

## Consistency Assessment Approval Form – Protection of the High Street cutting at Barangaroo

Existing Approved Project
<p>Planning approval reference details (Application/Document No. (including modifications)): SSI-15_7400 Sydney Metro City &amp; Southwest – Chatswood to Sydenham</p>
<p>Date of determination: 9 January 2017</p>
<p>Type of planning approval: Part 5.1 – Critical State Significant infrastructure</p>
<p>Description of existing approved project:</p> <p>The Chatswood to Sydenham component of Sydney Metro City &amp; Southwest comprises a new metro rail line, approximately 16 kilometres long, between Chatswood and Sydenham. New metro stations would be provided at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, as well as new underground metro platforms provided at Central Station.</p> <p>Works at Barangaroo Station would involve staged cut and cover excavation within Hickson Road, to the west of the High Street cutting. The Non-Aboriginal Heritage Impact Assessment within the Environmental Impact Statement identified that there would be a minor to moderate indirect impact (views and vistas) and minor direct impact on the State heritage listed Millers Point and Dawes Point Village Precinct heritage conservation area as a result of the project. The assessment did not identify any direct impact to the High Street cutting wall (located within the State heritage listed Millers Point and Dawes Point Village Precinct) as a result of the construction works at Barangaroo Station. The Non-Aboriginal Heritage Impact Assessment did note that the proposed ventilation shafts would be designed to minimise visual impacts and minimise impacts to the fabric of the Hickson Road (High Street) cutting.</p>
<p>Relevant background information (including EA, REF, Submissions Report, Director General’s Report, MCoA):</p> <ul style="list-style-type: none"> <li>• Chatswood to Sydenham Environmental Impact Statement and accompanying technical papers (May, 2016)</li> <li>• Chatswood to Sydenham Submissions and Preferred Infrastructure Report (October, 2016)</li> <li>• Conditions of Approval (dated 9 January 2017).</li> </ul>

### Description of proposed development/activity/works

In developing the construction methodology for the cut and cover works at Barangaroo Station, the construction contractor has identified that the High Street cutting would need to be stabilised and protected. The preliminary deformation analysis undertaken by the construction contractor concluded that the station box excavation could result in the High Street cutting to move by up to 30mm.

A number of options were investigated to ensure the cutting would be stabilised/protected (these options are considered in the Statement of Heritage Impact provided in Attachment A). The preferred option for stabilisation and protection of the cutting is through the installation of retention anchors, weep holes and protection netting. The proposed stabilisation works are required to minimise wall instability risks associated with:

- the proposed adjacent excavation to a depth of about 30m below the existing Hickson Road street level
- ground vibration from adjacent excavation plant being propagated through the wall
- limited details of the construction of the original cutting and the use of relatively poor quality materials (i.e. cyclopean concrete).

It is noted that an existing row of rock anchors and weep holes were installed in the southern end of the cutting wall around 1995.

The scope of the stabilisation works involve:

- installation of new, permanent anchor heads along the full length of the wall located about 3 metres from the top of the wall and along the toe of the wall. The anchor heads would be anchored into the bedrock behind the wall, with a spacing of 2 metres horizontally
- installation of temporary pattern anchor heads in the exposed rock beneath the toe of the wall (i.e. during excavation of the station box), with a spacing of 2 metres horizontally
- retention of the existing rock anchors where possible
- provision of weep hole drains drilled along the base of the retaining wall at 4 metre horizontal centres
- installation of netting or mesh to catch any small fragments of delaminated mortar or other debris.

The anchor heads would be patched with a similar colour render in keeping with the cutting's aesthetics. The proposed stabilisation works would be undertaken in consultation with an appropriately experienced heritage conservation architect and is subject to agreement with the relevant property owner (City of Sydney). Consultation has commenced with City of Sydney (refer to Attachment B for meeting minutes of briefing to City of Sydney) and they are generally supportive of the proposed works. Consultation will continue with City of Sydney throughout the proposed works. Monitoring and inspection would be undertaken during and following completion of the proposed stabilisation works.

The proposed working hours, duration, staffing levels and wastes generated would be in accordance with the approved project. The works would be carried out during out of hours. Traffic movements associated with the proposed stabilisation works, as well as the need to close parts of Hickson

Road, would be undertaken in accordance with the approved Construction Traffic Management Framework and associated management plans.

A peer review of the proposed works and heritage impact statement has been undertaken by Mott Macdonald (refer to Attachment C). The peer review and associated recommendations were discussed with the TSE contractor on 31 July 2017 (refer Attachment D for meeting minutes). A response to the peer review was prepared by the TSE contractor (refer Attachment E).

#### Timeframe

The proposed stabilisation works are anticipated to commence in late 2017/early 2018 and take about 3 months to complete.

#### Site description

Provide a description of the site on which the proposed works are to be carried out, including, Lot and Deposited Plan details, where available:

Works would be carried out on the High Street cutting which is part of Lot 2 DP 869022, owned by the City of Sydney.

#### Site Environmental Characteristics

The proposed stabilisation works would be carried out on the High Street cutting, which is a cutting located along the eastern side of Hickson Road into the natural sandstone bedrock above which is a retaining wall supporting High Street, Millers Point. The cutting is about 300 metres long from the Munn Street overbridge and Hickson Steps in the north, to the High Street steps in the south. The cutting forms the boundary between Barangaroo and Millers Point.

The cutting is located within the curtilage of the Millers Point and Dawes Point Village Precinct which is listed on the State Heritage Register.

#### Justification for the proposed works

The proposed stabilisation works would:

- protect and respect the heritage values of the contributory items of the State heritage listed Millers Point and Dawes Point Village Precinct;
- minimise the risk of wall instability and therefore the associated safety risk to construction workers in the station box excavation below and the general public; and
- be undertaken in accordance with Condition E58 which requires that the project is constructed with the objective of minimising impact to, and interference with, third party property and infrastructure and that such infrastructure and property is protected during construction.

### Environmental Benefit

The environmental benefits of the proposed works relate to the protection of the heritage values of the Millers Point and Dawes Point Village Precinct.

### Control Measures

Will a project and site specific EMP be prepared? Yes. A Heritage Management Plan would be prepared for the High Street cutting precinct.

Are appropriate control measures already identified in an existing EMP? No.

### Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design? N/A

## Impact Assessment – Construction

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Flora and fauna	N/A	N/A	Y	Y	-
Water	N/A	N/A	Y	Y	-
Air quality	N/A	N/A	Y	Y	-
Noise and vibration	<p>The proposed works would be undertaken during out of hours work; however noise and vibration impacts from the works are not anticipated to significantly affect any surrounding sensitive receivers and would be minor and short-term in nature.</p> <p>The proposed works would minimise the risks to the High Street cutting associated with vibration impacts from the equipment and construction activities required to excavate the station box at Barangaroo Station. The proposed stabilisation works may result in localised vibration impacts to the High Street cutting itself, although any damage as a result of the works would be made good.</p>	<p>The potential noise and vibration impacts associated with the proposed works would be managed in accordance with existing mitigation measures and conditions of approval.</p> <p>No additional mitigation measures are required. The need for any additional mitigation measures shall be reviewed as part of the assessment and approval of any out of hours works.</p>	Y	Y	-

(Uncontrolled when printed)

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Indigenous heritage	N/A	N/A	Y	Y	—
Non-indigenous heritage	<p>The proposed works to the High Street cutting would be located within the Millers Point and Dawes Point Village Precinct, which is listed on the State Heritage Register and has historic, aesthetic and social significance. A Statement of Heritage Impact for the proposed stabilisation works has been prepared. Refer to Attachment A.</p> <p>The assessment concludes that the proposed works would protect and respect the heritage significance of the contributory items within the State listed heritage precinct.</p> <p>The presence of temporary protection netting would have an adverse effect on the visual amenity of the cutting but it would not detract from the historic, aesthetic or social heritage values of the cutting or the heritage precinct.</p>	<p>The retention anchors shall be recessed and patched to minimise visual effects on the cement render of the cutting. The patching cement shall replicate, as far as possible, the composition and colour of the existing cement render.</p> <p>All stabilisation works shall be undertaken in consultation with an appropriately experienced heritage conservation architect and is subject to agreement with the relevant property owner.</p> <p>Any damage to the cutting as a result of the works shall be made good.</p> <p>The recommendations in the Statement of Heritage Impact (Attachment A), such as photographic recording and site personnel briefings, shall be implemented.</p>	Y	Y	—

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
	<p>There is little potential that archaeological relics would be encountered during the stabilisation works.</p> <p>Consultation regarding the proposed works has occurred with the Heritage Council. The Heritage Council has noted that the proposed works are acceptable subject to the potential visual impact of the patching works being appropriately mitigated (refer to Attachment F). Attachment F provides the Heritage Council's recommendations.</p>	<p>The recommendations from the Heritage Council (Attachment F) shall be implemented. It is noted that the need for broad scale rendering to mitigate any potential unacceptable visual impact and provide a consistent finish could be avoided through the implementation of suitable methods and materials for the patch render.</p>			
Community	N/A	N/A	Y	Y	—

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Traffic	<p>The number of vehicle movements to support the proposed stabilisation works would be minor and would not result in a change to the assessed intersection performance.</p> <p>The proposed works may require the temporary, partial closure of Hickson Road and/or adjacent parking spaces. Works would be undertaken outside standard working hours to minimise impacts on the road network.</p>	The stabilisation works shall be carried out in accordance with the approved Construction Traffic Management Framework and associated management plans.	Y	Y	—
Waste	N/A	N/A	Y	Y	—
Social	N/A	N/A	Y	Y	—
Economic	N/A	N/A	Y	Y	—



Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Visual	<p>Potential visual impacts associated with the proposed works relate to the temporary installation of protective netting/mesh and the proposed retention anchors along the cutting wall.</p> <p>The visual impact of the retention anchors would be minimised through their recess and patching with render similar in colour to the existing cement render. A photomontage of the proposed retention anchors following patching is shown in Figure 4.34 of the Statement of Heritage Impact (Attachment A).</p> <p>The proposed netting/mesh would act as a translucent screen across the cutting, obscuring the natural sandstone and cement rendering. This impact would be temporary and minor.</p>	<p>The retention anchors shall be recessed and patched to minimise visual effects on the cement render of the cutting. The patching cement shall replicate, as far as possible, the composition and colour of the existing cement render.</p>	Y	Y	—
Urban design	N/A	N/A	Y	Y	—
Geotechnical	N/A	N/A	Y	Y	—

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Land use	N/A	N/A	Y	Y	-
Climate Change	N/A	N/A	Y	Y	-
Risk	The proposed stabilisation works would reduce the safety risk to workers in the station box excavation below, as well as the general public.	No additional mitigation measures are required.	Y	Y	-
Other	N/A	N/A	Y	Y	-
Management and mitigation measures	N/A	N/A	Y	Y	-

## Impact Assessment – Operation

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Flora and fauna	N/A	N/A	Y	Y	-
Water	N/A	N/A	Y	Y	-
Air quality	N/A	N/A	Y	Y	-
Noise vibration	N/A	N/A	Y	Y	-
Indigenous heritage	N/A	N/A	Y	Y	-
Non-indigenous heritage	N/A	N/A	Y	Y	-
Community	N/A	N/A	Y	Y	-
Traffic	N/A	N/A	Y	Y	-
Waste	N/A	N/A	Y	Y	-
Social	N/A	N/A	Y	Y	-
Economic	N/A	N/A	Y	Y	-


Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures	Minimal Impact Y/N	Endorsed [for Planning and Environment use only]	
				Y/N	Comments
Visual	N/A	N/A	Y	Y	-
Urban design	N/A	N/A	Y	Y	-
Geotechnical	N/A	N/A	Y	Y	-
Land use	N/A	N/A	Y	Y	-
Climate Change	N/A	N/A	Y	Y	-
Risk	N/A	N/A	Y	Y	-
Other	N/A	N/A	Y	Y	-
Management and mitigation measures	N/A	N/A	Y	Y	-

## Consistency with the Approved Project

<p><b>Based on a review and understanding of the existing Approved Project and the proposed modifications, is there is a transformation of the Project?</b></p>	<p>No. The proposed stabilisation works would not transform the project. The project would continue to provide a new metro rail line between Chatswood and Sydenham.</p>
<p><b>Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?</b></p>	<p>Yes. The proposed stabilisation works would be consistent with the objectives and functions of the approved project.</p>
<p><b>Is the project as modified consistent with the objectives and functions of elements of the Approved Project?</b></p>	<p>Yes. The proposed stabilisation works would be consistent with the objectives and functions of the approved works at Barangaroo Station.</p>
<p><b>Are there any new environmental impacts as a result of the proposed works/modifications?</b></p>	<p>The approved project identified that there would be a minor to moderate indirect impact (views and vistas) and minor direct impact on the State heritage listed Millers Point and Dawes Point Village Precinct heritage conservation area. The proposed stabilisation works would protect and respect the heritage significance of the High Street cutting, which is a contributory item within the State listed heritage precinct.</p>
<p><b>Is the project as modified consistent with the conditions of approval?</b></p>	<p>Yes. The proposed works would be consistent with the conditions of approval.</p>
<p><b>Are the impacts of the proposed activity/works known and understood?</b></p>	<p>Yes. The impacts of the proposed stabilisation works are understood.</p>
<p><b>Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?</b></p>	<p>Yes. The impacts of the proposed works can be managed so as to avoid an adverse impact.</p>

I certify that to the best of my knowledge this Consistency Checklist:


- examines and takes into account also the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the project; and
- examines the consistency of the proposed activity/modification with the Approved Project;
- is accurate in all material respects and does not omit any material information.

Name	Yvette Buchli	Signature 	Date 10/8/17
Title	Manager, Planning Approvals		

To be signed by person preparing checklist

**THIS SECTION FOR PLANNING & ENVIRONMENT USE ONLY**

Application supported and submitted by:

Name	Carolyn Riley	Signature 	Date 10/8/17
Title	Senior Manager, Planning		

NOTE: ER Review was undertaken 26.6.2017 and their comments adopted.

**Project Approvals**

**Planning Approvals**

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

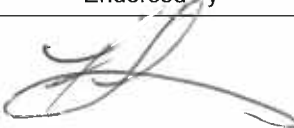
- Yes  The proposed activity/works can be endorsed by the <sup>DIRECTOR</sup>~~Principal Manager~~ Sustainability, Environment & Planning.
- No  The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/development consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

**Environmental Approvals**

Identify all other approvals required for the project:

Tick appropriate box

No further assessment required.		Further Assessment is required	
---------------------------------	--	--------------------------------	--

Comments	Endorsed by	Date	* Conditions of endorsement
	 DIRECTOR Principal Manager, Sustainability, Environment & Planning	6/9/17.	* Subject to landowner's consent being granted.

---

**ATTACHMENT A:** High Street Cutting, Millers Point – Statement of Heritage Impact (AMBS, June 2017)





# High Street Cutting, Millers Point Statement of Heritage Impact

Prepared by AMBS Ecology & Heritage  
for John Holland CPB Ghella Joint Venture

Final

June 2017

AMBS Reference: 16314

## Document Information

<b>Citation:</b>	AMBS Ecology & Heritage 2017, <i>High Street Cutting, Millers Point Statement of Heritage Impact</i> . Consultancy report to John Holland CPB Ghella Joint Venture.
<b>AMBS Ref:</b>	16314 SoHI
<b>Versions:</b>	Version 1: Draft Report issued June 2017 Version 2: Final report issued June 2017
<b>Recipient:</b>	Caitlin Richards, Approvals, Environment & Sustainability Manager John Holland CPB Ghella Joint Venture
<b>Approved by:</b>	Jennie Lindbergh AMBS Director Historic Heritage

# Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	The Site .....	1
1.2	Heritage Context.....	2
1.2.1	<i>Sydney Metro – City &amp; Southwest – Technical Services Hickson Road Retaining Wall Heritage Significance Assessment Technical Report .....</i>	<i>5</i>
1.3	Methodology & Authorship.....	6
<b>2</b>	<b>Historic Context .....</b>	<b>7</b>
2.1	Industrialisation & Change.....	10
2.2	The Hungry Mile.....	15
<b>3</b>	<b>Analysis of the Proposed Works .....</b>	<b>16</b>
<b>4</b>	<b>Physical Analysis.....</b>	<b>19</b>
4.1	The Cutting & Retaining Wall.....	21
4.1.1	<i>Hickson Steps.....</i>	<i>21</i>
4.1.2	<i>High Street Steps .....</i>	<i>22</i>
4.1.3	<i>The Cutting &amp; Retaining Wall.....</i>	<i>25</i>
4.2	Construction of the Cutting & Retaining Wall .....	28
4.3	Analysis of Options .....	33
4.3.1	<i>Option 1 – Do Nothing.....</i>	<i>33</i>
4.3.2	<i>Option 2 – Install retaining props to the wall.....</i>	<i>34</i>
4.3.3	<i>Option 3 – Install retention anchors.....</i>	<i>35</i>
4.3.4	<i>Option 4 – Install protection netting .....</i>	<i>38</i>
4.3.5	<i>Option 5 – Ad hoc repair and maintenance to the wall .....</i>	<i>39</i>
<b>5</b>	<b>Assessment of Heritage Impact .....</b>	<b>40</b>
5.1	Statement of Heritage Impact .....	41
<b>6</b>	<b>Mitigation.....</b>	<b>42</b>
6.1	Physical Condition of the High Street Cutting & Retaining Wall.....	42
6.2	Statutory Obligations.....	43
	<b>Bibliography.....</b>	<b>44</b>

## Tables

Table 3.1	Consideration of protection options (JHCPBG 2017:13–14).....	18
-----------	--	----

## Figures

Figure 1.1	The local Barangaroo environment. The cutting is indicated in red ( <a href="https://maps.six.nsw.gov.au/">https://maps.six.nsw.gov.au/</a> ).....	2
Figure 1.2	The SHR curtilage of the Millers Point & Dawes Point Village Precinct. The High Street cutting is indicated in red ( <a href="http://www.environment.nsw.gov.au/heritageapp/HeritageItemImage.aspx?ID=5054725#ad-image-40">http://www.environment.nsw.gov.au/heritageapp/HeritageItemImage.aspx?ID=5054725#ad-image-40</a> ).....	5
Figure 2.1	James Taylor’s watercolour, The town of Sydney in New South Wales c.1821 with the Military Hospital and military windmill beyond (Source: Mitchell Library, SLNSW, digital image a2916002r).....	7
Figure 2.2	1822 Plan of the town and suburbs of Sydney, the stone quarries (#15) along the eastern edge of the path to Dawes Point. Note the east side of the ridge is becoming populated, while the west side remains largely unoccupied ( <a href="http://nla.gov.au/nla.obj-229911701">http://nla.gov.au/nla.obj-229911701</a> ).....	8
Figure 2.3	Detail from 1855 City Detail Sheet, Sheet 02 showing the quarry and the approximate location of the High Street cutting. Also note three cottages at the edge of the quarry ( <a href="http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-detail-plans-1855/city-of-sydney-detail-plans-1855-sheet-2/">http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-detail-plans-1855/city-of-sydney-detail-plans-1855-sheet-2/</a> ).....	8

Figure 2.4 Detail from View of Miller's Point and Darling Harbour, ca. 1870, artist unknown, illustrating the effect of the quarry on the local Millers Point topography. Three cottages can also be seen at the edge of the quarry (<http://acms.sl.nsw.gov.au/item/itemDetailPaged.aspx?itemID=456908>) .....9

Figure 2.5 1833 Plan of the land on the east side of the northern continuation of Kent Street where the Government quarries are situated drawn by Thomas Mitchell. The east side of Kent Street has been developed; though the foreshore remains largely undeveloped ([http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps\\_pid=IE3545676](http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=IE3545676)). .....9

Figure 2.6 Detail from the Woolcott & Clarke 1854 Map of Sydney showing the development of wharves in the northern and southern sections of Millers Point. The approximate location of the High Street cutting (<http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-1854/city-of-sydney-1854-single-sheet/>)..... 11

Figure 2.7 Detail from the 1903 City of Sydney map. The central area of Millers Point is largely unoccupied, though the west side of Kent Street now has some housing. ....11

Figure 2.8 1907 map of Sydney showing the land and wharfage controlled by the Sydney Harbour Trust with inset detail of the 'Proposed High Level Roadway' (<http://nla.gov.au/nla.obj-369524664-1/view>). ..... 12

Figure 2.9 Bird's Eye view of the Sydney Harbour Trust lands and wharfage dated 1912, showing the proposed but unrealised, developments for Dawes Point, Darling, Johnstons and Blackwattle harbours (<http://nla.gov.au/nla.obj-229932979-1/view>). ..... 13

Figure 2.10 Photograph taken 1909 of the reconstruction of the East Darling Harbour wharves to the north of the Gas Works. Note that the retaining wall supporting High Street has not been built (View of the reconstruction of Darling Harbour from Millers Point showing Dalgetys Wharf No.1 partly completed. The sailing ship 'Macquarie' is shown being unrigged before being reborn as the coal hulk 'Fortuna' Dated: 1/1/1909 Digital ID: ..... 13

Figure 2.11 Aerial view of Circular Quay, Sydney, ca. 1920s. Also note connecting bridge from wharf to High Street (<http://nla.gov.au/nla.obj-162832415>). ..... 14

Figure 2.12 Looking south-east over Millers Point and the northern Darling Harbour port development 1971. The connecting bridge to High Street is extant (slnsw image#093479). ....14

Figure 2.13 A view south along the High Street cutting of Cars queue for parking in Hickson Road, Darling Harbour at 5.55am during a rail strike on 5 July 1983. The overhead bridge to High Street has now gone; however, street lighting has been attached to the length of the retaining wall (SMH NEWS Picture by John O'Gready FXB76008). ..... 15

Figure 3.1 The extent of the 1995 remediation works in red, and the extent of the proposed TSE Protection Works (JHCPBG 2017:8, Figure 3)..... 16

Figure 3.2 Detail of the methodology for the rock anchors used in the 1995 remediation works, whereby anchor heads were recessed into the concrete wall and rendered flush (JHCPBG 2017: Appendix A, Drawing 03)..... 16

Figure 4.1 View north-east from the Munn Street bridge. The slope falls away to a dip and rises again to the south seems to mark the pattern of quarrying. .... 19

Figure 4.2 View south-east where a greater quantity of the natural sandstone has been removed. A line of the 1995 anchors is indicated. .... 20

Figure 4.3 Carved sandstone corbel marking the location of the overhead bridge between High Street and the wharf buildings. Note the sandstone post upper left. .... 20

Figure 4.4 Along the palisade fence are two sandstone posts marking the location of the dip in the road and of the overhead bridge. .... 21

Figure 4.5 View north along the palisade fence (left), and detail of one of the cast iron posts supporting the fence. The fence is concreted into sandstone coping. .... 21

Figure 4.6 View east to the Hickson Steps. Note the brick infill rendering the steps unusable. The sign, left, identifies 'The Hungry Mile' and the steel door to the right identifies buried RailCorp electrical cables. .... 22

Figure 4.7 The steps do not extend to High Street in this image of the Reinforced concrete bridge, Munn St over Hickson Rd, Millers Pt. Note sandstone blocks for the construction of the wall in

the foreground (left slnsw #FL1866347). It seems likely that the sandstone posts mark the access to the steps, seen here with the Dalgety Bond Stores beyond.....22

Figure 4.8 View from the High Street Steps central landing along Hickson Road. Note the original handrails are extant.....23

Figure 4.9 View down the upper flights of steps from High Street. Note eroded render exposing what appears to be a brick. ....23

Figure 4.10 There has been little external change to the Men's Lavatory since 1934, when the photo. Left, was taken other than removal of the identifying sign (<http://www.photosau.com.au/cos/scripts/home.asp#NSCA CRS 538/049>). ....24

Figure 4.11 There is a gap between the TNS Australia building and the Steps. ....24

Figure 4.12 The concrete 'pillar' and brick infill are arrowed. ....25

Figure 4.13 A section of the cutting and wall. The render is scored to replicate masonry blocks and is aligned along the line of the natural bedrock, above which the underlying sandstone blocks have been exposed. Note, the weep hole has been colonised by a pigeon. ....26

Figure 4.14 A patch of modern cement render surrounded by the original render. The white flecks are shell fragments. ....26

Figure 4.15 Exposed patches of render indicate that at least some sections have three layers of render and the lower layers are pecked to create a rough surface for the next layer (left). Drainage channels have been shaped into the render below the original weep holes (right). ....27

Figure 4.16 There are sections of concrete with dense gravel aggregate. ....27

Figure 4.17 A collection of services attached to the wall, includes a cast iron pipe 'SHPCo.' .....27

