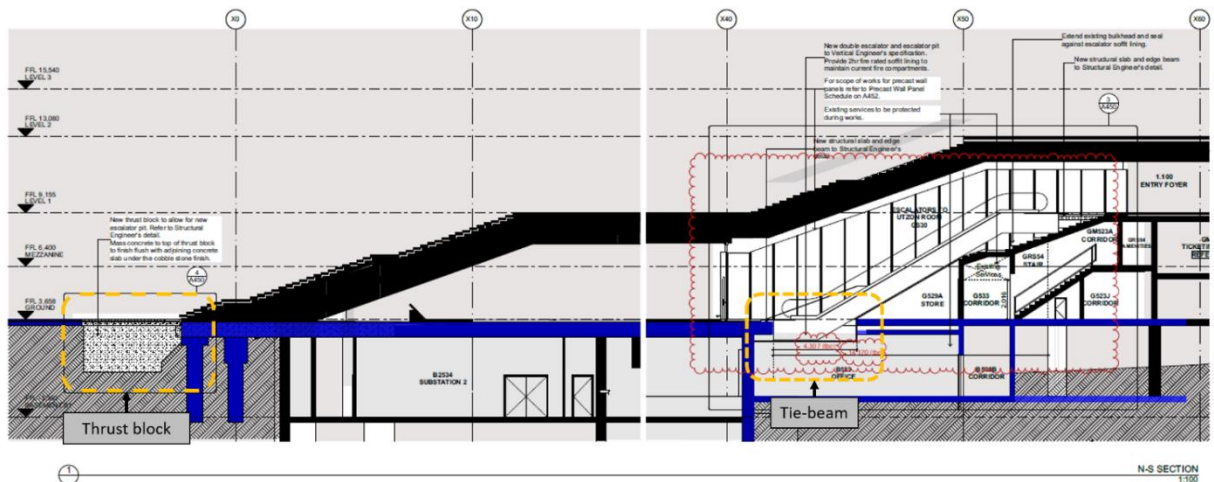


Figure 4: North-south Section (Source: Tonkin Zulaikha Greer Architects)

The proposed works include the cutting and modification of the north-south tie beams, which restrain the folded beams supporting the Monumental Steps and will allow for the escalator pit (Figure 5). A 'thrust block' is then required to restrain the Monumental Steps and folded beams in the permanent condition (Figure 6).

The dimensions of the thrust block are approximately 7 m (east to west) by 5 m (north to south), with a depth of 2.5 m from the ground level. It will require the excavation of a trench 9 m (east -west) by 6 m (north-south) by 3 m deep to install the thrust block (total size of excavation area is 54 m²). A works buffer zone of 14 m by 14 m will be required.

Construction of the thrust block will take approximately 8-9 weeks and include the following works:

- site setup (minimal noise) – approximately 2 weeks
 - erect site hoarding (chain link fence)
 - protect existing granite during excavation and drilling of rock anchors
- construction works (maximum noise component) – approximately 3.5 weeks
 - lifting of the existing granite setts and cobble stones (these will be set aside for re-use)
 - excavation of fill material (1-2 weeks)
 - hammering to remove sandstone (1-2 weeks) for thrust block and remove all spoil from site
 - installation of VSL anchors and cut tie beams
- Concreting and reinstatement of paving (minimal noise) – approximately 2-3 weeks
 - Reinforcement, concrete and tension VSL anchors
 - reinstallation of the granite setts and cobble stones allow for access to install flat jacks without disruption to the Forecourt or removal of excess paving
 - remove hoarding and clean site
 - flat jacks may be required if there is excessive movement.

