

Your ref  
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# ARUP

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Dear Sir/Madam

## Barangaroo South - Commercial Building C3 - Section 75W MOD2 Reflectivity Statement

This letter has been prepared to support an Application made pursuant to section 75W of the Environmental Planning and Assessment Act 1979 to modify Project Approval granted by the Minister for Planning in respect of MP11\_0044 for the C3 commercial building within Barangaroo South. The C3 Project Application was approved by the Minister for Planning under section 75J of the EP&A Act on 24 April 2012.

The approved C3 Project Application approves the construction and use of a 49 storey commercial building and allocation of car parking spaces from the Bulk Excavation and Basement Car Parking Project Application, within the area of land known generally as Block 3 at Barangaroo South. More specifically, consent was granted for development including:

- Piling and associated earthworks and remediation;
- Construction and use of a commercial building with a maximum GFA of 115,448m<sup>2</sup>;
- Operation and use of 175 car parking spaces and 8 parking spaces for all other uses;
- 401 bicycle parking spaces (65 to be located temporarily on grade in the landscaped forecourt adjacent to Hickson Road and 336 in the basement car park); and
- Construction of certain temporary public domain works.

The proposed MOD 2 seeks to modify the following elements of the approved C3 building:

- Podium design and ground floor lobby;
- Total GFA;
- Facade details;
- Structural bracing; and
- Roof treatment.

Barangaroo is located on the north western edge of the Sydney Central Business District, bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the northern half), The Rocks and the Sydney Harbour Bridge approach to the east; and bounded to the south by a range of new development dominated by large CBD commercial tenants.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Stage 2 and Barangaroo South.

The C3 Site extends over land generally known and identified in the approved Concept Plan as Block 3 which comprises Lot 5 in DP 876514.

Arup has reviewed the following drawing series prepared in respect to the Section 75W submission as below:

- Architectural drawings of Ground Level and above prepared by Rogers Stirk Harbour & Partners (RSHP), dated 13 September 2013.

The Reflectivity Study Report – Rev A (dated 18 October 2011), prepared by Arup to support the original Project Application assessed impact of potential reflections off the building facades, and found that these would not exceed limits of acceptability according to the Hassall methodology adopted in the study.

The modifications to C3 as part of this Section 75W submission are within the scope of the original report. The following clarifications are noted:

- Additional roof elements with PV cells are oriented in planes of reflective facades that were included in the original study. The feature extending to top of core height has been assessed by Arup using the original study methodology and has been found to not produce reflections in excess of acceptable limits for any materials within the allowable maximum of 20% external reflectivity.
- Alterations of the façade colour scheme and perforations to fin panels have no bearing on the assumptions for façade reflectivity noted in Section 1.5 and are within the scope of the original report.
- The podium floorplate changes introduce new potential glazing planes at the north of the podium and adjacent to the north entrance of the podium thoroughfare. The results in report sections 3.2 to 3.6 have been reviewed by Arup using the original study methodology and including these changes. The changes have been found to not produce reflections in excess of acceptable limits for any materials within the allowable maximum of 20% external reflectivity. The conclusions of the report remain valid for the modified building.
- The realignment of Globe St has introduced altered observer heading directions. As an extension to Section 3 of the report, reflections towards these have been assessed by Arup using the original study methodology and including the altered podium glazing plane orientations noted above.

The analysis has identified that the podium north facade glazing plane could produce reflections above the threshold of 500Cd/m<sup>2</sup> to locations along Globe St heading west. These occur approximately at the following times:

- March and September, after 4.30 pm – for up to 1 hour intervals

Any reflections theoretically above the threshold are however produced at shallow glancing angles. As the façade is parallel to the driver heading direction, the real sun will be visible at the same angle from the view ahead as the reflections. At any instances when the sun is reflected in the facade, the direct sun already produces illumination above the glare threshold, such that the effect of the reflections is

unlikely to increase the incidence of glare. Hence, glare effects from these reflections are discounted.

When travelling on Globe St heading east, the sun would be blocked by CBD buildings and excessive reflections are not expected.

Excessive reflections causing glare on the realigned Globe Street were therefore discounted.

On this basis, Arup is of the opinion that the proposed modification as contained in the Section 75W MOD 2 submission for MP11\_0044 will not result in any glare impact of reflections off the facade in addition to that identified within the Reflectivity Study Report and requires no further investigation or analysis at this stage of planning and design.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Jorg Kramer', with a long horizontal stroke extending to the right.

Jorg Kramer  
Facade Consultant