



Prepared for  
Art Gallery of NSW  
Date: 20 June 2019

Section 4.55(1A) Modification to SSD 6471

# Art Gallery of NSW Expansion Project – Sydney Modern



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This report is considered a draft unless signed by a Director.



Michael Harrison  
Director Urban Design and Planning

#### Revision history

| Issue Reference | Issue Date   | Issue Status            |
|-----------------|--------------|-------------------------|
| A               | 12 June 2019 | Draft for client review |
| B               | 20 June 2019 | Final                   |

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# Contents

|   |    |
|---|----|
| 1. Introduction   | 3  |
| 1.1 Preliminary   | 3  |
| 1.2 Subject Site  | 4  |
| 1.3 Approved Development                                    | 5  |
| 1.4 Overview of Proposed Modification                       | 6  |
| 1.5 Authorship  | 6  |
| 2. Background   | 7  |
| 2.1 Approval History  | 7  |
| 2.2 Construction Status                                     | 7  |
| 3. The Proposal   | 8  |
| 3.1 Overview of Proposed Modification                       | 8  |
| 3.2 Rationale for Modification                              | 15 |
| 4. Planning Context and Regulatory Framework                | 17 |
| 4.1 Applicable Planning Framework                           | 17 |
| 4.2 Substantially the Same Development                      | 18 |
| 5. Environmental Assessment                                 | 19 |
| 5.1 Section 4.15 (1)(a) Matters for Consideration – General | 19 |
| 5.2 Section 4.15 (1)(b) The Likely Impacts                  | 19 |
| 5.3 Section 4.15 (1)(c) Suitability of the Site             | 22 |
| 5.4 Section 4.15 (1)(d) Submissions Made                    | 22 |
| 5.5 Section 4.15 (1)(e) The Public Interest                 | 22 |
| 6. Conclusion   | 23 |

# Figures & tables

|   |    |
|---|----|
| <b>List of figures</b>  |    |
| Figure 1 Site Location Plan   | 4  |
| Figure 2 Photomontage of the approved gallery building facing east from Woolloomooloo | 5  |
| <b>List of tables</b>   |    |
| Table 1 Numerical GFA Overview  | 10 |

# 1. Introduction

## 1.1 Preliminary

This report has been prepared by Architectus Group Pty Ltd (Architectus) on behalf of the Art Gallery of New South Wales Trust, for submission to the NSW Department of Planning and Environment (DPE) to accompany an application made pursuant to Section 4.55(1A) of the Environmental Planning and Assessment Act 1979 (EP&A Act) to modify approved State Significant Development (SSD) 6471 for the approved Art Gallery of New South Wales (AGNSW) Expansion Project, known as Sydney Modern. This is the first modification to the approved development.

The Sydney Modern development is located predominantly north of the existing AGNSW on underutilised and disturbed parts of the Domain, including the existing former naval Fuel Bunker, and the land bridge above the Eastern Distributor (the site).

The proposed modification generally comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers to be located in an unused void inside the approved excavation footprint. Associated minor landscaping amendments are also proposed. A detailed description of the proposed modification is provided at **Section 3** of this report.

The proposed modification is a result of ongoing design development post approval, including a review by AGNSW for opportunities to consolidate and co-locate building services to ensure more efficient construction processes and a reduced construction impact, as well as improved operation, maintenance and servicing of the expanded AGNSW over time.

This report provides an overview of the approved development, describes the proposed modifications and provides a planning assessment of the relevant matters for consideration in Sections 4.55(1A) and 4.15(1) of the EP&A Act.

This report is supported by the following supporting documentation:

- **Appendix A:** Amended Architectural Plans, prepared by Architectus, dated May 2019;
- **Appendix B:** Supplementary Architectural Design Statement, prepared by SANAA, dated May 2019;
- **Appendix C:** Amended Landscape Plans, prepared by McGregor Coxall, dated May 2019;
- **Appendix D:** Review of Mechanical Services, prepared by Steensen Varming Dated June 2019;
- **Appendix E:** Addendum to Ecologically Sustainable Development (ESD) Report, prepared by WSP, dated June 2019;
- **Appendix F:** Updated Acoustic Impact Assessment, prepared by Arup, dated May 2019;
- **Appendix G:** Updated Air Quality Assessment Report, prepared by Wilkinson Murray, dated May 2019;
- **Appendix H:** Archaeological Assessment and Impact Statement, prepared by GML Heritage, dated June 2019; and
- **Appendix I:** Letter of support for the proposed modification, prepared by the Royal Botanic Gardens and Domain Trust, Sydney, dated May 2019.

Please refer to an overview of the site, overview of the planning framework and assessment of environmental impacts below.

## 1.2 Subject Site

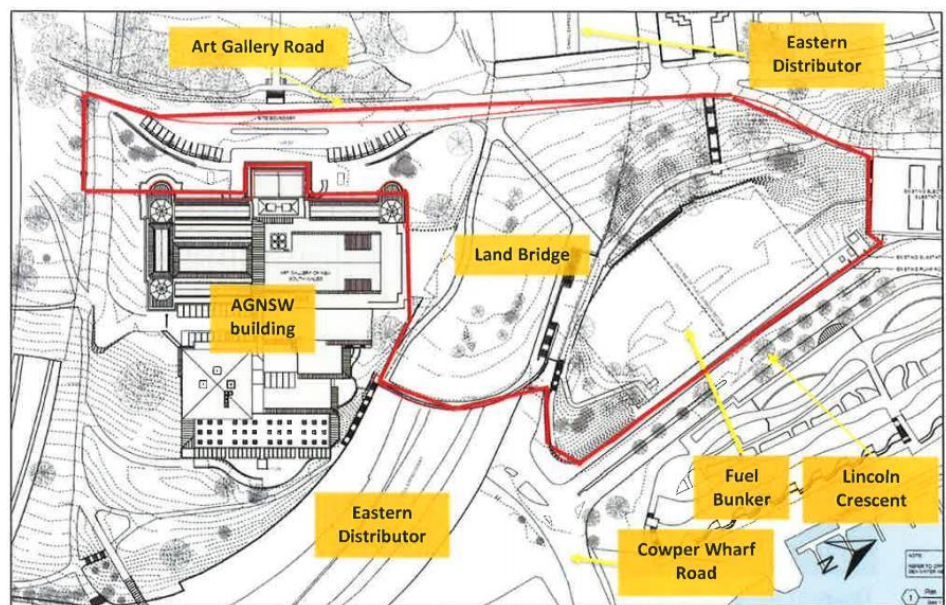
The site has a total area of 23,045sqm and is located within the Crescent Precinct of the Domain, to the east of the Phillip Precinct and Sydney CBD.

