



# DESIGN 5

A R C H I T E C T S

5 Queen Street, Chippendale NSW 2008  
Tel (02) 9319 1855 (02) 9319 0836 Fax  
E-mail: design5@design5.com.au  
Design 5 – Architects Pty Ltd ACN 090 066 194 ABN 22 090 066 194  
Nominated Architect – Alan Croker, Registration No 4693  
Catherine Forbes 5861 Letizia Coppo-Jones Robert Gasparini 7614

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## SYDNEY OPERA HOUSE BENNELONG STORMWATER DRAIN DIVERSION MP 09\_0122

### Further comments on impact of proposed Bennelong Drain Diversion on the National Heritage values of the Sydney Opera House and compliance with Conservation Management Plan policies

#### Background

An application was submitted in February 2010 in accordance with Part 3A of the *Environmental Planning and Assessment Act 1979* seeking approval for the diversion of the existing Bennelong stormwater drain and construction of a new section to discharge into Farm Cove. As part of the application, an Environmental Assessment was submitted that assessed key issues associated with the project. Appendix B of the Environmental Assessment (January 2010) is the 'Archaeological Management Plan and Heritage Impact Assessment' (January 2010) prepared by Godden Mackay Logan (heritage consultants) that included a brief report (24 August 2009) by Design 5 – Architects providing additional comment on heritage impact of the project.

This report has been prepared by Hendry Wan (heritage consultant) and reviewed by Alan Croker (Director), both of Design 5 – Architects.

#### Purpose of this report

The Australian Government's Department of the Environment, Water, Heritage and the Arts (DEWHA) provided comments with respect to heritage issues of the proposed Bennelong drain diversion (Reference: 1/12/036/0449).

This present report is in response to DEWHA's feedback and recommendations, namely:

*It is recommended that the assessment give full consideration to:*

- *the impact of the proposals on the National Heritage values of the Sydney Opera House;*
- *measures to ensure compliance with the Sydney Opera House accredited management plan policies 13.1, 13.2, 15.1, 15.2, and 15.3, including measures to retain and replace the forecourt paving fabric.*

Assessment of heritage and archaeological impacts of the Bennelong Drain diversion on archaeological remains as well as an archaeological management plan, are found in Appendix B of the Environmental Assessment and will not be repeated or summarised here in this present report.

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

### Summary Statement of Significance

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 the assessment of heritage impact of the Bennelong Drain Diversion.

*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.*

*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 and the venue being a cherished performing arts centre.

Important past uses and historical phases – such as use as Fort Macquarie, wharf/ ferry docks and tram shed – are not part of the values for which the Sydney Opera House is listed on the National Heritage List. The only value from the period prior to the construction of the Sydney Opera House which meets the National Heritage criteria is the site's association with the Aborigine, Bennelong.

Archaeological remains of the original Bennelong Drain, including its later sections, are not part of the National Heritage values of the Sydney Opera House.

In summary, the diversion of the Bennelong Drain and the construction of a new section of drain, will only have a short-term negative impact on the National Heritage values of the Sydney Opera House during the construction phase of the project.

## 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 extracts from the National Heritage values, under each of the criterion below, summarise and draw attention to the aspects of significance that are relevant to the assessment of heritage impact of the Bennelong Drain diversion. Design 5's assessment of heritage impact is summarised at the end of this section.

### Criterion (a) Events, Processes

**The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history**

Relevant key values from National Heritage values:

- "a monumental sculpture in the round, and its inspired design solution in response to its prominent setting on Bennelong Point in Sydney Harbour"
- "the building's distinctive form"

### Criterion (b) Rarity

**The place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history**

Relevant key values from National Heritage values:

- "distinctive sail-like concrete shell roofs standing boldly upon a massive granite-faced platform, located prominently on the Sydney Harbour foreshore"

### Criterion (e) Aesthetic characteristics

**The place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group**

Relevant key values from National Heritage values:

- "The design, form, scale and location of the Opera House make it one of the most significant landmarks in Australia"
- "Its landmark qualities are enhanced by the building's juxtaposition with Sydney Harbour, its relationship with the Sydney Harbour Bridge, the garden landscape of Bennelong Ridge, the sandstone cliff face of Tarpeian Rock, and the **vistas and views to and from The Rocks, Circular Quay, East Circular Quay, Macquarie Street, the Botanic Gardens and the harbour**"
- "The building's ability to emotionally move people and invoke a strong aesthetic response is enhanced by **the experience of approaching**, entering and moving around the building and surrounds. The public promenades including the **Forecourt**, Broadwalk, and podium platform and steps contribute to the majestic qualities of the place. **The large forecourt** and sweeping podium steps prepare the visitor for the majestic quality..."