Figure 4.18 A series of modern lights attached to the wall and cutting with attached signs Supplied from meter panel/for outages call City of Sydney 1300 651 301. Note the colonising grasses and ferns, and the stratigraphic layering of the bedrock.....28

Figure 4.19 Undated photograph of the construction of Hickson Road, showing that the blocks are clearly sandstone. Although the location is not specifically identified, as there is a similarly configured drainage channel in the rock face near to the Munn Street bridge, this is the likely location.....29

Figure 4.20 Photograph of the construction of the Concrete retaining wall: High St & Hickson Road, Millers Point, indicating that the large blocks may be concrete rather than sandstone (<http://archival.sl.nsw.gov.au/Details/archive/110105032>).....30

Figure 4.21 Photograph of the construction of Hickson Road showing what appears to be the overbridge which later linked High Street with the Darling Harbour wharves. Also note the mounds of fill above the wall ([https://s3-ap-southeast-2.amazonaws.com/srnsw-public-photos/9856\\_a017\\_A017000025.jpg](https://s3-ap-southeast-2.amazonaws.com/srnsw-public-photos/9856_a017_A017000025.jpg)). ....30

Figure 4.22 The trench along the south side of the east-west High Street return. ....31

Figure 4.23 Profile of the sandstone walling and possible floor levels (Casey & Lowe 2012:29, Fig. 3:25).....31

Figure 4.24 View of the cross-wall 13805 in Bay B looking west. Below the dashed line are the potential remains of the earlier 1830s building. The yellow arrows indicate the stones that appear to be different to those used in the upper courses. Scale 1m (Casey & Lowe 2012:36, Fig. 3:33).....32

Figure 4.25 An undated photograph of Darling Harbour showing three cottages overlooking the quarry. See also Figure 2.3 and Figure 2.4 above ([http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps\\_pid=FL977797](http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=FL977797)).....32

Figure 4.26 Overlay of the 1865 Trigonometric Survey of Sydney Plans A1 and A2 showing the central Darling Harbour area. The three cottages are extant, another cottage is at the waterfront, and to the south are two groups of houses, of which the house immediately east of the blue line was excavated by Casey & Lowe in 2012. The blue line marks the later east-west High Street return, and red line is the approximate alignment of the High Street cutting (<http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-trigonometrical-survey-1855-1865/>).....33

Figure 4.27 Elevation of the likely appearance and scale of the retaining props installed on the High Street cutting (JHCPBG).....34

Figure 4.28 An example of retaining props, albeit at a much smaller scale than would be required for the High Street cutting (JHCPBG). .....35

Figure 4.29 Indicative profile of the retaining wall with embedded retaining anchor (Detail from JHCPBG 2017: Appendix A, Drawing 02) .....36

Figure 4.30 Rock bolting of the sandstone cliff, Site C, Luna Park undertaken prior to 2006 (OCP 2006:23). .....36

Figure 4.31 Rock bolting the natural sandstone on the Old Northern Road at Wiseman’s Ferry (RMS Engineering Services). .....37

Figure 4.32 Detail of the rock bolting on the Old Northern Road at Wiseman’s Ferry (RMS Engineering Services).....37

Figure 4.33 1995 retention anchors along a section of the High Street retaining wall (left), and a detail of the recessed and patched anchor. ....37

Figure 4.34 Photomontage of the appearance of the retention anchors following patching. The image above shows the locations in red, while the image below is the after patching appearance (JHCPBG Appendix D). .....38

Figure 4.35 Protective netting attached to a road embankment (JHCPBG). .....39

# 1 Introduction

John Holland CPB Contractors Ghella (JHCPBG) has been nominated first ranked tenderer to be awarded the Design and Construct (D&C) Contract for the Tunnel and Station Excavation Works (TSE Works) of the Sydney Metro City & Southwest Project (the Project). Transport for NSW (TfNSW) is delivering the Project on behalf of the NSW Government. The Project was approved by the Minister for Planning on 9 January 2017 subject to a number of Conditions set out in Critical State Significant Infrastructure Sydney Metro & Southwest Chatswood to Sydenham Infrastructure Approval (Application no. SSI 15\_7400) (Project Planning Approval).

JHCPBG will be excavating for the new Sydney Metro Station at Barangaroo, which has the potential to have an adverse impact on the High Street cutting. During finalisation of the tender for the project JHCPBG undertook a preliminary deformation analysis which has concluded that the Barangaroo station box excavation will cause the High Street Cutting wall to move by up to 30 mm. Depending on its construction and existing condition, the worst case scenario is that it will present a safety hazard, in particular to workers in the station excavation and the general public accessing Hickson Road (JHCPBG 2017:4).

The High Street cutting is within the curtilage of the *Millers Point & Dawes Point Village Precinct* which is included on the State Heritage Register. The Minister's Condition of Approval for the project and which Conditions E10 and E58 are relevant:

**E10** *The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1.*

**E58** *The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with, third party property and infrastructure, and that such infrastructure and property is protected during construction.*

To address the potential impacts, AMBS Ecology & Heritage (AMBS) has been commissioned to prepare a Statement of Heritage Impact for the High Street cutting, Barangaroo.

## 1.1 The Site

The High Street cutting is a cutting along the eastern side of Hickson Road into the natural sandstone bedrock above which is a retaining wall supporting High Street, Millers Point. The cutting is approximately 300m long from the Munn Street overbridge and Hickson Steps in the north, to the High Street Steps in the south, and forms the boundary between Barangaroo and Millers Point in the Sydney City Local Government Area (LGA) (Figure 1.1).

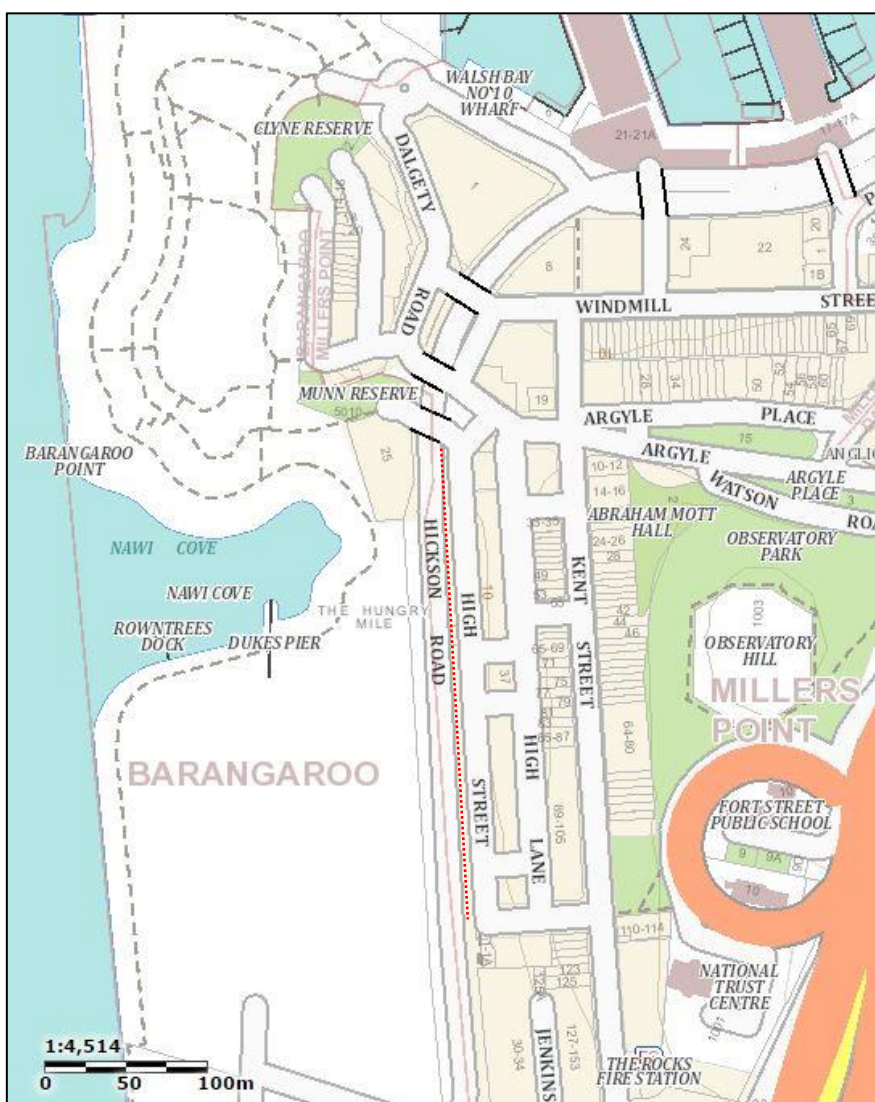


Figure 1.1 The local Barangaroo environment. The cutting is indicated in red (<https://maps.six.nsw.gov.au/>).

## 1.2 Heritage Context

The conservation and management of heritage items, places, and archaeological sites takes place within the framework of relevant Commonwealth, State or local government legislation. Non-statutory heritage lists and registers, ethical charters, conservation policies, and community attitudes and expectations can also have an impact on the management, use, and development of heritage items. The following describes the relevant statutory and non-statutory heritage listings for the study area.

The following statutory and non-statutory lists and registers have been reviewed to identify the location and significance of historic heritage items and places in the vicinity of the study area:

- National Heritage List (NHL)
- Commonwealth Heritage List (CHL)
- State Heritage Register (SHR)
- Maritime NSW Heritage & Conservation (Section 170) Register
- Sydney City LEP 2012, Schedule 5
- National Trust of Australia (NSW) Register
- Register of the National Estate (RNE)



The High Street Cutting is not listed on the NHL or CHL, nor the non-statutory National Trust Register or RNE. In addition, there are no items within the near vicinity included on these lists or registers. However, the following listings are relevant:

ID	Item	Address	Listing
01682	Millers Point & Dawes Point Village Precinct (Figure 1.2)	Upper Fort Street	SHR
00884	Millers Point Conservation Area		SHR
00559	Terrace*	Hickson Road	SHR
00920, 00918, 00919, 00868	Terrace Duplexes	A series of terrace duplexes at 2–80 and 3–9 High Street	SHR
4920007	Hickson Steps	Hickson Road	NSW Maritime S170 Register
881	Retaining Wall, Palisade Fence and Steps	High Street	City of Sydney LEP
882	Palisade Fence and High Steps	High Street	City of Sydney LEP
869	Bridges over Hickson Road	Argyle Place (and Munn and Windmill Streets)	City of Sydney LEP

\*NB. The Statement of Significance specifically refers to the Hickson Steps

The *Millers Point & Dawes Point Village Precinct* has identified historical, associative, aesthetic, and social significance, research potential, rarity and representativeness for which the Statement of Significance is:

*Millers Point & Dawes Point Village Precinct is of state significance for its ability to demonstrate, in its physical forms, historical layering, documentary and archaeological records and social composition, the development of colonial and postcolonial settlement in Sydney and New South Wales.*

*The natural rocky terrain, despite much alteration, remains the dominant physical element in this significant urban cultural landscape in which land and water, nature and culture are intimately connected historically, socially, visually and functionally.*

*The close connections between the local Cadigal people and the place remain evident in the extensive archaeological resources, the historical records and the geographical place names of the area, as well as the continuing esteem of Sydney's Aboriginal communities for the place.*

*Much (but not all) of the colonial era development was removed in the mass resumptions and demolitions following the bubonic plague outbreak of 1900, but remains substantially represented in the diverse archaeology of the place, its associated historical records, the local place name patterns, some of the remaining merchants villas and terraces, and the walking scale, lowrise, Villagelike character of the place with its central 'green' in Argyle Place, and its vistas and glimpses of the harbour along its streets and over rooftops, the sounds of boats, ships and wharf work, and the smells of the sea and harbour waters.*

*The postcolonial phase is well represented by the early 20th century public housing built for waterside workers and their families, the technologically innovative warehousing, the landmark Harbour Bridge approaches on the heights, the parklands marking the edges of the precinct, and the connections to working on the wharves and docklands still*

*evident in the street patterns, the mixing of houses, shops and pubs, and social and family histories of the local residents.*

*Millers Point & Dawes Point Village Precinct has evolved in response to both the physical characteristics of its peninsular location, and to the broader historical patterns and processes that have shaped the development of New South Wales since the 1780s, including the British invasion of the continent; cross cultural relations; convictism; the defence of Sydney; the spread of maritime industries such as fishing and boat building; transporting and storing goods for export and import; immigration and emigration; astronomical and scientific achievements; small scale manufacturing; wind and gas generated energy production; the growth of controlled and market economies; contested waterfront work practises; the growth of trade unionism; the development of the state's oldest local government authority the City of Sydney; the development of public health, town planning and heritage conservation as roles for colonial and state government; the provision of religious and spiritual guidance; as inspiration for creative and artistic endeavour; and the evolution and regeneration of locally distinctive and selfsustaining communities.*

*The whole place remains a living cultural landscape greatly valued by both its local residents and the people of New South Wales. (HO)*

The precinct is identified in the inventory as being:

*bounded on the north by the existing Walsh Bay SHR listed precinct, on the far north by the waters of Sydney Harbour in the vicinity of Ives Steps on Dawes Point/Tarra, on the northwest by the existing Sydney Harbour Bridge SHR listed item, on the northeast by the Bradfield Highway (bridge approaches) forming a distinctive physical boundary, on the south by the existing highrise apartment buildings forming a distinctive boundary, on the west by the edge of the concrete surfaced Darling Harbour wharf aprons forming a distinctive change in the landscape, and on the northwest by the cliffedges of Old Millers Point, again forming a distinctive boundary (Figure 1.2).*

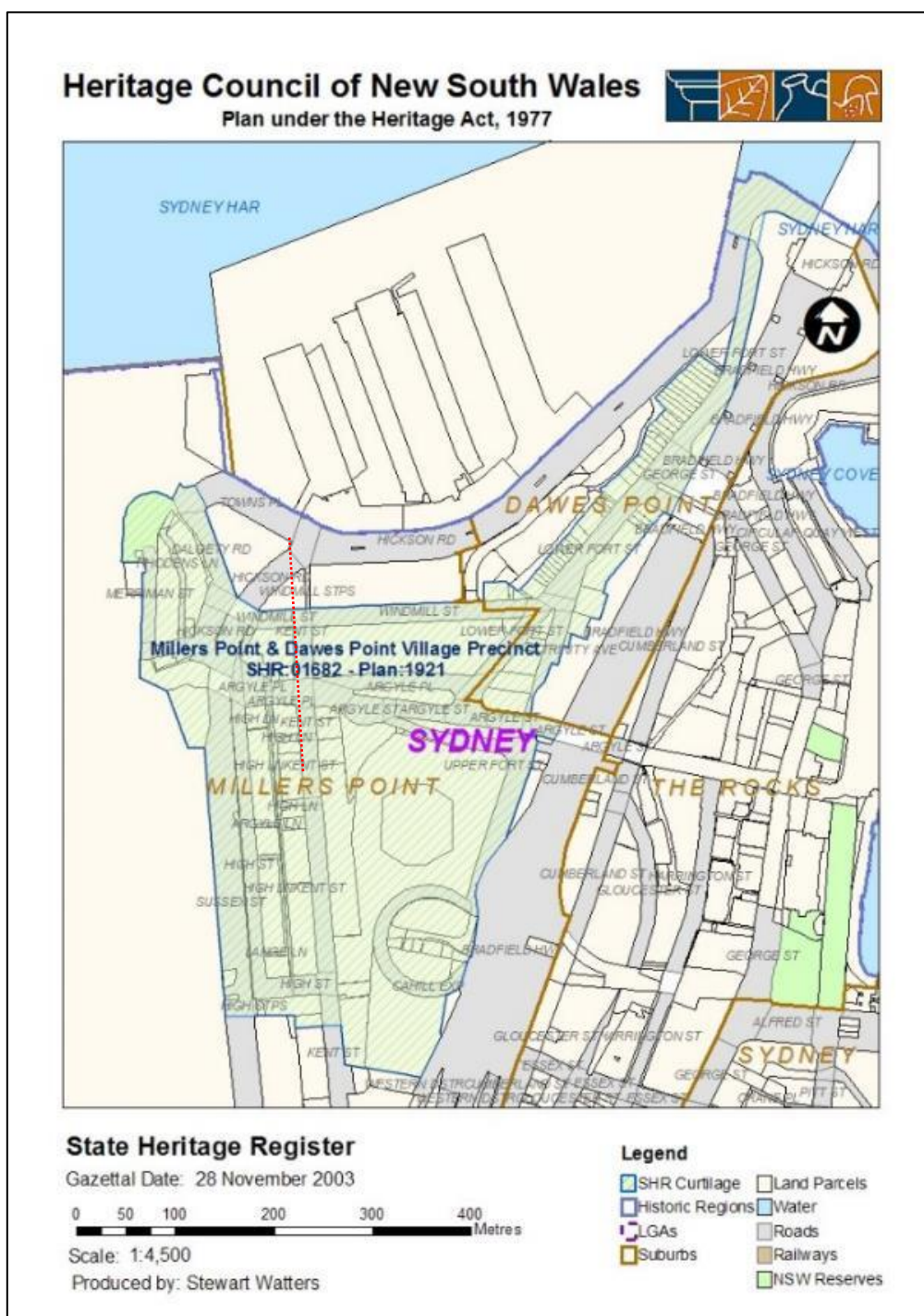


Figure 1.2 The SHR curtilage of the Millers Point & Dawes Point Village Precinct. The High Street cutting is indicated in red (<http://www.environment.nsw.gov.au/heritageapp/HeritageItemImage.aspx?ID=5054725#ad-image-40>).

### 1.2.1 Sydney Metro – City & Southwest – Technical Services Hickson Road Retaining Wall Heritage Significance Assessment Technical Report

In February 2017, GML Heritage prepared a Heritage Assessment of the High Street cutting, which is identified in the report as the Hickson Road Retaining Wall. The report identifies the wall as being contributory to the significance of the *Millers Point & Dawes Point Village Precinct* and as having historic, aesthetic and social significance for which the supporting Statement of Significance is:

*The Hickson Road Retaining Wall is a significant, contributory built element within the Millers Point and Dawes Point Village Precinct and the Millers Point Conservation Area, an intact residential and maritime precinct of outstanding state significance. The retaining wall is a dominant and relatively intact component of the extensive alterations to the natural topography of Millers Point designed to facilitate the management of cargo into and out of the new two-level finger wharves. The wall incorporated steps at its northern and southern ends to provide improved access to the wharves for stevedores and wharf workers who resided in Millers Point.*

*It provides a dramatic street edge to the eastern side of Hickson Road. The wall has landmark quality and displays an interface of fabrics, comprising the excavated rock face, cement render and masonry construction at the northern end of the wall. While there are varying degrees of erosion and deterioration to the stone/render, as well as intrusive fixtures, signage and penetrations, the retaining wall continues to define the edge of Millers Point and makes a positive contribution to the unique landscape character of Hickson Road.*

*The Hickson Road Retaining Wall holds social significance as it forms part of the 'Hungry Mile', a historic stretch of Sydney's waterfront where men and women would walk from wharf to wharf in search of employment during the Great Depression of the 1930s (2017:22-23)*

### **1.3 Methodology & Authorship**

This report is consistent with the principles and guidelines of the *Burra Charter: The Australian ICOMOS charter for the Conservation of Places of Cultural Significance 2013*. The report has been prepared in accordance with current best-practice guidelines as identified in the *NSW Heritage Manual (1996)*, published by the Heritage Office and Department of Urban Affairs and Planning, and associated supplementary publications, with particular reference to *Statements of Heritage Impact (rev.2002)*.

This report has been prepared by AMBS Director Historic Heritage, Jennie Lindbergh, who inspected the site on 2 and 11 June, 2017 and all photos in this report were taken by Jennie at these times unless otherwise indicated. Inspection of the cutting and retaining wall has only been possible from the Munn Street bridge, High Street and Steps, and from street level and as such, is not a detailed analysis of its condition.

The report has been reviewed by Dr Mary Casey, Director, Casey & Lowe Pty Ltd.

## 2 Historic Context

The topography of the peninsula to the west of Sydney Cove was such that Millers Point was separated from the main settlement of Sydney by the sandstone ridge, from which The Rocks derives its name, and as such the development of the western side of the peninsula is characterised by this physical isolation. From 1796, three windmills were constructed on the ridge, and in 1815, these were joined by Governor Macquarie's Military Hospital on Flagstaff Hill (Figure 2.1). By the early 1800s, the western side of the sandstone ridge was being quarried and housing was appearing along the lower margins of the rocky prominence (Figure 2.2).

From the early nineteenth century, Millers Point was extensively quarried to supply the construction of housing and public infrastructure, so that the area around Kent and Windmill Streets was known as The Quarries (Fitzgerald and Keating 2009:17). The quarry was worked by convicts who gradually formed the small local streets and modifying the natural topography to form the escarpment above which ran Kent Street (Figure 2.3 and Figure 2.4. The main access to the quarries and the few houses in the area was a rough path along the Darling Harbour foreshore to the northern extremity of the Point and the three windmills (Fitzgerald and Keating 2009:19).

The 1830s saw the Millers Point population increase with the industrial development of the foreshore and Kent Street the home to tradesmen and labourers working on the waterfront (Figure 2.5). Access to the area continued to be difficult, with a haphazard road network based on the expediency of access to the wharves and businesses. By 1836, Kent Street had been formed and had been extended to the north by quarrying around the base of Flagstaff Hill. Also by the 1830s, the western side of the peninsula was being developed with wharves, bond stores and housing, particularly on higher ground where advantage could be taken of the sea breezes (Davies 2007:12). At the same time, Kent Street was being populated by a sparse collection of buildings on either side. In the early 1840s, the creation of the Argyle Cut provided the connection to the east and the town.



**Figure 2.1 James Taylor's watercolour, The town of Sydney in New South Wales c.1821 with the Military Hospital and military windmill beyond (Source: Mitchell Library, SLNSW, digital image a2916002r).**

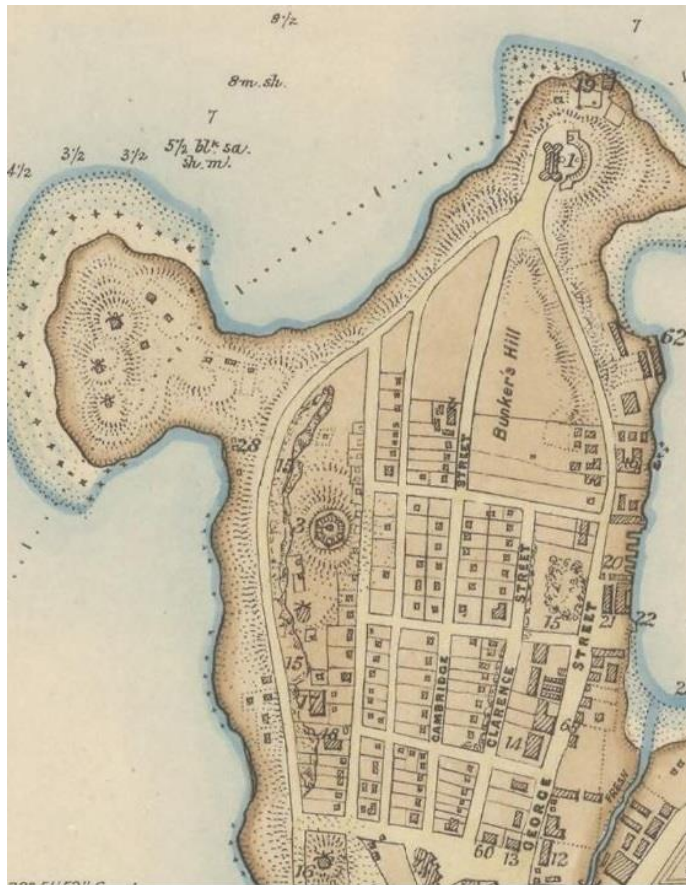


Figure 2.2 1822 Plan of the town and suburbs of Sydney, the stone quarries (#15) along the eastern edge of the path to Dawes Point. Note the east side of the ridge is becoming populated, while the west side remains largely unoccupied (<http://nla.gov.au/nla.obj-229911701>).

