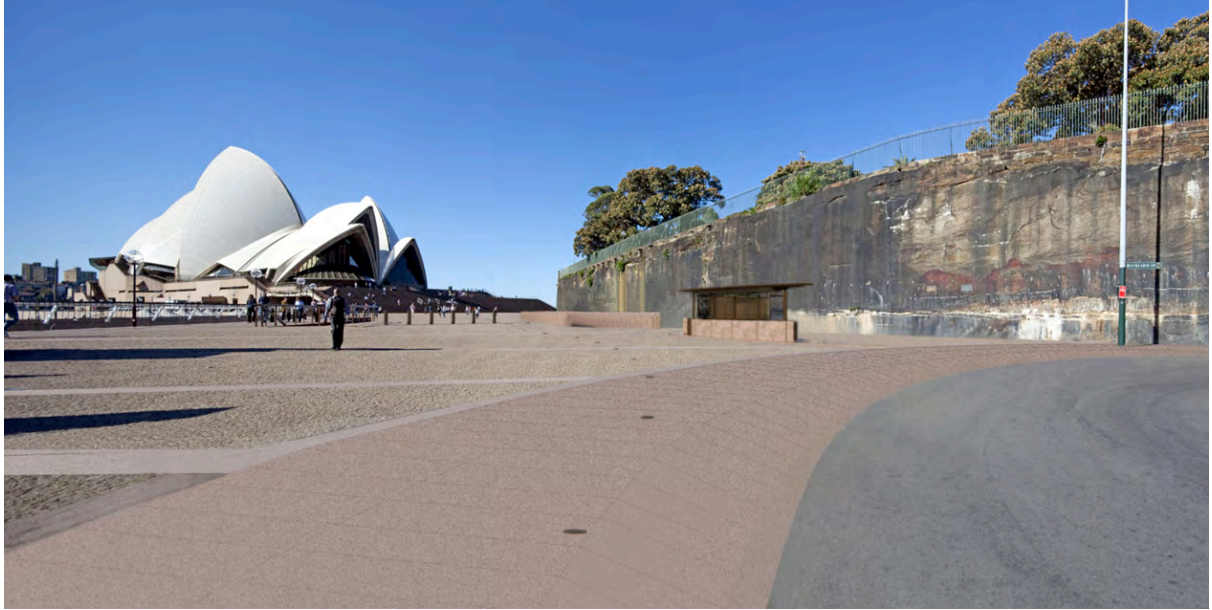


**SYDNEY OPERA HOUSE  
PROPOSED MODIFICATION TO  
VEHICLE AND PEDESTRIAN SAFETY PROJECT (VAPS)  
(MP 09\_0200)**

**HERITAGE IMPACT STATEMENT**



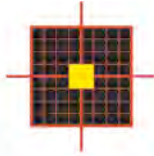
Amended photomontage showing proposed modification, based on an image by JPW for the original VAPS planning application  
(Image supplied by Scott Carver)

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**Final Report  
25 October 2012**

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## SYDNEY OPERA HOUSE PROPOSED MODIFICATION TO VEHICLE AND PEDESTRIAN SAFETY PROJECT (MP 09\_0200)

### HERITAGE IMPACT STATEMENT

#### 1.0 Background

Design 5 - Architects have been engaged by the Sydney Opera House Trust to prepare an assessment of the Heritage Impact of works described in a proposed application to modify the existing consent for the Vehicle And Pedestrian Safety (VAPS) Project at the Sydney Opera House.

These works include the following:

- 1 New cross tunnel at basement (B4) level linking the previously approved Opera Theatre Corridor and the Concert Hall Corridor as part of the construction of the underground loading dock.
- 2 Revised balustrade to the perimeter of the opening at the entry to the underground loading dock in the forecourt. This includes revised precast cladding against the associated section of the Tarpeian Wall, and deletion of the proposed precast upstand adjacent to the Tarpeian Wall to the east of the opening for the loading dock entry ramp.
- 3 Revised location and design for the proposed Gate House at the vehicle entry to the site.

The architects, Scott Carver, have been working in close collaboration with Jan Utzon on this project, particularly on the loading dock entry ramp and the gate house. In addition, Design 5 have worked closely with the design team and provided comment throughout the design development process.

This report has been prepared by Alan Croker (Director) of Design 5.

#### 2.0 Basis of assessment

The following documents form the basis on which this present proposal is assessed:

- Kerr, James Semple, *Sydney Opera House, A Revised Plan for the Conservation of the Sydney Opera House and its Site*. Third Edition, SOHT, 2003 (referred to below as the CMP 3rd edition)

as well as the Utzon design principles,

- *Sydney Opera House, Utzon Design Principles*, SOHT May 2002 (referred to below as the UDP 2002)

The CMP 3rd edition and the UDP 2002 are an integral part of the bilaterally accredited 'Management Plan for the Sydney Opera House' (August 2005) that has been prepared under Section 46 of the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The fourth edition of the CMP, *Sydney Opera House, Conservation Management Plan* by Alan Croker (author of this HIS) is not yet formally endorsed and is therefore not used as a basis for this assessment. However the discussion below incorporates considerations of issues addressed in this fourth edition.

The documents and drawings used for this assessment are those prepared by Scott Carver Pty Ltd as follows:

**Report: Sydney Opera House VAPS - Design Report**  
In support of Planning Application Sept 2012  
9 September 2012  
Reference 20100112-Report-PDR2

Drawing No.	Revision	Title
49-FV-SC001-EA-003	1	Environmental Assessment Site Plan
49-FV-SC001-EA-100	1	Environmental Assessment Basement Level B4 Plan
49-FV-SC001-EA-140	0	Environmental Assessment Forecourt Part Plan
49-FV-SC001-EA-300	0	Environmental Assessment Section & Elevations
49-FV-SC001-EA-304	0	Environmental Assessment Cross Tunnel Section
49-FV-SC001-EA-325	1	Environmental Assessment Section N-S Sheet 1
49-FV-SC001-EA-900	0	Macquarie Street photomontage

## 2.1 Methodology

This Heritage Impact Statement has been prepared in accordance with the principles and processes of the *Australia ICOMOS Burra Charter 1999*, including its accompanying 1988 'Guidelines to the Burra Charter' (on cultural significance and procedures for undertaking studies and reports). The preparation of this Heritage Impact Statement also follows the process and model recommended in the NSW Heritage Office guideline *Statements of Heritage Impact* (revised 2002), including consideration of alternative options and their impact.

The report has been set out in the same manner as the original Heritage Impact Statement dated 15 July 2010 prepared for the original VAPS planning approval application. In that report, the key issues addressed the impacts of the proposal on Heritage and Archaeology on the site, and also the Visual Impacts of the proposal. This current report does not address archaeology as this has already been covered separately in the earlier report by Godden Mackay Logan, however the other issues are considered in this report.

## 3.0 The site

The Sydney Opera House is located on Bennelong Point at the north end of Macquarie Street in Sydney. The proposed works described in this application to modify the approved works will take place generally within the area of the site owned by the Sydney Opera House but includes some fixings and other works at the base of the Tarpeian Wall. Refer to site plan below showing the location of works at the southern end of the forecourt.

