THE UNIVERSITY OF SYDNEY

Section 96(1A) Modification Application Environmental Assessment

For:
Faculty of Arts and Social Sciences (FASS),
University of Sydney

SSD 7081

August 2017

FDC

FDC Construction and Fitout Pty Ltd
22 – 24 Junction Street
Forest Lodge, NSW 2037

PO Box 425
Camperdown, NSW 1450

Telephone: 02 9566 2800
Facsimile: 02 9566 2900
timb@fdcbuilding.com.au
www.fdcbuilding.com.au
ABN 44 120 295 034

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1.0 Introduction

This Environmental Assessment Report is submitted to the NSW Department of Planning & Environment in support of a Section 96(1A) application to modify State Significant Development consent SSD_7081. This application involves the construction of a six storey building to accommodate the Faculty of Arts and Social Sciences (FASS) and works to the existing RD Watt Building.

This Section 96(1A) application seeks approval for the following modification:

- *Change of roof sheeting colour from Colorbond 'Gully' to Colorbond 'Surfmist' to achieve compliance with the University of Sydney's mandatory ESD framework requirements;*

In summary, it has become apparent that the approved metal roof sheeting colour, Colorbond 'Gully' will not achieve the necessary Solar Reflectivity Index (SRI) to comply with the requirements of the University's Sustainability Framework. To comply, it is necessary to change the colour of the roof sheeting to Colorbond 'Surfmist' which provides a much higher Solar Reflectivity Index (SRI).

The original proposal was considered State Significant Development because it was development for the purposes of an educational establishment (including associated research facilities for a University) and had a capital investment value in excess of $30 million (project CIV of $63,127,219) pursuant to clause 15 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011*.

Clause 226(1) of the *Environmental Planning & Assessment Regulation 2000* provides that a development carried out by an Australian University is a Crown development. Sydney University is listed as an Australian University and consequently, this application is considered to be Crown development for the purposes of Division 4 of the Environmental Planning & Assessment Act 1979 (the Act), in particular, Clause 89B.

FDC Construction and Fitout Pty Ltd (FDC) has been engaged by Sydney University to construct the approved FASS building and associated works FDC has worked with the University to determine the need for the proposed modification and has therefore coordinated the submission of this application is cooperation with Architectus.

This report provides an explanation and justification for the proposed colour change. It also considers the various statutory considerations for making modifications and potential environmental impacts associated with the proposal. It should be read in conjunction with attached architectural plans and other supporting information contained as appendices:

- Revised Roof Plan and Materials Palette, prepared by Architectus (Appendix 1)
- Colorbond Steel, Colours for Building Professionals, BlueScope Steel 2014 (Appendix 2)

2.0 Background

2.1 The Site

The land subject to SSD 7081 is within the University of Sydney Camperdown Campus and is legally described as Lot 1 in DP 1171804. The site is located on NSW Crown Land.

The site is bound by Parramatta Road to the north, the R.D Watt Building and Science Road to the south, the Demountable Buildings and Ross Street to the west, and the Heydon-Laurence Building to the east.

The FASS site lies on land that was previously occupied by the McMillan Building - constructed c.1961, and demolished in 2012. The subject site is located in the vicinity of three local heritage listed items – 'RD Watt Building' (Item 74), 'Heydon-Laurence Building' (Item 75), and the 'Site landscaping and the University of Sydney perimeter fencing and gates' (Item 72) at Parramatta Road, Camperdown.

Vehicular access is currently available to the site off Science Road. Pedestrian access is also provided from Science Road, with no direct public access available from Parramatta Road.

Figure 1.1: Site Location/ Context

2.2 State Significant Development 7081

State Significant Development 7081 (SSD 7081) involved:

Construction and use of a new Faculty of Arts and Social Sciences (FASS) building, with works including:

- *site excavation works to accommodate the proposed building footprint;*
- *construction of a new six storey education building, comprising general teaching spaces, lecture theatre, office and meeting rooms, terrace roof top space and associated plant for a new FASS;*

- *internal and external refurbishment works to the existing RD Watt Building, and the construction of an awning structure connecting the proposed building to the RD Watt Building; and*
- *associated tree removal, landscaping works and utilities and infrastructure connection works.*

The application was approved by the Minister for Planning on the 16th December 2016. At the time of writing, the approved development is under construction. Demolition and excavation works have been completed and the structure is underway, with completion anticipated by July 2018.