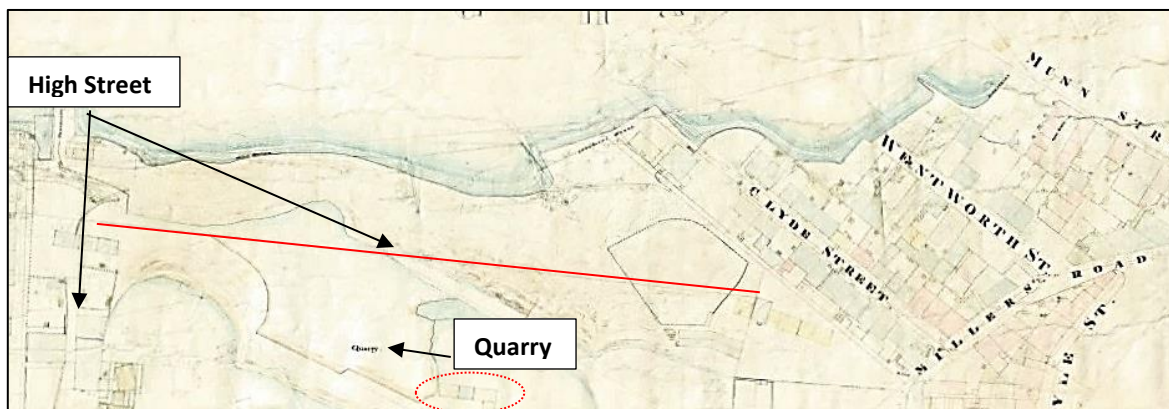


Figure 2.3 Detail from 1855 City Detail Sheet, Sheet 02 showing the quarry and the approximate location of the High Street cutting. Also note three cottages at the edge of the quarry (<http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-detail-plans-1855/city-of-sydney-detail-plans-1855-sheet-2/>).



Figure 2.4 Detail from *View of Miller's Point and Darling Harbour*, ca. 1870, artist unknown, illustrating the effect of the quarry on the local Millers Point topography. Three cottages can also be seen at the edge of the quarry (<http://acms.sl.nsw.gov.au/item/itemDetailPaged.aspx?itemID=456908>)

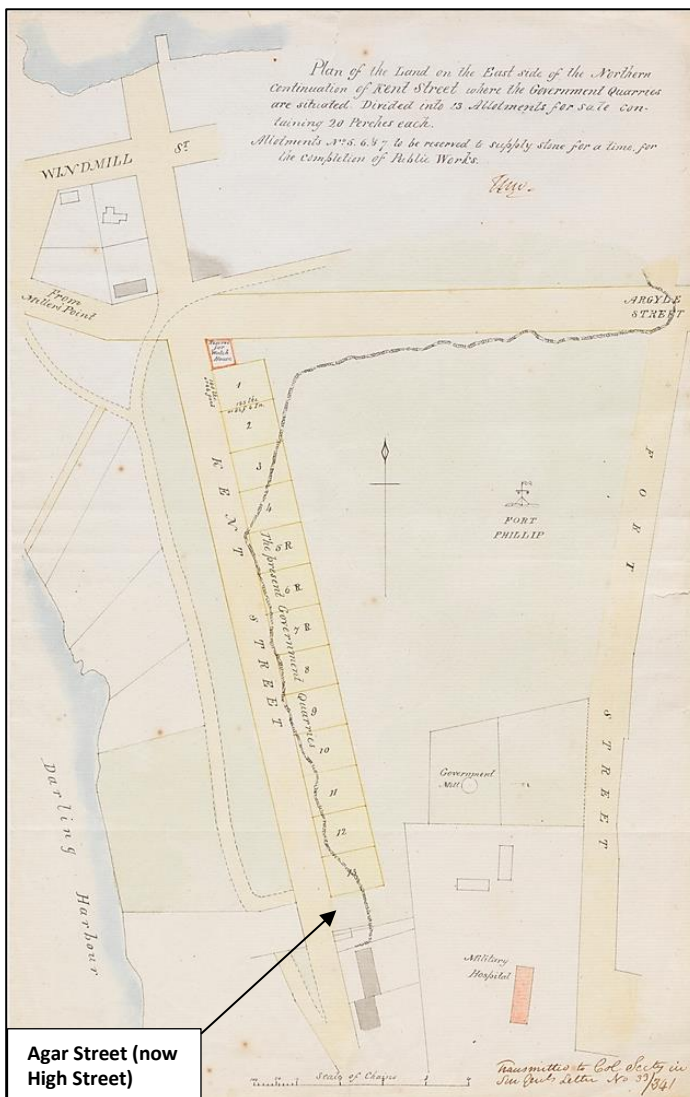


Figure 2.5 1833 Plan of the land on the east side of the northern continuation of Kent Street where the Government quarries are situated drawn by Thomas Mitchell. The east side of Kent Street has been developed; though the foreshore remains largely undeveloped ([http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps\\_pid=IE3545676](http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=IE3545676)).

## 2.1 Industrialisation & Change

At the foundation of the colony, the British East India Company was conferred an exclusive right to control all trade to and from the Colony, indeed, no private individuals were permitted to trade with India, China any colony of any European nation. To ensure that this was adhered to shipbuilding was also prohibited. However, local warehouses held a variety of goods to be shipped out, including sealskins, whalebone, sperm oil, pearl shell and sandalwood. As such, despite opposition from the East India Company and the Governors, a shipbuilding industry was established, if for no other reason than goods needed to be shipped up and down the Parramatta River. In 1813, the Company's monopoly was removed and shipbuilding grew, reaching a peak in the 1840s through to 1880, with large shipyards established along the deep-water frontages on Millers Point (Proudfoot 1996:15, 17, 19). One of the important early independent shipyards to be established was Barclay's and Corcoran's Yard near the Millers Point gasworks, which built large sailing ships and boats. From 1850, John Cuthbert took over Corcoran's Yard, near the Balmain Steam Ferry Wharf, south of the current study area. However, by 1854 the industry was at its peak with the most intensive activities along the northern section of Millers Point, away from the swampy head of Darling harbour (Proudfoot 1996:23-28) (Figure 2.6).

By the time of the 1890s Depression, the local shipbuilding industry was in decline, largely because of the construction of large iron-hulled ships overseas. New aspects of maritime industry were established with a proliferation of warehouses and bond stores, including along the Millers Point shoreline. However, an inhibiting factor to the development of Millers Point was the circuitous access routes to wharves and warehouses (Proudfoot 1996:64-66)..

In 1901, the Sydney Harbour Trust was formed, in part to address issues with rats, but also to reconstruct Sydney's wharfage and to act as its all-encompassing administrative authority. Until the establishment of the Trust, wharves had brush-box decking supported on turpentine piles with rubble infilling the spaces between the piles and the foreshore, on which rats established. Following the outbreak of bubonic Plague in 1899 and 1900, the government established the Trust, resumed the entire private commercial wharfage along the foreshores and solid-fill jetties were constructed (Figure 2.8 and Figure 2.9). In addition, 654 premises comprising stores, shops, houses and hotels were resumed and the area to be developed by the Trust. The construction of housing for port workers supplemented the existing private housing. The first houses were built in 1911; 12 on Munn Street, 16 on High Street and by 1912, 72 houses had been built on High Street and a children's playground (Proudfoot 1996:67-68, 324).

A new direct access was proposed from 1897 to connect the Maritime Services Board at West Circular Quay to the west side of the peninsular along Darling Harbour through Walsh Bay, and Pyrmont to terminate at Harris Street. It was not until the establishment of the Trust that the proposal could be realised, and in 1909, work began on constructing Hickson Road. The process entailed cutting back the cliff face and constructing the retaining wall supporting High Street and the reinforced concrete bridges over Munn, Windmill and Argyle Streets completed over 1910-1914 (Fitzgerald and Keating 2009:90) (Figure 2.10). From 1912 until 1925, wharves 3A to 6B replaced previously privately-owned wharves along the east side of Darling Harbour. The wharf buildings were two-storied with connecting bridges across Hickson Road to warehouses on the upper roads (Figure 2.11).

Darling Harbour was progressively developed until in 1971, when the Maritime Services Board was constituted to develop all infrastructure associated with the port. It was during this decade with the construction of roll-on-roll-off facilities began. These works extended the shoreline was extended by the construction of a concrete platform, replacing the entire system of wharves along the foreshore (Figure 2.12 and Figure 2.13). The ensuing phase of change was the closure and



removal of all port facilities and infrastructure to create the more 'natural' shoreline of Barangaroo.

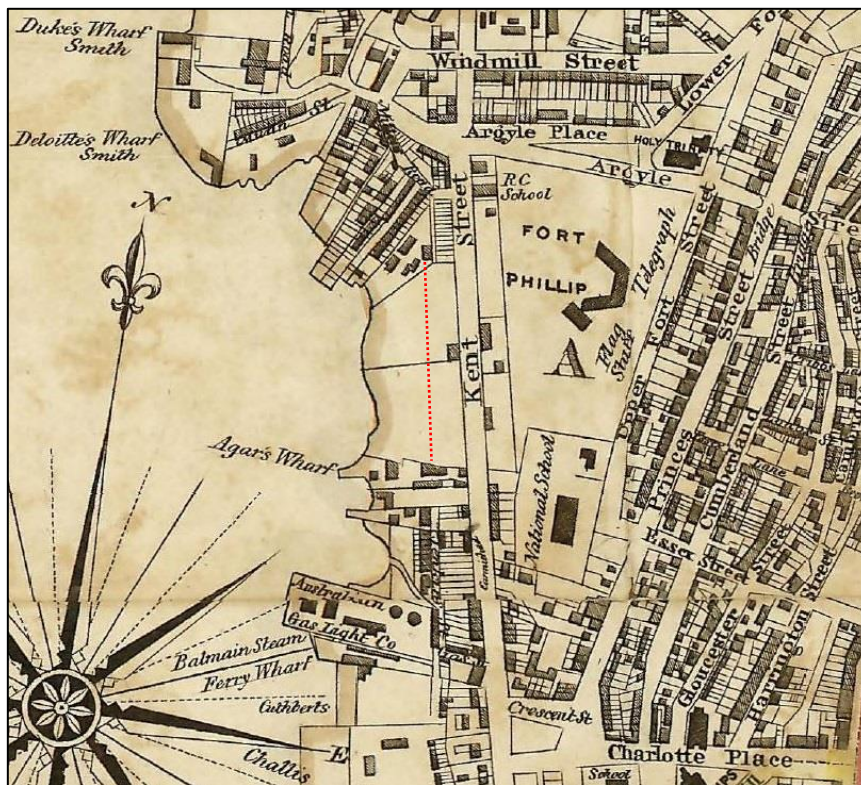


Figure 2.6 Detail from the Woolcott & Clarke 1854 Map of Sydney showing the development of wharves in the northern and southern sections of Millers Point. The approximate location of the High Street cutting (<http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-1854/city-of-sydney-1854-single-sheet/>).

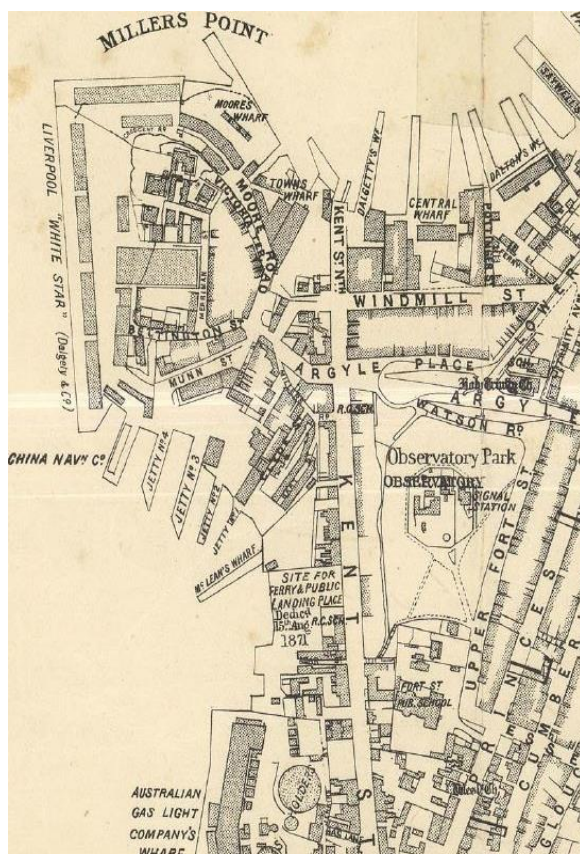


Figure 2.7 Detail from the 1903 City of Sydney map. The central area of Millers Point is largely unoccupied, though the west side of Kent Street now has some housing.

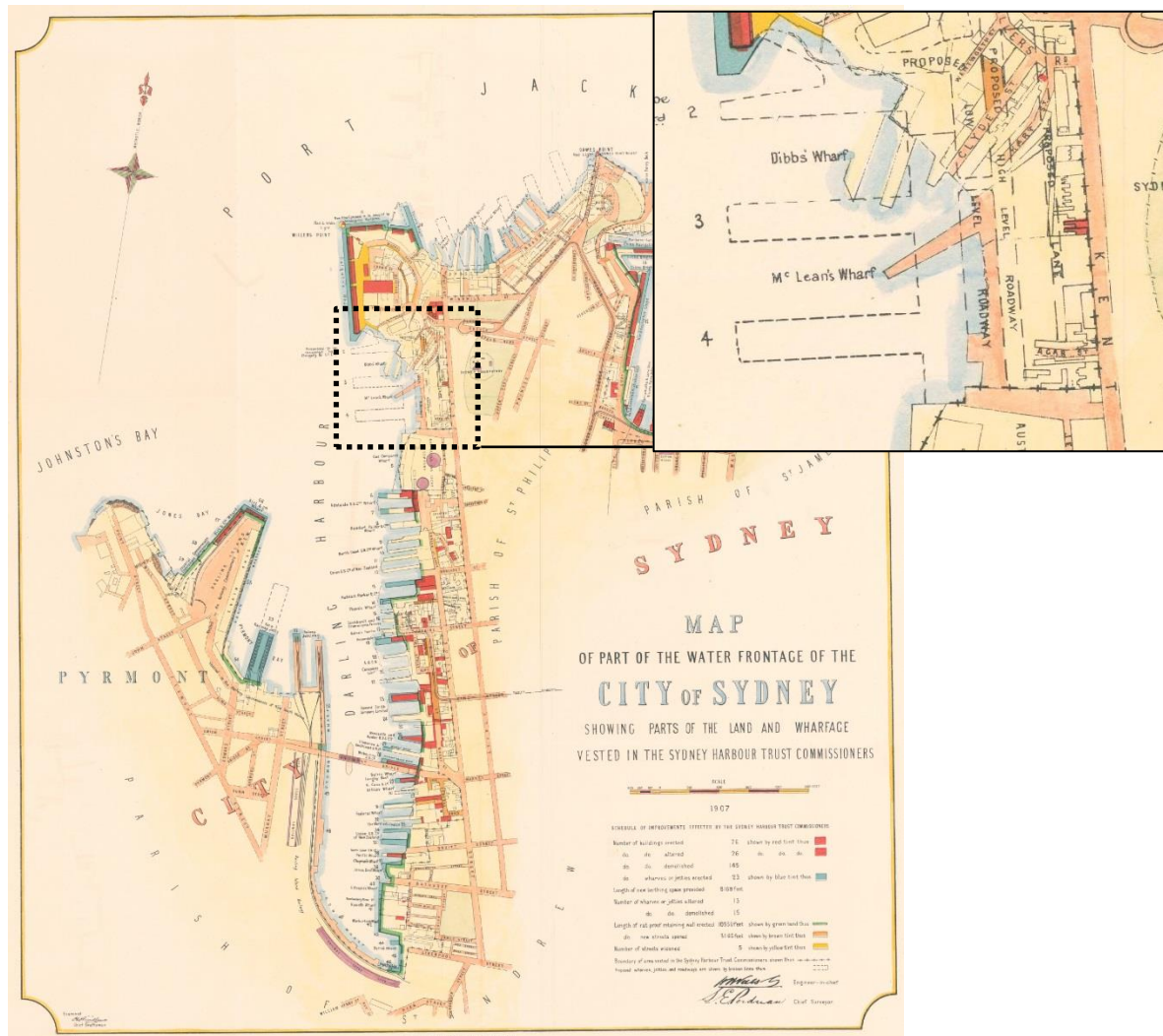


Figure 2.8 1907 map of Sydney showing the land and wharfage controlled by the Sydney Harbour Trust with inset detail of the 'Proposed High Level Roadway' (<http://nla.gov.au/nla.obj-369524664-1/view>).

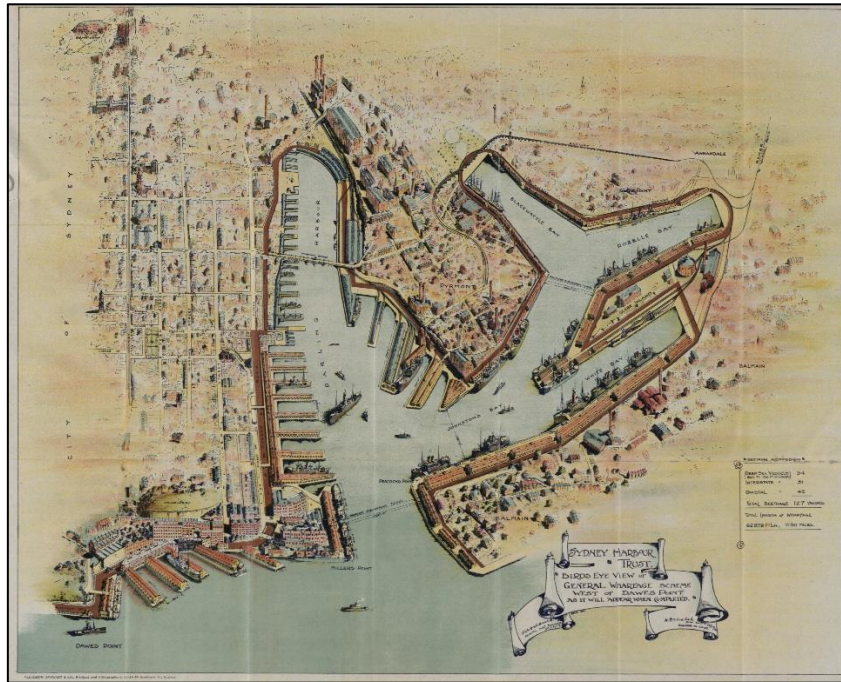


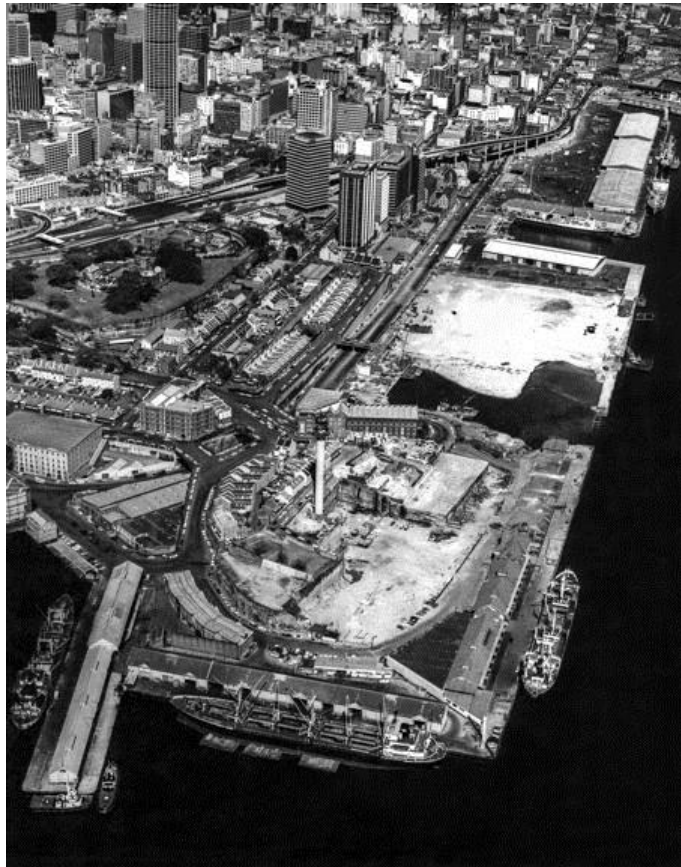
Figure 2.9 Bird's Eye view of the Sydney Harbour Trust lands and wharfage dated 1912, showing the proposed but unrealised, developments for Dawes Point, Darling, Johnstons and Blackwattle harbours (<http://nla.gov.au/nla.obj-229932979-1/view>).



Figure 2.10 Photograph taken 1909 of the reconstruction of the East Darling Harbour wharves to the north of the Gas Works. Note that the retaining wall supporting High Street has not been built (View of the reconstruction of Darling Harbour from Millers Point showing Dalgetys Wharf No.1 partly completed. The sailing ship 'Macquarie' is shown being unrigged before being reborn as the coal hulk 'Fortuna' Dated: 1/1/1909 Digital ID: 9856\_a017\_A017000007. <https://www.records.nsw.gov.au/series/9856?title=&page=5>).



**Figure 2.11** Aerial view of Circular Quay, Sydney, ca. 1920s. Also note connecting bridge from wharf to High Street (<http://nla.gov.au/nla.obj-162832415>).



**Figure 2.12** Looking south-east over Millers Point and the northern Darling Harbour port development 1971. The connecting bridge to High Street is extant (slnsw image#093479).



**Figure 2.13** A view south along the High Street cutting of Cars queue for parking in Hickson Road, Darling Harbour at 5.55am during a rail strike on 5 July 1983. The overhead bridge to High Street has now gone; however, street lighting has been attached to the length of the retaining wall (SMH NEWS Picture by John O'Gready FXB76008).

## 2.2 The Hungry Mile

On 26 September 2006, the then Premier of NSW, Morris Iemma, announced that Hickson Road would be renamed 'The Hungry Mile' in honour of maritime workers and their struggles during the Great Depression. On 24 July 2009, The Hungry Mile was gazetted as an assigned Urban Place, which is described as:

*An urban place that includes the section of Hickson Road between the Munn Street overbridge and the Napoleon Street intersection. Located mainly in the suburbs of Barangaroo and Millers Point.*

*The name commemorates the colloquial name given to this area which was a source of casual employment on the wharves during the Great Depression era of the 1930s. Success in gaining work meant money for food and shelter, failure meant going hungry ([http://www.gnb.nsw.gov.au/place\\_naming/placename\\_search/extract?id=MnlOvqrXlt](http://www.gnb.nsw.gov.au/place_naming/placename_search/extract?id=MnlOvqrXlt)).*

The 'Hungry Mile' is the section along Hickson Road that is defined by the High Street cutting, between Hickson Steps to the north, extending to the High Street Steps to the south. The name was given to the mile of wharves between Darling Harbour and Millers Point by the maritime workers who walked in the hope of casual low-paid work each day from the nineteenth century into the 1940s (Cahill). The growth and development of Millers Point was as a nexus in the international maritime network with local employment opportunities offered by shipping and associated industries attracting an ethnic and social diversity. This meant that workers needed to live locally to be on-hand when work became available. Following the early nineteenth century resumptions and demolition of public and private housing, the Sydney Harbour Trust constructed public housing for workers on the wharves, including along High Street, which fulfilled this requirement (Fitzgerald and Keating 2009:89).

### 3 Analysis of the Proposed Works

The scope of works for the construction of the new Barangaroo Station for the Sydney Metro project includes substantial excavations for the station box in Hickson Road and near to the High Street cutting and retaining wall. There is uncertainty regarding the stability of the retaining wall and *JHCPBG has concluded that, in its existing state, the High Street Cutting wall presents a risk to construction workers in the station box* (2017:11). In addition, as Hickson Road will continue to function as a through road, there is a risk to the public.

However, similar stabilisation works were undertaken in 1995, when approximately 50m of the High Street cutting was remediated with the installation of rock anchors and weep holes at the southern end of the cutting. In total, 25 rock anchors of variable lengths from 9.4m to 14.2m embedding either 6.0m (Type A) or 3.0m (Type B), with anchors ranging in length from 9.4m to 14.2m (Figure 3.1). The anchor heads were recessed into the concrete wall, and rendered flush to minimise adverse effects on the aesthetic significance of the wall (Figure 3.2). At the same time and 23 weep holes were installed as part of these works (JHCPBG 2017:6). The works are described in detail in Appendix A of the JHCPBG report.