The proposed expansion area is predominantly north of the existing AGNSW on underutilised and disturbed parts of the Domain, including the former naval Fuel Bunker, and partly over the land bridge above the Eastern Distributor.

It is noted that following determination of SSD 6471, which provided approval for subdivision, that land title details at the site have changed from those described within the initial SSD Application (SSDA).

Works that are the subject of this modification application are contained within Lots 1001 and 1002 DP 1249710. Note these are newly created lots, being the result of the approved subdivision granted by SSD 6471.

The subject site is shown outlined in red at **Figure 1** below.



**Figure 1 Site Location Plan**

Source: DPE Assessment Report for SSD 6471

### 1.3 Approved Development

The AGNSW Expansion Project, known as Sydney Modern, was approved by the Minister for Planning on 20 November 2018.

The approved development, designed as a separate, stand-alone building, comprises a new Entry Plaza, new exhibition spaces, shop, food and beverage facilities, visitor amenities, art research and education spaces, multipurpose spaces, adaptive re-use of a former naval Fuel Bunker, new roof terraces and landscaping and associated site works and infrastructure, including loading and service areas, services infrastructure and an ancillary seawater heat exchange system.

The new building, designed by Pritzker Prize-winning architects, SANAA, will be close to double the current exhibition space. The expansion will enable AGNSW to show more of its outstanding art collection and host more of the best exhibitions from around the world, increasing visitation to an expected two million people a year.

The expanded AGNSW includes a prominent destination for Aboriginal and Torres Strait Islander art; a large gallery for major exhibitions; a spectacular contemporary art space repurposed from a decommissioned WWII oil tank; and spaces for family, learning and educational programming to double student and teacher visits to 200,000 annually. A public Art Garden will link the new and existing buildings, for all visitors to AGNSW, the Domain and adjacent Royal Botanic Garden to enjoy.

AGNSW is the first public art museum in the nation to achieve the highest environmental standard for design with a 6-star Green Star design rating from the Green Building Council of Australia, exceeding the original 5-star Green Star design rating goal.

The Sydney Modern development will provide a significant increase in the AGNSW capabilities to meet its charter as a State cultural institution with a collection valued at over \$1.3 billion, as well as accommodate future increases in patronage and remain competitive as a leading cultural institution in Australia, and as a major cultural destination in the wider Asia-Pacific region.

The Sydney Modern development will allow the AGNSW to reinforce its position as the State art gallery and Sydney's pre-eminent cultural institution, contributing to the wellbeing and prosperity of Sydney, NSW and Australia.



**Figure 2 Photomontage of the approved gallery building facing east from Woolloomooloo**  
*Produced by Kazuyo Sejima and Ryue Nishizawa / SANAA*  
*Source: AGNSW*

#### **1.4 Overview of Proposed Modification**

A detailed description of the proposed modification is provided at **Section 3** of this report. The proposed modification comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers located in an unused void in the approved excavation line of development above the loading dock. Associated minor landscaping amendments are also proposed.

The proposed modification is a result of ongoing design development post approval, including a review by AGNSW of opportunities to consolidate and collocate building services to ensure more efficient construction processes and a reduced construction impact, as well as improved operation, maintenance and servicing of the expanded AGNSW over time.

##### ***Amendment to Condition A2 (Approved Drawings)***

To facilitate the proposed design modifications outlined above, it is proposed to amend Condition A2 of SSD 6471, being the schedule of approved drawings to incorporate the amended architectural and landscape plans respectively.

##### ***Deletion of Conditions B28, D2 and E22 (Seawater Heat Exchange System)***

The proposed modification also seeks to delete Conditions B28, D2 and E22 of SSD 6471 requiring design certification (Conditions B28 and D2) and associated ongoing management requirements (Condition E22) of the seawater heat exchange system.

As the seawater heat exchange system is proposed to be deleted, the conditions relating to design certification and associated ongoing management requirements are no longer required.

#### **1.5 Authorship**

This report has been prepared by Jonathan Archibald, Senior Urban Planner, and Jane Anderson, Urban Planner.

The report has been reviewed by John Riordan, Consultant Planner.



## 2. Background

### 2.1 Approval History

An overview of recent and relevant approval history for the site is provided below.

#### **SSD 6471 – AGNSW Expansion Project**

The AGNSW Expansion Project, known as Sydney Modern, was approved by the Minister for Planning on 20 November 2018. As detailed within the Notice of Determination for SSD 6471, consent was granted for:

*“Sydney Modern Expansion Project:*

- demolition, earthworks and excavation works*
- construction of new art gallery building*
- remediation and conversion of former fuel bunker to gallery use*
- construction of new entry plaza and associated canopy*
- new loading dock with access from Lincoln Crescent*
- installation of seawater heat exchange system*
- public domain and landscaping works, including new footpaths, public lifts and tree planting*
- subdivision.”*

It is noted that construction works associated with the approved development have not yet commenced, however the facilitating subdivision of land has been undertaken, within lots registered in early 2019. As such, affected lots and land title details have changed from those described within the SSDA documentation.