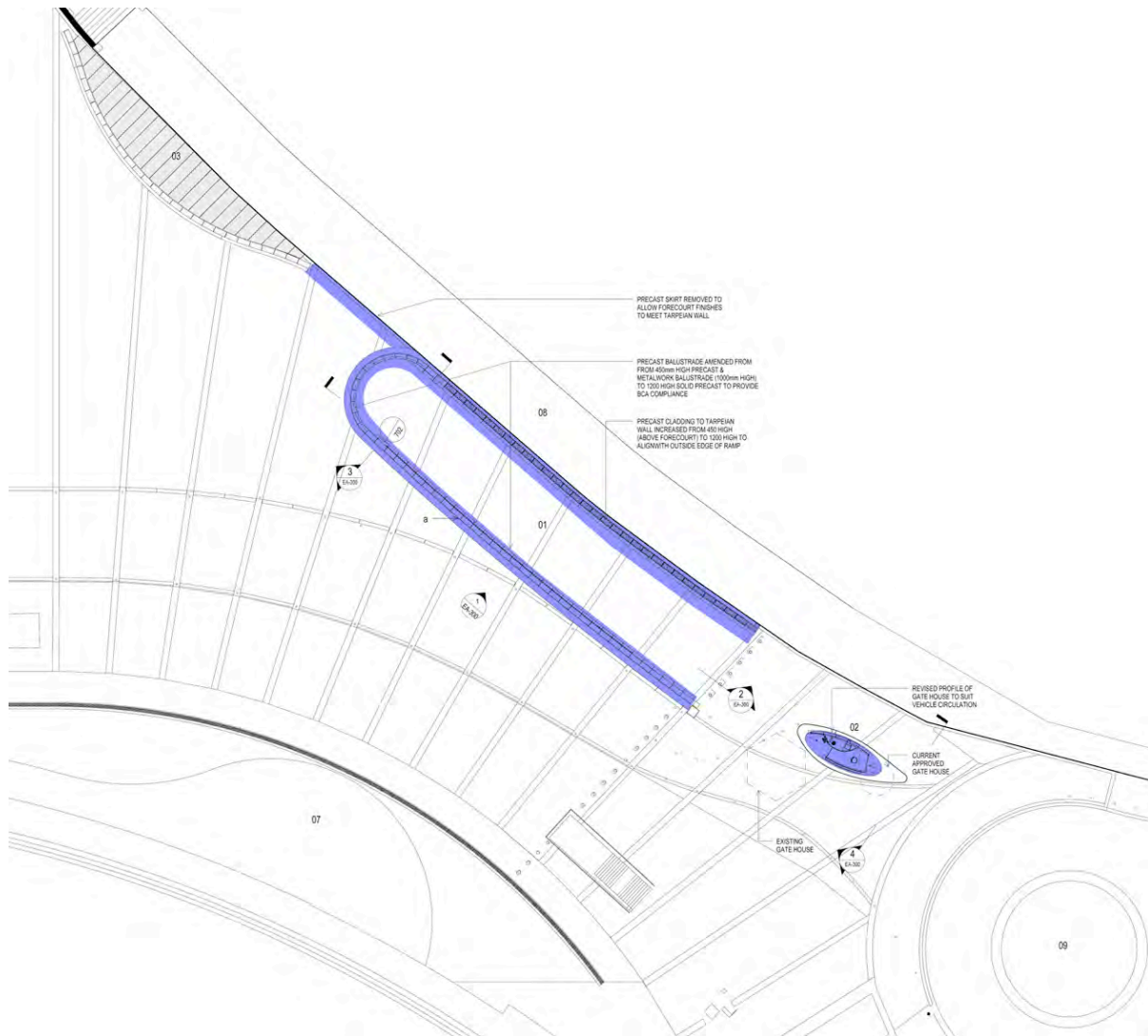


Illustration taken from Scott Carver drawing No. 49-FV-SC001-EA-140

## 4.0 Brief description and rationale for proposed modifications

The proposed modifications to the existing consent are described briefly below.

### 4.1 Cross Tunnel

A new cross tunnel is proposed at B4 level (same level as the new loading dock) linking the previously approved Opera Theatre Corridor and the Concert Hall Corridor as part of the construction of the underground loading dock.

This cross tunnel will allow a more efficient construction program for the VAPS project and once completed will provide improved amenity for bump-in and bump-out operations. It will also provide an alternative egress path from this level.

This tunnel is situated well below any former ground level and will not impact on any known archaeology.

## **4.2 Loading Ramp Balustrade and Perimeter Wall**

Revised balustrade to the perimeter of the opening at the entry to the underground loading dock in the forecourt. To address compliance issues, the approved 450mm high precast upstand with open metal balustrade above is proposed to be replaced with a 1200mm high solid precast parapet using the pink granite.

Associated with this is a raised height for the precast pink granite wall cladding against the Tarpeian Wall where it faces the ramp to match the proposed balustrade opposite.

It is now proposed to delete the precast upstand adjacent to the Tarpeian Wall between the east end of the opening for the loading dock entry ramp and the carpark vent structure to allow the base of the Tarpeian Wall to remain exposed.

## **4.3 Gate House**

Revised location and design for the proposed Gate House at the vehicle entry to the site.

The present gate house has been assessed as an intrusive element in both the CMP 3rd edition, and in the CMP 4th edition. The proposed gate house utilises the already established language of precast parapet panels of pink granite, finely detailed bronze elements, and simple glazing.

The plan form is based on an elongated ellipse, addressing sight line and functional requirements, and the roof is an almost flat bronze canopy 'floating' above the granite and glass enclosure. The form is more akin to a sheltered reception desk than a gate house, but it functions as both in a very low-key manner.

## **5.0 Consideration of alternative solutions**

### **5.1 Cross Tunnel**

This tunnel is entirely within the new areas excavated for the loading dock. Consideration of alternative solutions is not relevant here as there are no heritage issues.

### **5.2 Loading Ramp Balustrade and Perimeter Wall**

The original VAPS approval included a 1m high metal balustrade above a 450mm high precast parapet around the perimeter of the loading dock entry portal. Its design was to be consistent with the parapet treatment on the western edge of the forecourt over the lower concourse. Since then compliance requirements have changed and now a more robust and higher parapet is necessary to address crowd loading and the 4m plus difference in level to the floor of the adjoining ramp. In resolving these issues, the architects Scott Carver in collaboration with Jan Utzon went back to first principles and re-examined various options for the shape of the ramp portal in the forecourt, as well as the associated balustrade to ensure the best possible solution.

In terms of the plan configuration of the opening in the forecourt, the following options were considered:

- square ended opening,
- 'J' outline of opening – with a curved end on the north side of the opening, returning to meet the Tarpeian Wall at right angles,
- 'U' outline of opening – with fully curved end – as already approved.

Although consistent with all the other openings in the forecourt and podium, and therefore with Utzon's original concepts, the square-ended opening was considered to be too sharp and abrupt in terms of its intrusion into the forecourt and the consequent impact on activities there, including on the forecourt events and the visual impact due to the sheer scale of the ramp for vehicle compliance reasons.