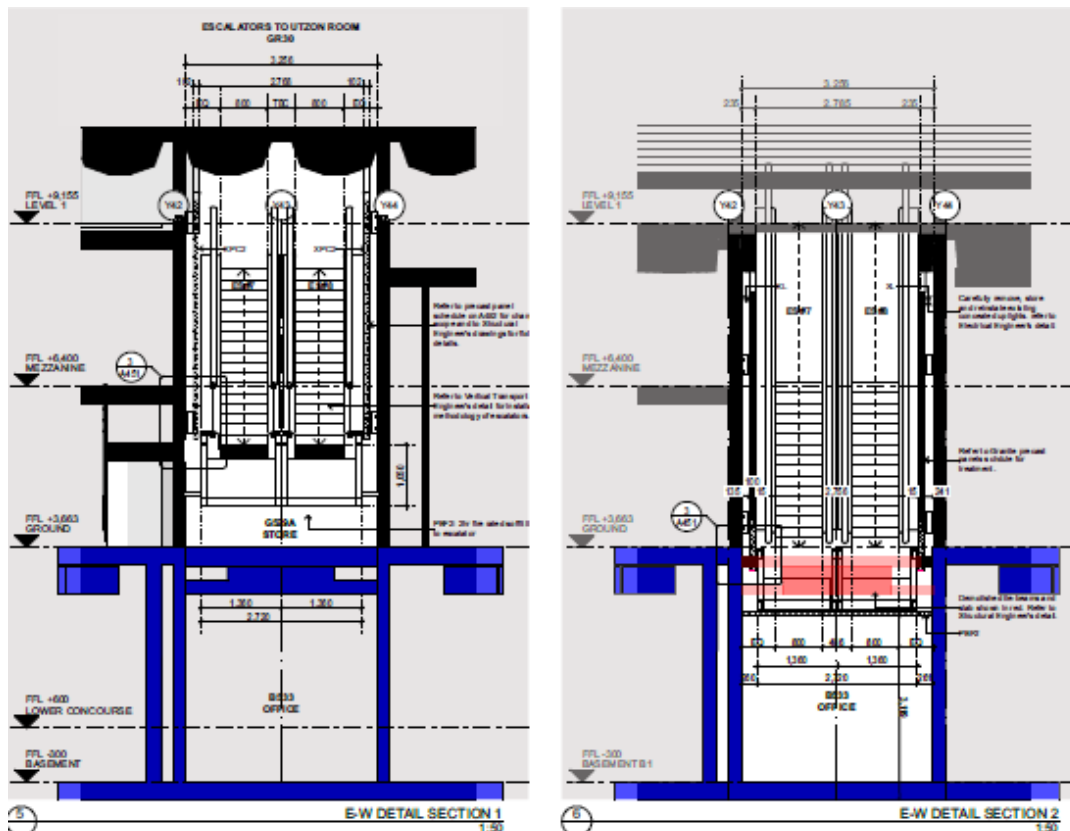


Figure 5: Tie-beam detail section (Source: Tonkin Zulaikha Greer Architects)