There are no other recent applications or approvals relevant to the proposed modification.

### 2.2 Construction Status

Construction works associated with SSD 6471 are anticipated to commence later in 2019.

# 3. The Proposal

## 3.1 Overview of Proposed Modification

The proposed modification generally comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers located in an unused void inside the approved excavation line of the development above the loading dock to facilitate the heat rejection system serving the building. Associated minor landscaping amendments are also proposed.

The cooling towers shall discharge warm air only vertically through a grate located directly above them in the landscaping, make up air shall be drawn through this same grate. It is anticipated that the cooling towers will be supplied with makeup water through a rainwater harvesting system.

A detailed description of the proposed modification is provided below, with the extent of the proposed modifications shown on the amended architectural plans at **Appendix A**.

### ***Deletion of Seawater Heat Exchange System***

The proposal includes deletion of the approved seawater heat exchange system, including:

- Deletion of all pipework associated with the seawater heat exchange system;
- Deletion of upper (above ground) plant room;
- Deletion of the lower (below ground) plant room; and
- Minor internal layout changes to the loading dock (LL3) to facilitate provision of cooling towers.

### ***Provision for Cooling Towers in an Unused Void Inside the Approved Excavation Line above the Loading Dock***

The proposal includes provision for the installation of cooling towers in an unused void inside the approved excavation line of the building above the loading dock (Lower Level 3 (LL3)), to facilitate the heat rejection system servicing the building in lieu of the previously approved seawater heat exchange system, which is proposed to be deleted. The installation of cooling towers generally comprises:

- Installation of three (3) cooling tower units in an unused void above the loading dock;
- Installation of associated ducting and pipework within the approved building to the outlet/discharge point; and
- Provision of an outlet vent located directly north of Gallery 2, to be constructed against the slope of the land and amongst landscaping within the hillside.

Note this outlet vent is to be covered by a generally circular steel grate structure, with a diameter of approximately 8m and total area of 51m<sup>2</sup> (irregular in shape).

It is noted that the area required by the cooling towers and associated infrastructure (including outlet grate) is located behind the approved rammed earth wall feature within the gallery building. In this regard, the proposed modification is located wholly within the approved excavation footprint.

No further excavation is required to facilitate the proposed modification.

### ***Landscaping Amendments***

To enable construction of the proposed cooling tower outlet grate within the hillside, minor landscaping amendments are required, including:

- Redistribution of shrubbery planting located adjacent to the proposed grate outlet (to ensure sufficient clearance).

No additional trees are required to be removed to support the proposed modification.

The development will maintain the same number of trees approved for the site under SSD 6471, being the planting of a minimum of 273 trees (as required by Condition E19).

### ***Reconfiguration of Fire Stair and Egress Pathway from Gallery 2***

To enable construction of the proposed cooling tower outlet grate within the hillside and associated landscape amendments, minor reconfiguration of the fire stair and egress pathway from Gallery 2 to Mrs Macquaries Road is required.

This fire egress path is required to be routed to the north of the cooling tower outlet grate and will exit within the area of bicycle parking.

### ***No Additional Excavation***

As detailed above, the proposed modification is located wholly within the approved excavation footprint. No further excavation is required to facilitate the proposed modification.

### ***No Alteration to Gross Floor Area (GFA)***

For clarity the proposed modification seeks the provision for cooling towers only and will not affect the approved AGNSW layout and will not alter the approved GFA at the site.

### ***Minor Alteration to External/Publicly Accessible Areas***

Given the provision of the cooling tower outlet grate within the hillside and associated landscape adjustments, the proposed modification will result in a minor alteration to external/publicly accessible areas at the site.

Consistent with the numerical overview provided within the Environmental Impact Statement (EIS) for SSD 6471, please refer to an overview of this alteration below.

**Table 1 Numerical GFA Overview**

|   | <b>Data (As approved under SSD 6471)</b>                      | <b>Data (As per the proposed modification)</b> |
|---|---|--|
| Proposed SMP Site Area  | 23,045 sqm  | No change                                      |
| Existing AGNSW Gallery Building footprint   | 9,726 sqm   | No change                                      |
| Existing AGNSW Gallery Building – current GFA   | 19,679 sqm  | No change                                      |
| Existing AGNSW Gallery Building GFA – proposed GFA  | N/A – No works to the existing gallery building are proposed. | No change                                      |
| Proposed SMP Gallery Expansion GFA  | 12,112 sqm  | No change                                      |
| Proposed Maximum building height (metres)   | 9.5m (RL 31.65, Entry Plaza Canopy)                           | No change                                      |
| Estimated Cost of Works   | \$275,387,633   | No change                                      |
| Estimated operational job generation  | 279 FTE (increase of 75 jobs)                                 | No change                                      |
| Proposed building footprint (including Entry Plaza)   | 7,716 sqm (33.5% site coverage)                               | No change                                      |
| Proposed building footprint (excluding Entry Plaza)   | 6,203 sqm (26.9% site coverage)                               | No change                                      |
| Area restored from roadway to open space (Vernon entry)                                     | 1,100 sqm   | No change                                      |
| Building footprint over built structures (land bridge & Fuel Bunker)                        | 6,172 sqm (79.9% of the building footprint)                   | No change                                      |
| Proposed publicly accessible terraces (building opening hours only)                         | 1,856 sqm   | No change                                      |
| Proposed roof gardens   | 1,916 sqm   | No change                                      |
| Publicly accessible courtyards (building opening hours only)                                | 1,547 sqm   | No change                                      |
| Publicly accessible external spaces 24/7 (excludes roof terraces and courtyards)            | 14,737 sqm (63.9% of the site)                                | 14,695 sqm (63.8%)                             |
| Total publicly accessible external spaces within site (including within building footprint) | 18,140 sqm (78.7% of the site)                                | 18,098 sqm (78.5%)                             |
| Land subject to landscape embellishments within site  | 19,913 sqm (86.4% of the site)                                | 19,873 sqm (86.2%)                             |



### **Amendment to Condition A2 (Approved Drawings)**

To facilitate the proposed design modifications outlined above, it is proposed to amend Condition A2 of SSD 6471, being the schedule of approved drawings to incorporate the amended architectural and landscape plans respectively.