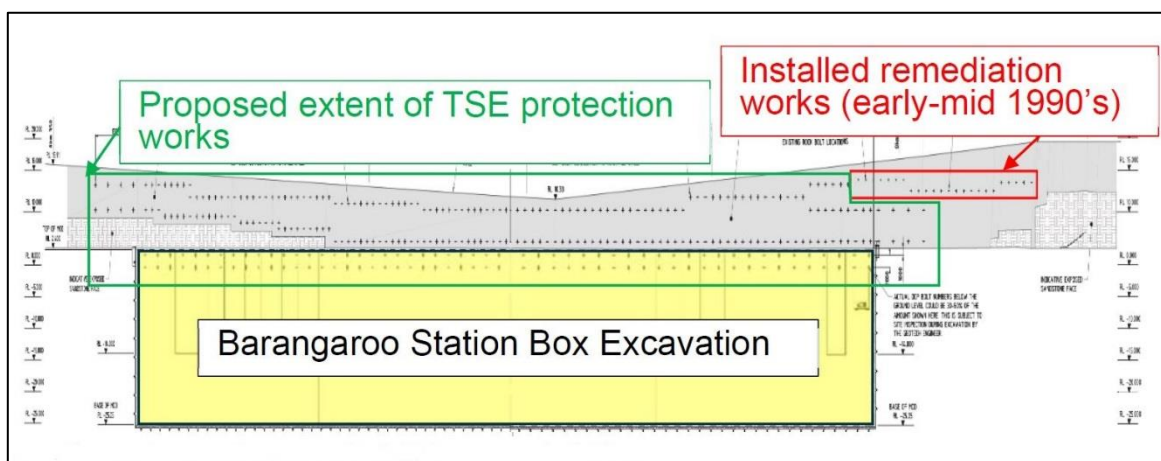


Figure 3.1 The extent of the 1995 remediation works in red, and the extent of the proposed TSE Protection Works (JHCPBG 2017:8, Figure 3).

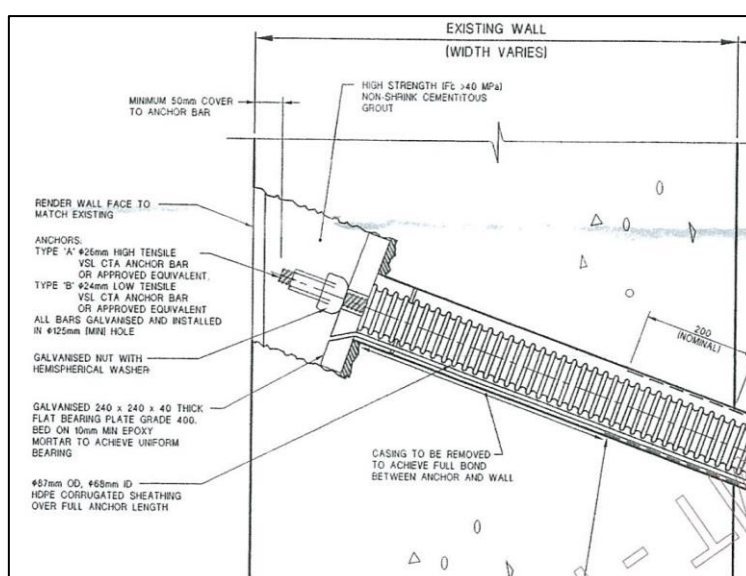


Figure 3.2 Detail of the methodology for the rock anchors used in the 1995 remediation works, whereby anchor heads were recessed into the concrete wall and rendered flush (JHCPBG 2017: Appendix A, Drawing 03).

JHCPBG has identified that the risk stemming from the works associated with construction of the new Barangaroo Station are:

*1) Lateral movement on the wall, anticipated to occur up to approximately 30mm, if the wall is not protected*

*2) Vibration from heavy excavation equipment, likely to contribute to additional movement of the wall, if the wall is not protected.*

*Information on the design and the quality of the constructed wall is limited, due to the age of the wall and the nature of the construction materials and methods used at that time (2017:11).*

As such, JHCPBG has developed the following Options for the cutting:

- 1) Do nothing
- 2) Install Retaining Props to the wall
- 3) Install retention anchors
- 4) Install protection netting
- 5) Ad hoc repair and maintenance to the wall

The feasibility of the five options are described and discussed in Table 3.1 below.

**Table 3.1 Consideration of protection options (JHCPBG 2017:13–14).**

No.	Option	Scope of Work	JHCPBG comment
1	Do nothing	Nil	The uncertainty surrounding the structural integrity of the High Street Cutting wall lead to the conclusion that providing no protection to the wall would pose an unacceptably high safety risk to workers and the general public. Furthermore, predicted effects of the cracking and delamination of the surface render was considered detrimental the heritage value of the wall. Accordingly, this option has been ruled out.
2	Install retaining props to the wall	Installation of large section steel props at 2-3m centres along entire length of High Street Wall Drill and fix props to heritage wall Props founded onto ground along Hickson Road	While a propping solution was considered effective in restricting movement along the wall and limiting the overall risk imposed by the wall on workers and the general public, the feasibility of this solution was contingent on use of the area along Hickson Road for the duration of the TSE works. This area however will be required for the station box excavation itself. This solution was therefore not considered further.
3	Install retention anchors	Anchor heads to be recessed into concrete wall and patched with similar colour render in keeping with the heritage wall's aesthetic Weep holes to be installed in areas where existing holes are not present (locations to be determined after further investigation)  Refer to Appendix C of the JHCPBG report drawing showing location and type of retention anchors	Installation of retention anchors was considered a viable option for the following reasons: 1) Structurally feasible 2) Works with the other excavation/construction works ongoing in the area, albeit with some timing impacts 3) Similar works have been carried out successfully on the wall previously, albeit over a shorter zone 4) The short term heritage impact on the wall would be minimal, as the anchors can be recessed and patched flush shortly after installation The long term visual impact on the wall would be minimal, as the flush rendered holes can be patched with a render sympathetic the existing wall's colour.
4	Install protection netting	Superficial netting to be affixed to face of wall to prevent dislodged render from landing in area within construction zone or public thoroughfare	Installation of protective netting/mesh along the wall was assessed and found to be effective at providing protection to the safety of the general public and construction workers in the vicinity. Protection netting alone however does not provide protection to the wall itself. Structural cracking and damage to the wall could therefore still occur which would be detrimental to maintaining the overall heritage value of the wall, as well as contribute to an increase in risk to the safety of public and workers by not eliminating the source of the risk in the first place.
5	Ad hoc repair and maintenance to the wall	Monitor wall condition and patch/replace damaged sections of the wall as required.	Repairing and maintaining the wall on an ad hoc basis provides only marginal improvement to the long term risk to the wall's heritage of doing nothing, however risk to the safety of the public and construction workers remained at an unacceptably high level under this approach. As a result, pursuing the option of providing ad hoc repair and maintenance to the wall was discounted.



## 4 Physical Analysis

The High Street cutting should be correctly described as a cutting, formed by the construction of Hickson Road, with a retaining wall constructed above the cut natural sandstone. The retaining wall rises above the eastern side of Hickson Road over a length of approximately 300m, ranging in height between approximately 10m–20m. The extent of the retaining wall is defined by the Munn Street bridge and Hickson Steps at the northern end, and the High Street Steps to the south. The retaining wall comprises the quarried sandstone rock face with gaps filled with sandstone blocks, above which the foundation to High Street has been built up with a substantial quantity of fill behind a brick wall surmounted by an iron palisade fence. The full extent of the wall has been previously cement rendered. The render is in poor condition with large patches of exposed sandstone and clearly visible signs of more recent repairs. In addition, faults and gaps in the wall have been colonised by vegetation.

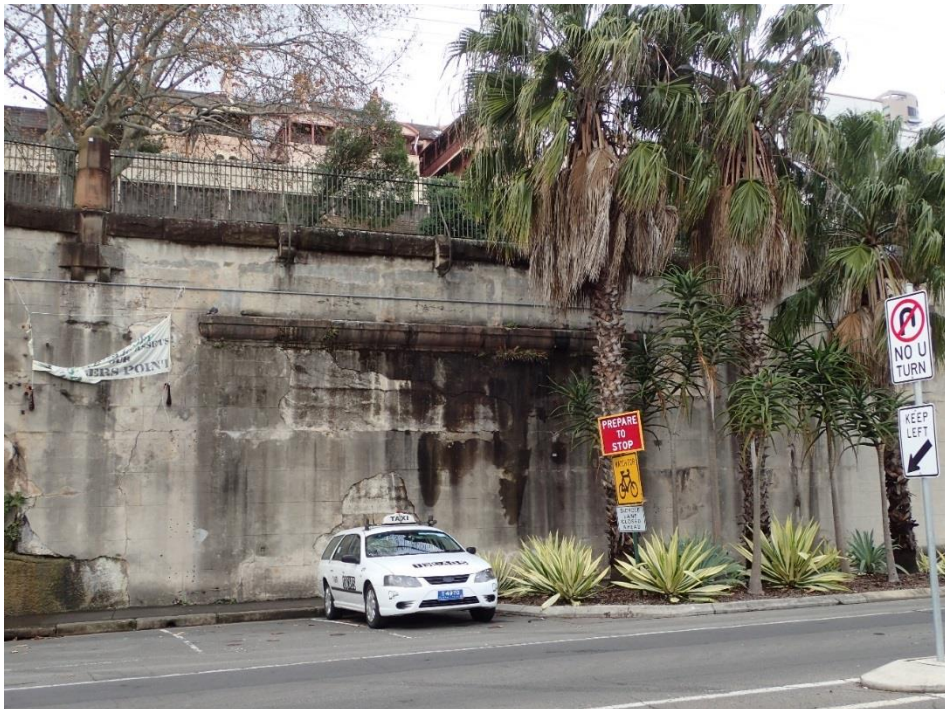
The cutting back of the sandstone bedrock to form Hickson Road in 1909, reveals a pattern of natural sandstone and infill material, comprising sandstone blocks, in-situ concrete and brick which has been surfaced in a cement render. The line of the natural sandstone rises to the north and south which likely reflects the quarrying in this area from the early nineteenth century (Figure 4.1 and Figure 4.2). This pattern is also reflected in the formation of the retaining wall supporting High Street, which also dips in the central area. This may reflect a greater loss of natural sandstone extending further to the east, or perhaps the convenient height for the connecting bridge between High Street and the wharf buildings (see Figure 2.11 above). The location of the overhead bridge is identifiable by the carved sandstone corbel set into the wall at the dip and the two carved sandstone posts in the palisade fence above (Figure 4.3 and Figure 4.4). The palisade fence along the top of the wall is concreted into the sandstone coping (Figure 4.5).



**Figure 4.1** View north-east from the Munn Street bridge. The slope falls away to a dip and rises again to the south seems to mark the pattern of quarrying.



**Figure 4.2** View south-east where a greater quantity of the natural sandstone has been removed. A line of the 1995 anchors is indicated.



**Figure 4.3** Carved sandstone corbel marking the location of the overhead bridge between High Street and the wharf buildings. Note the sandstone post upper left.



Figure 4.4 Along the palisade fence are two sandstone posts marking the location of the dip in the road and of the overhead bridge.



Figure 4.5 View north along the palisade fence (left), and detail of one of the cast iron posts supporting the fence. The fence is concreted into sandstone coping.

## 4.1 The Cutting & Retaining Wall

The inventory for the cutting describes it as a sandstone block and brick wall, behind which is a substantial fill, with no indication of changes subsequent to its construction in 1911. However, the inspection of the retaining wall shows evidence of modifications.

### 4.1.1 Hickson Steps

Hickson Steps rise up in two flights to halt against the Munn Street bridge abutment. The lower flight originally ran beneath a sandstone overhang, which has been bricked in; however, when this was done is not known (Figure 4.6). In addition, although the steps are described in the Inventory as being *associated with the widening of George Street North to allow access to Hickson Road and Pier 1*, it is unclear how this was achieved (REP Inventory for Hickson Steps) (Figure 4.7). It is worth noting that above the steps are two of the sandstone posts, likely marking the location of access to the steps.



Figure 4.6 View east to the Hickson Steps. Note the brick infill rendering the steps unusable. The sign, left, identifies 'The Hungry Mile' and the steel door to the right identifies buried RailCorp electrical cables.



Figure 4.7 The steps do not extend to High Street in this image of the *Reinforced concrete bridge, Munn St over Hickson Rd, Millers Pt.* Note sandstone blocks for the construction of the wall in the foreground (left slnsw #FL1866347). It seems likely that the sandstone posts mark the access to the steps, seen here with the Dalgety Bond Stores beyond.

#### 4.1.2 High Street Steps

The High Street Steps rise from Hickson Road to High Street in four flights (Figure 4.8). The lower two flights lead to the south and are cut into the natural sandstone and are cement rendered, while the upper two flights lead to the north and are integral with the retaining wall and are also cement rendered. There is some evidence of cracking in the steps and a patch of eroded render may expose an underlying brick (Figure 4.9). The original brass handrails are extant, but a later palisade fence has been added to ensure compliance with modern safety standards.

Set into the bedrock beneath the steps the 'Men's Lavatory' is extant, presumably part of the original construction of the wall and steps (Figure 4.10). The southern edge of the Steps abut the adjacent modern building occupied by TNS Australia, leaving a gap between the two structures (Figure 4.11). To the north of the Steps, is a concrete column rising from street level, and an adjacent bricked in section supporting a down pipe; however, it is not known when these were

introduced, though the brick column appears to be of similar type to the infill brickwork in the Hickson Steps.



**Figure 4.8** View from the High Street Steps central landing along Hickson Road. Note the original handrails are extant.



**Figure 4.9** View down the upper flights of steps from High Street. Note eroded render exposing what appears to be a brick.



Figure 4.10 There has been little external change to the Men's Lavatory since 1934, when the photo. Left, was taken other than removal of the identifying sign ([http://www.photosau.com.au/cos/scripts/home.asp#NSCA CRS 538/049](http://www.photosau.com.au/cos/scripts/home.asp#NSCA%20CRS%20538/049)).

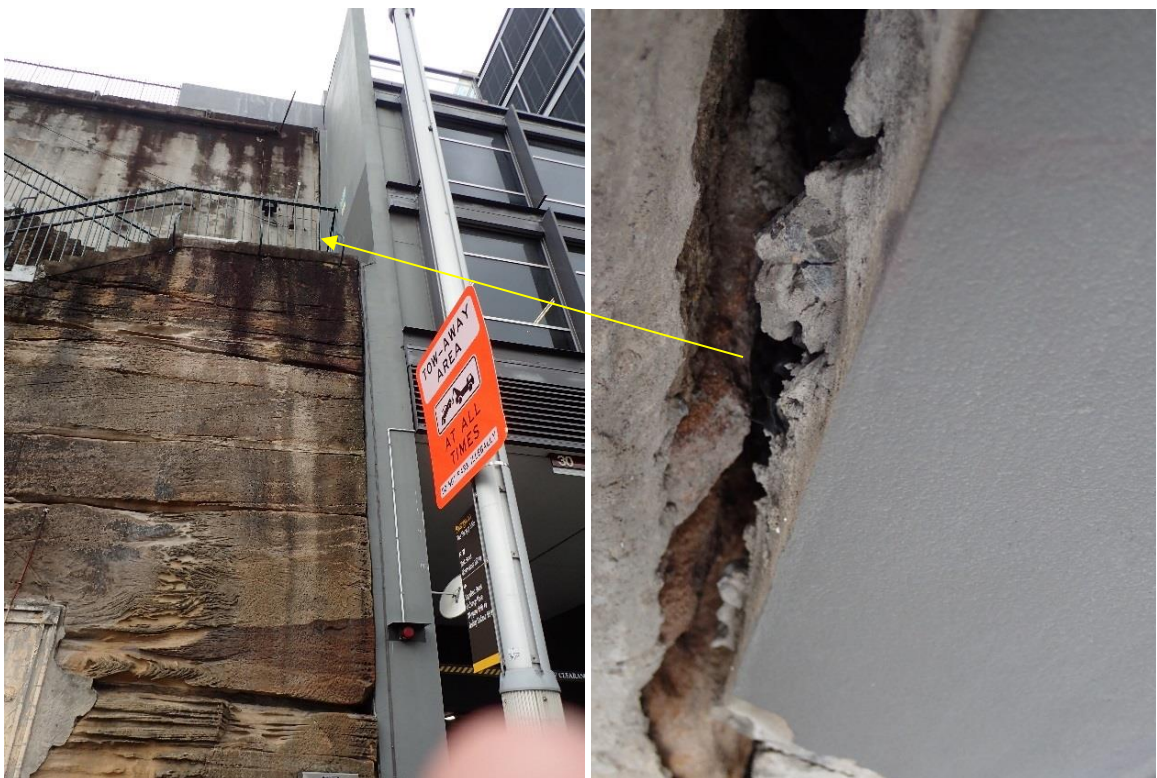
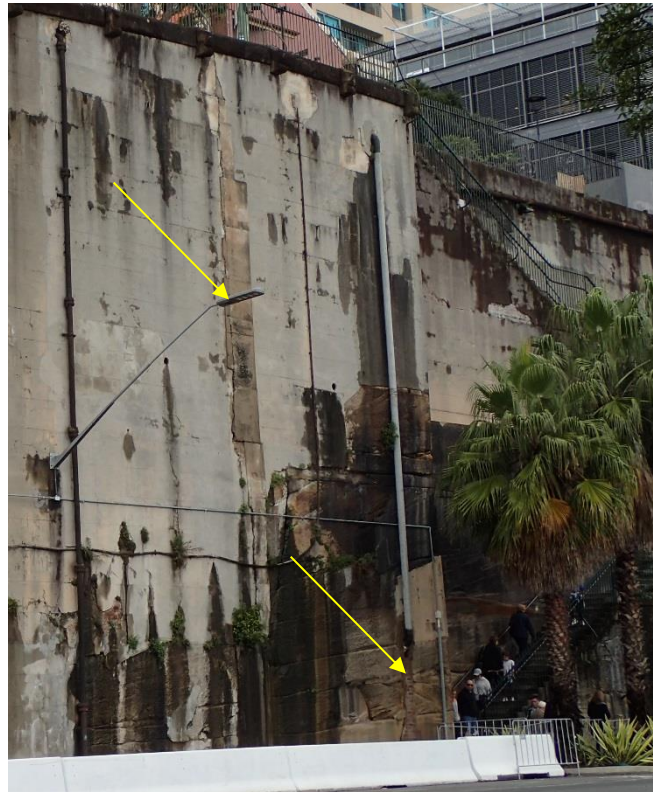


Figure 4.11 There is a gap between the TNS Australia building and the Steps.



**Figure 4.12** The concrete 'pillar' and brick infill are arrowed.

#### 4.1.3 *The Cutting & Retaining Wall*

The cement rendering appears to be applied to the fabric of the retaining wall but not the natural sandstone. As analysis has only been possible from street level, it should therefore be understood that there may be differences along the upper section of the wall. The cement render has been scored to replicate large masonry blocks and where patches have fallen off, the fabric of the structure of the wall is exposed (Figure 4.13). The original render has a high shell content, it is however also very strong indicating a mix of shell lime with Portland cement, unlike areas of modern patch repairs which appears to be a Portland cement without the inclusion of shell lime (Figure 4.14). The original render was applied in up to three layers, with each layer scored to provide purchase for the next layer (Figure 4.15). In addition, there at least some sections of concrete with a dense gravel aggregate (Figure 4.16).

There are cracks across the surface of the wall; however, it is not known whether these are merely surface cracks, or represent underlying faults. There are also generations of attached services, including a series of relatively modern street lights, bolted to the face of the wall, and exposed gaps have been colonised by ferns and grasses (Figure 4.17 and Figure 4.18).



**Figure 4.13** A section of the cutting and wall. The render is scored to replicate masonry blocks and is aligned along the line of the natural bedrock, above which the underlying sandstone blocks have been exposed. Note, the weep hole has been colonised by a pigeon.



**Figure 4.14** A patch of modern cement render surrounded by the original render. The white flecks are shell fragments.

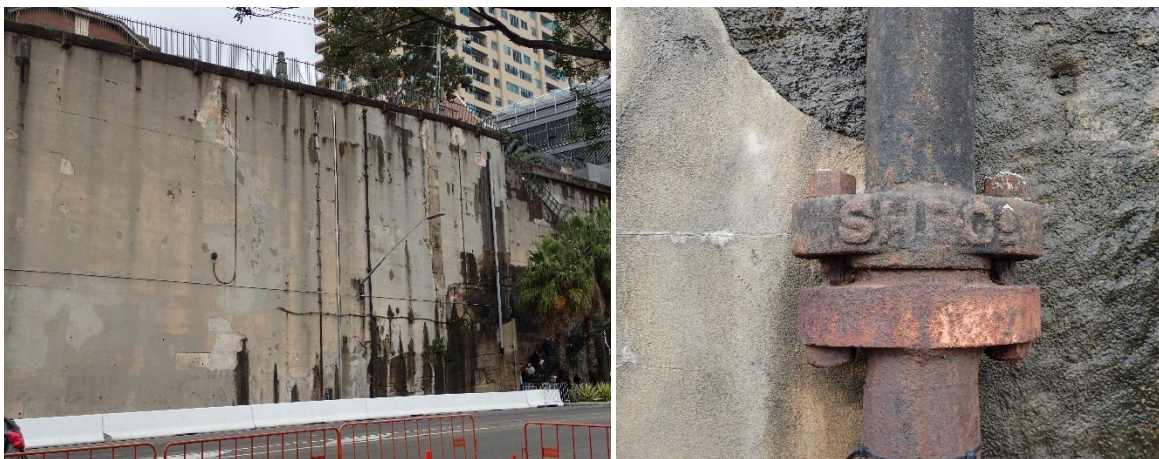




**Figure 4.15** Exposed patches of render indicate that at least some sections have three layers of render and the lower layers are pecked to create a rough surface for the next layer (left). Drainage channels have been shaped into the render below the original weepholes (right).



**Figure 4.16** There are sections of concrete with dense gravel aggregate.



**Figure 4.17** A collection of services attached to the wall, includes a cast iron pipe 'SHPCo.'



**Figure 4.18** A series of modern lights attached to the wall and cutting with attached signs *Supplied from meter panel/for outages call City of Sydney 1300 651 301*. Note the colonising grasses and ferns, and the stratigraphic layering of the bedrock.

## 4.2 Construction of the Cutting & Retaining Wall

There is not a great deal of information regarding the actual construction of the High Street Cutting and the retaining wall other than that it was constructed in 1911 as part of the Hickson Road works. It is clear however, that the quarry face was cut back to form the base of the retaining wall to High Street, and a wall of sandstone and brick was constructed, behind which a depth of fill, apparently including sandstone blocks or rubble was introduced to fill the area of the former quarry. It is not known how far back the fill extends from the wall until bedrock is reached, with the exception of those areas where boreholes investigation has been undertaken. It is however, assumed that the interface between the underlying bedrock and the fill material rises up from the visible rock/wall boundary from behind the wall towards the east and the top of the High Street.

Historic photos indicate that the wall above the cutting was constructed with sandstone or concrete block, which would have provided a more robust structure than a brick alternative (Figure 4.19 and Figure 4.20). In addition, it appears that the overbridge from the wharf to the central section of High Street was initially built to assist in the construction works (Figure 4.21).

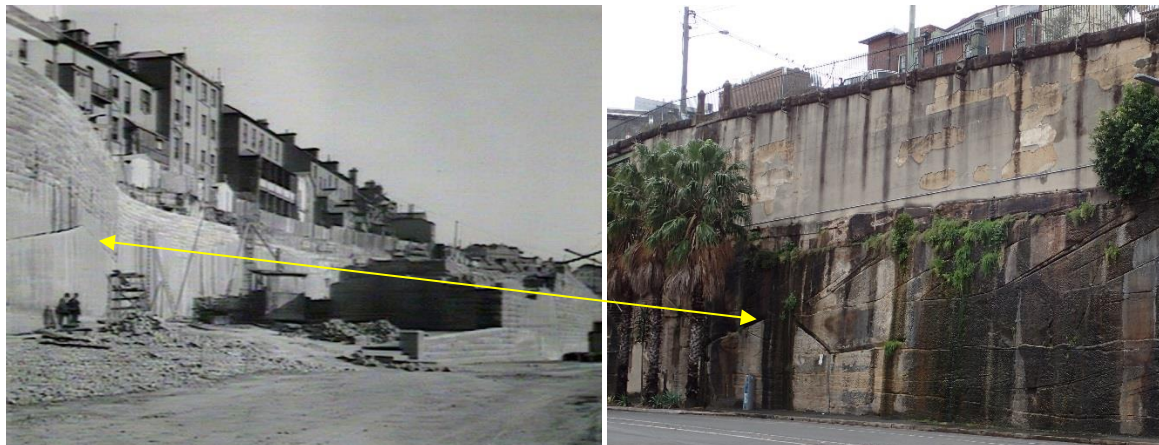
Towards the south-end of the retaining wall, High Street turns ninety degrees to the east and intersects with Kent Street at a right angle. The potential for archaeological remains was investigated in 2012 by Casey & Lowe during excavation for a new stormwater service for houses on Kent Street. The utility installation work, included construction of new pits and piping through the east-west High Street return (Figure 4.22). Within the trench substantial remains were exposed associated with the mid-nineteenth century occupation of the area including:

- Substantial sandstone walls and foundations, representing the foundations and part of the ground floor of a mid- late-nineteenth century building, initially identified as likely being associated with a sandstone building constructed by Thomas Agar in the 1830s.
- The remains comprised sections of a main east-west wall, defining the south side of the building, five internal cross-walls and a western external wall. The building had at least six internal spaces or rooms. The archaeological evidence indicated an 1850s or later date (Figure 4.23 and Figure 4.24).
- Evidence of a brick building, or room, added to the western end in the late nineteenth century, which included a fireplace was also exposed.