3.0 Proposed Modifications to Consent

The proposed modification involves the following minor change:

- *Change of roof sheeting colour from Colorbond 'Gully' to Colorbond 'Surfmist' to achieve compliance with the University of Sydney's mandatory ESD framework requirements;*

3.1 Explanation of Proposed Modification

The University of Sydney Sustainability Framework is a holistic rating scheme that draws from the best national (Green Star) and international building (BREEAM & LEED) rating systems and best design practice.

The University's Sustainability Framework provides an equivalent rating scheme to demonstrate industry best practice for sustainable design. The Sustainability Framework considers the following themes:

1. *Leadership and Communication*
2. *Resource Efficiency*
3. *Healthy Environment*
4. *Materials*
5. *Climate Change, Landscape & Infrastructure*
6. *Sustainable Transport*

The Sustainability Framework benchmarks sustainability across the different building types by using common sustainability ambition levels. The FASS building was designed to target a Bronze rating under the Sustainability Framework. This equates to a minimum environmental rating score of 91 points out of a possible 140 points and is considered to be an appropriate target for a project of this nature.

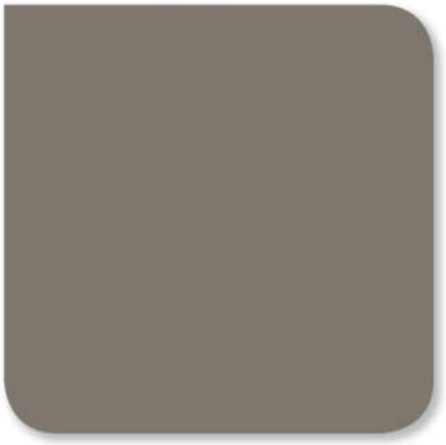
As detailed design has progressed, it has become apparent that the DA approved metal roof sheeting colour, Colorbond 'Gully' will not achieve the necessary Solar Reflectivity Index (SRI) to comply with the requirements of the University's Sustainability Framework. To comply, it is necessary to change the colour of the roof sheeting to Colorbond 'Surfmist' which provides a much higher Solar Reflectivity Index (SRI).

Essentially, darker colours absorb more solar energy than lighter colours. Therefore, higher levels of solar absorption (heat) will impact the efficiency of mechanical controls systems. The efficiency of such systems is crucial to achieve sustainable outcomes in the context of the University's framework.

The attached Colorbond Steel colour chart (see Appendix 2), provided by BlueScope, illustrates different colour choices in the context of Solar Absorption characteristics. It suggests that the Building Code of Australia classifies roof colour on the basis of solar absorption as defined below:

- Light (L<0.40);
- Medium (M<0.60); and
- Dark (D>0.60)

In this context, the approved roof colour ‘Gully’ is categorised as the highest rating for absorbing solar energy while ‘Surfmist’ is in the lowest category.



GULLY™
SA = 0.63. BCA = D

Approved Roof Colour

SURFMIST® $
SA = 0.32. BCA = L

Proposed Roof Colour

This is the only modification proposed and results in very few, if any, environmental impacts for the site and surrounding locality, primarily because the roof material is not visible from surrounding buildings or the public domain. The potential impacts are considered in detail within Section 4 of the assessment report.

4.0 Environmental Assessment

Section 96 of the *Environmental Planning and Assessment Act 1979* provides the statutory instrument to amend a development consent. Section 96(1A) of the Act states that a consent authority may modify a development 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.*

4.1 Minimal Environmental Impact?

The proposed modification does not appear to generate any significant environmental impacts for the surrounding natural or built environment. The proposal is limited to a change of roof material colour and will therefore not impact the hydraulic operation of the roof or drainage system, the external appearance of the building or any other function of the building. The proposed modification does however warrant further consideration of the following matters.

4.1.1 Visual Impact

The proposed change in roof colour is unlikely to result in any significant visual impacts for the site or surrounding locality. The current flat roof design essentially means that roof material will not be visible from ground level. The height of the new building in relation to existing adjoining buildings also means that such material will not be visible. The major visual impact anticipated would be from an aerial view of site. While the colour is different from that already approved, it remains a standardised colour selection and would therefore sit contextually with the multitude of varying roof colours across the city.