It is proposed to amend Condition A2 of SSD 6471 to read as follows (as emphasised by Architectus in **red**):

#### **“Terms of Consent**

A2. The development may only be carried out:

- a) In compliance with the conditions of this consent;
- b) In accordance with all written directions of the Planning Secretary;
- c) In accordance with the EIS and RTS; and
- d) In accordance with the approved plans in the table below:

| <b>Architectural Drawings prepared by SAANA and Architectus Architects</b> |                          |  |  |
|--|--------------------------|--|--|
| <b>Drawing No.</b>   | <b>Revision</b>          | <b>Name of Plan</b>                                | <b>Date</b>                            |
| DA_0054  | J                        | Site Demolition Plan                               | 06/08/18                               |
| DA_0055  | <del>K</del><br><b>L</b> | Ancillary Works Plan                               | <del>14/08/18</del><br><b>25/05/19</b> |
| DA_0056  | I                        | Sea Water Heat Exchange System Plan                | 06/08/18                               |
| DA_0057  | E                        | Site and Building Areas                            | 06/08/18                               |
| DA_0058  | <del>G</del><br><b>H</b> | Open Space/External Publicly Accessible Areas      | <del>29/10/18</del><br><b>24/05/19</b> |
| DA_0059  | <del>F</del><br><b>G</b> | Land Subject to Landscape Embellishments           | <del>29/10/18</del><br><b>24/05/19</b> |
| <del>DA_0070</del>   | <del>D</del>             | <del>Sea Water Heat Exchange Upper Room Plan</del> | <del>06/08/18</del>                    |
| DA_0100  | <del>M</del><br><b>N</b> | Proposed Site Plan                                 | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1000  | <del>M</del><br><b>N</b> | Roof Plan  | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1001  | <del>M</del><br><b>N</b> | Entry Level Plan                                   | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1002  | <del>L</del><br><b>M</b> | Lower Level 1 Plan                                 | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1003  | <del>L</del><br><b>M</b> | Lower Level 2 Plan                                 | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1004  | J                        | Lower Level 3 Plan – Demolition Plan               | 06/08/18                               |
| DA_1005.0  | <del>I</del><br><b>J</b> | Lower Level 3 Plan – Proposed Plan (Confidential)  | <del>06/08/18</del><br><b>24/05/19</b> |
| DA_1005  | H                        | Lower Level 3 Plan – Proposed Plan                 | 06/08/18                               |
| DA_1006  | J                        | Lower Level 4 Plan – Demolition Plan               | 06/08/18                               |
| DA_1007.0  | J                        | Lower Level 4 Plan – Proposed Plan (Confidential)  | 06/08/18                               |
| DA_1007  | H                        | Lower Level 4 Plan – Proposal Plan                 | 06/08/18                               |
| DA_2000  | K                        | Sections AA & BB                                   | 06/08/18                               |
| DA_2001  | K                        | Sections CC & DD                                   | 06/08/18                               |

|  |                   |   |                                 |
|--|-------------------|---|---------------------------------|
| DA_2002  | F                 | Perspective Section Sheet 1   | 06/08/18                        |
| DA_2003  | F                 | Perspective Section Sheet 2   | 06/08/18                        |
| DA_2004  | F                 | Perspective Section Sheet 3   | 06/08/18                        |
| SMP-C-1300<br>X01                                      | 3                 | Bulk Earthworks Plan  | 20/07/18                        |
| DA_2006  | D                 | Proposed Excavation Sections  | 06/08/18                        |
| DA_3000  | J                 | North and South Elevations  | 06/08/18                        |
| DA_3001  | J                 | East and West Elevations  | 06/08/18                        |
| DA_3002  | F                 | Overall West Elevation  | 06/08/18                        |
| DA_3010  | E                 | North Part Elevation A  | 06/08/18                        |
| DA_3011  | E                 | North Part Elevation B  | 06/08/18                        |
| DA_3012  | E                 | South Elevation   | 06/08/18                        |
| DA_3013  | E                 | East Part Elevation A   | 06/08/18                        |
| DA_3014  | E                 | East Part Elevation B   | 06/08/18                        |
| DA_3015  | E                 | West Part Elevations  | 06/08/18                        |
| DA_5000  | I                 | Gross Floor Area Calculation  | 06/08/18                        |
| DA_5001  | J                 | Gross Floor area Diagrams   | 06/08/18                        |
| DA_6001  | A                 | External Materials  | 21/09/18                        |
| <b>Subdivision Drawings prepared by Ysco Geomatics</b> |                   |   |                                 |
| 0714/12C<br>Sheet 1 of 2                               | –                 | Proposed subdivision of Lot 34 in DP 39586  | 18/10/18                        |
| 0714/12C<br>Sheet 2 of 2                               | –                 | Proposed subdivision of Lot 34 in DP 39586  | 18/10/18                        |
| 0741/14C<br>Sheet 1 of 3                               | –                 | Proposed subdivision of part of Eastern Distributor, being Lot 108 in DP 1105308, Lot 4 in DP 259027 and Lot 52 in DP 1105375                                     | 22/10/18                        |
| 0741/14C<br>Sheet 2 of 3                               | –                 | Proposed subdivision of part of Eastern Distributor, being Lot 108 in DP 1105308, Lot 4 in DP 259027 and Lot 52 in DP 1105375                                     | 22/10/18                        |
| 0741/14C<br>Sheet 2 of 3                               | –                 | Proposed subdivision of part of Eastern Distributor, being Lot 108 in DP 1105308, Lot 4 in DP 259027 and Lot 52 in DP 1105375                                     | 22/10/18                        |
| 0741/13C   | –                 | Proposed subdivision of land bridge over Eastern Distributor, being Lot 3001 in Subdivision of Lot 108 in DP 1105308, Lot 4 in DP 259027 and Lot 52 in DP 1105375 | 23/10/18                        |
| <b>Landscape Drawings prepared by McGregor Coxall</b>  |                   |   |                                 |
| <b>Drawing No.</b>                                     | <b>Revision</b>   | <b>Name of Plan</b>   | <b>Date</b>                     |
| DA_00-01   | <del>U</del><br>W | Landscape Masterplan - Roof   | <del>14/08/18</del><br>28/05/19 |
| DA_00-02   | <del>U</del><br>W | Landscape Masterplan – GF Level   | <del>14/08/18</del><br>28/05/19 |
| DA_10-01   | G                 | Vernon Curtilage  | 14/08/18                        |
| DA_10-02   | G                 | Entry Plaza   | 14/08/18                        |
| DA_10-03   | <del>G</del><br>I | Fuel Bunker Garden  | <del>14/08/18</del><br>28/05/19 |