### Criterion (f) Creative or technical achievement

**The place has outstanding heritage value to the nation because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period**

Relevant key values from National Heritage values:

- "a **sculptural form** that would be both a **focal point in Sydney Harbour** and a reflection of its character"
- "finished in natural materials, textures and colours"
- "the creation of sensory experiences to bring pleasure to the building's users, particularly the **experience of approaching**"

- “Utzon’s application of counterpointing techniques using light and dark tones, soft and **hard textures**”

#### **Criterion (g) Social value**

**The place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons**

Relevant key values from National Heritage values:

- “the profile of the distinctive ceramic clad roof shells has become an instantly recognisable national emblem”

#### **Criterion (h) Significant people**

**The place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history**

Relevant key values from National Heritage values:

- “The Sydney Opera House is directly associated with Jørn Utzon”

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

The horizontal plane of the Forecourt not only underlines the building’s distinctive sculptural form on its elevated podium, the experience of approaching the Sydney Opera House via the large forecourt is an integral part of Utzon’s intent and design of the place.

The physical, visual and experiential qualities of the Forecourt are essential aspects of the National Heritage values of the Sydney Opera House.

The construction phase of the drain diversion project will have a short-term material impact on the Forecourt, including on its paving. The assessment of heritage impact on the Forecourt is discussed in the section below (compliance with relevant accredited conservation policies).

The harbour setting is an essential aspect of the exceptional significance of the Sydney Opera House. The seawall bounding Bennelong Point is an integral part of this peninsula on which the Sydney Opera House sits as a monumental urban sculpture.

The assessment of heritage impact of the Bennelong Drain diversion on the seawall is discussed in the section below (compliance with relevant accredited conservation policies).

In summary, the diversion of the Bennelong Drain and the construction of a new section of drain, will only have a short-term negative impact on the National Heritage values of the Sydney Opera House during the construction phase of the project.

### **Discussion of compliance with relevant Sydney Opera House accredited conservation policies**

This section refers to the relevant conservation policies from the Conservation Management Plan, 3rd edition, 2003 (prepared by James Semple Kerr), followed by Design 5’s comments on the compliance with these policies in the Bennelong Drain diversion project.

#### **Paving and cladding of podium and broadwalk**

**Policy 13.1** *The existing paving and cladding system of precast and etched pink reconstituted granite slabs of monumental size should be retained.*

**Policy 13.2** *When replacement becomes necessary, care should be taken to maintain quality control of colour, form and finish to match existing fabric.*

## Comment

The two policies above relate to the paving and cladding of the podium and broadwalk, not to the paving of the Forecourt where the proposed Bennelong Drain diversion will affect.

The above policies are relevant to the Bennelong Drain diversion insofar as the paving material chosen for the Forecourt is consistent with Utzon's design intent of having a hard-textured natural material (stone) that would reinforce his concept of the podium being a form of 'headland' or masonry platform supporting the shells above.

For discussion of the Forecourt paving, see Policies 15.1, 15.2 and 15.3 below.

## The forecourt and lower forecourt

**Policy 15.1** *The fan pattern granite setts or cobbles and the high quality solid granite strips and paving on the forecourt and lower forecourt should be retained and conserved.*

**Policy 15.2** *The roadway of granite setts should be renewed in a way that will stand up to the wear and tear imposed by Opera House traffic, and retain the visual effect of driving across an open pedestrian space. Any design solution should:*

- retain the same materials, colours and textures;
- incorporate more appropriate 'traffic calming' features;
- reinforce pedestrian direction (and safety) when crossing to the podium steps.

**Policy 15.3** *Any scheme for providing facilities under the Forecourt should:*

- retain the existing level of the Forecourt;
- co-ordinate and minimise above ground intrusions;
- record the surviving nineteenth century fabric of the storm water drain before diversion;
- provide for paving designed to be consistent with the character of adjacent Podium and Broadwalk paving as well as accommodating changed structural requirements.

## Comment

The original Utzon design envisaged the Forecourt as part of the continuous open horizontal masonry surface surrounding the building. However, completion of the building by others and cost constraints, meant that in 1973 this area was paved in bitumen and used as a carpark. At the opening of the Sydney Opera House in 1973, the Sydney Opera House Trust thought it would be sensible to wait and see how the building would be used before final decisions were made on the design of the Forecourt.<sup>1</sup>

The existing Forecourt paving is part of the NSW Government's Bicentennial Project, carried out in 1986-1988 to the design and direction by the NSW Government Architect Andrew Andersons, with contribution from Peter Hall. This was a major enhancement — to the setting and approach of the Sydney Opera House and included the removal of the bitumen paved carpark and its replacement with a continuous expanse of granite paving. Vehicle access across the forecourt was restricted to a narrow path along the western side and for the first time, the forecourt was a truly pedestrian space.