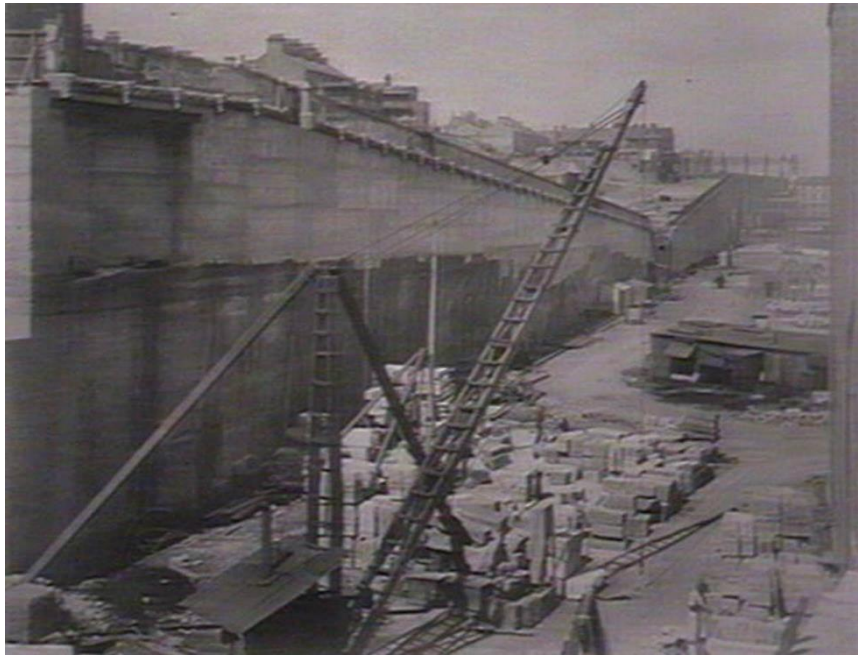
- The building had evidently been constructed on an east-to-west sloping natural landscape, which has since been buried beneath the fill introduced for the construction of High Street following the 1900 resumptions.
- No artefacts or other occupation deposits were found and as such there was no additional evidence to provide information regarding the occupants of the building.
- Evidence regarding the natural landscape and, in particular, the extent of the early twentieth century, post-plague resumptions and the major remodelling of the area and construction of the High Street retaining wall.

Although a large part of the central Barangaroo area had been quarried from the early nineteenth century, housing was present within its vicinity, and as indicated by the archaeological investigations undertaken in 2012 by Casey & Lowe, there is some potential for additional evidence of early structures and activities to be extant behind the wall (Figure 4.25 and Figure 4.26).

The High Street cutting and retaining wall has been identified as having historic, aesthetic and social significance; however, it is arguable that the cutting and retaining wall has technical value for the achievement of its construction by the Sydney Harbour Trust and may have research potential associated with the potential archaeological remains protected behind the wall.



**Figure 4.19** Undated photograph of the *construction of Hickson Road*, showing that the blocks are clearly sandstone. Although the location is not specifically identified, as there is a similarly configured drainage channel in the rock face near to the Munn Street bridge, this is the likely location.



**Figure 4.20** Photograph of the construction of the Concrete retaining wall: High St & Hickson Road, Millers Point, indicating that the large blocks may be concrete rather than sandstone (<http://archival.sl.nsw.gov.au/Details/archive/110105032>).



**Figure 4.21** Photograph of the construction of Hickson Road showing what appears to be the overbridge which later linked High Street with the Darling Harbour wharves. Also note the mounds of fill above the wall ([https://s3-ap-southeast-2.amazonaws.com/srns-public-photos/9856\\_a017\\_A01700025.jpg](https://s3-ap-southeast-2.amazonaws.com/srns-public-photos/9856_a017_A01700025.jpg)).



Figure 4.22 The trench along the south side of the east-west High Street return.

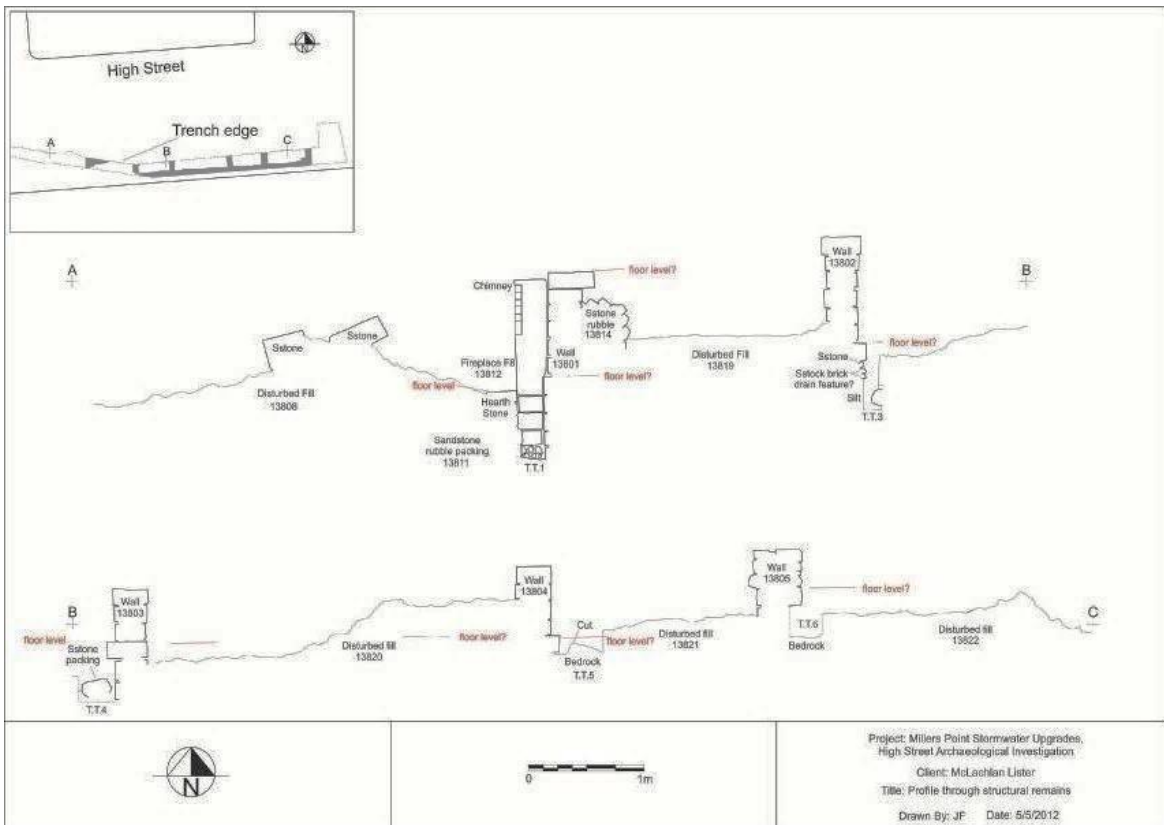


Figure 4.23 Profile of the sandstone walling and possible floor levels (Casey & Lowe 2012:29, Fig. 3:25).



Figure 4.24 View of the cross-wall 13805 in Bay B looking west. Below the dashed line are the potential remains of the earlier 1830s building. The yellow arrows indicate the stones that appear to be different to those used in the upper courses. Scale 1m (Casey & Lowe 2012:36, Fig. 3:33).



Figure 4.25 An undated photograph of Darling Harbour showing three cottages overlooking the quarry. See also Figure 2.3 and Figure 2.4 above ([http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps\\_pid=FL977797](http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=FL977797))



Figure 4.26 Overlay of the 1865 Trigonometric Survey of Sydney Plans A1 and A2 showing the central Darling Harbour area. The three cottages are extant, another cottage is at the waterfront, and to the south are two groups of houses, of which the house immediately east of the blue line was excavated by Casey & Lowe in 2012. The blue line marks the later east-west High Street return, and red line is the approximate alignment of the High Street cutting (<http://atlas.cityofsydney.nsw.gov.au/maps/city-of-sydney-trigonometrical-survey-1855-1865/>).

### 4.3 Analysis of Options

The following discussion considers the heritage implications of each option.

#### 4.3.1 Option 1 – Do Nothing

Article 3.1 of the Burra Charter regarding protection, or conservation of heritage significance:  
*Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible.*

The cautious or conservative approach respects and acknowledges original fabric and heritage values by changing as little as possible to retain and preserve a place and its fabric in its original condition. It is a fundamental principle that new materials and work are recognisably new additions to the surviving original fabric. However, as noted by JHCPBG, the uncertainty regarding the current and ongoing structural integrity of the retaining wall is such that to *provide no protection to the wall would pose an unacceptably high safety risk to workers and the general public* (2017:13). In addition, the potential loss of fabric would be an unacceptable loss of heritage significance.

As such, Option 1 has been discounted for heritage and safety reasons.

#### 4.3.2 Option 2 – Install retaining props to the wall

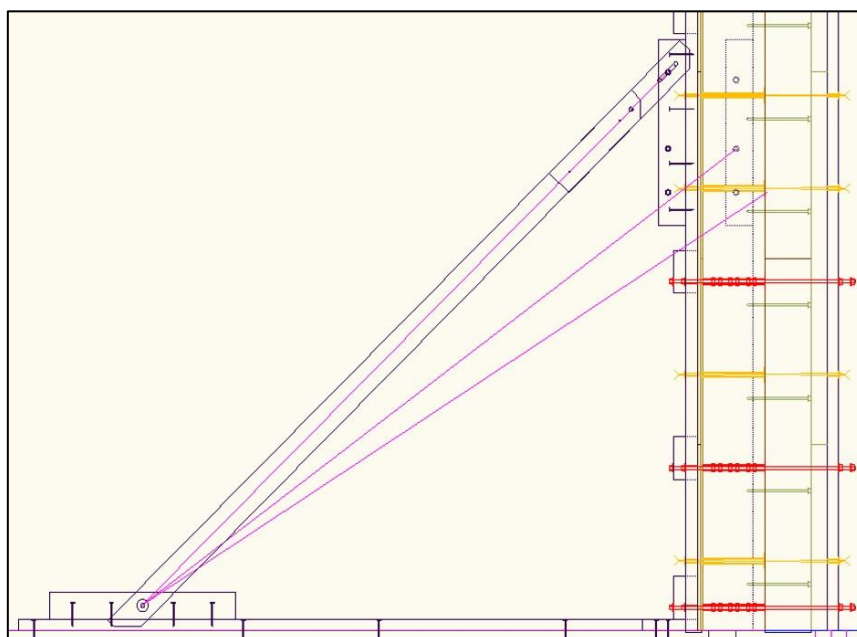
Although the installation of retaining props is structurally feasible and would protect the structural integrity of the wall, it would inhibit free passage along Hickson Road, which would be unacceptable.

The retaining props would be installed at 2m-3m intervals along the High Street Cutting and retaining wall and the process would entail drilling into the wall to fix the props and embedding the footings, at the same intervals, into the Hickson Road easement (Figure 4.27 and Figure 4.28). During the process there is a high likelihood that significant areas of the fabric would be damaged. Installing reaction footings is not considered in the short term (construction) phase of the TSE works, due to the need to excavate this area for the construction of the Barangaroo Metro station. Similarly, the long term (permanent, post-construction phase) design for Hickson Road requires the area to be reinstated to its current state. Props would therefore need to be removed and would not offer long term protection to the wall, however it is not clear whether this would have a serious structural impact on the wall or not.

Due to the inherent damage the wall would receive by adopting this option there would be an unacceptable impact on the original fabric arising from the extent of intervention into the wall. In addition, the scale and frequency of the props would obscure clear views of the retaining wall, which would have a negative effect on its historic and aesthetic heritage values, at least during the construction phase, possibly longer.

As such, Option 2 would have an unacceptable impact on the physical and aesthetic significance of the High Street cutting which would in turn have an adverse impact on the significance of the *Millers Point & Dawes Point Village Precinct*.

As noted in Table 3.1 above, JHCPBG has rejected Option 2 on the grounds of the likely impact on heritage values and the intrusion into Hickson Road.



**Figure 4.27 Elevation of the likely appearance and scale of the retaining props installed on the High Street cutting (JHCPBG).**





**Figure 4.28** An example of retaining props, albeit at a much smaller scale than would be required for the High Street cutting (JHCPBG).

#### 4.3.3 Option 3 – Install retention anchors

The process of installing retention anchors would be similar to the protection works undertaken in 1995 at the southern end of the wall such that anchors would be installed through the retaining wall, angled down to embed into the bedrock at varying lengths according to the detailed design. An extract of the 1995 protection works design is shown below to convey the concept (Figure 4.29). To protect the aesthetic value of the wall, the concrete would be locally over-cored, to allow the anchor head and anchor plate to sit recessed within the core of the concrete wall for flush rendering. The over-core diameter would be in the order of 300mm in diameter. By adopting this technique, the area of displacement and loss of fabric is minimised. The potential to impact buried archaeological relics through the installation (drilling) process does exist. However, the pattern of early occupation was a sparse collection of houses at the margins of the quarry primarily at the northern and southern of present day High Street (see Figure 4.26 above) As such, there is little potential that archaeological relics would be encountered.

Rock bolting has been used successfully to stabilise natural sandstone embankments and cliff faces associated with items listed on the SHR (Figure 4.30 - Figure 4.32). However, unlike standard rock bolting, the retention anchors will be recessed and patched, thus minimising the visual effect on the cement render of the retaining wall (Figure 4.33). In addition, the patching cement would replicate, as far as possible, the composition and colour of the existing cement render (Figure 4.34, see also Appendix D to the JHCPBG report). The replacement render should consider the composition of the original render in order to ensure that a too hard cement patch does not cause cracking or collapse of the original render.

Stabilisation of the High Street cutting and retaining wall will insure it against damage during construction of the new Barangaroo Station. In addition, its stability and structural integrity would be ensured in the long-term.

Installation of retention anchors is JHCPBG's preferred option to protect the structural integrity of the retaining wall, providing a sound mitigation to safety risks to members of the public and construction workers alike, and offers a sensible solution for protecting heritage values, consistent with the 1995 stabilisation works.

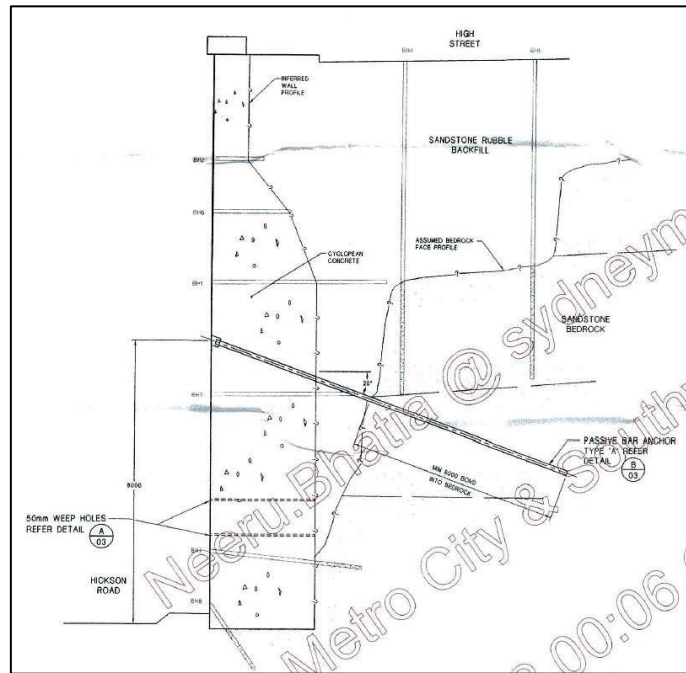
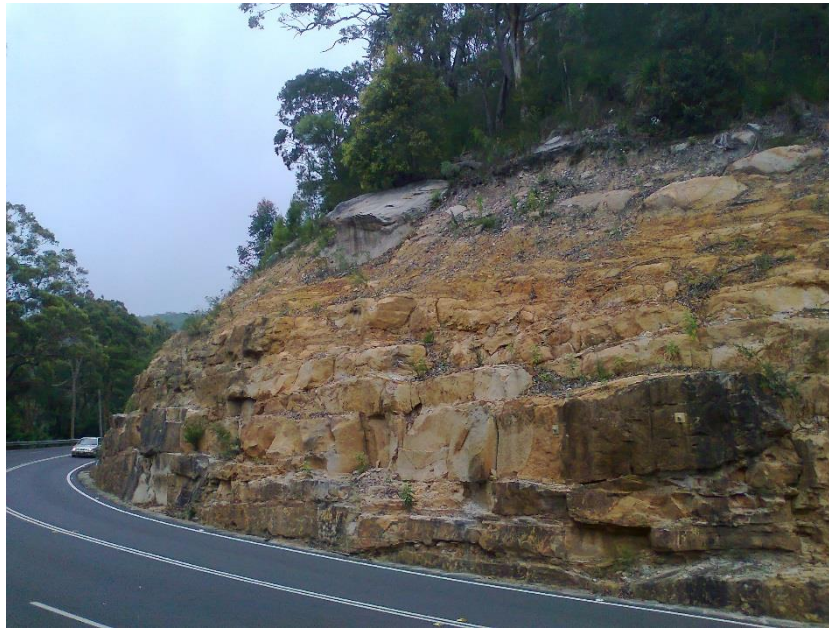


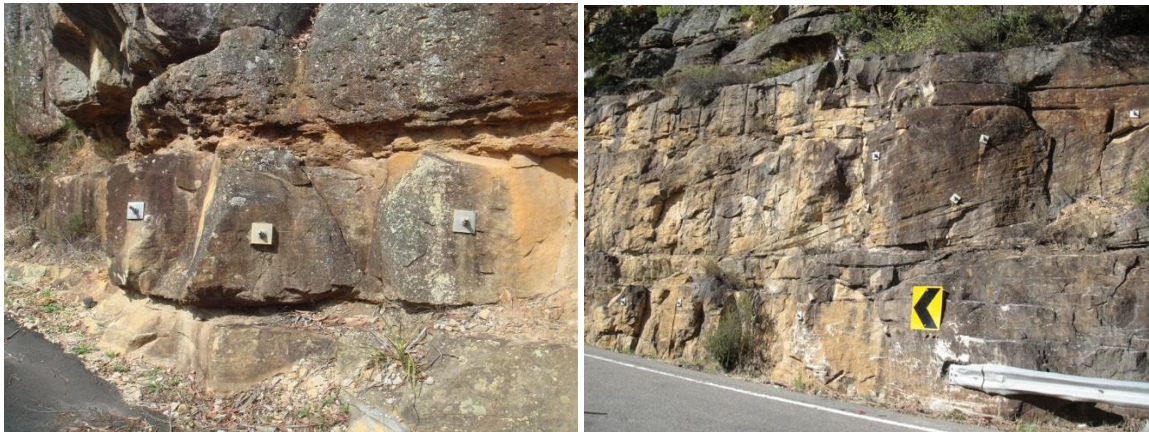
Figure 4.29 Indicative profile of the retaining wall with embedded retaining anchor (Detail from JHCPBG 2017: Appendix A, Drawing 02)



Figure 4.30 Rock bolting of the sandstone cliff, Site C, Luna Park undertaken prior to 2006 (OCP 2006:23).



**Figure 4.31** Rock bolting the natural sandstone on the Old Northern Road at Wiseman's Ferry (RMS Engineering Services).



**Figure 4.32** Detail of the rock bolting on the Old Northern Road at Wiseman's Ferry (RMS Engineering Services).



**Figure 4.33** 1995 retention anchors along a section of the High Street retaining wall (left), and a detail of the recessed and patched anchor.



**Figure 4.34** Photomontage of the appearance of the retention anchors following patching. The image above shows the locations in red, while the image below is the after patching appearance (JHCPBG Appendix D).

#### 4.3.4 Option 4 – Install protection netting

The installation of protection netting or mesh to the High Street cutting would be a short term measure to protect the public and construction workers from injury should any minor damage to the wall cause render to crack and fall away. The netting would be in a form similar to that used on rock-retention systems, albeit the much smaller piece size of a piece of render would not demand that the netting be affixed with large rockbolts as is usually the case. Options are currently being investigated which would provide a minimal impact on the wall, should it be required.

Netting is an option that is recommended by RMS as a more sympathetic and less intrusive means of stabilising road embankments than the use of shotcrete, which is prevalent on road and rail embankments:

- *Mesh netting or use of bolted rock mesh coloured matt black (RMS 2016:08).*

During the fixing process, redundant services and vegetation may need to be removed from the retaining wall.

It is worth noting that covering the retaining wall with mesh will act as a translucent screen across the wall, obscuring the natural sandstone and cement rendering. However, as the effect will be

short term this will not detract from the historic, aesthetic or social heritage values of the High Street Cutting nor, the *Millers Point & Dawes Point Village Precinct* in its entirety.

As the installation of mesh netting in this form may provide additional safety benefits, JHCPBG are considering this as an option to complement the preferred wall retention system, subject to the outcomes of further risk assessment



**Figure 4.35 Protective netting attached to a road embankment (JHCPBG).**

#### 4.3.5 Option 5 – Ad hoc repair and maintenance to the wall

As noted by JHCPBG in Table 3.1 above, monitoring the condition of the wall and undertaking patch repairs as required is a short-term management strategy only, that does not address the long-term structural integrity of the wall, is a retrospective action only and does not protect the public and construction workers. There is the potential that there may be a loss of original fabric with sections of the cement render falling off, and does not address the potential for wall collapse.

There is potential for a loss of heritage fabric, which would have an adverse to significant impact on the historic, aesthetic and social heritage values of the retaining wall and on the *Millers Point & Dawes Point Village Precinct* in its entirety.

As such, Option 5 has been discounted as being inadequate to the protection of heritage values.

## 5 Assessment of Heritage Impact

The proposed stabilisation of the High Street cutting and retaining wall at Hickson Road, Millers Point has the potential to affect the state heritage significance of the *Millers Point & Dawes Point Village Precinct*. The High Street Retaining Wall has been identified as having historic, aesthetic and social significance, and should also be considered to have technical significance. The JHCPBG proposal of installation of permanent retention anchors and the possible installation of temporary protection netting represents a change to the High Street cutting and retaining wall, the impact of which is assessed below.

***The following aspects of the proposal respect or enhance the heritage significance of the item or conservation area for the following reasons:***

The proposal is to install permanent retention anchors to ensure the structural integrity of the High Street cutting and retaining wall and to protect the public and construction workers from harm during the construction period. The retention anchors will be carefully installed through the retaining wall, angling down and extending to embed into the underlying bedrock. The entry points for each anchor will be recessed and patched to minimise the visual effect on the retaining wall.

The structural integrity of the High Street cutting and retaining wall will be protected in the long-term by the installation of the retaining anchors and as such, its historic, aesthetic and social significance is respected. Protection of the High Street cutting and retaining wall also respects and protects the heritage significance of the contributory items within its vicinity and of the *Millers Point & Dawes Point Village Precinct*, in its entirety.

The proposal to potentially fix temporary protection netting will have an adverse effect on the visual amenity of the High Street cutting and retaining wall during the period of construction of the new Barangaroo Station. However, this effect will be short-term during the construction period only, after which the netting would be removed and the full extent of the High Street cutting and retaining wall would be revealed. The surface of the retaining wall will also be cleared of redundant services and vegetation to enhance the appearance of the wall. The historic and aesthetic significance of the cutting and retaining wall is respected and protected.

***The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts:***

Alternate considerations of to 'do nothing' or undertake 'ad hoc repair and maintenance' would not ensure the long-term stability of the High Street cutting and retaining wall. There would be a risk of damage to the structural integrity of the wall, which would have a significantly detrimental impact on the heritage values of the retaining wall and on the *Millers Point & Dawes Point Village Precinct*, in its entirety.