|          |                   |  |                                 |
|----------|-------------------|--|---------------------------------|
| DA_10-04 | G                 | Sandstone Woodland                               | 14/08/18                        |
| DA_10-05 | G                 | Art Garden                                       | 14/08/18                        |
| DA_00-15 | T                 | Tree Significance                                | 07/08/18                        |
| DA_00-17 | <del>D</del><br>F | T1118  | <del>13/08/18</del><br>28/05/19 |
| DA_00-18 | H                 | Tree Significance - High                         | 14/08/18                        |
| DA_00-19 | G                 | Tree Significance - Medium                       | 07/08/18                        |
| DA_00-20 | G                 | Tree Significance - Low                          | 07/08/18                        |
| DA_20-01 | F                 | Sections   | 14/08/18                        |
| DA_20-02 | E                 | Sections   | 01/08/18                        |
| DA_20-03 | G                 | Sections   | 14/08/18                        |
| DA_30-01 | H                 | Plant Palette                                    | 01/08/18                        |
| DA_30-02 | H                 | Plant Palette                                    | 01/08/18                        |
| DA_30-03 | J                 | Plant Palette                                    | 07/08/18                        |
| DA_30-04 | S                 | Existing Tree Plan                               | 01/08/18                        |
| DA_30-05 | <del>U</del><br>W | Trees Proposed                                   | <del>14/08/18</del><br>28/05/19 |
| DA_90-20 | C                 | Sea Water Heat Exchange Upper Room - Plan        | 12/03/18                        |
| SK_90-21 | B                 | Sea Water Heat Exchange Upper Room - Render      | 05/03/18                        |
| SK_90-22 | C                 | Sea Water Heat Exchange Upper Room – ISO/Section | 15/03/18                        |

### ***Deletion of Conditions B28, D2 and E22 (Seawater Heat Exchange System)***

The proposed modification also seeks to delete Conditions B28, D2 and E22 of SSD 6471 requiring design certification (Conditions B28 and D2) and ongoing management requirements (Condition E22) of the seawater heat exchange system.

As the seawater heat exchange system is proposed to be deleted, the conditions relating to design certification and associated ongoing management requirements are no longer required.

#### ***~~“Seawater Heat Exchange System~~***

~~*B28. The detailed design of the seawater heat exchange system must comply with the preliminary design details outlined in the Seawater Heat Exchange Report (dated 16 March 2018) in Appendix H of the RTS. Details demonstrating compliance with this condition must be submitted to the satisfaction of the Certifying Authority prior to the commencement of the relevant works.*~~

And;

#### ***~~Seawater Heat Exchange System~~***

~~*D2. Prior to occupation or commencement of the use, the Applicant is to provide documentation to the PCA demonstrating the design of the seawater heat exchange system complies with the preliminary design details outlined in the Seawater Heat Exchange Report (dated 16 March 2018) in Appendix H of the RTS.*~~

And;

#### ***~~Seawater Heat Exchange System Operation~~***

~~*E22. The operation of the seawater heat exchange system must comply with the following at all times:*~~

- ~~*a) any anti-foulant product used is registered at the time of use by the Australian Pesticides and Veterinary Medicines Authority for the purpose of a marine growth anti-foulant;*~~
- ~~*b) waste water discharged must contain less than the concentration of anti-foulant product specified on the pesticides label for that product;*~~
- ~~*c) the intake pipework is pigged not less than twice per year;*~~
- ~~*d) an appropriate system is installed for the integrated collection and storage of all waste generated from pigging the intake pipework; and*~~
- ~~*e) all pigging waste from the intake pipework is disposed of to sewer, or where such disposal is not approved by Sydney Water Corporation, is disposed of a facility legally able to accept the waste for treatment and proper disposal.”*~~

No other conditions of SSD 6471 are required to be amended to support the proposed modification.



### **3.2 Rationale for Modification**

The proposed modification is a result of design development post approval, including a review by AGNSW of opportunities to consolidate and co-locate building services to ensure more efficient construction processes and a reduced construction impact, as well as improved operation, maintenance and servicing of the expanded AGNSW into the future.

For the reasons discussed below and detailed further within this report, the proposed modification is not considered to alter the design intent of the approved development. The proposed modification is considered to be substantially the same development as the development for which consent was originally granted. Further, the proposed modification is considered to result in minimal (reduced) environmental impact, with improved operational efficiencies when compared to the approved seawater heat exchange system.