Peter Hall did not favour extending the use of the precast granite paving panels across the Forecourt, even if the Bicentennial Project budget had allowed it. He noted that "Its solution seemed to call for elements of either very large or very small scale, with the edges strongly defined and some kind of architectural organization of pattern. Perhaps the best model was St. Peter's Square, Rome, where a combination of granite setts and travertine strips relate the paving to the great scale of St. Peter's and the Bernini Colonnade."<sup>2</sup> Hall selected widely spaced bands of sawn finished pink (Calca) granite, parallel to the podium stairs, continuing the alignment of the building's base, with the spaces between paved with split faced pink (Sienna) granite setts, laid out in a traditional fan pattern. Both granites are South Australian and a good match for the rest of the podium.

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<sup>1</sup> Peter Hall, 'Sydney Opera House: The design approach to the building with recommendations on its conservation', 1990, p.62.

<sup>2</sup> Hall, op. cit., p.63.

Although considered appropriate for heavy traffic at the time, the granite setts have worked loose in many areas and have become a constant maintenance issue. Their failure admits water into the structure below. Together with the sunken vehicular pathway, the uneven textured surface of the granite setts are considered a public safety hazard, a serious issue when the primary use of this part of the site is for pedestrians who are frequently distracted in their gaze by the building and its setting.

There are opportunities to reconfigure the Forecourt paving to improve pedestrian access and safety; however, this is not part of the present application for approval. As explained in the Environmental Assessment, the principal drivers for the Bennelong Drain diversion relate to future strategic building plan directions and operational flexibility. These future projects are yet to be fully defined but may include the provision of a new loading area and associated improved vehicular and pedestrian access (not the subject of the present application for approval).

As part the Bennelong Drain diversion project, the existing Forecourt paving will be removed and reinstated upon the completion of the excavation and construction works. This can be carried out without damaging the fabric and will not have a negative heritage impact on the Forecourt, including its character, material, texture and colour. The works will be directed by the heritage architect to ensure minimum fabric is removed, damage is minimised, the paving is reinstated appropriately and any necessary remedial work is carried out.

### **Bennelong stormwater channel**

The Conservation Management Plan anticipates the diversion of the Bennelong Drain (Policy 15.3 above). An Archaeological Management Plan has been prepared (Godden Mackay Logan, January 2010) for the drain diversion project, including methods for archaeological investigation and recording. The works will be carried out in accordance with the recommendations (Section 6.2) in the Archaeological Management Plan.

### **Rock seawall**

The area of the Macquarie Fort was enlarged with added sea walls in the early 1860s. These were further altered in the late nineteenth and early twentieth centuries with the changes in use of Bennelong Point and the addition of wharves and jetties. Parts of these sandstone walls remain beneath the broadwalks, concealed by the existing broadwalk skirting and more recent concrete infilling in some areas behind it.

While the removal of an area of sandstone wall for the insertion of a new drain section (the diverted drain) will have some material impact on the seawall, it is considered acceptable from a heritage perspective. Since the submission of the Environmental Assessment in February 2010, there have been further discussions with Sydney Water, owner of the Bennelong Drain. The reinforced concrete box drain within the sandstone seawall (shown in Drawing sheet 5 of 7, Issue 4, date 26/05/09) will be of suitable sandstone that is durable in the Sydney harbour environment. It will be of grey to buff colour. The final stone to be selected will be free from prominent banding or flaws. The stone drain outlet will match the existing fabric of the seawall and will mitigate the visual disparity between the two. In Appendix A of the 'Archaeological Management Plan and Heritage Impact Assessment' (Godden Mackay Logan, January 2010), Design 5 has also made recommendations on the treatment and bonding of the new drain section to the existing seawall. Sydney Water has agreed to the design in principle (correspondence 25 May 2010); further details will be finalised and confirmed prior to Sydney Water's approval of the detailed design.

As shown in the photomontages in Section 7.4 (Visual impacts) of the Environmental Assessment (January 2010), the Bennelong Drain diversion will not affect the setting of the Sydney Opera House. It will not have an adverse impact on views to and from the Sydney Opera House surrounds, including the harbour waters, Man O' War Jetty and Royal Botanic Gardens.

## Summary conclusion

The proposed Bennelong Drain diversion will not have any negative impact on the National Heritage values of the Sydney Opera House.

The works affecting the Forecourt and the seawall will not have any negative heritage impact on the overall significance of the Sydney Opera House or on the individual components of the place.

The Bennelong Stormwater Drain Diversion is consistent with the accredited *Management Plan for the Sydney Opera House* (August 2005).

DESIGN 5 – ARCHITECTS PTY LTD  
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