The proposal to install retaining anchors has been identified as the most sympathetic of all options considered as it ensures the structural integrity of the High Street cutting and retaining wall in the long-term, which respects and protects the heritage significance of the wall and the Millers Point precinct

Where potential for damage to the fabric of the retaining wall exists in any case where drilling or fixing to the wall is required, such as the installation of anchors or installation of fixing points for protection netting, any inadvertent damage shall be limited to the smallest area possible and those areas made good in a manner in keeping with the heritage significance of the wall.

***The following sympathetic solutions have been considered and discounted for the following reasons:***

An important consideration in determining the preferred option for the protection of the structural integrity of the High Street cutting and retaining wall has been the potential for impacts on the heritage significance of the wall and on the *Millers Point & Dawes Point Village Precinct* in its entirety. Protecting the wall from collapse with retaining anchors is the most sympathetic option.

## **5.1 Statement of Heritage Impact**

The High Street cutting and retaining wall has heritage significance as a contributory item of the *Millers Point & Dawes Point Village Precinct*. Protection of the state heritage significance of the retaining wall has been an important consideration in identification of protective measures for the High Street cutting and retaining wall.

The installation of permanent retention anchors will ensure the structural integrity of the High Street cutting and retaining wall in the long-term. Should temporary protection netting be required to provide additional protection, this would only be in place during the construction period. The retention anchors will be carefully installed through the retaining wall, angling down and extending to embed into the underlying bedrock. The entry points for each anchor will be recessed and patched to minimise the visual effect on the retaining wall, and the entry points will be recessed and patched to minimise the visual effect on the retaining wall.

There is potential for damage to the fabric of the retaining wall while erecting the protection netting, which would be avoided by ensuring that the original fabric is protected against inadvertent damage. Any damage that is incurred to the retaining wall would be made good.

The structural integrity of the High Street cutting and retaining wall will be protected in the long-term by the installation of the retaining anchors and as such its heritage significance is respected. Protection of the High Street cutting and retaining wall also respects and protects the heritage significance of the contributory items within its vicinity and of the *Millers Point & Dawes Point Village Precinct*, in its entirety.

## 6 Mitigation

Heritage places contribute to an understanding and character of a community by providing tangible evidence of its history and identity. At times of change, they help to preserve a connection to the past, and can provide a point of reference for interpreting the past to future generations. Article 15 of the Burra Charter refers to managing *change*, which should be guided by the *cultural significance of the place* and its appropriate *interpretation*. The Burra Charter process also recognises that the development of preferred conservation options requires consideration of a range of other factors which could affect the future of a place. These include:

- requirements of the owner, in this instance the responsibility for the care of the High Street cutting and retaining wall lies with Transport for NSW and JHCPBG for the duration of this project;
- the physical condition of the place; and
- statutory obligations or issues related to heritage and safety requirements.

The primary consideration for Transport for NSW and JHCPBG is that the High Street cutting and retaining wall is made safe in accordance with current safety standards, and that the state heritage significance of the *Millers Point & Dawes Point Village Precinct*, of which the wall is a contributory item, is maintained.

### 6.1 Physical Condition of the High Street Cutting & Retaining Wall

Article 2 of the Burra Charter recommends a cautious or conservative approach that respects and acknowledges original fabric and heritage values by changing as little as possible. It is a fundamental principle that new materials and work are recognisably new additions to the surviving original fabric. Recessing and patching over the retention anchor heads ensures that the least possible damage is done to the retaining wall, which is in accordance with Burra Charter principles. However, in this instance the patching will be as near to the surrounding fabric in composition as possible to minimise an adverse effect on the aesthetic significance and to avoid damage to the original render.

The preferred option of installing permanent retaining anchors and temporary safety netting, if required, is in accordance with Burra Charter principles as the heritage significance of the wall and place of Millers Point are respected and protected. However, the following recommendations are aimed at ensuring that heritage values are protected:

#### **Recommendation 1**

*A photographic recording should be made prior to and on completion of works to ensure that there is a record of the changes to the overbridge within its local environment. The recording should be in accordance with the Heritage Council guideline publication Photographic Recording of Heritage Items Using Film or Digital Capture (revised 2006).*

The significance of the High Street cutting and retaining wall as a contributory item of the state heritage *Millers Point & Dawes Point Village Precinct* should be understood by all on-site staff and construction team to ensure that no inadvertent damage is done to the wall.

#### **Recommendation 2**

*Prior to works commencing, all on-site staff should be briefed on the heritage requirements of the High Street Cutting and retaining wall, its heritage significance and the value of its fabric.*



The original cement render has a high shell content indicating a higher percentage of lime than modern renders. As such, any new render should be of the same or a similar non-reactive composition.

**Recommendation 3**

*The original fabric of the cement render has a high lime content. Any new render should be matched in the patches to ensure that the existing render does not crack or collapse due to the difference in hardness. Any inadvertent damage should be made good.*

**6.2 Statutory Obligations**

The construction of the new Barangaroo Station is part of the Sydney Metro City & Southwest Project which has been approved as Critical State Significant Infrastructure. As such there is no requirement for an approval for works which fall within the project footprint. However, as a contributory item of the *Millers Point & Dawes Point Village Precinct*, and in particular as the place known as The Hungry Mile, the High Street cutting and retaining wall have particular importance to the people of NSW, and should be protected in accordance with heritage best practice and Heritage Council of NSW requirements. The protection of the structural integrity of the retaining wall ensures that its heritage significance is respected and protected.

## Bibliography

ARUP (2005) *Slope 1208 Old Northern Road, Wisemans Ferry Addendum 1 - Stabilisation of the Court House Cave* (Draft) prepared for Road and Traffic Authority

Australia ICOMOS (2013) *Burra Charter: The Australia ICOMOS charter for the conservation of places of cultural significance, 2013* Burwood, VIC.

Cahill R (nd) *The Hungry Mile And 'Maritime Invisibility'* Available at [http://unionsong.com/hungry\\_mile.html](http://unionsong.com/hungry_mile.html)  
by

Casey & Lowe Pty Ltd (2012) *Archaeological Monitoring and Recording Stormwater Upgrades, High Street, Millers Point* prepared for McLachlan Lister Pty Ltd, on behalf of Department of Finance and Services

City of Sydney Archives  
*Historical Atlas of Sydney* (<http://www3.photosau.com/CoSMaps/scripts/home.asp>)  
*ArchivePix* (<http://www.photosau.com.au/cos/scripts/home.asp>)

Davies, P (2007) *Millers Point and Walsh Bay Heritage Review*, prepared for City of Sydney Council

Fitzgerald S and C Keating (2009) *Millers Point: The Urban Village*. Halstead Press.

Fitzgerald S (2008) Dictionary of Sydney entry: *Millers Point*. Available at <http://dictionaryofsydney.org/entry/millerspoint>.

GML Heritage (2017) *Sydney Metro – City & Southwest – Technical Services Hickson Road Retaining Wall Heritage Significance Assessment Technical Report* for Transport for NSW

JHCPBG (June 2017) *High Street Cutting Protection*. Sydney Metro City & Southwest – TSE Works

NSW Heritage Office and Department of Urban Affairs & Planning (1996) *NSW Heritage Manual: Statements of Heritage Impact* (rev. 2002)

NSW State Heritage Inventory  
<http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx>  
SHR Millers Point & Dawes Point Village Precinct  
SHR Terrace, Hickson Road  
Hickson Steps Sydney REP (repealed)  
Palisade Fence and High Steps

Otto Cserhalmi + Partners Pty Ltd (2006) *Cliff Top Site C Luna Park Statement of Heritage Impact*, prepared for Luna Park Sydney P/L

Proudfoot, P (1996) *Sydney Seaport. The making of the city landscape*. UNSW Press

RTA Environmental Planning and Assessment (2007) *Statement of Heritage Impact – Proposed stabilisation of Courthouse Cave on Old Northern Road, Wisemans Ferry*.

Transport Roads & Maritime Services (RMS) (2016) *Shotcrete Design Guidelines. Design guidelines to avoid, minimise and improve the appearance of shotcrete*.

TROVE National Library of Australia (<http://trove.nla.gov.au/?q=>)

---

**ATTACHMENT B:** Meeting minutes of briefing to City of Sydney

## Minutes

### Hickson Rd Wall Briefing with the City of Sydney

<b>Date:</b>	18 July 2017
<b>Time:</b>	3.00 – 4.00pm
<b>Venue:</b>	Town Hall House, Kent St Sydney
<b>Chair:</b>	Ron Turner

#### Invitees:

Paul Grennan	PG	Stakeholder and Community Liaison, Sydney Metro
Tony Smith	TS	Urban Design & Heritage Manager Planning Assessments, CoS
Fil Cerone	FC	Principal Manager Sustainability, Environment Planning, Sydney Metro
Ron Turner	RT	Heritage Manager, Sydney Metro
Caitlin Richards	CR	Environment and Sustainability Manager, JHCPBG
Jennie Lindbergh	JL	Director Historic Heritage, AMBS

#### Apologies:

Margaret Desgrand	MD	Senior Heritage Architect, City of Sydney
-------------------	----	---

Item	Agenda item	Responsible	Outcome for discussion, decision or information
1.	<b>Purpose of Meeting.</b>		
1.1	To provide CoS with information on the Hickson Wall protection measures required for the adjacent Sydney Metro Barangaroo Station excavation.		Note
2.	RT welcomed all present and recorded apologies received as noted above.		Note
3.	<b>Key Points Discussed</b>		
3.1	<p>The Sydney Metro (Metro) Chatswood to Sydenham project was approved by the Department of Planning and Environment in January 2017 (CSSI 15_7400). The approved works included excavation and construction of the Barangaroo Station on Hickson Rd.</p> <p>The CSSI approval requires that heritage items, that are located near the main works, are protected so avoid any potential accidental damage. The Barangaroo Station site is located immediately adjacent to the Hickson Road wall.</p> <p>The Hickson Rd Wall is located within the Millers Point Heritage Precinct and is on the State Heritage Register.</p> <p>The City of Sydney is the owner of the Hickson Rd Wall.</p> <p>Sydney Metro recently contracted John Holland, CPB Ghella (JHCPBG) to construct the tunnels and station excavation as part of the Chatswood to Sydenham Planning project approval.</p> <p>During the early design phase JHCPBG identified that protective measures would be required to provide long term stability of the Hickson Rd wall and provide rock fall protection to ensure safety of workers and members of the public during construction.</p>		
4.	<b>Options Discussed</b>		

Item	Agenda item	Responsible	Outcome for discussion, decision or information
4.1	<p>Three options for protection were discussed and these are as noted in the attached JHCPBG presentation.</p> <p>The preferred and best option identified is to install rock anchors on the face of the wall. JL noted that any adverse aesthetic impacts would be mitigated by recessing the heads and patching in a discrete and sympathetic manner. JHCPBG will investigate options for the most suitable patch material.</p> <p>It was also noted that this method is generally consistent with the rock bolts installed by CoS in 1995.</p> <p><b>Netting</b></p> <p>Options for a protective catch net were being developed by JHCPBG. CR reported that this net would be required as a temporary measure and would be removed at the end of the construction phase.</p> <p>CR advised that the protection will be implemented as enabling works and is scheduled to commence in early September 2017.</p>		
5.	<b>Consultation</b>		
5.1	<p>RT reported that both the Heritage Council and Heritage Division have been briefed on the proposed mitigation measures. Both have provided in principle support for the approach to mitigate potentially more significant impacts by taking action at this point. Rock bolting with a rendered (covered) head was supported as the best approach.</p> <p>RT noted that Metro and JHCPBG understand the significance of this site and have taken an appropriately cautious approach to the proposed scope and methodology.</p> <p>TS expressed his support for taking early preventative action noting that other significant retaining walls within the City had required more extensive interventions as a result of delayed or in absence of monitoring and protective measures. TS also noted that the proposed treatment of recessing and patching of the anchor holes was a proven detail, consistent with the protection applied in 1995.</p>		
6.	<b>Next Steps and Actions</b>		
6.1	Metro and JHCPBG will continue to consult with CoS.		Metro/JHCPBG
6.2	Metro property and CoS property divisions will commence discussions regarding installation of the rock bolts. TS agreed to contact CoS Property to confirm his endorsement of the proposal.		Note/TS
6.3	Subject to achieving compliance with the relevant conditions of approval, JHCPB will commence installation of rock bolting in early Sep 2017		Note
7.	Meeting Closed at 4:00. Minutes recorded by RT		

---

**ATTACHMENT C:** High Street Cutting Protection – Peer Review (Mott Macdonald)

Our ref 373080VA02  
T 02 9098 6800  
E Alex.Been@mottmac.com



Metron  
Level 39  
680 George Street  
Sydney NSW 2000

## SYDNEY METRO CITY & SOUTHWEST – HIGH STREET CUTTING PROTECTION

### PEER REVIEW OF THE AMBS STATEMENT OF HERITAGE IMPACT

ISSUE NO.	DATE	AUTHOR	STATUS
A	29.06.2017	ACB	DRAFT FOR METRON REVIEW

We report the findings from our review of the AMBS Ecology and Heritage report “*High Street Cutting Millers Point – Statement of Heritage Impact*”.

Documents sighted in the review:

- AMBS Ecology and Heritage report *High Street Cutting Millers Point – Statement of Heritage Impact* dated June 2017.
- JHCPBG report *High Street Cutting Protection* dated 6 June 17
- Pells Sullivan Meynink report *Geotechnical Review of Proposed Lateral Support to the Heritage Retaining Wall at Barangaroo Station* dated 25 November 2016.
- GML Heritage report *Hickson Road Retaining Wall – Heritage Significance Assessment – Technical Report* dated 15 February 2017

### 1.0 BACKGROUND ENGINEERING ASSESSMENT

As part of our peer review we considered the background engineering advice provided to AMBS by JHCPBG, and the geotechnical advice, works documentation and proposals provided by PSM and Rust PPK.

#### 1.1 WALL MOVEMENT DUE TO STRESS RELIEF

Lateral wall deformation due to stress relief in the excavated rock face is stated to be a maximum of 30mm.



### Comments

1. This figure appears to be based on the “rule-of-thumb” of 1mm of stress relief per metre of excavation in Sydney Sandstone. It does not appear that any site specific geological assessment has been undertaken to confirm this figure.
2. Due to the primary direction of the excavation, the location and direction of major Sydney geological fault lines, and the site and area geology, site specific geological assessment may predict a significantly lower level of deformation.
3. As a general rule, the maximum deformation of an excavated rock face due to stress relief occurs at the centre of the excavated length, and decrease to 0mm at the edges of the excavated rock face. Assuming a maximum deflection of 30mm at the centre of the excavation and an excavation length of 210m, a deflection rate of 1:3500 can be expected.
4. It is expected that the majority of in-built stresses in the existing High Street rock cutting were relieved during historic quarrying. Therefore it may be expected that there will be minimal difference between the deflection of the excavated face at ground level and the rock face above.
5. We note that based on the above, consideration of the real effects of the expected deformations at this site should be given by JHCPBG. Some additional site specific assessment and consideration of the scale of stress relief may be warranted before finalising strategies to address this movement.

### 1.2 WALL MOVEMENT DUE TO EXCAVATION WORKS

The report states that “vibration from heavy excavation equipment is likely to contribute to movement of the wall”.

#### Comments

1. It does not appear that any analysis of the expected intensity of ground vibration has been conducted.
2. There is no explanation of what form of movement in the wall due to ground vibration is expected.
3. We note that the effects of high intensity vibrations may include: downslope wall drift, activation of backfill causing an increase in earth pressures (leading to wall bulging, cracking, overturning etc), delamination of the rendered face, and loosening or loss of mortar or masonry units.
4. Any proposed interventions should address these effects.

### 1.3 WALL CONSTRUCTION AND CONDITION

The report states that information on the design and the quality of the constructed wall is limited. The various reports state that the wall is partly a quarried rock cutting, and in remainder constructed in cyclopean concrete, concrete blocks, sandstone blocks or brick masonry. It is noted that the rock anchors installed in 1995 assumed (and noted in borehole logs) a cyclopean concrete construction.

### Comments

1. An understanding of the wall construction and current condition may be necessary to determine appropriate mitigation strategies and to document any associated works.
2. The use of cyclopean masonry construction for this type of structure is considered unusual (more commonly associated with dam construction). If confirmed, this construction method may contribute to the wall's heritage significance. It is understood that new and experimental forms of construction were used in the terraces along High Street, therefore it is possible that unusual construction methods were employed for the High Street Cutting.
3. Apart from the 1995 borehole logs no evidence of cyclopean masonry construction has been presented. Photos contained in the report suggest the use of large sandstone blocks. This would be consistent with other walls in the area.
4. The reason for the installation of rock anchors in 1995 is not mentioned. We assume the works were in response to the appearance of cracks in the wall and spalling render.

### 1.4 PROTECTION OPTIONS

The JHCPBG report provides a set of options for the protection of the wall, the public and workers, against the predicted effects of the excavation. The report states that providing no protection to the wall would pose a risk to workers and general public, and that the predicted effects of cracking and delamination of surface render is considered detrimental to the heritage value of the wall.

### Comments

1. The options proposed appear to be centred around preventing collapse of the wall and protecting people below from material falling from the cutting as a result of the predicted wall movements.
2. There is no discussion of methods to limit wall movement due to stress relief or to reduce the vibrations.
3. The use of retaining props is discussed as a method to "restrict movements". The propping arrangement shown would however do little prevent deflections due to stress relief, or prevent damage due to vibrations.
4. The expected benefit of installation of rock anchors is not explained. Rock anchors will not prevent deflections due to stress relief, or prevent damage such as spalling render or loss of mortar and masonry units due to vibrations. With appropriate design rock anchors may assist in preventing collapse of wall sections.
5. Installation of protective netting/ mesh is proposed as an effective method of providing protection to people below. We note that this method would provide only limited protection (against falling debris of a small scale), and does not prevent collapse. This method also prevents monitoring of the condition of the wall during the excavation works.

6. Installation of protective netting/ mesh is discounted in the report as it does not prevent damage to the wall and does not eliminate the source of the risk. We note that none of the options proposed appear to fully address these issues.
7. Ad hoc repair and maintenance is discounted. We note that this approach may be of some benefit in conjunction with other works, and therefore should only be discounted as an entire strategy.

## **2.0 AMBS STATEMENT OF HERITAGE IMPACT**

Our review of the content of the AMBS Statement of Heritage Impact (SoHI) follows. The review covers the various sections in order.

### **2.1 SCOPE OF REPORT**

The scope of the SoHI is expected to be limited to the impacts of the proposed works on the High Street Cutting, described as the cut rock face and retaining wall above Hickson Road, and associated elements.

#### **Comments**

1. The SoHI contains descriptions of building remnants under High Street. These do not appear to be part of the item in under assessment. It may be more appropriate to separate these and any other affected items into other, specific reports.
2. It appears that while the building remnants may be affected by the proposed works (installation of rock anchors), no specific mitigation strategies have been proposed.

### **2.2 HISTORY**

#### **Comments**

1. The SoHI contains a statement about the historic context of the item, but only minimal history of the High Street Cutting itself, aside from the date of its original construction. Information on alterations made over the life of the wall may be of value.

### **2.3 ANALYSIS OF PROPOSED WORKS**

The SoHI re-produces information from the JHCPBG report regarding the proposed excavation works and protection works for the wall.

#### **Comments**

1. Discussion of the effect of the proposed works on the wall would be expected in this section.

## 2.4 PHYSICAL ANALYSIS

### Comments

1. The inventory for the wall is referenced in section 4.1. It is unclear which inventory this is. As the inventory states the construction of the wall as “sandstone block and brick block”, this may be a useful reference when proposing and designing appropriate interventions.
2. Figure 4.19 shows a historic photograph of the construction of the intersection of Hickson Road and Pottinger Street in Dawes Point, not the High Street Cutting.
3. The section (4.2) describing the archaeology under High Street may not be relevant to this SoHI, as mentioned above.

## 2.5 ANALYSIS OF OPTIONS

### Comments

1. The analysis of options is based on the information provided in the JHCPBG report. As noted in Section 1.0 above, the background information is incomplete and based on various assumptions, therefore this analysis may need to be revised if alternative or adjusted works are proposed.

## 2.6 ASSESSMENT OF HERITAGE IMPACT

### Comments

1. The assessment of heritage impact repeats the analysis of options. It is expected that a heritage impact assessment should assess a single proposal only, discussing the various aspects of that single proposal, noting beneficial aspects, detrimental aspects and other solutions (as suggested by the sub-headings in Section 5).
2. Installation of temporary netting is proposed, requiring the removal of “redundant” services that may be of heritage significance. Some assessment of the heritage value of the various fixings should be conducted before removal, and alternative methods of conservation considered to reduce the heritage impact of such works.

## 2.7 MITIGATION

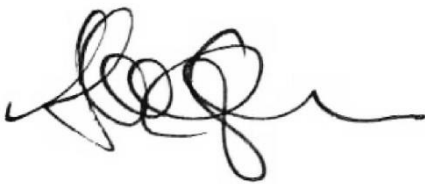
### Comments

1. The outline of mitigation measures considers the installation of the permanent retaining anchors and temporary safety netting.
2. The SoHI states that recessing and patching the anchor heads ensures that the least possible damage is done to the retaining wall. Recessing anchor heads requires removal of greater amounts of original fabric than surface mounting. Recessing anchor heads enables patching and this may be considered to be an effective mitigation of the effect of installation of anchors.

3. There is no discussion of the likely impact of installation of the temporary netting, or any mitigation measures to offset such impacts.
4. Recommendation 1 in Section 6.1 refers to the photographic recording of an overbridge. This is likely to have been taken from a previous AMBS report. Any photographic recording should be conducted in a manner appropriate to the place and proposed works.
5. There is no discussion around other mitigation strategies to prevent or reduce the effects of the proposed excavation works. Strategies we would expect to be discussed in this SoHI include:
  - a. Condition assessment, investigations and the like to determine the actual construction of the wall, to inform the most efficient methods of intervention,
  - b. Measures to reduce, or reduce the impact on the cutting of, the expected stress relief deformations.
  - c. Application of initial limits on ground vibrations occurring across the cutting caused by excavation works, followed by monitoring to allow adjustment of vibration limits depending on the observed effects,
  - d. Remediation of any damage caused during installation of protection measures or during excavation works using appropriate materials.

We trust that the foregoing is of assistance. Please contact the undersigned for any further information.