The 'J' option was proposed by Jan Utzon. It had the advantage of avoiding the abrupt angular intrusion of a square opening into the forecourt, while at the same time providing a direct and simple connection with the Tarpeian Wall, consistent with other openings on the site, and more consistent with Utzon's original concepts. The Eminent Architects Panel (EAP) recommended against this option in consultation with the consultant team, as they considered it made the adjacent forecourt appear too much like a 'bridge' rather than a 'platform' extending from and connected to the Tarpeian Wall.

The fully curved 'U' option was part of the original approval for the VAPS project. This shape of opening does not exist elsewhere on the site, however it is the same as the entry and exit to the Opera House Carpark in Macquarie St. It was this option that was supported by the EAP and recommended to the SOHT, who then accepted this recommendation.

The treatment of the excavated section of sandstone at the base of the Tarpeian Wall was also considered. The options here were:

- leave sandstone exposed with a machine sawn finish,
- cover sandstone with precast pink granite panels the same as the proposed treatment on the north side of the opening and as already approved.

A sample of the sawn finish on the sandstone was prepared for inspection and again there was robust debate about the options in assessing the pros and cons of each. Following review of all options and the various recommendations, the Sydney Opera House Trust agreed that the precast clad solution was the preferred option and subsequently selected as part of the curved configuration.

Options considered for the balustrade included:

- keep as per the approval with a low precast angled upstand with a more robust open metal balustrade above to 1200mm high,
- solid precast balustrade with angled top facing out towards the forecourt,
- solid precast balustrade with angled top facing in towards the ramp.

To achieve the crowd loading requirements for events on the forecourt with an open metal balustrade would require substantial sections and potentially result in a visually less satisfactory solution. A solid parapet was considered more appropriate and potentially simpler. Different precast profiles were considered for the solid parapet, but the architects recommended the precast balustrade profile used at the north end of the podium which has an angled profile but no metal rail and is of a similar height. This retains a consistency of language across the site, simplifies the detail, and provides the safest solution for patrons, particularly during events on the forecourt.

The decision as to whether the angle faces in or out, came down to structural and compliant requirements and how the balustrade interfaced with the Tarpeian Wall. The chosen configuration with the angled top facing the ramp was considered the most successful and was supported by the EAP. The precast panels within the opening against the Tarpeian Wall are proposed to be at the same height to maintain a consistent language.

In the previously approved scheme, a 450mm upstand of precast panels was proposed against the Tarpeian Wall to the east of the ramp portal. This matched the balustrade around the portal and was associated with the intrusion into the forecourt required to accommodate the vent structure from the carpark. In order to resolve the now different heights for the precast panels, the precast upstand along the section of wall between the portal and the vent has been removed, resulting in the exposure of more of the Tarpeian Wall.

### 5.3 Gate house

At the time of submission of the 2010 DA, detailed resolution of the gate house had not been finalised. The design included in this present submission has refined the location for the gate house based on detailed studies of vehicle movements in and out of the site and queuing distances to Macquarie St.

Various shapes and materials for the gate house were considered and explored, but the architects chose to reduce the design to its fundamental principles and directly address the functional and contextual requirements. These requirements included provision of a secure and comfortable place for staff to monitor and control traffic entering and leaving the site, sheltered from the weather and with its own facilities. There was also a necessity for maximum security surveillance of the surrounding areas and for ease of access by staff to approach vehicles and address drivers directly.

An overarching consideration was the form of the gate house in its highly visible relationship with the Opera House itself.

The final design of the proposed gate house has a larger footprint than that in the approval in order to meet the functional requirements but is still less than the present gate house. It utilises elements and materials already found on the site and is a simple and direct response to its functional requirements. These include precast granite balustrade panels, bronze sections and glass. It also includes a simple roof form, recognising that it shall be seen from above (from Royal Botanic Gardens) and on approach from Macquarie Street.

## 6.0 Heritage listings and statutory framework

The Sydney Opera House is listed on the following statutory registers:

- World Heritage List (UNESCO)
- National Heritage List (Australian Government)
- Register of the National Estate (Australian Heritage Council)
- State Heritage Register (NSW Government)
- Sydney Local Environmental Plan 2005 (City of Sydney Council)

The Sydney Opera House is listed on the following non-statutory heritage registers:

- National Trust of Australia (NSW) register
- National Register of Significant 20th Century Buildings (Australian Institute of Architects)

Part 3, Division 1 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) identifies Commonwealth requirements relating to World Heritage properties and National Heritage places.

The Sydney Opera House site is subject to a bilateral agreement between the Australian Government and the State of New South Wales made in 2005 pursuant to Section 45 of the EPBC Act, although this has presently lapsed. Under the terms of the agreement (Clause 8.1), an action taken at the Sydney Opera House site does not require the approval of the Commonwealth Minister for the Environment, Heritage and the Arts where:

*the taking of the action has been approved by the State of New South Wales or an agency of New South Wales in accordance with the Management Plan for the Sydney Opera House ...*

As the Sydney Opera House site is listed as a 'State significant site' under Schedule 3 of the State Environmental Planning Policy (Major Development) 2005, any proposed development on the Sydney Opera House site would require the approval of the NSW Minister for Planning. Such proposals would be subject to the assessment and approval processes outlined in Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and the Sydney Opera House Management Plan under Section 46 of the EPBC Act submitted in August 2005.

The Management Plan referred to in the bilateral agreement provides a framework for protection of the World and National Heritage values of the Sydney Opera House site and has been endorsed by the Heritage Branch, Department of Planning (formerly the NSW Heritage Office). The Management Plan states that approval of actions in relation to the Sydney Opera House site may only be made in accordance with the Management Plan, which defers to the CMP 3rd edition for an assessment of heritage impact of proposals.

The Management Plan identifies that any proposed development on the Sydney Opera House site would require statutory approvals under both the EP&A Act and the *NSW Heritage Act 1977*.

## 7.0 Discussion of impact on World Heritage values of the Sydney Opera House

In 2007, the Sydney Opera House was inscribed on UNESCO's World Heritage List (WHL) for its Outstanding Universal Value and as a "masterpiece of human creative genius" under criterion (i) of the Operational guidelines for the implementation of the World Heritage Convention. The Sydney Opera House was inscribed on the WHL for these values:



### **Outstanding Universal Values**

*The Sydney Opera House constitutes a masterpiece of 20th century architecture. Its significance is based on its unparalleled design and construction; its exceptional engineering achievements and technological innovation and its position as a world-famous icon of architecture. It is a daring and visionary experiment that has had an enduring influence on the emergent architecture of the late 20th century. Utzon's original design concept and his unique approach to building gave impetus to a collective creativity of architects, engineers and builders. Ove Arup's engineering achievements helped make Utzon's vision a reality. The design represents an extraordinary interpretation and response to the setting in Sydney Harbour. The Sydney Opera House is also of outstanding universal value for its achievements in structural engineering and building technology. The building is a great artistic monument and an icon, accessible to society at large.*

### **Criterion (i)**

*The Sydney Opera House is a great architectural work of the 20th century. It represents multiple strands of creativity, both in architectural form and structural design, a great urban sculpture carefully set in a remarkable waterscape and a world famous iconic building.*

### **Comment**

The impact of the location and configuration of the loading dock entry portal have already been assessed as part of the original DA submission.