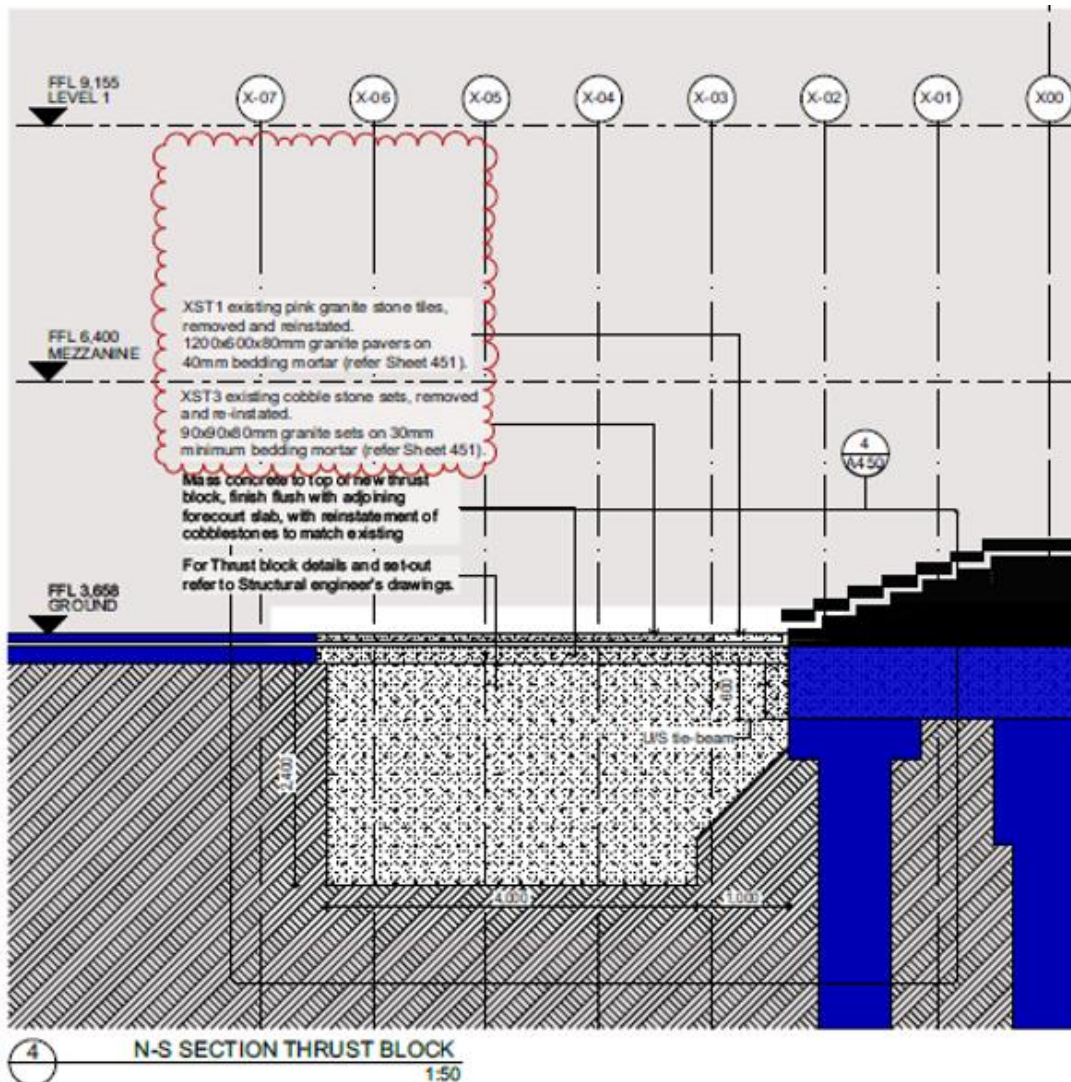


Figure 6: Thrust Block Section (Source: Tonkin Zulaikha Greer Architects)

5.2 Proposed modifications to Development Consent

The proposed works described above necessitate modification of the Development Consent, as outlined below.

The words proposed to be inserted are shown in **bold underline** and words proposed to be deleted are shown in ~~**bold strikethrough**~~.

5.2.1 Schedule 2 Condition A1 - Terms of Consent

It is recommended that Schedule 2 Condition A1 be amended as follows:

- A1. The Applicant, in acting on this consent, must carry out the development:
 - a) generally in accordance with the Environment Impact Statement entitled 'Sydney Opera House Building Renewal Safety, Accessibility and Venue Enhancement Works and Entry Foyer Refurbishment', and accompanying appendixes, prepared by Keylan Consulting Pty Ltd, dated September 2016;

- b) generally in accordance with the Response to Submissions entitled 'Sydney Opera House Building Renewal Safety, Accessibility and Venue Enhancement Works and Entry Foyer Refurbishment (SSD 7665)', and accompanying appendices, prepared by Keylan Consulting Pty Ltd, dated 3 February 2017;
- c) in compliance with the conditions of this consent; and
- d) the following drawings:
- e) **Statement of Environmental Effects Section 4.55(1A) modification application (SSD 7665 MOD 1), prepared by Keylan Consulting Pty Ltd, dated May 2018; and**

Entry Foyer Refurbishment Works			
Architectural (or Design) Drawings prepared by Tonkin Zulaikha Greer Architects			
Sheet No.	Revision	Name of Plan	Date
A-0000	A	Cover Page	2/8/2016
A-0001	A	Location Plan (+30)	2/8/2016
A-0101	A	Demolition Level 1 Plan (+30)	2/8/2016
A-1001	A	Proposed Ground Floor Plan (+12)	2/8/2016
A-1002	A	Proposed Level 1 Plan (+30)	2/8/2016
A-1003	A	Proposed Level 2 Plan (+42)	2/8/2016
A-1201	A	Proposed Level 1 RCP (+30)	2/8/2016
A-2001	A	Wall Elevations 01	2/8/2016
A-2002	A	Wall Elevations 02	2/8/2016
A-2003	A	Wall Elevations 03	2/8/2016
A-6001	A	Utzon Escalator Detail Plans	2/8/2016
A-6002	A	Utzon Escalator Detail Sections	2/8/2016
A-6003	A	Lift 36 Plans GR + 21 and L1 +30	2/8/2016
A-6004	A	Lift 36 Plans L2 (+42) and Roof (+51)	2/8/2016
A-9001	A	Finishes + Product Information	2/8/2016
A002	1	Site Local Plan	18/12/2017
A100	3	General Arrangement Plans	27/06/2018
A200	4	N-S Section	17/08/2018
A450	4	Escalator Plans & N-S Section	17/08/2018
A451	4	Escalator Details & E-W Section	17/08/2018
S000	2	Entry Foyer Escalators – Cover sheet	02/05/2018
S001	2	Structural General Notes – Sheet 1	02/05/2018
S002	2	Structural General Notes – Sheet 2	02/05/2018
S010	4	Utzon Escalator Details – Sheet 1	20/06/2018
S011	4	Utzon Escalator Details – Sheet 2	20/06/2018
S015	5	Thrust Block Details – Sheet 1	10/06/2018
S016	3	Thrust Block Details – Sheet 2	10/06/2018
S017	1	Thrust Block Details – Sheet 3	10/06/2018