#### ***Better Integration With Building Design***

The proposed cooling towers are to be concealed within the building design and will not alter the bulk, scale, form or overall design intent of the approved building. Further, the proposed modification will not result in any unreasonable visual impact from within the expanded AGNSW or from the public domain.

When compared to the seawater heat exchange system, the proposed cooling towers are to be located wholly within the approved building (and excavation) footprint, with no expansion required to facilitate their installation or operation.

The proposed deletion of the seawater heat exchange system will also result in an improved visual impact from Lincoln Crescent, particularly from the nearby 'Wharf Terraces' residential apartment building, as the proposed upper plant room (located within the grass reserve to the northern end of Lincoln Crescent) is no longer required.

#### ***Improved Access and Servicing***

The proposed revision to cooling towers represents a more conventional approach to building environmental control when compared to the seawater heat exchange system, which will improve access and servicing for the life of the building.

The co-location of building services will improve access for service personnel who will no longer need to access the confined space plant rooms associated with the seawater heat exchange system (both upper and lower rooms), located outside of the building footprint to the north of Lincoln Crescent. The proposed modification also ensures there is no requirement for marine (diver) access from Farm Cove or Woolloomooloo Bay. This therefore provides for an overall reduced risk and therefore improved safety for service personnel.

Given this improved accessibility, the proposed revision to cooling towers will also ensure more efficient monitoring and servicing of the system ongoing. Further, as a more conventional system, replacement and repair of the cooling towers will be more convenient through the greater availability of standardised equipment sourced from within Australia.

#### ***Reduced Construction Impact***

The provision of cooling towers within an unused void inside the approved excavation line above the loading dock level (LL3) allows for the consolidation and co-location of building services. The proposed modification also represents a lesser construction impact, with the proposed cooling towers to be located within the approved excavation footprint of the building. As noted at **Section 3.2**, no further excavation is required to facilitate the proposed modification. On the basis that the seawater heat exchange system is no longer required, the proposal will therefore result in an overall reduced construction impact. The deletion of the seawater heat exchange system and works from the northern end of Lincoln Crescent will also reduce the extent of construction works within proximity to the nearby 'Wharf Terraces' residential building.

Specifically, the extent of construction will be reduced, as the multiple components of the seawater heat exchange system, including pipes, upper and lower plant rooms and access pits are no longer required. Importantly, by providing cooling towers on site within the new building, the connecting pipework present in the seawater heat exchange system is no longer required. This eliminates any future development between the new building and the harbour from having the below ground pipes acting as a potential obstruction.

The proposed modification and removal of the seawater heat exchange system will therefore result in overall reduced excavation, reduced land take and the removal of all built elements from the northern extent of Lincoln Crescent and Woolloomooloo Bay.

#### ***Reduced Environmental Risks***

On the basis of the reduced extent of excavation and reduced land requirement as outlined above, the proposed modification will result in an overall reduced environmental impact.

Whilst the environmental impacts of the seawater heat exchange system were carefully considered, with mitigation measures implemented where possible, the proposed deletion of the seawater heat exchange system will remove all environmental risk associated with this system and to Woolloomooloo Bay.

As detailed in the updated acoustic assessment prepared by Arup at **Appendix F**, the proposed modification will not result in any unreasonable acoustic impacts. Additionally, as detailed in the updated air quality assessment prepared by Wilkinson Murray at **Appendix G**, the proposed modification will not result in any air quality or odour impacts.

The proposed cooling towers will eliminate the requirement for chemical treatment of seawater (to prevent marine growth within the seawater heat exchange system pipework) and the proposal will no longer involve any disturbance to Woolloomooloo Bay.

# 4. Planning Context and Regulatory Framework

*This section assesses the development against the relevant legislation, environmental planning instruments, guidelines and controls.*

## 4.1 Applicable Planning Framework

The EIS submitted for SSD 6471 addressed compliance of the Sydney Modern development against the applicable planning framework, including:

- Art Gallery of NSW Act 1980;
- Royal Botanic Gardens and Domain Trust Act 1980;
- Environment Protection and Biodiversity Conservation Act 1999 (Cth);
- EP&A Act 1979;
- Pesticides Act 1999;
- Fisheries Management Act 1994;
- Protection of the Environment Operations Act 1997;
- Biodiversity Conservation Act 2016;
- Contaminated Land Management Act 1997;
- Heritage Act 1977;
- National Parks and Wildlife Act 1974;
- Marine Safety Act 1998;
- Marine Pollution Act 2012;
- Pesticides Act 1999;
- Environmental Planning and Assessment Regulation 2000 (EP&A Regulation);
- State Environmental Planning Policy (State and Regional Development) 2011;
- State Environmental Planning Policy No. 55 – Remediation of Land;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No. 64 – Advertising & Signage;
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005;
- Draft State Environmental Planning Policy (Environment);
- Draft State Environmental Planning Policy No. 55 – Remediation of Land;
- Sydney Local Environmental Plan 2012; and
- Sydney Development Control Plan 2012.

Having regard to the above, the proposed modification of SSD 6471 remains consistent with, and does not alter, the previous assessment of compliance with the applicable planning framework under the EIS.

## 4.2 Substantially the Same Development

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

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

- a) it is satisfied that the proposed modification is of minimal environmental impact, and*
- b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and*
- c) it has notified the application in accordance with:*
  - i. the regulations, if the regulations so require, or*
  - ii. a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and*
- d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.”*

The proposed modification generally comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers located in an unused void inside the approved excavation line above the loading dock to facilitate building environmental systems. Associated minor landscaping adjustments are also proposed. A detailed description of the proposed modification is provided at **Section 3** of this report.