The proposed cross tunnel at B4 level will have no impact on the World Heritage values.

The proposed changes to the parapet and balustrade around the loading dock entry portal will have a significant impact on the setting of the forecourt because of their solidity and height, however this is mitigated by their simple design and use of elements consistent with Utzon's design elsewhere on the site. The open and unencumbered character of the forecourt and Tarpeian Wall as defining elements in the iconic presentation of the Opera House will not be substantially diminished.

The re-designed gate house is considered a substantial improvement, both functionally and aesthetically on that proposed in the original approval. While it has a larger footprint, it is very economically resolved functionally and much more appropriate in its context in terms of form and materials. It will be a substantial improvement over the existing gate house in the presentation and approach experience of the Opera House and will also provide much improved security, amenity and convenience for its occupants as well as the site.

The works proposed in this present application will not have a negative impact on the World Heritage values of the Sydney Opera House.

These impacts are discussed in detail below (compliance with CMP 3rd edition). The CMP 3rd edition was one of the primary documents in support of the nomination of the Sydney Opera House to the WHL. The CMP includes comprehensive policies that will guide the long-term conservation of the World and National Heritage values of the Sydney Opera House.<sup>1</sup>

## **8.0 Discussion of impact on National Heritage values of the Sydney Opera House**

The following is the Summary Statement of Significance of the National Heritage values of the Sydney Opera House. **Emphasis added** on aspects of significance relevant to this assessment.

*The Sydney Opera House, constructed between 1957 and 1973, is a masterpiece of modern architectural design, engineering and construction technology in Australia. It exhibits the creative genius of its designer, the Danish architect Jørn Utzon and the contributions to its successful completion by the engineering firm Ove Arup and Partners, the building contractors M.R. Hornibrook, and the architects Hall, Todd and Littlemore. It is an exceptional creative and technical achievement in the national history of building design and construction in Australia.*

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<sup>1</sup> Section 5b 'Heritage Framework', Management Plan for the Sydney Opera House, August 2005.

*Since its completion the Sydney Opera House has attracted world wide acclaim for its **distinctive design, enhanced by its prominent location on Bennelong Point within a superb harbour setting**. With its soaring white roof shells set above a massive podium, the Sydney Opera House is a **monumental urban sculpture**, internationally acclaimed as an architectural icon of the twentieth century. Its many national and international awards reflect its pivotal place in the national story of creative and technical achievement in Australia. The challenges involved in executing Utzon's design inspired innovative technical and creative solutions that were groundbreaking in the history of architectural design and building construction in Australia, particularly the roof shells that were based on the geometry of the sphere and demonstrated the extraordinary creative potential of the assembly of prefabricated, repeated components.*

*The interior spaces also reflect the creative genius of Utzon and his successors, Todd, Hall and Littlemore, who completed the building after Utzon's departure from the project in 1966.*

*The Sydney Opera House is the most widely recognised building in Australia, and is cherished as a **national icon** and world-class performing arts centre. It represents an enduring symbol of modern Sydney and Australia, both nationally and internationally, reflecting changing social attitudes towards Australian cultural life in the decades after World War II. The Sydney Opera House has played a seminal role in the development of Australia's performing arts, enhancing the cultural vitality of the nation. It continually attracts nationally and internationally acclaimed performers, and is a mecca for visitors from around Australia and overseas.*

*The peninsula on which the Sydney Opera House now stands has a special association with Bennelong, an Aboriginal man who became a prominent and influential figure in the early colony and played a significant role in mediating interactions between Aboriginal people and early settlers.*

## **Comment**

The National Heritage values of the Sydney Opera House are primarily related to Jørn Utzon's outstanding design of the building, its recognition as a national icon, and the venue being a cherished performing arts centre.

### **8.1 National Heritage criteria**

The Sydney Opera House is registered on the National Heritage List for meeting its listing criteria (a), (b), (e), (f), (g) and (h).

The values of the Sydney Opera House that meet the National Heritage criteria are set out in full in Appendix C of the Management Plan for the Sydney Opera House (August 2005) and also in the listing of the Sydney Opera House on the National Heritage List, available at <http://www.deh.gov.au/cgi-bin/ahdb/search.pl>

The heritage impact assessment under each of the individual National Heritage criterion, relevant to the VAPS proposal, has been discussed in the July 2010 HIS prepared for the original VAPS planning approval application. Design 5's assessment of heritage impact specific to this modification application is summarised below.

### **8.2 Summary assessment of heritage impact on National Heritage values**

#### **Cross tunnel**

The proposed cross tunnel at B4 level may improve the functionality of the backstage operations and therefore potentially enhance the function of the place as a performing arts centre.

#### **Loading Ramp Balustrade and Perimeter Wall**

The proposed changes to the approved design for the parapet around the loading dock entry portal will visually intrude into the southern edge of the Forecourt and conceal the lower part of the Tarpeian Wall, where it abuts this entry. The strength and simplicity of the proposed parapet design will mitigate these impacts on the Forecourt.

The proposed parapet treatment around the loading dock entry portal utilises the language of precast pink granite panels and parapet profiles already found on the site, retaining and respecting the use of "natural materials, textures and colours."

The removal of the precast upstand against the Tarpeian Wall to the east of the portal will clarify the visual connection between Forecourt and the wall, and strengthen the role of this wall as a defining element in the enclosure of the space. It will also mitigate the impact of concealing the lower part of the wall where it is behind the loading dock portal.

On balance, the resultant impacts of the proposed changes on the Forecourt and Tarpeian Wall are considered acceptable.

#### Gate house

The proposed works will potentially enhance the ability of the approach to the Sydney Opera House to be appreciated without the distraction of the presently intrusive gate house. The proposed materials, textures and formal language of the proposed gate house retain and respect the existing significant values of the place and will enhance the “experience of approaching” and the setting for the building. The proposed gate house is more consistent with the identity of the Opera House as a cultural icon and potentially enhance an appreciation of the Sydney Opera House as a monumental sculpture in the round.

In summary, the proposed design for the gate house is considered a positive impact on the visitor experience and setting of the Sydney Opera House and on the associated National Heritage values.

#### Associations

The works proposed in this application will not adversely affect the place’s special associations with Jørn Utzon or Bennelong.

#### Summary

In summary, the works proposed in this application to modify the existing approval will have both material and visual impacts on the Forecourt and Tarpeian Wall, and also on the primary southern approach to the Sydney Opera House. On balance these impacts on the associated National Heritage values are considered to be acceptable.

The assessment of heritage impact on all relevant significant values is discussed in Section 10 below (compliance with CMP 3rd edition).

## 9.0 Discussion of impact on State Heritage values of the Sydney Opera House

The following is the Statement of Significance of the State Heritage values of the Sydney Opera House. **Emphasis added** on aspects of significance relevant to the assessment of heritage impact of the VAPS Project.