6 Section 4.55 Assessment

Section 4.55(1A) of the EP&A Act states:

A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

Section 4.55(1A) Provision	Response
(a) <i>it is satisfied that the proposed modification is of minimal environmental impact, and</i>	<p>The proposed modification is substantially the same development as the development for which consent was originally granted (SSD 7665). The modification seeks minor amendments to approved DA plans which have arisen from further detailed engineering design of the approved escalator. This will result in short-term minor construction impacts and will not have any adverse impacts on the heritage significance of the Sydney Opera House or on the amenity of the locality.</p> <p>On this basis, the proposal would result in development that is substantially the same as the originally approved development.</p>
(b) <i>it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and</i>	<p>Although this involves construction works in an area outside of the works approved under SSD 7665, these works are essential to the carrying out of an element of the works approved under SSD 7665 (i.e., the new escalator to the Entry Foyer). Therefore, the proposed modification is substantially the same as approved development.</p>
(c) <i>it has notified the application in accordance with:</i> <ol style="list-style-type: none"> <i>the regulations, if the regulations so require, or</i> <i>a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and</i> 	<p>DP&E will notify the modification application in accordance with the regulations.</p>
(d) <i>it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.</i>	<p>Consideration will be given to any submissions (if required) to the application should DP&E deem it necessary to advertise and/or notify the proposal in accordance with its notification requirements</p>

Table 1: Section 4.55(1A)

7 Section 4.55(3) of the EP&A Act

Section 4.55(3) of the EP&A Act states:

In determining an application for modification of a consent under this section, the consent authority must take into consideration such of the matters referred to in Section 4.15(1) as are of relevance to the development the subject of the application.

The planning assessment of the proposed modified development remains generally consistent with the matters considered in the Environmental Impact Statement (EIS) submitted with the original SSD development application (SSD 7665).

The following assessment considers the relevant matters under Section 4.15(1) and demonstrates that the development, as proposed to be modified, will be of minimal environmental impact.

The proposal is consistent with the objects of the EP&A Act as it is considered to promote the orderly and economic use and development of land without resulting in an adverse impact on the environment.

The following section of the report provides the planning assessment against the key statutory environmental planning instruments relevant to the development. The section also includes discussion and assessment of the key issues and matters for consideration pursuant to Section 4.15 of the *Environmental Planning and Assessment Act 1979*.

8 Section 4.15(1)(a) Planning Instruments

The original EIS addressed the development's level of compliance against relevant planning instruments, including:

- *State Environmental Planning Policy (State Significant Precincts) 2005*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*
- *State Environmental Planning Policy No.55 – Remediation of Land.*

The proposed modification will not affect the consistency of the proposed development with the relevant planning instruments. The following EPI's are deemed relevant to the proposed modification.

8.1 State Environmental Planning Policy (State Significant Precincts) 2005

The *State Environmental Planning Policy (State Significant Precincts) 2005* (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.

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

The *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) declares certain types of development and infrastructure to be of State and regional significance. As clause 1 of Schedule 2 of the SRD SEPP identifies all development within the SOH as SSD, the works known as the SAVE works comprise SSD and were assessed and determined as such (SSD 7665).

8.3 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 Harbour 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 Harbour SREP.

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

Clause 13 Planning principles for the Sydney Harbour Catchment

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

The proposed works are combined to short term excavation to enable the installation of the thrust block below the forecourt at the base of the Monumental Steps. and will not add to the bulk or the scale of the building or any new above ground structures. Other than during the short term construction period there will be no impact on views to or from the Opera House or the scenic character of the harbour.