The proposed modification does not intensify the approved use and does not alter the built form, scale or design intent of the approved development. It is therefore considered that the development as it is proposed to be modified is substantially the same as the development for which the consent was originally granted. Further, the proposed modification is considered to result in minimal (reduced) environmental impact, with improved operational efficiencies when compared to the approved seawater heat exchange system.

It is anticipated that the proposed modification will be notified in accordance with the requirements of the EP&A Regulation. A response will be provided to any submissions raised during this period.



# 5. Environmental Assessment

*This section includes environmental assessment of the proposed modification against the relevant requirements under the EP&A Act.*

## **5.1 Section 4.15 (1)(a) Matters for Consideration – General**

Matters for consideration under this clause have been addressed in Section 4 of this report.

## **5.2 Section 4.15 (1)(b) The Likely Impacts**

A discussion of the likely anticipated impacts resulting from the proposed modification is set out below.

### ***Built Form and Massing***

As noted earlier, the proposed modification will not alter the bulk, scale, setback or siting of the approved development. The proposed modification is largely contained within the approved building envelope, with the exception of the proposed outlet vent located directly north of Gallery 2, to be constructed against the slope of the land and amongst landscaping within the hillside.

Whilst this element of the proposal may be visible from select vantage points, the proposed modification will not affect the built form, massing or overall presentation of the approved gallery building. Refer to a further discussion of visual impacts below.

### ***Architectural Design Intent***

As detailed in the supplementary design statement prepared by SANAA at **Appendix B**, it is the opinion of the project architect that the proposed modification does not alter the built form, scale or design intent of the approved development.

### ***No Tree Removal or Landscape Adjustments***

The proposed modification will require only minor landscaping adjustments, limited to realignment of the fire egress pathway and the redistribution of shrubbery planting located adjacent to the proposed grate outlet (to ensure sufficient clearance).

No additional trees are required to be removed to support the proposed modification and the proposal will not affect any approved tree planting (including relocation) at the site.

The development will maintain the same number of trees approved for the site under SSD 6471, being the planting of a minimum of 273 trees (as required by Condition E19).

### ***Visual Analysis***

The proposed modification generally comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers located within an unused void inside the approved excavation line above the loading dock to facilitate building environmental systems. The cooling towers and associated infrastructure is located behind the approved rammed earth wall and is located wholly within the approved excavation footprint.

The cooling towers shall discharge warm air only vertically through a grate outlet located directly above them in the landscaping, being the only element of the proposed modification that will be visible from the public domain.

This grate is to be located directly north of Gallery 2, to be constructed against the slope of the land and amongst landscaping within the hillside. Whilst it is anticipated that this grate will not be visible from the public domain, photomontages have been prepared (refer **Appendix A**) to identify potential visual impacts from the following locations:

- **Photomontage 1 (Mrs Macquaries Road):** Photograph taken from the southern footpath along Mrs Macquaries Road, at the location of the approved bicycle storage racks, facing south west towards Gallery 2 and the Entry Pavilion; and
- **Photomontage 2 (Wharf Terraces Rooftop):** Photograph taken from publicly accessible walkway atop the Wharf Terraces residential apartments, located at number 10 Lincoln Crescent, Woolloomooloo. This view is oriented to the west, directly towards the proposed building and Mrs Macquaries Road, with glimpses of the Sydney CBD skyline beyond.

Please refer to these photomontages at **Appendix A**.

Photomontage 1 (Mrs Macquaries Road) demonstrates that the proposed outlet grate will not be visible from Mrs Macquaries Road, as it will be integrated within the landscape and shielded by surrounding vegetation.

Similarly, Photomontage 2 (Wharf Terraces Rooftop) demonstrates that the proposed outlet gate will be partially visible from the publicly accessible roof area of the Wharf Terraces residential apartment building, located at number 10 Lincoln Crescent, Woolloomooloo. Notwithstanding this partial visibility, the proposed outlet grate will not obscure any part of the proposed Sydney Modern building, will not obscure any views of the Royal Botanic Garden or Mrs Macquaries Road nor of the Sydney CBD skyline beyond.

In this regard, although potentially visible from certain view angles, the proposed outlet grate will not result in any unreasonable visual impact from either the public or adjacent private domain.

#### ***Air Quality and Odour***

As detailed in the amended air quality assessment prepared by Wilkinson Murray at **Appendix G**, the proposed cooling towers form part of a closed loop system and will expel recirculated air only. The cooling towers shall discharge warm air to the atmosphere, with makeup water likely to be drawn from rainwater harvesting. In this regard, the proposed cooling towers do not present any potential sources of air pollution and will not result in any impact to air quality or odour.

#### ***Acoustic***

An updated acoustic impact assessment has been prepared by Arup at **Appendix F**.

This amended acoustic impact assessment provides that the proposed modification will operate within applicable NSW Environment Protection Authority industrial noise policy criteria, subject to implementation of acoustic mitigation measures, including, however not limited to:

- Provision of an acoustic louvre to the proposed outlet vent;
- Provision of acoustic attenuators (minimum 600mm installed to the discharge plenum); and
- Provision of appropriate vibration isolation mounting for the cooling towers.

These mitigation measures are able to be accommodated within the building and as part of the detailed design of the cooling towers and will not be visible from the private nor public domain. It is anticipated the recommendations of this acoustic assessment would be implemented as a suitable condition of consent prior to operation of the cooling towers.

### ***Heritage***

An Archaeological Assessment and Impact Statement (AAIS) has been prepared by GML to support the proposed modification at **Appendix H**.

This AAIS provides that the proposed modification will have a reduced heritage impact within Lincoln Crescent, on the basis that the seawater heat exchange system is to be deleted, removing the potential for any disturbance or unexpected finds at this location.