*The Sydney Opera House is of State significance as a twentieth century architectural masterpiece sited on a prominent peninsular in Sydney Harbour. In association with the Sydney Harbour Bridge it has become an internationally recognised symbol of Sydney and Australia, which is also widely admired by local citizens. Designed for the NSW Government by renowned Danish architect Jørn Utzon between 1957 and 1966, and completed in 1973 by Hall, Todd and Littlemore, the building has exceptional aesthetic significance because of its quality as a monumental sculpture in the round, both day and night, and because of the appropriateness of its design to its picturesque setting. **Its public spaces and promenades have a majestic quality, endowed by powerful structural forms** and enhanced by vistas to the harbour and the city. An icon of modern architecture, the Sydney Opera House uses the precise technology of the machine age to express organic form. It has scientific and technical significance for the ways in which its construction continually pushed engineering and building technologies to the limit. It also has significance for the extensive associations of the site with many famous people and important themes in Australian history. Abutting the site of the first settlement of Europeans in Australia at Sydney Cove, the Sydney Opera House stands on Bennelong Point, Aboriginal land which was named after a Wangal Aboriginal man and which is of significance in the history of the entanglements and interactions between Aboriginal and non-Aboriginal cultures in Australia. Other historic themes associated with the site include the arrival of the First Fleet in Sydney Cove, scientific investigation, defence, picturesque planning, marine and urban transport and most recently, **cultural showcasing**. Since its official opening by the Queen in 1973, the Sydney Opera House has been **the scene of many notable achievements in the performing arts and has associations with many nationally and internationally renowned artistic performers**. The Sydney Opera House provides*

*an outstanding visual, cultural and tourist focal point for Sydney and Australia.*

## **Comment**

The CMP 3rd edition was developed in preparation for the listing of the Sydney Opera House on the NSW State Heritage Register (SHR), on 3 December 2003. Hence, the discussion of compliance with the CMP 3rd edition below is deemed to also satisfy as an assessment of heritage impact of the proposed modifications to the VAPS Project on the State Heritage values of the Sydney Opera House.

## **9.1 State Heritage Register criteria**

The Sydney Opera House is listed on the SHR for meeting all its listing criteria (a)-(g). The values of the Sydney Opera House that meet the SHR criteria are set out in full in the NSW Heritage Database, available online at [http://www.heritage.nsw.gov.au/07\\_subnav\\_01\\_2.cfm?itemid=5054880](http://www.heritage.nsw.gov.au/07_subnav_01_2.cfm?itemid=5054880)

The heritage impact assessment under each of the individual SHR criterion, relevant to the VAPS proposal, has been discussed in the July 2010 HIS prepared for the original VAPS planning approval application. Design 5's assessment of heritage impact specific to this modification application is summarised below.

## **9.2 Summary assessment of heritage impact on State Heritage values**

### **Cross tunnel**

The proposed cross tunnel at B4 level will improve the functionality of the Sydney Opera House and thus will potentially have a positive impact on its function and status as an internationally recognised performing arts centre.

### **Loading Ramp Balustrade and Perimeter Wall**

The proposed modifications to the parapet around the loading dock entry portal in this proposal will have a material and visual impact on the Forecourt and Tarpeian Wall. The removal of redundant precast upstand against the Tarpeian Wall, and re-design of the gate house will on balance have a positive impact on the place. The revised parapet design is more solid but simpler than the earlier design and on balance the impacts are considered acceptable.

### **Gate house**

By refining the gate house design, this proposal will potentially enhance the visitor experience and appreciation of the Sydney Opera House as an outstanding architectural icon. In fact the re-designed gate house should improve its aesthetic significance by extending the quality of Utzon's design to the point of entry to the site from Macquarie Street. Overall, the impacts of the re-designed gate house will be positive.

### **Associative significance**

The modifications proposed in this application, particularly with the parapet and gate house, designed in close collaboration with Jørn Utzon's son Jan, will potentially strengthen associations with Utzon and others involved with the design and construction of the Sydney Opera House. It presents an opportunity to strengthen these associations in the mind of the general public.

### **Summary**

In summary, the modifications proposed in this application will not have any adverse impact on the values, attributes and features that imbue the Sydney Opera House with its unmistakable symbolic qualities. They are consistent with Utzon's design intention for the open and uncluttered approach to the Sydney Opera House and his concept of using an honestly expressed natural palette of materials to create powerful spaces. The proposed modifications to the VAPS Project will have a positive impact on the State Heritage values of the Sydney Opera House.

The assessment of heritage impact on all relevant significant values is discussed in Section 10 below (compliance with CMP 3rd edition).

## 10.0 Discussion of compliance with Sydney Opera House Conservation Plan (CMP) 3rd edition

The CMP identifies and defines the significant values of the Sydney Opera House and then formulates policies framed to retain these values. The following discussion assesses the impact of the proposed modifications to the VAPS project, over and above what was identified in the HIS dated 15 July 2010 for the original proposal, firstly on the relevant significant values and elements of the place, and then against the relevant policies.

### 10.1 Significant values and elements – discussion of impact

The following Statement of Significance from CMP 3rd edition summarises the significant values of the place:

*The Sydney Opera House is a dramatic expression of the genius of a then relatively unknown architect, Jørn Utzon (whose subsequent international fame was in part a result of the design of the building), of the high quality completion of the work by Hall, Todd and Littlemore, and of the technical support given throughout by the internationally renowned engineering firm of Ove Arup and Partners and finally by M.R. Hornibrook, the inventive contractor of stages two and three.*

*The Sydney Opera House is of exceptional significance because of:*

- *its spectacular quality as sculpture in the round both by day and night;*
- *its inspired design solution in response to its setting;*
- *the picturesque quality of the peninsula setting;*
- ***the way in which its fabric reflects the contemporary philosophy of creating refined forms from machine-made components;***
- *the way in which the plastic arts, geometry and technology were drawn on to create a structure at the leading edge of endeavour;*
- *the majestic quality of its public spaces contained by powerful structural forms;*
- *the evidence of its fabric in expressing its place in twentieth century architecture (not excluding the troubled history of its construction);*
- *the seminal influence of some of its design and construction techniques;*
- ***its function as a performing arts centre of world renown;***
- *its almost mythological status as a cultural icon (then and now) arising from all the above, from the high public interest in its protracted and controversial development; and from its power to attract artists, patrons and tourists on a national and international level.*

*This significance is intensified by the extensive associations of the site and its structures, including:*

*Aboriginal and European contact (Bennelong and his house); scientific investigation (Flinders and Baudin); defence (Phillip's 1788 redoubt to Greenway's Fort Macquarie, 1817–1901); Picturesque planning (Macquarie to Utzon); marine and urban transport (overseas shipping and local ferry wharves, tram terminal and dépôt); popular recreation; and, finally, the nation's most famous cultural icon (The Opera House) and its legions of national and international performers.*

Those values noted above in bold type are relevant to the VAPS proposal. Taking each of them separately, the following comments are made:

- ***the way in which its fabric reflects the contemporary philosophy of creating refined forms from machine-made components;***

#### Comment:

The various components of the proposed modifications to the VAPS proposal have been designed using this same principle and philosophy and are consistent with the approved proposal. This is strengthened by the use of the same palette of natural materials - precast pink granite panels and bronze.