Further, the HIS concludes that these works will have an acceptable impact on the heritage values of the building.

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 confined to under the Sydney Opera House Forecourt and construction activities will be managed to minimise their interface with the public. The proposed development will also have minimal impact on external publicly accessible land and areas of the Sydney Opera House. The construction area within the concourse will need

to be temporarily closed for safety reasons during the installation of the thrust block. 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 8.2, the heritage impacts of the proposed works have been considered in detail 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 SSD 7665, ensuring no impacts on the surrounding environment.
- *Public access to and use of the foreshores and waterways (clause 22)* - the proposed works will be confined to a limited area below the Sydney Opera House Forecourt. During construction the works area will be enclosed by construction hoardings and sealed off from public access during these works. The closure is short term 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)* – the proposed works are largely contained beneath the Monumental Steps and will not add to the bulk or the scale of the building or any new above ground structures. Other than during the short-term construction period there will be no impact on views to or from the Opera House or the scenic character of the harbour.
- *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 10.1, the HIS accompanying this application addresses the proposed works 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.

In addition, AIS also concludes (Section 10.2) that given the small scale of proposed works, should any features/deposits be present the impact would be partial, given that these features/deposit would extend outside of the immediate works area. Therefore, any adverse impacts could be adequately mitigated.

8.4 Sydney Local Environmental Plan 2012 and Development Control 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 Objective 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 characteristics 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 and 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

The works approved through SSD 7665 and the proposed works subject to this modification request are permissible in the B8 zone as they relate to development for the purposes of an entertainment facility.

In relation to the Sydney Development Control Plan (DCP) 2012, which supplements the SLEP and provides more detailed guidance, clause 11 of the SRD SEPP states that DCPs do not apply SSD and therefore does not apply to the proposal.

8.5 Environmental Planning and Assessment Regulations

There are no known matters prescribed by the Regulations that are relevant to the consideration of this application. The proposal will remain compliant with the BCA, refer to **Appendix 3**.

9 Other legislation

9.1 Heritage Act 1977

The works subject to SSD 7665 were approved under section 60 of the *Heritage Act 1977* on 7 June 2017.

We understand that the NSW Office of Environment and Heritage has advised that the proposed works will require a modification of this approval under section 65A of the Heritage Act.

9.2 Environmental Protection & Biodiversity Conservation Act 1999

The works subject to SSD 7665 were referred to the Commonwealth Minister for the Environment under *Environmental Protection & Biodiversity Conservation Act 1999* (EP&BC Act) and subsequently approved on 20 June 2017.

The HIS prepared in support of this application (Attachment 4) concludes

the proposed cutting of two tie beams to facilitate installation of the escalators, and the associated construction of a thrust block beneath the Forecourt at the south end of the folded beams will have no significant (adverse) impact on either the World or National Heritage values of the Sydney Opera House. It is not therefore considered as a 'controlled action' under the EPBC Act and a referral to the Commonwealth Minister for the Environment in regard to impacts on World and National Heritage values is not required.

Notwithstanding, prior to commencement of works on site, the detailed plans for the escalators and thrust block will be provided to the Commonwealth Minister for the Environment in accordance with the conditions of the EP&BC approval.

10 Likely impacts of the development

The modifications remain generally consistent with the conclusions of the EIS submitted with the original development application (SSD 7665).

Notwithstanding, Section 4.15(1)(b) of the EP&A Act 1979 requires an assessment of the impact of development on environmental impacts (natural and built), and social and economic impacts. These are discussed in detail below.

10.1 Heritage

The Heritage Impact Statement (HIS) submitted with the original DA (SSD 7665) concluded that:

In conclusion it is our assessment that the negative impacts on fabric and spaces at the Opera House identified in this assessment should not threaten or diminish the outstanding universal values that underpin its World Heritage Listing.

These impacts are high on the fabric of the JST foyer spaces, but should not substantially affect the Opera House's national or state heritage values. However, because these impacts affect spaces and fabric of exceptional/considerable significance, it is our recommendation that a referral to the Commonwealth Government under the EPBC Act should be made.

A supplementary HIS was prepared to support the proposed modification and to assess the relevant heritage values (**Appendix 4**). In summary the HIS concluded:

...construction of a thrust block beneath the Forecourt at the south end of the folded beams will have no significant (adverse) impact on either the World or National Heritage values of the Sydney Opera House.