Yours faithfully



**Mott MacDonald Australia**

**ALEX BEEN**

**PRINCIPAL STRUCTURAL ENGINEER**

BE, MHERITCONS, MIEAUST

---

**ATTACHMENT D:** Meeting minutes of discussion of Mott Macdonald peer review



## MINUTES

### Hickson Road Wall Peer Review

<b>Date</b>	Monday, 31 July 2017		
<b>Time</b>	2:30pm		
<b>Venue</b>	JHCPBGJV Offices		
<b>Chairperson</b>	Craig Tucker		
<b>Invitees</b>	Dominic Wright Brian Cullinane Caitlin Richards Gary Ewwn Steve Burns	DW BC CR GW SB	TfNSW TfNSW JHCPBGJV JHCPBGJV JHCPBGJV
<b>Apologies:</b>	None		

		<b>Responsible/ Due Date</b>
<b>1.</b>	TSE Contractor reps spoke to the Mott McDonald Peer Review in terms engineering, design and heritage issues.	
1.1	Risk assessment re wall was based on experience with similar excavations through typical rock formations.	Noted
1.2	Majority of excavation at Barangaroo will use road headers, reducing vibration impact	Noted
1.3	Noted that the wall is built using three different construction methods, one of which is cyclopean, ie use of plumbs. This will be factored into ongoing design considerations.	Noted
1.4	Do nothing option is not a real option however it was noted that TSE Contractor was asked to consider this by SMDO	Noted
1.5	Benefits of installation of rock anchors are to avoid rock failure / safety	Noted
1.6	Assessment of other options – noted that can't avoid stress relief deformations	Noted
1.7	It was recognized that a detailed design would be ongoing in which appropriate TfNSW reps would participate	Noted
<b>2.</b>	Noted that design life of rock anchors would be 1000 years	Noted
<b>3.</b>	EPL: TSE Contractor want EPL no later than 3 <sup>rd</sup> October	Noted
<b>4.</b>	Consistency Assessment (CA): noted that City of Sydney Council letter was last item of documentation required to complete the CA. TSE Contractor hoping for a 'clean' approval from Council with no additional requirements	Noted

		Responsible/ Due Date
<b>5.</b>	<b>Action Items</b>	
5.1	Send word version of Peer Review to TSE Contractor	Mott MacDonald  Closed
5.2	TSE Contractor to provide response	TSE Contractor  Closed
5.3	Finalise CA	SMDO  11 <sup>th</sup> August 2017

#### STATUS OF ACTIONS FROM LAST MEETING

		Status	Responsible/ Revised Due Date
1.	NA		
2.	NA		
3.	NA		



---

**ATTACHMENT E:** TSE response to peer review

## SYDNEY METRO CITY & SOUTHWEST – HIGH STREET CUTTING PROTECTION

### MOTT MACDONALD PEER REVIEW OF THE AMBS HIGH STREET CUTTING, MILLERS POINT STATEMENT OF HERITAGE IMPACT (16314) AND JHCPBG HIGH STREET CUTTING PROTECTION (SMCSTSE-JHCPBG-TPW-EN-RPT)

#### 1.0 BACKGROUND ENGINEERING ASSESSMENT

##### 1.1 WALL MOVEMENT DUE TO STRESS RELIEF

Mott MACDONALD Comments	JHCPBG Response
<ol style="list-style-type: none"> <li>1. This figure appears to be based on the “rule-of-thumb” of 1mm of stress relief per metre of excavation in Sydney Sandstone. It does not appear that any site specific geological assessment has been undertaken to confirm this figure.</li>   <li>2. Due to the primary direction of the excavation, the location and direction of major Sydney geological fault lines, and the site and area geology, site specific geological assessment may predict a significantly lower level of deformation.</li>   <li>3. As a general rule, the maximum deformation of an excavated rock face due to stress relief occurs at the centre of the excavated length, and decrease to 0mm at the edges of the excavated rock face. Assuming a maximum deflection of 30mm at the centre of the excavation and an excavation length of 210m, a deflection rate of 1:3500 can be expected.</li>   <li>4. It is expected that the majority of in-built stresses in the existing High Street rock cutting were relieved during historic quarrying. Therefore it may be expected that there will be minimal difference between the deflection of the excavated face at ground level and the rock face above.</li>   <li>5. We note that based on the above, consideration of the real effects of the expected deformations at this site should be given by JHCPBG. Some additional site specific assessment and</li> </ol>	<p>This is not a “rule of thumb” – our assessment is based on extensive empirical evidence from hundreds of deep excavations in Sydney sandstone. With the station box so close to the “harbour cliff” there will not be high horizontal rock stresses and the geotechnical assessment from the borehole information supports the 30mm predicted figure.</p> <p>The station box site is not impacted directly by any faulting structure. (The Luna Park fault zone passes through the Barangaroo cavern some 100m to the north).</p> <p>At the ends of the box, there is lateral restraint and the movement will be less. The deflection will taper out to zero (over a length of around 20m).</p> <p>Agreed. The upper cliff face will be dragged sideways only due to the movement below. There should be zero differential displacement between the top and bottom of the exposed cliff face.</p> <p>There is no requirement for additional assessment – the behaviour of the movement in Sydney sandstone due to deep</p>

consideration of the scale of stress relief may be warranted before finalising strategies to address this movement.	excavations is well understood and we have recent borehole data confirming the rock quality and properties.
---	---

## 1.2 WALL MOVEMENT DUE TO EXCAVATION WORKS

Comments	JHPCBG Response
1. It does not appear that any analysis of the expected intensity of ground vibration has been conducted.	Potential vibration impacts and management will be detailed in the Construction Noise and Vibration Method Statement for Barangaroo. We are planning to excavate using standard rock saws and hammers with roadheaders used for the lower bench excavation. The vibration characteristics are well understood and the use of roadheaders which was not included in the EIS will reduce vibration impacts.
2. There is no explanation of what form of movement in the wall due to ground vibration is expected.	The tensioned rock anchors are used to secure the wall and prevent any differential movement
3. We note that the effects of high intensity vibrations may include: downslope wall drift, activation of backfill causing an increase in earth pressures (leading to wall bulging, cracking, overturning etc), delamination of the rendered face, and loosening or loss of mortar or masonry units.	The tensioned rock anchors are being installed to prevent any such movement.
4. Any proposed interventions should address these effects.	None required

## 1.3 WALL CONSTRUCTION AND CONDITION

Comments	TSE Response
1. An understanding of the wall construction and current condition may be necessary to determine appropriate mitigation strategies and to document any associated works.	The available drawings have sufficient detail to provide a reasonably good understanding of the wall and its construction. Available evidence from the adjacent strengthening work undertaken in 1995 also supports this understanding.
2. The use of cyclopean masonry construction for this type of structure is considered unusual (more commonly associated with dam construction). If confirmed, this construction method may contribute to the wall's heritage significance. It is understood that new and experimental forms of construction	We are treating the wall as a low strength mass concrete wall (because of the use of "plums" in the mix).

<p>were used in the terraces along High Street, therefore it is possible that unusual construction methods were employed for the High Street Cutting.</p> <p>3. Apart from the 1995 borehole logs no evidence of cyclopean masonry construction has been presented. Photos contained in the report suggest the use of large sandstone blocks. This would be consistent with other walls in the area.</p> <p>4. The reason for the installation of rock anchors in 1995 is not mentioned. We assume the works were in response to the appearance of cracks in the wall and spalling render.</p>	<p>The close spacing of the rock anchors is such that we have no reliance on any tensile capacity of the existing wall concrete.</p> <p>Acknowledged</p> <p>We are using rock anchors to stabilise the wall and anchor it to the competent sandstone mass at the back of the wall. It is in response to a safety issue. There will be movement of the cliff face and the proposed treatment minimising the risk of the wall falling onto motorists/ pedestrians/ workers below.</p>
--	---

#### 1.4 PROTECTION OPTIONS

Comments	TSE Response
<p>1. The options proposed appear to be centred around preventing collapse of the wall and protecting people below from material falling from the cutting as a result of the predicted wall movements.</p> <p>2. There is no discussion of methods to limit wall movement due to stress relief or to reduce the vibrations.</p> <p>3. The use of retaining props is discussed as a method to “restrict movements”. The propping arrangement shown would however do little prevent deflections due to stress relief, or prevent damage due to vibrations.</p> <p>4. The expected benefit of installation of rock anchors is not explained. Rock anchors will not prevent deflections due to stress relief, or prevent damage such as spalling render or loss of mortar and masonry units due to vibrations. With appropriate design rock anchors may assist in preventing collapse of wall sections.</p> <p>5. Installation of protective netting/ mesh is proposed as an effective method of</p>	<p>Yes</p> <p>There is no way to prevent the horizontal movement and propping of the face is not an option given space constraints.</p> <p>Agreed</p> <p>The wall requires anchoring to ensure that the wall does not collapse. They will not prevent movement. The need for netting to control any spalling or loss of render is to be assessed in more detail but considered likely due to the poor state of the wall.</p>

<p>providing protection to people below. We note that this method would provide only limited protection (against falling debris of a small scale), and does not prevent collapse. This method also prevents monitoring of the condition of the wall during the excavation works.</p> <p>6. Installation of protective netting/ mesh is discounted in the report as it does not prevent damage to the wall and does not eliminate the source of the risk. We note that none of the options proposed appear to fully address these issues.</p> <p>7. Ad hoc repair and maintenance is discounted. We note that this approach may be of some benefit in conjunction with other works, and therefore should only be discounted as an entire strategy.</p>	<p>The netting would be used for protection of minor spalling only. The rock anchors provide protection against collapse.</p> <p>Repeat – the rock anchors prevent collapse. The netting is for protection of minor spalling only</p> <p>There is no place for an ad hoc repair. It is impossible to undertake a full structural assessment of the old wall without a major intrusive excavation and coring. We must consider the whole wall to be suspect and strengthen the full face above the station box.</p>
---	--

## 2.0 AMBS STATEMENT OF HERITAGE IMPACT

### 2.1 SCOPE OF REPORT

Comments	TSE Response
<p>1. The SoHI contains descriptions of building remnants under High Street. These do not appear to be part of the item in under assessment. It may be more appropriate to separate these and any other affected items into other, specific reports.</p> <p>2. It appears that while the building remnants may be affected by the proposed works (installation of rock anchors), no specific mitigation strategies have been proposed.</p>	<p>We are not proposing to dig in High St and our proposed rock anchors are well below any old building foundations. No impact</p> <p>The SoHI states "The potential to impact buried archaeological relics through the installation (drilling) process does exist. However, the pattern of early occupation was a sparse collection of houses at the margins of the quarry primarily at the northern and southern of present day High Street (see Figure 4.26 above) As such, there is little potential that archaeological relics would be encountered." The only mitigation would be excavation and salvage which would further destabilise the wall. Under the Infrastructure Approval (SSI 15_7400) archaeological excavation and salvage is only required in areas where</p>

	excavation is required to make way for the Project.
--	---

## 2.2 HISTORY

Comments	TSE Response
1. The SoHI contains a statement about the historic context of the item, but only minimal history of the High Street Cutting itself, aside from the date of its original construction. Information on alterations made over the life of the wall may be of value.	This information is not necessary to determine the required protection and mitigation.

## 2.3 ANALYSIS OF PROPOSED WORKS

Comments	TSE Response
1. Discussion of the effect of the proposed works on the wall would be expected in this section.	We have identified the need for drilling anchors (as already installed in the southern section of the wall in 1995). We are proposing recessing of the anchor heads and patching with suitably coloured grout to minimise the visual impact as detailed in the SoHI.

## 2.4 PHYSICAL ANALYSIS

Comments	TSE Response
1. The inventory for the wall is referenced in section 4.1. It is unclear which inventory this is. As the inventory states the construction of the wall as "sandstone block and brick block", this may be a useful reference when proposing and designing appropriate interventions.	This information is not necessary to determine the required protection and mitigation.
2. Figure 4.19 shows a historic photograph of the construction of the intersection of Hickson Road and Pottinger Street in Dawes Point, not the High Street Cutting.	Noted
3. The section (4.2) describing the archaeology under High Street may not be relevant to this SoHI, as mentioned above.	Noted – see response to 2.1, Question 2.

## 2.5 ANALYSIS OF OPTIONS

Comments	TSE Response
<p>1. The analysis of options is based on the information provided in the JHCPBG report. As noted in Section 1.0 above, the background information is incomplete and based on various assumptions, therefore this analysis may need to be revised if alternative or adjusted works are proposed.</p>	<p>Disagree. The proposed strengthening is based not only on sound assumptions but utilises the same treatment used in 1995 on the southern section of the same wall.</p>

## 2.6 ASSESSMENT OF HERITAGE IMPACT

Comments	TSE Response
<p>1. The assessment of heritage impact repeats the analysis of options. It is expected that a heritage impact assessment should assess a single proposal only, discussing the various aspects of that single proposal, noting beneficial aspects, detrimental aspects and other solutions (as suggested by the sub-headings in Section 5).</p> <p>2. Installation of temporary netting is proposed, requiring the removal of “redundant” services that may be of heritage significance. Some assessment of the heritage value of the various fixings should be conducted before removal, and alternative methods of conservation considered to reduce the heritage impact of such works.</p>	<p>TfNSW specifically requested that the SoHI address treatment options</p> <p>The netting is for retention of possible spalling only. There is no need to remove any existing fitments and this not proposed</p>

## 2.7 MITIGATION

Comments	TSE Response
<p>1. The outline of mitigation measures considers the installation of the permanent retaining anchors and temporary safety netting.</p> <p>2. The SoHI states that recessing and patching the anchor heads ensures that the least possible damage is done to the retaining wall. Recessing anchor heads requires removal of greater amounts of original fabric than surface mounting. Recessing anchor heads</p>	<p>Agree</p> <p>Visible protruding anchor heads are not considered an enhancement over the proposed recessed anchors</p>

<p>enables patching and this may be considered to be an effective mitigation of the effect of installation of anchors.</p> <p>3. There is no discussion of the likely impact of installation of the temporary netting, or any mitigation measures to offset such impacts.</p> <p>4. Recommendation 1 in Section 6.1 refers to the photographic recording of an overbridge. This is likely to have been taken from a previous AMBS report. Any photographic recording should be conducted in a manner appropriate to the place and proposed works.</p> <p>5. There is no discussion around other mitigation strategies to prevent or reduce the effects of the proposed excavation works. Strategies we would expect to be discussed in this SoHI include:</p> <ol style="list-style-type: none"> <li>a. Condition assessment, investigations and the like to determine the actual construction of the wall, to inform the most efficient methods of intervention,</li> <li>b. Measures to reduce, or reduce the impact on the cutting of, the expected stress relief deformations.</li> <li>c. Application of initial limits on ground vibrations occurring across the cutting caused by excavation works, followed by monitoring to allow adjustment of vibration limits depending on the observed effects,</li> <li>d. Remediation of any damage caused during installation of protection measures or during excavation works using appropriate materials.</li> </ol>	<p>Minor facing fixing of the netting only is required.</p> <p>This is a mitigation specific to the High Street Cutting and will be undertaken in accordance with relevant government guidelines</p> <p>Disagree. Options identified are appropriate and no further consideration is necessary. We reiterate that:</p> <ul style="list-style-type: none"> <li>• Additional information on the current condition of the wall is not necessary to determine the required protection and mitigation.</li> <li>• Potential vibration impacts and management will be detailed in the Construction Noise and Vibration Method Statement for Barangaroo.</li> </ul> <p>It would not be appropriate for a heritage specialist to give advice on engineering design, settlement impact and vibration management and as such the suggestion that this be covered in the SoHI is not supported.</p>
---	--



**ATTACHMENT F:** Heritage Council minutes and recommendations

**MINUTES OF MEETING – 443**  
**Heritage Council of NSW**

5 July 2017  
Commencing at 9:04 am  
Office of Environment and Heritage  
Level 6, 10 Valentine Ave  
Parramatta

**MEMBERS PRESENT**

Mr Stephen Davies (Chair)  
Dr Deborah Dearing  
Prof Gary Sturgess AM  
Ms Jennifer Davis  
Ms Lisa Newell (National Trust (NSW) Nominee)

**APOLOGIES**

Dr Mark Dunn (Deputy Chair)  
Ms Jane Irwin  
Dr Raymond Kelly  
Mr Gary White (for Secretary, Department of Planning & Environment)  
Mr Peter Poulet (Observer, Government Architect)  
Mr Ben Hewett (Observer, Government Architect)

**OEH ATTENDEES**

*Heritage Division Executive:*  
Ms Pauline McKenzie, Executive Director, Mr Nigel Routh, Director, Heritage Strategy, Ms Rochelle Johnston, A/ Senior Manager, Conservation, Ms Katrina Stankowski, A / Manager, Listings, Mr Rajeev Maini, A/Manager, Conservation, Ms Juanita McCarthy, A/ Manager, Metropolitan Region.

*Heritage Division Staff:*  
Ms Aleisha Buckler, Listings, Mr Michael Ellis, Conservation.

*OEH Staff:*  
Ms Althea Kannane, Ms Victoria Nolan

**HERITAGE COUNCIL SECRETARIAT**

Ms Natalia Leiva  
Ms Diana Cowie

**GUEST PRESENTERS**

Item 2.1 Evans Head Memorial Aerodrome, Modification of the Heritage Agreement - Mr Vaughan Macdonald (General Manager) and Mr Mike Perkins (Manager Property and Economic Projects), Richmond Valley Council.

Item 2.2 Closebourne, Morpeth, Masterplan – Mr Bruce Gould (Lend Lease), Mr Marty Cloraine (Lend Lease) and Ms Brittany Frelander (City Plan)

Item 2.3 Jenolan Caves, draft Masterplan - Mr Bob Conroy, Administrator, Jenolan Caves Reserve Trust.

**Agenda Items**

Note: The order of items discussed was adjusted during the meeting to accommodate guest presenters.

The meeting commenced at 9:04 am.

**1.0 Welcome, agenda, confirmation of minutes**

**1.1 Welcome and Acknowledgement of Country**

Prior to commencing business, the Chair, Mr Stephen Davies, delivered an Acknowledgment of Country and NAIDOC week.

## 1.2 Apologies, confirmation and timing of agenda

Discussion Apologies were received from Dr Mark Dunn, Ms Jane Irwin, Dr Raymond Kelly, Mr Gary White, Mr Peter Poulet and Mr Ben Hewett.  
Members noted external presentations were scheduled for the day including Approvals Committee Item 2.2, which has been brought forward into the Heritage Council meeting.

Noted copies of the updated agenda and late discussion papers were tabled. These included:

- Item 2.2 Closebourne, Morpeth, Masterplan – Closebourne Village Retirement Living Facility
- Item 2.3 Jenolan Caves, Jenolan Karst Conservation Reserve – Draft Visitor Use and Services Zone Masterplan.

The Chair acknowledged Ms Alesha Buckler and Ms Juanita McCarthy, as guest observers from the Heritage Division.

Noted The Heritage Council of NSW noted the Chair's welcome, apologies, the late papers and confirmed the agenda.

## 1.3 Members declarations

Discussion No declarations of interest were provided by members prior to the meeting and no additional declarations of interest were identified during the meeting.  
Mr Stephen Davies, the Chair, advised that his company had been involved in a previous Conservation Management Plan (CMP) for Jenolan Caves but this work was not related to Item 2.3.

Noted The Heritage Council of NSW noted nil declarations of interest.

## 1.4 Heritage Council of NSW meeting of 7 June 2017

Discussion Members discussed the draft minutes of the 7 June 2017 Heritage Council meeting.

- Dr Deborah Dearing clarified for the members the discussion point at Item 5.1 (page 10 of 12) of the minutes, stating it should read: 'Dr Dearing noted that she had read in a media report that the application...'

Resolution 2017-45. The Heritage Council of NSW:

1. accepts the minutes as a true record of the Heritage Council meeting held on 7 June 2017.

Moved by Mr Stephen Davies and seconded by Ms Lisa Newell.

## 1.5 Heritage Council out of session decisions since last meeting.

Nil matters were determined by the Heritage Council out of session since the last meeting held on 7 June 2017.

## 2.0

## Presentations

### 2.1 Evans Head Memorial Aerodrome, Richmond Valley Council, Modification of the Heritage Agreement

- Presentation The guest presenters, Mr Vaughan Macdonald and Mr Mike Perkins from Richmond Valley Council, expressed gratitude for the opportunity to present and informed the Heritage Council:
- a briefing on the Evans Head Memorial Aerodrome (the Aerodrome) had previously been given by Richmond Valley Council several years ago.
  - the Aerodrome, built in the 1930s and listed on the State Heritage Register, is of great significance to the local area and one of the most important World War Two airfields.
  - there are opportunities to bring the heritage of the site to life.
  - the Heritage Agreement (HA) includes provision of a conservation fund and guides how heritage items are maintained and how the Aerodrome functions by setting out funding arrangements for the maintenance and restoration of heritage assets. A lot of the HA commitments have been delivered on, for example, the upgrade and restoration of the bellman hanger. These works were funded from Council general revenue and funding from Mr Peter Lynch's company. The hanger is a major attraction to the heritage area and complements the air museum.
  - the southern portion of the aerodrome contains a proposed 20 lot subdivision and a manufactured homes estate.
    - The feature of primary significance in this section of the aerodrome, is the vista of the runway (although the runway has been removed).
    - The delegate of the Heritage Council issued general terms of approved for the layout and design of the manufactured homes estate.
    - The lots and estate have been on the market with suitable interest; however, the HA is perceived by prospective purchasers as an encumbrance on the land and contract of sale.
    - Richmond Valley Council proposes the 20-lot subdivision and manufactured homes estate is removed from the heritage agreement as these properties do not contain heritage items associated with the aerodrome.
    - Richmond Valley Council also seek ways to efficiently manage the approvals process for construction of higher end manufactured homes on these lots, such as through site specific exemptions.
    - The manufactured homes estate maintains the heritage values of the runway and taxiway which are kept clear of structures as part of the estate.
    - Advantages are seen in the whole manufactured estate being built by a company and company ownership of several larger lots in terms of ensuring uniformity of scheme, quality and management.
    - Part of the Costs for the restoration works at the aerodrome, funding by Richmond Valley Council general revenue to date, are to be recovered from the sale of the 20 lots and manufactured homes estate.
    - Ongoing maintenance and conservation works at the aerodrome are funded by 20% of council rates from the 20 lots and manufactured homes estate, but only while

Council owns the land and airpark. In the future, the Richmond Valley Council foresee the airpark (an adaptive reuse of the aerodrome site by a community strata organisation) ultimately funding and having responsibility for the upkeep and maintenance of the aerodrome. The airpark is proposed to be like a canal estate but focused on flying enthusiasts – driveway at the front and taxi way at the back.

- It is the intention of Richmond Valley Council to sell the airpark, including runways, to a private developer/ manager who will be required to take on responsibility for the maintenance and upkeep of the heritage assets, Future developments at the aerodrome may include a hotel and residential hanger homes; however, these would not require exclusion from the HA. It is important that the airpark and any associated future developments remain under the HA for ongoing heritage conservation reasons.
- Richmond Valley Council's preference is that both the manufactured homes estate and the 20 lots are removed from the HA; however, the highest priority is the removal of the 20 lots.
- At present, Richmond Valley Council still owns all the land but have a contract to sell the estate and 20 lots to one entity and another contract to sell the airpark to another entity. The sales are subject to DA approval which will be issued next month by the joint regional planning panel.
- The Heritage Council decision today could affect Richmond Valley Council's contract with the developer due to the lack of lot purchases.
- Richmond Valley Council are willing to work through these complex issues to get the right arrangements and funding in place for this significant aerodrome.

Discussion The members discussed:

- the removal of the lots from the Heritage Agreement but not from the heritage listing of the property.
- the removal of the 20 lots and manufactured homes estate not affecting the responsibility of owners, as Richmond Valley Council has paid the costs of heritage maintenance and intends to recover part of those costs from sale of the land.
- the value of Heritage Division having early visibility on the legal arrangements for the airpark.
- the proposed cessation of funding for conservation from rates following establishment of the airpark, and the commitment of Richmond Valley Council to ongoing support for heritage conservation should the airpark proposal fail.
- review of the existing Heritage Agreement and its correlation with the Heritage Management Plan - principles for Heritage Agreements should be guided by Plans of Management.
- the need for consistency in how development within the curtilage of listed items is dealt with noting very few have Heritage Agreements. The forthcoming policy on subdivision on listed items will provide principles. The developer is very aware of the heritage constraints and responsibilities associated with the listed item.
- a variation to the Heritage Agreement should consider including provision for 20% of the total ordinary council rates levied each financial year (regardless of whether Council is a land owner), going into the Aerodrome conservation fund.

- the site-specific exemptions likely to be sought – this is a common occurrence and does not present a concern in this case.

Resolution 2017-46. The Heritage Council of NSW:

1. considers the information in this paper and in the presentation.
2. in principle supports a variation to the Heritage Agreement for the Evans Head Memorial Aerodrome, for the removal of the Manufactured Home Estate and 20 Residential Lots at Currajong Street, Evans Head from the Heritage Agreement.
3. explore the on-going financial viability of the Evans Head Aerodrome to support the State Heritage Register listed item and variation to the Heritage Agreement.

Moved by Mr Stephen Davies and seconded by Ms Jennifer Davis.

## 2.2 Closebourne, Morpeth, Masterplan – Closebourne village - Retirement Living facility

Presentation The guest presenters, Mr Bruce Gould (Lend Lease), Mr Marty Cloraine (Lend Lease) and Ms Brittany Freeland (City Plan) informed the council:

- this presentation is part of their process of seeking responses and feedback from stakeholders on proposed changes to the Masterplan.
- a significant quantity of development has been done on the site and Lend Lease are now looking to finalise the Masterplan.
  - There has been a masterplan on the site since 2008 which includes the Conservation Management Plan (CMP) and Heritage Agreement (HA).
  - A sequence of consents and approvals have been obtained for the development works.
- there are three significance items on the site. The upgrade and adaptive reuse of Morpeth House has been completed and the building has been operating since 2014 as a community centre on the site, winning awards for the adaptive reuse.
- the western portion of the subject site includes mixed farmlet residential development and a retirement village. The eastern portion of the subject site is mixed use.
- the retirement village component of Stage 5 of the development, has been altered in the Masterplan to now comprise of all single storey villas.
- to date, 251 retirement villas, which are the predominant structures on the subject site, have been approved. These villas are single storey, single or duplex homes in medium density.
- Stage 6 of the development includes works on the oval, construction of the Closebourne residential aged care facility and a series of '10 packs' (continuous double storey villas).
  - The density to be delivered in the oval area has not been finalised. Originally it was proposed as medium density; however, there is no longer demand for multi-storey living. Education and funding around aged care has change. Lend Lease are now trying to deliver single storey and lower scale buildings where possible.
- there are three areas changes to the Masterplan are proposed:
  - Instead of multi-storey villas in greater density, it is proposed to continue the theme of low rise, medium density villas. This considers red gum grove (significant

trees) and historic items. Single storey villas will give more prominence to the heritage buildings. Apartments in Robinsons House and the Principle's Residence are proposed. These new arrangements represent a reduction in yield as well as the height and volume of the buildings in the western portion of the subject site.