This is particularly evident in the re-design of the gate house, where a limited selection of materials and forms from across the site are assembled to make a refined and elegant structure at this important entry to the site.

- *its function as a performing arts centre of world renown;*

**Comment:**

All works included in this proposal to modify the existing approval are designed to enhance the function and efficiency of the place as a performing arts centre.

The cross tunnel improves amenity and efficiency of back stage access. The parapet design addresses issues of crowd loading and public safety for events on the forecourt. The gate house improves efficiency of vehicle movements, security, and staff amenity.

Broadly the elements and areas listed below (following the main headings in the *Schedule of levels of significance* in the CMP 3rd edition), will be affected to varying degrees by the proposed construction and completion of the works:

- Topographic setting
- Forecourt
- The form, fabric and structural systems of the Opera House
- Original concept of sequential experiences on arrival, entry and circulation
- Service areas

Each element is discussed below in relation to this proposal. At the end of each discussion section a table sets out the components of each element and their significance as listed in the CMP, with comments on the impact on each. The significance rankings are taken from the CMP 3rd edition and are as follows:

- A – Exceptional significance
- B – Considerable significance
- C - Some significance
- D - Little significance
- Int – intrusive element

## Topographic setting

Topographic setting generally refers to the broader setting of the place, however it also applies to the immediate setting, of which the forecourt and surrounding features are an important part. The proposed modifications to the VAPS proposal will impact on this immediate setting by modification of the parapet around the loading dock entry portal and revising the precast panelling against the Tarpeian Wall. These modifications arise primarily out of a need to address compliance issues, particularly in the context of events in and around the forecourt. Refer to earlier discussion on 'Consideration of alternative solutions'.

The revised parapet design is more solid and taller than the approved design, however this is mitigated by its clarity and simplicity, and its use of an original Utzon precast component – the precast podium balustrade panel.

The use of this same panelling returning on the face of the Tarpeian Wall to the same height unifies the perimeter of the portal, but results in more of the sandstone wall being covered. This is mitigated to some degree by the removal of the precast upstand between the east end of the portal and the carpark air vent structure. Access for maintenance of the wall and associated drainage must be maintained between the precast and the wall.

The re-design of the gate house will result in a positive impact on the setting and approach of the Opera House. It incorporates prefabricated components found elsewhere on the site in an elegant and honest expression of function and should fit very comfortably with the iconic masterpiece behind it on Bennelong Point.

Element	Significance	Potential impact of proposal	Comment
<b>Topographic setting</b>	<b>A</b>		
Unencumbered exposure to the harbour on three sides, permitting	a	low	There will not be any additional impact over and above what was

Unencumbered exposure to the harbour on three sides, permitting views to the Opera House from neighbouring ridges and headlands, particularly Dawes Point, Observatory Hill, Mrs Macquarie's Point, Garden Island, Bradley's Head, Cremorne Point, Kurraba Point, Kirribilli, Milson's Point and McMahon's Point; the waters of the harbour, city buildings and the harbour bridge;	a	low	There will not be any additional impact over and above what was identified in the original proposal. Acceptable impact
open relationship with the Bennelong ridge, its garden landscape and the sandstone cliff face of the Tarpeian Rock;	a	medium	Some impact from increased height of precast panels against Tarpeian Wall adjacent to portal ramp. Reduced impact from deletion of precast panels against wall to east of portal. Overall an acceptable impact
vistas, progressively or suddenly enlarging to views, from The Rocks, the northern end of Circular Quay, East Circular Quay, Macquarie Street, the	a	low	Impact confined to perimeter of portal entry where more solid parapet / balustrade will affect view. Positive impact from refinement of

## Forecourt

The detail of the precast parapet around the entry portal is simple and consistent with elements and detailing elsewhere on the site, however its increased solidity and height (over the approved lower and more open design) will to some extent obstruct views across this part of the forecourt and conceal more of the sandstone face of the Tarpeian Wall. This will impact on views and appreciation of the Tarpeian Wall at this point, however the carefully considered location of this portal, and the deletion of precast upstands to the section of sandstone wall adjacent to the east, mean these impacts may be considered acceptable. Refer also to discussion of *Consideration of alternatives* earlier in this report.

The revised design and location of the gate house will have a positive impact on the forecourt and on the approaches to it. This new design is more consistent with Utzon's design for other elements on the site and will replace poorly resolved and intrusive elements which have detracted from the iconic masterpiece on the Bennelong peninsula.

Element	Significance	Potential impact of proposal	Comment
<b>Forecourt</b>	<b>A</b>		
Openness and freedom from impedimenta;	a	medium	Higher and more solid parapet detail will increase obstruction of views across loading dock entry portal . On balance, an acceptable impact
Tarpeian cliff face with stone steps and iron railings (not on SOH property)	a	medium	View of the Tarpeian Wall affected by increased height of parapet panels against wall to portal ramp. View of Tarpeian Wall to east of portal improved by deletion of precast upstands against wall east of portal. On balance, an acceptable impact
Paving of fan pattern granite setts and strips of ashlar granite	b	none	No additional impact

Paving of fan pattern granite setts and strips of ashlar granite parallel to the podium steps (1988);	b	none	No additional impact
Roadway paving of fan pattern granite setts	b	none	No additional impact
Remains of 1857 oviform masonry stormwater drain under the forecourt;	b	none	No additional impact
Tramway cable fixings in Tarpeian cliff;	c	none	Remain untouched
Sudan contingent plaques in Tarpeian cliff;	c	none	Remain untouched
Lewis fountain (1988);	c	none	Remain untouched
Lewis plaque on plinth;	c(int)	none	Remain untouched
Air intake grille at base of Tarpeian cliff and air exhaust feature in traffic roundabout (1993);	d	low +ve	No additional impact
Pair of polished granite entry pylons at the East Circular Quay entry to the site;	int	none	Remain untouched
Present security gatehouse	int	high +ve	Proposed relocation and re-design are both positive impacts – reducing impact on views to and from SOH, particularly on the approach from Macquarie St.
3 circular granite edge planter beds;	int	none	Already removed
Garden and dwarf granite walls at base of Tarpeian cliff;	int	none	Already removed
Flagpoles beside Macquarie Street roundabout and eastern harbour parapet;	int	none	Remain untouched
Ice-cream, coffee and food bars	int	none	No additional impact
Cat's eye reflectors and black and yellow speed humps on roadway;	int	none	No additional impact
Impediments to pedestrian vision across and into forecourt	int	medium	Impact of raised precast parapet around loading dock entry portal will intrude on views in immediate area, but not on broader views. Acceptable impact. Impact of present gatehouse greatly reduced by revised design.
Advertising or announcement	int	none	No additional impact

## The form, fabric and structural systems of the Opera House

The proposed 1200mm high precast parapet panels copy Utzon's original parapet panels at the north end of the podium, and reinforce his design principle of utilising prefabricated elements assembled to make larger elements.

In a similar manner, the re-designed gate house utilises a small selection of prefabricated elements from Utzon and Hall's work and assembles them to make an elegant and efficient gate house shelter



structure at the Macquarie St entry to the site. The form, structure and materials used are consistent with Utzon's design principles and provide an appropriately scaled entry to this part of the site.