In addition, there would be no adverse impacts on the State Heritage values associated with the proposed modification.

The improved functionality and accessibility of the public areas 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.

10.2 Archaeology

An Archaeological Impact Statement (AIS) has been prepared by GML Heritage to assess and evaluate the impact proposed works may have on potential archaeological resource (**Appendix 5**).

The AIS identifies that the study area has the potential to contain archaeological evidence associated with the modification of Beenelong Point's shoreline, possibly Fort Macquarie, the early rectangular building and the naval drill hall and the twentieth century tram operations.

The AIS concluded that the proposed modification is likely to impact on State significant archaeological remains, including:

- deposits associated with the original shorelines (moderate potential)

- early lime burning (low potential)
- the rectangular structure (low potential).
- Fort Macquarie (very low potential).

In addition, the proposed works are likely to impact on locally significant archaeological remains, including:

- deposits associated with the process of infilling the original shoreline (moderate potential)
- rubbish dump (low potential)
- the drill hall (low to moderate potential)
- the tramcar house and associated infrastructure (moderate potential).

However, AIS also concludes that the small scale of proposed works means that should any of the abovementioned features/deposits be present the impact would be partial, given that these features/deposit would extend outside of the immediate works area. Therefore, any adverse impacts could be mitigated as follows:

- record and remove any features and deposits to bedrock
- structures be subject to detailed recording
- during the works hoarding can be used to publicise the outcomes of the previous archaeological investigations which are not currently subject to permanent public interpretation.

These measures will be implemented during construction activity.

10.3 Noise and vibration

Proposed construction works are temporary (up to 8-9 weeks), confined to a limited area beneath the Forecourt and are not anticipated to generate noise and vibration impacts on areas external to the site.

The EIS submitted with the original application (SSD 7665) considered the likely impacts of noise on the nearest noise sensitive receivers and recommended the following mitigation measures to minimise any potential noise nuisance:

- all mitigation measures outlined in the Noise Impact Assessment be implemented (SSD 7665 - Appendix 6)
- the scheduling of external demolition works during the night time period be minimised to whenever it can be considered “feasible and reasonable”
- the successful contractor be required to prepare a Construction Noise Management Plan
- a noise logger 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 extend of works being undertaken
- 24hr contact details be provided nearby residents to allow complaints to be logged and addressed as soon as possible by the Opera House

A Technical Note was prepared by ARUP to support the proposed modification and assess the impact of construction activities (**Appendix 6**). In summary the Technical Note concludes:

...noise expected from construction activities related to the inclusion of a thrust block are not likely to have adverse impacts on noise sensitive receivers around the site provided the following recommendations are met:

- *[implementing noise mitigation measures as outlined in Section 6.5.2 of the NIA for DA2 – SSD 7665]*
- *limiting external works at night to only those that are required, with the exception of the delivery of items that cannot be accommodated at other times*
- *preparing a Construction Noise Management Plan.*

The proposed modification is substantially the same development as the development for which consent was originally granted (SSD 7665).

10.4 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 underneath the Sydney Opera House Forecourt, there will be minimal interface with and effect on publicly accessible areas.

The Construction Management Plan (supporting SSD 7665) 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 Forecourt will be enclosed by construction hoardings and sealed off from public access during these works.

10.5 Suitability of the site for the development

The site remains suitable for the proposed development for the reasons outlined in the EIS lodged in support of the original application (SSD 7665), and the proposed modifications do not alter these conclusions.

10.6 Section 4.15(1)(e) the public interest

The development, as proposed to be modified, continues to be in the public interest as it will support the role of the Sydney Opera House building as an important visitor destination, key component of Sydney's tourist economy and contributor to Sydney's status as a global city.

The proposed works are required to enable installation of the new escalator, which is an essential component of the approved SAVE works and will provide improved accessibility to the Entry Foyer.

11 Conclusion

It is concluded that the proposed modification 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 will improve accessibility for both patrons and performers in accordance with the Sydney Opera House Accessibility Masterplan (AMP) 2015
- 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 proposed works are of a minimal environmental impact and will have no significant impacts in terms of noise, pedestrian access and safety, traffic and access and air quality
- the proposed works relate to substantially the same development as approved under SSD 7665
- the proposal remains consistent with the conclusions of the original application.