The following figures help to justify that the roof would not be visible from adjoining public areas and buildings and would therefore unlikely to significantly change the visual impact of the new building within this context.

4.1.2 Reflectivity

The original application included the submission of a Solar Light Reflectivity Analysis prepared by Windtech Consultants Pty Ltd (dated May 2016). This study was prepared to identify possible 'adverse reflected solar glare conditions affecting motorists, pedestrians and to occupants of neighbouring buildings'. The study

recommended that, ‘glazed aspects of the development should have a maximum normal specular reflectivity of visible light of 20%’ and noted the following:

> *‘the most reflective surface on the façade of a building is the glazing. Reflected solar glare from concrete, brickwork, timber, etc, is negligible (i.e.: less than 1% normal specular reflectance) and hence will not cause any adverse solar glare effects. Note also that, for any painted or powder-coated metallic surfaces on the exterior façade of the development, the maximum normal specular reflectance of visible light for those types of surfaces is in the range of 1% to 5%, which is well within the abovementioned limit’.*

On this basis, it is safe to assume that the proposed colour modification to roof material, although lighter than that already approved, is unlikely to result in any reflectivity issues for the locality or for aircraft travelling above.

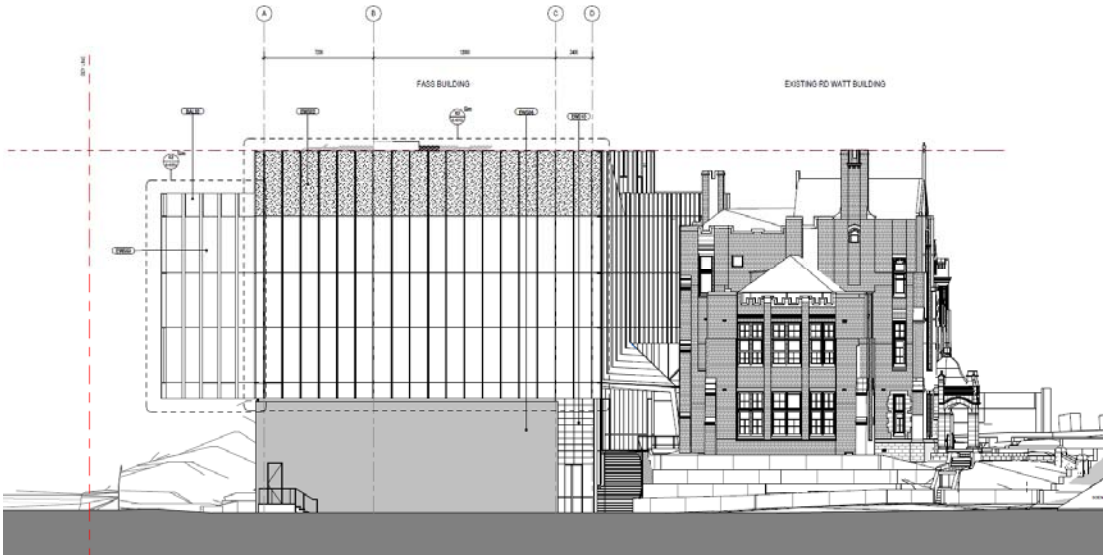


Figure 4.1: Approved Western Elevation

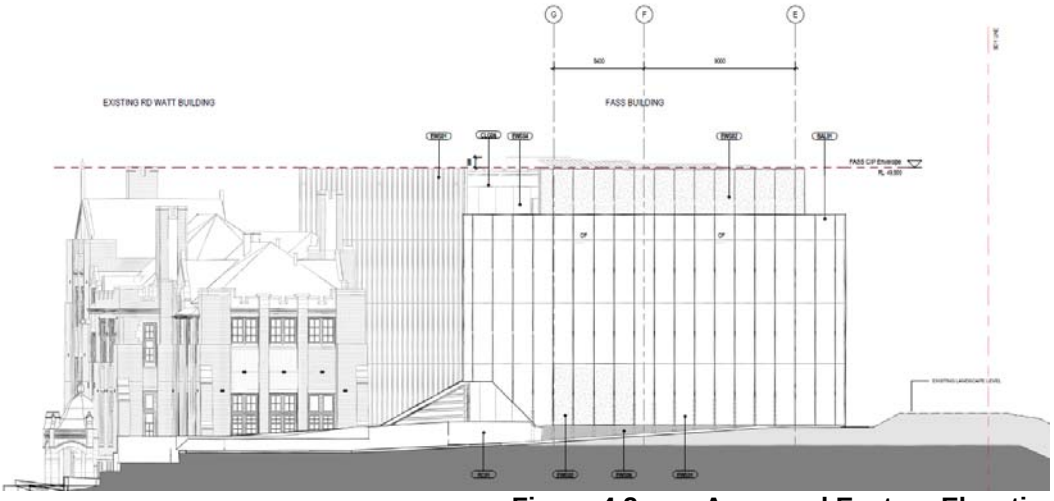


Figure 4.2: Approved Eastern Elevation

SOUTH WEST VIEW FROM LOWER ENTRY COURTYARD

SOUTH EAST VIEW FROM ENTRY COURTYARD

Figure 4.3: Photomontages (*Architectus*)

NORTH EAST VIEW FROM PARRAMATTA ROAD

NORTH WEST VIEW FROM PARRAMATTA ROAD

Figure 4.4: Photomontages (*Architectus*)