Element	Significance	Potential impact of proposal	Comment
<b>The form, fabric and structural systems of the Opera House, including</b>	<b>A</b>	none	None of the significant existing structures altered.
Roof shells with pedestals, ribs, boxed beams, warped surfaces, tile lids and lightning conductors	a	none	Not affected by proposal
Bronze louvre walls infilling shell ends	a	none	Not affected by proposal
Podium clad and paved with monumental precast granite	a	none	Not affected by proposal
Folded beams throughout the building	a	none	Not affected by proposal

### Original concept of sequential experiences on arrival, entry and circulation

The re-designed gate house will provide an appropriately scaled and detailed 'entry point' from Macquarie St. This is a very significant part of the arrival experience and this modification should enhance this experience.

Element	Significance	Potential impact of proposal	Comment
<b>Original concept of sequential experiences on arrival, entry and circulation</b>	<b>A</b>	high +ve	Re-designed gate house will enhance experience at entry point from Macquarie St.
Forecourt, podium steps, podium deck, box office foyer, stairways, level 30 foyers, auditoria	a	medium high +ve	Medium impact from solid parapet in area adjacent to ramp portal Strong positive impact at gate house.
Vehicle concourse, stairways to box office foyer, box office foyer, stairways, level 30 foyers, auditoria	a	none	Not affected by modifications

### Service areas

The proposed cross tunnel is within the new basement level B4 created as part of the VAPS project. It will have no impact on existing service areas. The proposed tunnel should continue the finishes from adjacent spaces.

Element	Significance	Potential impact of proposal	Comment
<b>Service areas</b>	<b>C-D</b>	none	Proposed cross tunnel is not within existing service areas
Character of white painted off-form concrete walling with applied colour-coded services;	b	none	Not affected
Individual spaces so treated (including plant rooms, workshops, service corridors, vehicle access areas, storage and	c-d	none	Not affected

## 10.2 Compliance with CMP policies

It is clear from the Statement of Significance in the CMP that the Sydney Opera House derives its significance primarily from its form (design structure and construction), function and setting. These three components are interdependent and as each of them is crucial to this significance then each must be maintained to the highest level. These are discussed below within the framework of the policies from the CMP 3rd edition.

### Policy 1.1 Utzon, Hall and the approach to change – Utzon’s principles

*All work on the Sydney Opera House should be carried out within the framework of Jørn Utzon’s design principles as endorsed in 2002.*

#### Comment

For details on the proposed modifications, refer to the architects’ Design Report dated 9 September 2012, accompanying this application. It is the opinion of Design 5, that the proposal responds positively and well to Utzon’s Design Principles, particularly in terms of design, form, materials, scale and function, and therefore complies with this policy.

### Policy 1.2 Utzon, Hall and the approach to change – Utzon’s concepts

*The following fabric and attributes are essential to Utzon’s concept for the Sydney Opera House and should be retained in any future development:*

- a. *the relationship between the three shell groups and the platform below;*
- b. *the shell geometry and the ceramic tile cladding;*
- c. *the canted alignments of the major shell groups;*
- d. *the supporting structural systems throughout the building;*
- e. *the visually free standing sculptural form of the building unobstructed by adjacent erections;*
- f. *the open and uncluttered character of the forecourt and grand stair by which the raised podium is gained;*
- g. *the visual relationship with the harbour setting from the podium – including the foyers surrounding the auditoria;*
- h. *the retention of a ‘natural’ palette of materials for external fabric.*

#### Comment

Most of the fabric and attributes noted above are unaffected by the proposed modifications to the works. Those affected are ‘f’ and ‘h’.

The open and uncluttered character of the forecourt will be affected by the proposed higher and more solid precast parapet around the loading dock entry portal, however this is mitigated by the simplicity of the design and the use of an element already used by Utzon in the original work. These impacts are considered acceptable.

The ‘natural’ palette of external materials is retained and utilised in the proposed works.

### Policy 1.5 Utzon, Hall and the approach to change – Major works

*Major works within the auditoria and podium are acceptable where technical advance, expert advice, design quality, adequate resources and meticulous construction can be combined to create performance and service facilities that will improve function and reinforce or enhance the significance of the Sydney Opera House, provided that:*

- *the work is planned in the context of an overall plan for the place;*
- *the scheme is developed in accordance with Policy 56.1 on the management of change.*

### Policy 1.6 Utzon, Hall and the approach to change – Additional on-site facilities

*Entire new spaces, including access and delivery systems, may be created by excavating areas below existing facilities, forecourt, vehicle concourse and broadwalks, provided the supporting mechanical*

*services and access systems are designed to be minimal visual intrusions into the surrounds of the building.*

#### **Comment**

Compliance with these policies was addressed in the HIS for the original application in July 2010. In summary the proposed modifications to the approval comply with both policies.

The present application includes a level of detail which was anticipated in the original application. Although the architects have changed since this application was prepared, the intent of the concept design remains true. In the case of the gate house, the re-design is even more refined and aligned with the Utzon Design Principles.

Policy 1.5 requires compliance with:

#### **Policy 56.1 Continuity of heritage conservation advice**

*Continuity of relevant and experienced heritage conservation advice should be provided as part of the process by which changes to the Sydney Opera House and its setting are developed and executed.*

*The timing of this advice is important. For major projects it should be drawn upon:*

- initially, at the concept stage;*
- during the development and refinement, or alteration, of the proposal;*
- for a formal statement of heritage impact, or its equivalent, in response to the completed development application;*
- to keep a watchful eye on work actually underway.*

#### **Comment**

Heritage conservation advice has been sought during the design development stages for these modifications to the VAPS Project and this HIS assesses the completed documentation. It is important that this specialist advice continue through to completion of the project to ensure the broader as well as detailed conservation objectives are achieved.

#### **Policy 3.3 Setting – Open and uncluttered setting**

*Objects should only be permitted on the forecourt, lower forecourt sea wall path, broadwalk, podium deck and steps, if they do not interrupt or intrude upon the open and uncluttered character of the place, or if they are absolutely necessary for the safety of visitors.*

#### **Comment**

The proposed modifications to the parapet and balustrade around the loading dock entry portal make it higher and more solid. This has arisen out of the necessity to meet compliance standards in terms of public safety. Alternative solutions were investigated but any open railing of the required height would have been visually more intrusive and also foreign to the SOH site. The chosen solution utilises a form, material and profile which is original to Utzon's work and has the visual strength and simplicity to allow it to sit comfortably in this exceptionally significant space. It is also "absolutely necessary for the safety of visitors." Therefore the proposal complies with this policy.

#### **Policy 6.1 Exterior – External form**

*The Opera House should retain unchanged its external form of roof shells, glass wall concept, podium and podium steps, forecourt and broadwalk.*

#### **Policy 6.2 Exterior – External form**

*Proposals that obscure the original exterior form of the Opera House are unacceptable.*

#### **Comment:**

The proposed modifications to the parapet around the loading dock entry portal will have some impact on views across the forecourt, and will be prominent in views south from the podium, but they will not adversely affect the form and character of the forecourt, or obscure the exterior of the Opera House in any way. The impact of the modified parapet is considered acceptable.