- To offset the reduced yield in the western portion, it is proposed to increase the density of villas in the oval space and at the location of the former Closebourne Respite Centre (proposed for demolition).
- The addition of the nursing home associated adjacent to Closebourne House.
- Adaptive reuse of Closebourne House for retail purposes instead of aged care facilities.
- the demolition of the respite facility will add to the paddock landscape, altering opportunities for the developable land in the central area. A carpark structure is proposed in the paddock landscape area at the eastern end of the subject site.
- Lend Lease are looking not to change the quantities of developable vs non-developable land as set in the heritage agreement.
- the heritage significant landscape components that are being considered are the European trees and avenue of trees.
  - Main entrance and traffic will be via an alternative to ensure the protection of the avenue of trees to tank street.
- to achieve the number of high care beds required in the nursing home and respite building, a lateral extension of this building is proposed.
  - The façade of the nursing home and respite building will be set back to facilitate better relationship to the landscape.
  - The impacts of an extension of the nursing home and respite building into the heritage garden area are considered minor as a more significant part, the paddock landscape area is conserved.

Discussion Michael Ellis informed the council:

- that when the Masterplan was prepared, the yields available on the land were not assessed.
- when Lend Lease presented the Development Application at the Approvals Committee earlier in 2017, a discussion was held on the yields that the subject site could support.
- the yield proposed in Lend Lease's original masterplan was not achievable on a heritage property such as the subject site. Alteration to yields was not envisaged in the heritage agreement which was established in 2010 to preserve the landscape character and curtilage of the subject site.
- development in designated open landscape areas would require a variation to the heritage agreement.
- the landscape values and how this proposal will impact those values is not well articulated.
- a landscape masterplan for the site has not been prepared. Landscape plans have been undertaken and presented on a stage by stage basis which has prevented an holistic understanding of the subject site's landscape values and potential impacts.

The members discussed:

- land-use is being achieved reasonably well however, in built form significant problems are arising. It is understood though, that there are established forms and constraints determined by function, for aged care facilities.
- the siting, bulk, scale and design of the elevated carparking structure in the landscape paddock area.
- without detailed plans at this stage there is limited ability to provide comment.
- further information about the significant values of the landscape and mitigation of landscape impacts (including detailed visual analysis and landscape master plan to assist assessment of this application) would be required to assess this application as justification based on heritage impacts is not presented. The justification based on bed requirements and finance is understood but the focus now needs to be on heritage impacts.
- this matter returning to the non-government sub-committee for continuation of the conversation.
- amendments to precincts A and B do not present concerns.

Resolution 2017-47. The Heritage Council of NSW:

1. notes the information in the prepared paper.
2. considers the presentation.
3. provides the following comments:
  - a. the information contained in the presentation document submitted for consideration for Closebourne Village is conceptual and it is not possible to provide detailed comment. However, it is acknowledged that the proposed siting of the proposed High Care Bed Nursing Home (aged care facility) and elevated car parking structure may negatively impact the State heritage values of *its Arcadian landscape* ascribed to the place.
  - b. the proposed High Care Bed Nursing Home and elevated car parking structure is not consistent with clause 3 of the 2010 Heritage Agreement; because it would encroach on the identified *Preserved Landscape Curtilage*.
  - c. any future development proposal for the High Care Bed Nursing Home should be informed by a detailed heritage impact assessment focussing on gradings of significance in the CMP, including landscape and visual impact.
  - d. the revised 2017 CMP for Morpeth submitted for endorsement must be referred by Heritage Division to the Heritage Council of NSW.

Moved by Mr Stephen Davies and seconded by Ms Lisa Newell.

### 2.3 Jenolan Caves, Jenolan Karst Conservation Reserve – draft Visitor Use and Services Zone Masterplan

Presentation The guest presenter, Mr Bob Conroy – administrator of Jenolan Caves Trust informed the council:



- Jenolan Caves is listed on the State Heritage Register and is one of eight properties included in the Greater Blue Mountains World Heritage area and is also listed on the National Heritage Register.
- the Jenolan Karst Conservation Reserve (the reserve) forms part of the upper catchment of the Sydney water catchment.
- the reserve is managed by two agencies – National Parks and Wildlife Service (NPWS) manages the conservation zone and the seven precincts that form the visitor use and services zone are managed by the Jenolan Caves Trust (the Trust).
- the Trust has managed the visitor use and services zone since 1989.
- in 2006 the NSW government transferred the reserve along with other places such as Wombeyan Caves, to NPWS. The NSW government is exploring divestment of visitor use and services to the private sector. The Trust is an interim body tasked with de-risking the business and the visitor use and services zone.
- the Trust is responsible for determining appropriate management of the items, assets and services within the zone. The Trust is self-funded and occasionally receives capital grants from the NSW government, the last one being for five million dollars in 2015.
- in 2015 Mr Bob Conroy was engaged as administrator and tasked with development of a Strategic Plan 2015-2018. Priority projects were identified by the Trust and NPWS, the most important of which was to finalise a Plan of Management (PoM).
- the PoM has gone through consultative processes and is ready for submission to the minister. The PoM identifies several other key projects including completion of a masterplan and finalisation and endorsement of the Conservation Management Plans.
  - The Urbis 2009 Conservation Management Plan (CMP) was not formally endorsed by the Heritage Council or its delegate. Updating the 2009 CMP and obtaining Heritage Council endorsement of the updated CMP which identifies sites, assets and future directions thoroughly, is one way of de-risking the business.
  - In developing the updated CMP, several key stakeholders including Aboriginal people and local Councils have been consulted. As the reserve has reasonable public interest, it is intended that the updated CMP be placed on public exhibition before submitting to the Heritage Council for endorsement. The CMP is currently going through a formal professional edit.
- a Masterplan for the visitor use and services zone has been undertaken concurrently with the CMP. The Masterplan is currently under internal review, which will be followed by public exhibition also. The Masterplan:
  - Has been developed in consultation with key stakeholders such as the Trust staff, Aboriginal people and local Councils.
  - Incorporates conservation issues as raised in the CMP.
  - Examines a number of proposals:
    - caravan and campervan services at the top of five-mile hill (in an area of low significance).
    - the redevelopment (boardwalk and signage) of the blue lake (a popular visitor area where platypus habitat is being impacted and sediment is building up).
    - Caves House signage, landscape improvement, removal of intrusive elements and walking track installation.

- conversation of the 6-foot track (currently one way) into a circular route.
- Proposals have been assessed against the CMP and few conflicts exist.
- Will not be implementable in the foreseeable future without suitable funding.
- the goal of the Trust is to establish an excellent visitor service at Jenolan, increasing the number of visitors to a sustainable level. In achieving this, they aim to address deferred maintenance issues that have needed addressing for a long time.
- there is no pressure on the CMP and Masterplan process from privatisation. The motive is to de-risk the business for the Trust's purposes but this will be helpful for any future divestment.
- the Trust has also updated the Caves House CMP by Robert Moore and Associates and intends to table this for Heritage Council endorsement in August. This CMP addresses intrusive elements and wear and tear at Caves House. The Trust aims to improve Trip Advisor ratings for Caves House and encourage people to stay overnight in Caves House. One area that has received the most complaints is the Caves House Bistro. An architect and hotel expert has been engaged to look at improvements in the bistro. All improvements are informed by the Caves House CMP.

Discussion The members noted that:

- the CMP for Caves House is likely to be tabled at Heritage Council in the next six months, before the Visitor Use and Services Zone CMP and Masterplan.
- the Visitor Use and Services Zone CMP will be tabled at Heritage Council following public exhibition.

Resolution 2017-48. The Heritage Council of NSW:

1. notes the information provided in this report and the presentation by Mr Bob Conroy, Administrator, Jenolan Caves Reserve Trust.
2. commends the Jenolan Caves Reserve Trust for commissioning the preparation of a comprehensive Masterplan for the Reserve and notes that the Masterplan is to be supported by the Conservation Management Plans and their policies.

Moved by Dr Deborah Dearing and seconded by Prof Gary Sturgess.

### 3.0 Conservation matters

*Nil matters.*

### 4.0 Legislative, policy and administrative matters

#### 4.1 Heritage Council of NSW Business Plan - Final

Presentation Mr Nigel Routh advised:

- Mr Stephen Davies and Ms Jennifer Davis had discussion on the business plan which resulted in suggestions for streamlining. The revised business plan is proposed to be tabled next Heritage Council meeting.

Noted The Heritage Council of NSW noted the verbal update.

## 4.2 State Heritage Register Framework: Recommendations for the listing strategy

- Presentation Ms Althea Kannane introduced Ms Victoria Nolan who advised:
- the State Heritage Register is a critical component in identifying and conserving items of heritage value in NSW. It is dominated by several themes and underrepresented themes have been identified. Previous attempts to address gaps in the register include thematic listings programs, the first of which was more successful than the second, due to the support of the Minister and promotion.
  - there is no standard approach in how nominations are managed and prioritised.
  - there is a need for a strategic approach to build a register that reflects key stories of the state. This approach will also help guide management and inflow of nominations.
  - the Heritage Act sets out timeframes for actions once the Heritage Council issues a notice of intention to consider listing. The State Heritage Register Framework will put in place processes to complement and support the legislated processes.
  - the purpose of the State Heritage Register Policy will be to set the medium to long term approach for addressing gaps in the register, and mechanisms for managing and prioritising nominations.
  - the last presentation to the Heritage Council was at the State Heritage Register Framework (the Framework) project proposal stage. OEH Policy Division has continued to meet with the State Heritage Register Committee, internal OEH working groups and the Heritage Committee in addition to meeting with ICOMOS and the National Trust on the Framework.
  - the first part of the Framework is the strategic setting which establishes the vision and objectives of the Framework. The vision and objectives should flow through to other aspects of the Framework. Following the vision and objectives, a set of principles for listing should describe what an item on the State Heritage Register should exhibit (noting that these would not be assessment criteria).
  - recommendations for the State Heritage Register Framework include:
    1. A comprehensive analysis of the State Heritage Register should be undertaken every 10 years or at the discretion of the Heritage Council. Alongside this, the evolving narrative of the State's heritage should be documented.
    2. The State Heritage Register Policy will guide the periodic development of the listings program.
    3. The listings program will identify topic areas and priorities for State Heritage Register listings and will be developed and delivered by the Heritage Division.
    4. Topic areas identified in the listings program will guide the prioritisation process.
    5. Prioritisation of nominations will occur at certain times throughout each calendar year. This allows for constructive prioritisation using comparative analysis.
    6. A methodology for prioritisation should be included in the listings program to allow for its evolution over time, but high level principles for prioritisation should be reflected in the Policy.
- Discussion The members:
- agreed with the vision and objectives as presented.

- provided preliminary comments on the principles including particularly reflecting the concept of the story of the State or the State's evolving narrative/s in the principles.
- discussed the distinction between local values and state values.
- discussed the relationship between the NSW State themes and the federal heritage categorisation as well as the relationship and perceptions of the principles in comparison to the State Heritage Register criteria. It is important that the principles are not misconstrued or used as defacto criteria.
- discussed the explanation the Framework will provide about the approach to explicitly addressing gaps in the State Heritage Register.
- indicated a project for telling the story of the register as part of the 40<sup>th</sup> anniversary would be desirable as a concentrated piece of work undertaken by a suitably skilled person/ team with flair. This project should address the questions:
  - What is the story we are currently telling with our register items?
  - What is the story we should/ need/ want to tell?
- considered the legacy they would like to leave in terms of the stories progressed in the State Heritage Register?
- discussed the benefits of Ministerial promotion of the State Heritage Register.
- suggested phrasing recommendations to highlight positive opportunities they present.
- noted that all nominations are accepted and treated with respect.
- discussed a proposed definition for exceptional items/ extra-ordinary circumstances.
- noted the nexus between addressing the backlog of nominations and the recommendations for the State Heritage Register Framework.
- considered the timing of consultation and messaging in terms of ensuring there is not a focus on the topic areas, but rather on the story of NSW.

Resolution 2017-49. The Heritage Council of NSW:

1. notes the consultation that has informed the listings strategy options paper.
2. approves each of the recommendations and the proposed definition listed at Attachment A of the prepared paper.
3. note that the draft Policy, including the strategic setting and the listings strategy, will be presented to the Heritage Council at its August meeting.
4. request Heritage Division to progress work to support implementation of recommendation 1 at Attachment A of the prepared paper.

Moved by Mr Stephen Davies and seconded by Dr Deborah Dearing.

Action The Heritage Division to:

- arrange a workshop for the Heritage Council on the State Heritage Register Framework Principles.
- table a paper on next steps and timing for the Listings Program to the next Heritage Council meeting.

### 4.3 Aboriginal Cultural Heritage Reforms: Proposed Heritage Act amendments

Presentation Ms Althea Kannane and Ms Victoria Nolan advised on:

- the status of the Aboriginal Cultural Heritage Law Reforms including timing and public consultation.
- the *Heritage Act 1977* (Heritage Act) provides for the protection of Aboriginal heritage through listing on the State Heritage Register.
- proposals concerning the potential interaction between new standalone Aboriginal Cultural Heritage legislation and the Heritage Act.

Discussion The members discussed:

- arrangements for the assessment of significance and values against the established State Heritage Register criteria.
- what the criteria and the rich set of assumptions that are embodied in the criteria for listing mean when applied for non-Aboriginal heritage.
- the consensus that Aboriginal values are considered and included on the State Heritage Register under the Heritage Act should not change. However, the new legislation may open new ways that the State Heritage Register criteria might be interpreted, viewed and applied in relation to Aboriginal cultural heritage.
- future discussions required on listing and conservation of Aboriginal cultural heritage, once the new Aboriginal cultural heritage legislation is in place.

Noted The Heritage Council of NSW noted the paper.

#### 4.4 Deferred State Heritage Register Nomination List, Project Manager Position

Presentation Ms Katrina Stankowski advised:

- the deferred nomination list (the list) was tabled at the State Heritage Register Committee meeting in June 2017.
- the proposed deferred nomination list project will prioritise the approximately 200 State Heritage Register nominations awaiting assessment.
- the State Heritage Register Committee recommend a project manager position be funded to achieve the proposed deferred nomination list project.

Ms Lisa Newell advised on:

- the work that has been and needs to be undertaken to assess and determine nominations.
- the priority list and themes needing to be agreed post release of the State Heritage Register framework.
- the State Heritage Register Committee's willingness to contribute their time to review nominations; however quite a number of nominations have very scant information provided.
- requesting further information from key stakeholders that may hold such information for items where insufficient information has been received, before nominated items are considered for removal from the nominations list. This would facilitate informed decision making.

- examining the cost for resources to examine the deferred nominations list and development of informed triage reports for expediting consideration by the State Heritage Register Committee.
- the National Trust's desire for every item nominated to be examined in some capacity.
- the State Heritage Register Committee's recommendations are based on the fact that the Heritage Division is at maximum capacity in managing the nominations process. With the Heritage Division's current funding, at most 30 nominations can be assessed annually. With the current nominations and the deferred nominations list, it would take approximately ten years with current funding levels to assess nominations without accounting for new nominations that may be submitted.
- greater clarity about the nominations that are to progress and those which will not be progressed will ensure the Heritage Division is not retaining nominations unnecessarily, and indefinitely.

Discussion The members discussed:

- allocation of funding from the Heritage Council's budget for the proposed project management position and the nature of that position and reporting line.
- revisiting items with a ranking higher than three on the deferred nominations list.
- consideration given to nominations currently being negotiated on with community groups - removing deferred items from the list would not prevent a community group re-nominating it.
- prioritisation with information and the ability to tell which nominations should not progress, would be a positive outcome of the triage list; however, a project officer would be required to undertake a process of desktop review and brief reporting to facilitate informed prioritisation. A clear project scope is required.
- prioritisation can be based on item significance as well as resources where there is not sufficient information and substantial work would need to be done.
- the undertaking of information gathering and a triage process on the deferred nomination list concurrently with the development of the State Heritage Register Listings Program.
- the Heritage Council's enthusiasm for a draft State Heritage Register Listings Program being developed.
- the problem with themes previously part of listings programs being that they were selected, they weren't part of a framework that helps to build the story of the state – what are we passionate about, what do we neglect, what stirs deep feeling?
- that community consultation in development of a State narrative will be important.
- the importance of a strategic direction that all people can commit to.
- the task of writing the narrative of the State Writing – it would take someone with a deep understanding of the history of NSW and facilitate the identification of key messages/ themes. This would facilitate informed future State Heritage Register listing priorities that are captured in the Listings Program arising out of the State Heritage Register Framework.

Resolution 2017-50. The Heritage Council of NSW:

1. agree to fund the cost of a Project Manager Position for up to \$130K to undertake the assessment and prioritisation of the deferred (and potentially current) list of State Heritage Register nominations.
2. agree to fund up to \$50K to develop the narrative and inform the topic areas for the future nomination priorities under the Listings policy of the State Heritage Register framework and the development of the 40-year State Heritage Register narrative.

Moved by Ms Lisa Newell and seconded by Ms Jennifer Davis.

## 5.0 Listing matters

*Nil matters.*

## 6.0 Reports

### 6.1 Executive Director, Heritage Division's monthly update

Discussion The paper was taken as read by members.

Mr Nigel Routh delivered the Executive Director's report on behalf of Ms Pauline McKenzie. An update was provided on the following matters:

- positive feedback received about Heritage Division's performance from the Millers Point Project Control Group (Land and Housing Corporation).
- M24 Submarine media release and news stories associated with the Minister's announcement of the dive ballot.
- Mr Tim Smith OAM appointed as Director, Operations in the Heritage Division.
- Sydney Observatory marquee matter will be coming to the Heritage Council in the next couple of months.

Noted The Heritage Council noted the paper and updates.

### 6.2 Chair of the Heritage Council of NSW monthly update

Discussion The Chair:

- reported to members on representations received in relation to the V8 super cars to be held in Newcastle this year. The representations regarded landscaping and have been promptly followed up with conversations by Heritage Division.
- congratulated Dr Deborah Dearing on her new role as Chair of the Architects Registration Board.

Noted The Heritage Council of NSW noted the report.

### 6.3 Department of Planning & Environment Chief Planner's report

Discussion The paper provided by Mr Gary White, Chief Planner, Department of Planning & Environment was taken as read by members.

Noted The Heritage Council of NSW noted the paper.

## 2.2 \*Sydney Metro Stage 1 (Approved) – Impacts on the Hickson Road Wall

\*Item scheduled for the Approvals Committee, but heard in this meeting to ensure quorum.

Presentation Mr Ron Turner (Heritage Manager – Sydney Metro) introduced the presentation:

- arrangements for the protection of Hickson Road Retaining Wall during the construction phase of the Sydney Metro project Barangaroo Station have been considered by the procurement team, and the selected contractor - a joint venture between CPB Contractors, John Holland and Ghella.

Ms Jennie Lindberg (AMBS ecology and heritage) advised:

- the construction phase of the Sydney Metro project is now commencing.
- a safety issue with the Hickson Road Retaining Wall has been identified and needs to be managed as part of the excavation of the Barangaroo station box to mitigate risks to the wall and human life.
- the Hickson Road Retaining Wall is within the State Heritage Register (SHR) Listed Millers Point and Dawes Point Village Precinct (SHR #1682). It is a dominant physical element within the surrounding streetscape. The wall was cut into the bedrock when Hickson Road was built. It is retaining a substantial quantity of fill and has been primarily constructed of a combination of exposed sandstone bedrock and large segments of cement rendered bedrock and sandstone block wall. It includes a palisade fence and sandstone posts that flanked former bridges over Hickson Road (most now demolished). The excavation of the Sydney Metro station box has the potential to cause impact to the wall.
- retaining anchors were installed in a section of the wall in 1995.
- the methodology proposed for anchoring the rest of the wall to mitigate impacts, is the same:
  - The number of anchors likely to be required is still being developed by engineers, however, a worst-case scenario of the likely locations and appearance of the wall was presented.
  - The heads of the anchors would be recessed into the wall and patches applied.
  - The patching would match the surface of the wall.
  - The entire process would be monitored including using vibration monitors. This monitoring would continue through the process of construction.
- other options were considered:
  - Retaining props would be unsightly and have a greater negative impact on the wall.
  - Ad-hoc maintenance and patching would not guarantee long term stability of the wall.
  - Doing nothing is not an option due to the safety concerns and risk to the wall.
- protection netting would be a temporary medium used during construction. While it has a negative visual impact, it will be removed at the end of the construction.
- the intervention would protect the structural integrity of the wall.
- groundwater draw down and vibration impacts have been assessed and the design is fully-tanked, tailoring to the site and long term water drawn down. Associated damage



is not expected, however, conditions surveys (subject to landowner consent) for the existing buildings would enable monitoring.

- the design of the station box and station is documented in the project Environmental Impact Statement is not part of the scope of this paper or the contractors work associated with the Hickson Road Retaining Wall.
- the design is still preliminary and substantial investigation is being undertaken to test the engineering of the proposed approach for stabilising the wall.
- the team will work with the contractors to ensure impacts are mitigated appropriately.
- the Heritage Council would continue to be informed through the project heritage working group.

Discussion The members discussed the number of anchors proposed. The Heritage Council does not have objections to the use of retaining anchors as it appears necessary for the stability and longevity of the wall. How the anchors are recessed and finished is important to ensure a successful visual heritage outcome.

Resolution 2017-51. The Heritage Council of NSW:

1. note the information provided in the prepared paper and the presentation.
2. provide the following comments:
  - a. Hickson Road wall is a significant element with landmark qualities that provides a dramatic visual edge to the western side of the Millers Point and Dawes Point Village Precinct.
  - b. Retention and long term sustainability of this significant element must be built into any building program related to the proposed station box under Hickson Road.
  - c. It is acknowledged that some such anchors may have been necessary in the current situation for the long-term stability of the Hickson Road wall even without the need being created by the proposed station box.
  - d. The proposed anchors may be acceptable in the rendered section of the wall as they can be designed to have minimum or no visual impact. It is noted that some earlier anchors exist in the rendered section that are indented and covered by the render thereby leaving a lesser visual impact.
  - e. The anchors may have a potential visual impact, that may be mitigated by the application of some consistent finish throughout the rendered section of the Hickson Road wall following the patch repair of render. The render will also need to be repaired in other areas where the existing render may not be sound.

Moved by Mr Stephen Davies, seconded by Prof Gary Sturgess.

## 7.0 Monthly and quarterly reporting

The following reports were taken as read. The Chair noted that several matters on the action list have been completed.

- 7.1 Heritage Council Action Report
- 7.2 Conservation matters approved under delegation
- 7.3 Listing matters
- 7.4 Grant matters
- 7.5 Conservation major projects status

Noted The Heritage Council of NSW noted the above reports.

## 8.0 Committee and subcommittee updates

### 8.1 Heritage Council committee updates

Discussion The paper was taken as read by members.

Noted The Heritage Council of NSW noted the committee notes and updates.

## 9.0 General business

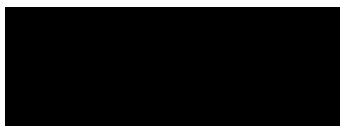
Discussion Mr Nigel Routh noted that Ms Jane Irwin attended the Design Review Panel for Central Station and sent a message that the tenderer bidding on the works are presenting in August. The Heritage Council is invited to send a representative. The Chair reminded members that the next Heritage Council meeting will be held at Callan Park.

Action The Heritage Division will:

- respond to Ms Jane Irwin to clarify which Central Station works the tender presentation relates to. This information will be circulated to members with a request for a volunteer to attend the presentation
- send a new meeting invitation providing the address and map for the location of the next Heritage Council meeting at Callan Park.

### CLOSE OF MEETING – 2.35 pm.

I confirm that these minutes are an accurate reflection of the Heritage Council of NSW discussion and outcomes.



.....  
 Dr Mark Dunn  
 Deputy Chair, Heritage Council of NSW  
 Date: 2 August 2017