4.2 Substantially the Same Development?

The modified development is substantially the same development as that originally approved in that:

- the change of roofing material colour is required to ensure that the building achieves a greater level of environmental performance than would currently occur with the chosen material colour.
- no modification is proposed to the building's appearance, building design or building envelope;
- the built form will continue to respect the heritage context of the site on the basis that the building's appearance and position will not change by this proposal;
- the approved land use remains unchanged by the proposal;
- the proposal retains the design quality excellence of the original application; and
- there are no more than minimal environmental impacts as a result of the modified development.

FDC is confident that the proposed modification to the colour of roof sheeting will ensure that the development remains substantially the same as that approved under SSD 7081.

4.3 Public Notification and Submissions

We believe that the Department will consult with Sydney Council in regard to this application. The Department will also need to consider whether the broader public should be informed about the proposal.

As already outlined, the proposed modification is minor in nature and thus should not be a source for public concern. However, we remain willing to address any matters raised during the process should this be considered necessary.

5.0 Conclusion

This Environmental Assessment Report is submitted to the NSW Department of Planning & Environment in support of a Section 96(1A) application to modify State Significant Development consent SSD_7081 relating to the construction of a new Faculty of Arts and Social Sciences (FASS) – comprising a new six storey building and works to the existing RD Watt Building.