**Policy 11.1 Exterior – Podium “platform”, broadwalk and forecourt**

*The exterior platform of the podium, the broadwalk and the forecourt are important open spaces which set off the Opera House and should be kept free of permanent structures or wheeled vehicles. Furniture should be kept to a minimum and should not intrude aggressive tonal or colour contrasts with the surrounding built form. Temporary structures for occasional celebrations or manifestations should be designed to be erected, used and dismantled without damage or alteration of the fabric.*

**Comment:**

This has already been assessed in the HIS for the original application in July 2010.

**Policy 13.1 Exterior – Paving and cladding of podium and broadwalk**

*The existing paving and cladding system of precast and etched pink reconstituted granite slabs of monumental size should be retained.*

**Policy 13.2 Exterior – Paving and cladding of podium and broadwalk**

*When replacement becomes necessary, care should be taken to maintain quality control of colour, form and finish to match existing fabric.*

It is impractical to attempt to retain existing surfaces in pristine condition. Provided the visual effect remains reasonably homogeneous, paving and cladding may be allowed to age. It then takes on a more matt finish. For this reason replacement slabs need not be given a high and reflective polish which will set them apart from their neighbours.

**Comment:**

Details of the materials and finishes for the proposed modified parapet and also the proposed gate house, comply with Policy 13.1. Regarding the discussion following Policy 13.2, it is important to note that care should be taken to achieve a finish which is not highly polished. The aim should be to match the aged and more matt surface of the precast panels, as outlined in the CMP discussion above.

**Policy 25.1 Character and treatment of internal spaces – New areas**

*In accord with policy 1.6 (additional on-site facilities), entirely new spaces may be created by excavation. Where the new spaces are to have a visual or significant sequential relationship with existing Hall designed spaces they should be fitted out to the corresponding design regime. Where no such relationship exists, the new spaces may be fitted out in a contemporary idiom appropriate to the proposed use.*

**Comment:**

The proposed cross tunnel associated with the underground loading dock has no visual relationship with Hall designed spaces. The form, material, finishes and colours should therefore be consistent with adjacent new areas at this level.

**Policy 46.3 Housekeeping – Signs**

*Exterior signs should be kept to the minimum and, as far as possible, given common design and graphic characteristics.*

**Comment:**

A Signage Manual (2005) has been prepared by emeryfrost for the Sydney Opera House Trust as a response to Policy 46.1 for such a guideline document. The signage associated with the VAPS Project will be documented at later stages of the design and documentation process, and should be guided by the Signage Manual.

**Policy 51.1 Managing the process of change – Relating levels of significance to proposals**

*The more significant a concept, fabric, relationship, space or vista, the more care should be exercised in preparing proposals that may affect the place – the objective being to ensure that the work will not reduce, and may reinforce, the identified significance.*

**Comment:**

The impact of the proposed modifications to the VAPS Project on affected spaces, qualities, features and components of the Sydney Opera House is discussed in more detail in the tables in Section 10.0 'Discussion of compliance with Sydney Opera House Conservation (CMP) 3rd edition' above.

**Policy 53.1 Managing the process of change – Excavation**

*Work involving excavation, or investigation of sub surface objects, should be planned and executed in accordance with the requirements of the Heritage Act 1977 and advice of the NSW Heritage Office.*

**Comment:**

Due to the depth of the proposed cross tunnel at B4 level, it is highly unlikely nothing but solid sandstone will be encountered. Should any archaeological remains be uncovered during the work, then this should be dealt with in accordance with this policy.

**Policy 56.1 Managing the process of change – Sequence and advice in developing proposals**

*Continuity of relevant and experienced heritage conservation advice should be provided as part of the process by which changes to the Sydney Opera House and its setting are developed and executed.*

*The timing of this advice is important. For major projects it should be drawn upon:*

- *initially, at the concept stage;*
- *during the development and refinement, or alteration, of the proposal;*
- *for a formal statement of heritage impact, or its equivalent, in response to the completed development application;*
- *to keep a watchful eye on work actually underway.*

**Comment**

Design 5, as heritage architect and consultant, has been involved since 2004 in various processes of investigating options and assessing proposals affecting the Sydney Opera House, including providing comment on various options under consideration for the current VAPS Project. Refer to section 5.0 for discussion on 'Consideration of alternative solutions'.

Design 5 has detailed knowledge and understanding of the significance of the place in whole and in parts. Design 5 has also prepared the draft of the 4th edition of the Conservation Management Plan for the Sydney Opera House.

See also comment under Policies 1.5 and 1.6 above.

## **11.0 Summary impact of VAPS modification proposal**

The proposed modifications to the approved Vehicle and Pedestrian Safety Project (VAPS) will not have a significant overall impact on the Sydney Opera House over and above what has already been assessed in the July 2010 HIS for the original application.

The proposed cross tunnel could potentially have a positive impact on the amenity and efficiency of the loading dock area, and thus the long term use of the Opera House as a performing arts venue.

Negative impacts are confined to the statutorily required 1200mm height of the parapet around the loading dock entry portal and its consequent impact on the views across this area. More open balustrade / parapets were explored, but crowd loading requirements for events on the forecourt meant this would be difficult and the simplicity, strength and Utzon provenance of the chosen precast solution was preferred over a potentially distracting metal balustrade solution. This also results in a section of the Tarpeian Wall being covered to a matching height by precast panels adjacent to the portal ramp. This is mitigated to some degree by the deletion of precast upstand panels at the edge of the forecourt which would have covered 450mm of the lower part of the wall to the east of the loading dock portal. In summary the impacts of this modified parapet have been assessed as acceptable at an aesthetic level and positive at a functional level, particularly in regard to public safety and events on the forecourt.

The re-design of the gate house is considered a very positive impact as it extends the Utzon Design Principles to this southern entry to the site in a very refined and elegant manner. This new design introduces an element which is consistent with the quality, form and materiality of Utzon's original work and thus enhances the visitor experience of the place. It also enhances the management, functionality and security of the vehicle entry to the site.

On balance, we conclude that these modifications will support and enhance the significance of the Sydney Opera House.

In order to ensure these modifications are properly and appropriately implemented, it is essential that the quality and detail described in the documents is not diminished, or 'costed out' of the project during the detailed design or construction process.

The following recommendations are made for consideration as part of the approval conditions:

1. Sufficient space for access to maintain the Tarpeian Wall and associated drainage should be provided at its base, behind the proposed precast panels enclosing the loading dock ramp.
2. In accordance with Policy 1.5 of the CMP 2003, the quality and detail described in the documents should not be diminished during the detailed documentation or construction process. In order to achieve this, the documentation and construction process should be reviewed at regular and/or significant points along the project's implementation program to ensure these are maintained, and if possible enhanced. Unless prevented by extenuating circumstances, the architects and designers of the project should be part of this quality control and checking process, and their recommendations properly considered and included in the implementation.
3. In accordance with Policy 56.1 of the CMP 2003, specialist heritage conservation advice should continue to be sought during the design development and documentation stages for the VAPS Project and continue through to completion of the project to ensure the broader as well as detailed conservation objectives are achieved.

Alan Croker  
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