The proposed works are to be located within the approved excavation footprint of the building. Previous studies, including the Heritage Impact Statement (HIS) and the Aboriginal Cultural Heritage Assessment Report (ACHAR) submitted with the SSDA for SSD 6471 indicates that this area is highly disturbed, with low potential for Aboriginal and/or historical remains.

As such, the AAIS (**Appendix H**) provides that proposed modification is considered unlikely to have an impact on any archaeological remains. Notwithstanding, the AAIS recommends that existing Conditions C16 (Archaeology) and C18 (Impacts of Below Ground (Sub Surface) Works – Aboriginal Objects) of SSD 6471 are suitable to mitigate any potential heritage impacts, including any unexpected finds.

### ***Ecologically Sustainable Development***

The proposed modification to cooling towers has been carefully designed and reviewed against the seawater heat exchange system to ensure minimal impact on the overall environmental sustainability of the development, including the principles of ESD.

An addendum to the ESD report submitted with the SSDA for SSD 6471 has been prepared by WSP at **Appendix E**. This addendum provides that the proposed cooling tower system would have an almost equivalent energy consumption to the seawater heat exchange system. This addendum however provides that when compared to the seawater heat exchange system, only cooling towers require potable water. However, through use of rainwater harvested on-site, the potable water consumption of a cooling tower system may be significantly reduced.

Overall, the proposed modification to cooling towers is considered to offer a comparable outcome, being almost equivalent to the seawater heat exchange system in terms of energy consumption, potable water consumption and greenhouse gas emissions.

### ***No Impact to 6-Star Green Star Design Rating***

The proposed modification will maintain the current overall 6-star Green Star design rating.

During the most recent Green Star design review, the project was awarded 79.8 points, achieving a 6-star Green Star design rating. The minimum threshold for a 6-star Green Star design rating is 75 points.

Overall, it is anticipated that the revision to the project's heat rejection system will offer equivalency in terms of energy consumption and greenhouse gas emissions, with the potential to achieve water consumption equivalency through rainwater harvesting.

However, it is anticipated that the proposed modification will impact the project's Green Star Strategy, with fewer points achievable under Credit 18B (Potable Water). However, as detailed at **Appendix E**, the project will maintain an overall 6-star Green Star design rating, with 77.8 of the 79.8 points awarded in the last round remaining achievable.

In this regard, the proposed modification will not impact on the approved 6-star Green Star design rating and will far exceed the 5-star Green Star design rating originally targeted under the SSDA for SSD 6471.

### ***Services and Infrastructure***

In response to the proposed modification, a review of mechanical services has been undertaken by Steensen Varming at **Appendix D**.

This review provides that, notwithstanding the removal of the seawater heat exchange system, that the proposed modification to cooling towers will not impact any other mechanical services or services infrastructure associated with the approved development, which will remain as per the original proposal.

No further infrastructure upgrades are required to facilitate the proposed modification.

### ***Conclusion***

Having regard to the above, the proposed modification will not result in any unreasonable impact to visual or acoustic amenity, air quality or odour impact.

The proposed modification will not alter previous conclusions relating to the overall environmental performance or sustainability of the approved development, which will maintain the highest environmental standard for design with a 6-star Green Star design rating from the Green Building Council of Australia, exceeding the original 5-star Green Star design rating goal.

Overall, the proposed modification is considered to result in minimal (reduced) environmental impact.

### **5.3 Section 4.15 (1)(c) Suitability of the Site**

The proposed modification is not considered to alter the design intent of the approved development and is considered to be substantially the same development as the development for which consent was originally granted.

The site remains suitable for the Sydney Modern development for the reasons outlined in the original SSDA for SSD 6471.

### **5.4 Section 4.15 (1)(d) Submissions Made**

Any submissions made on this subject modification application will be duly considered and addressed.

### **5.5 Section 4.15 (1)(e) The Public Interest**

For the reasons discussed within this report, the proposed modification is not considered to alter the design intent of the approved development and is considered to be substantially the same development as the development for which consent was originally granted under SSD 6471.

The proposed modification is considered to be in the public interest as it will not alter the bulk, scale, siting nor form of the existing approved development and will not result in any loss of amenity. Therefore, the development as it is proposed to be modified remains in the public interest, for the reasons outlined in the original SSDA for SSD 6471.

# 6. Conclusion

This report has been prepared by Architectus on behalf of the Art Gallery of New South Wales Trust to modify SSD 6471 for the approved AGNSW Expansion Project, known as Sydney Modern, pursuant to Section 4.55(1A) of the EP&A Act.

The proposed modification seeks to modify the conditions of SSD 6471 which provided approval for:

*“Sydney Modern Expansion Project:*

- demolition, earthworks and excavation works*
- construction of new art gallery building*
- remediation and conversion of former fuel bunker to gallery use*
- construction of new entry plaza and associated canopy*
- new loading dock with access from Lincoln Crescent*
- installation of seawater heat exchange system*
- public domain and landscaping works, including new footpaths, public lifts and tree planting*
- subdivision.”*

The proposed modification comprises the deletion of the approved seawater heat exchange system, to be replaced with a series of cooling towers located within an unused void inside the approved excavation line above the loading dock to facilitate building environmental systems. Associated minor landscaping amendments are also proposed.

The proposed modification is a result of ongoing design development post approval, including a review by AGNSW of opportunities to consolidate and co-locate building services to ensure more efficient construction processes and a reduced construction impact, as well as improved operation, maintenance and servicing of the expanded AGNSW over time.

The proposed modification is not considered to alter the design intent of the approved development and is considered to be substantially the same development as the development for which consent was originally granted. Further, the proposed modification is considered to result in minimal or reduced environmental impact, with improved operational efficiencies when compared to the approved seawater heat exchange system.

Having regard to the matters discussed within this report, it is recommended that the Minister for Planning, or their delegate, grant consent to the proposed modification.