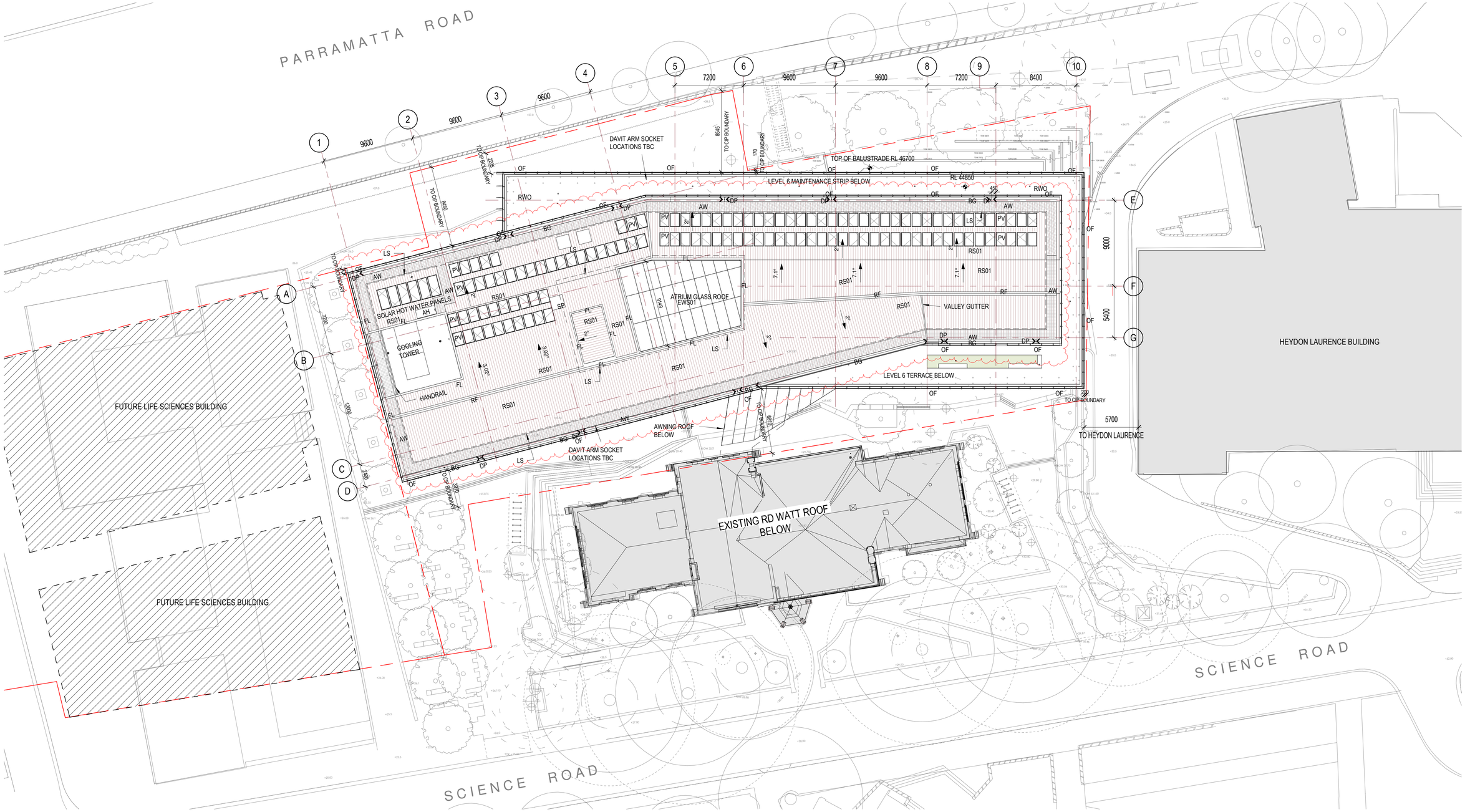
Approval of the proposed modification will facilitate the completion of a building that is able to comply with the projected environmental targets set by Sydney University in the context of their Sustainability Framework.

The proposal remains consistent (and compliant) with all relevant environmental and legislative requirements, applicable to the site and proposed development.

FDC trusts that the information provided within this report provides the Department with sufficient information upon which to base an assessment of relevant issues.

The proposed modification should therefore be considered favourably by the Department and supported.

Appendix 1 – Revised Architectural Plans



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issue	amendment	date
A	DRAFT FOR CONSULTATION	29.04.2016
B	DA DRAFT ISSUE - FOR REVIEW	27.05.2016
C	DA DRAFT ISSUE - FOR REVIEW	02.06.2016
D	DA ISSUE FOR APPROVAL	15.06.2016
E	SSDA ISSUE	16.06.2016
F	SSDA ISSUE	20.06.2016
G	AMENDED SSDA ISSUE	10.10.2016
H	AMENDED SSDA ISSUE	09.08.2017

ROOF PLAN LEGEND

AW	ACCESS WALKWAY
AH	ACCESS HATCH
AP	ACCESS PANEL
BV	BOILER VENT PIPES
BG	BOX GUTTER
DP	SIPHONIC DOWNPIPE
FL	METAL ROOF FLASHING
GA	GENERATOR ATTENUATOR
LS	LIFE-LINE SAFETY SYSTEM
MDR	METAL DECK ROOF
OF	OVERFLOW
PV	SOLAR PANELS
RS1	COLORBOND SURFMIST

client

THE UNIVERSITY OF SYDNEY

architectus™

Architectus Sydney
Level 18 MLC Centre
19 Martin Place
Sydney NSW 2000
T (61 2) 8252 8400
F (61 2) 8252 8600
sydney@architectus.com.au
ABN 90 131 245 684

Sydney
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drawn Author | project no 150479.00

FOR APPROVAL

project
F.A.S.S - Faculty of Arts & Social Sciences

drawing
ROOF PLAN

drawing no. **DA1070** | issue **H**

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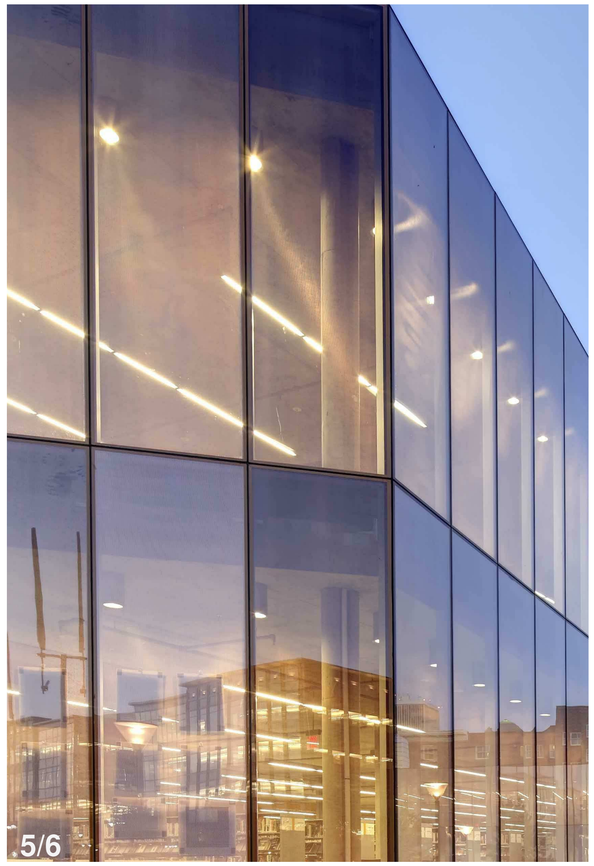

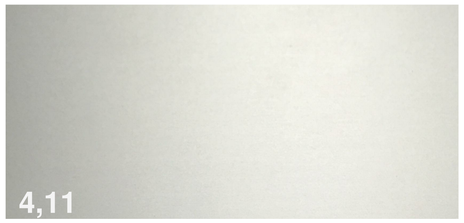

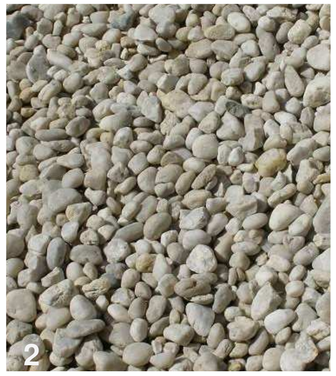

MATERIALS KEY

1 ROOF SHEETING - COLORBOND SURFMIST

2 PEBBLES - COWRA WHITE

3 ANODISED ALUMINIUM MULLIONS - WARM METALLIC COLOUR

4 ANODISED ALUMINIUM MULLIONS - NATURAL

5 HIGH PERFORMANCE DOUBLE-GLAZED, CURTAIN WALL SYSTEM WITH INTER-LAYER

6 CURTAIN WALL PANEL TO MATCH MESH SCREEN IN A 2 STAGE LOUVRE SYSTEM

7 CLEAR LOW IRON DOUBLE GLAZED UNIT

8 CLEAR LOW IRON HIGH PERFORMANCE GLASS

9 CLEAR LOW IRON ENGINEERED GLASS FACADE

10 GRANITE - STONE CLADDING

11 PERFORATED ALUMINIUM SCREEN TO LOUVRE, NATURAL ANODISED

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issue	amendment	date
A	SSDA ISSUE	16.06.2016
B	SSDA ISSUE	20.06.2016
C	SSDA ISSUE	09.08.2017
D	SSDA ISSUE	22.08.2017

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THE UNIVERSITY OF SYDNEY

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Sydney
Melbourne
Adelaide
Auckland
Christchurch
Brisbane

Architectus Sydney
Level 18 MLC Centre
19 Martin Place
Sydney NSW 2000
T (61 2) 8252 8400
F (61 2) 8252 8600
sydney@architectus.com.au
ABN 90 131 245 684

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drawn	HD	project no	150479.00

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Appendix 2 – BlueScope Information