

Memorandum

To: The Secretary, NSW Department of Planning, Industry and Environment
12 Darcy Street, Parramatta NSW 2150

From: Robyn Hyslop (Lendlease Integrated Solutions)

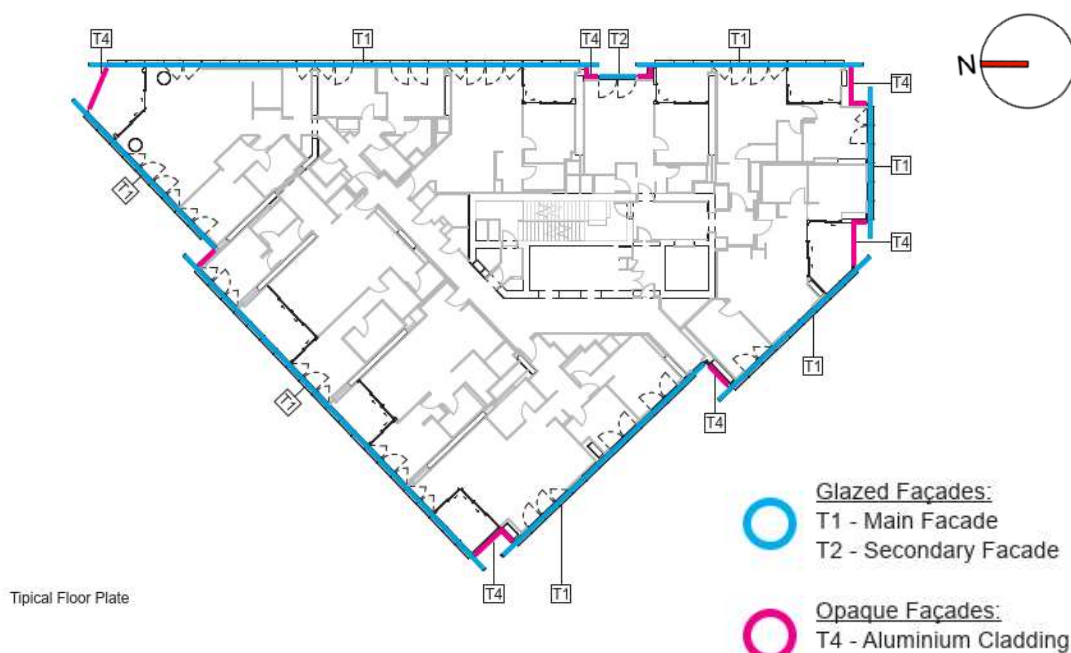
CC: Jenny Chung (Lendlease Building)

Date: 19th May 2022

Subject: **Building R5, Barangaroo South – Tower and Podium Glazing Performance**

This memo has been prepared in response to Condition B16 of SSD 6966 Building R5 Development Consent – Schedule of Materials, to be submitted to the NSW Department of Planning, Industry and Environment. The project architect, Renzo Piano Building Workshop (RPBW), has prepared a document providing additional information with regards to the visual appearance of key façade types and associated mock-ups. This document is intended to provide additional information describing the environmental performance of façade types, and in particular the west facing facades.

The RPBW document references two key façade types that impact the visual appearance of the building. The following mark-up indicates the location of these façade types throughout a typical floor.

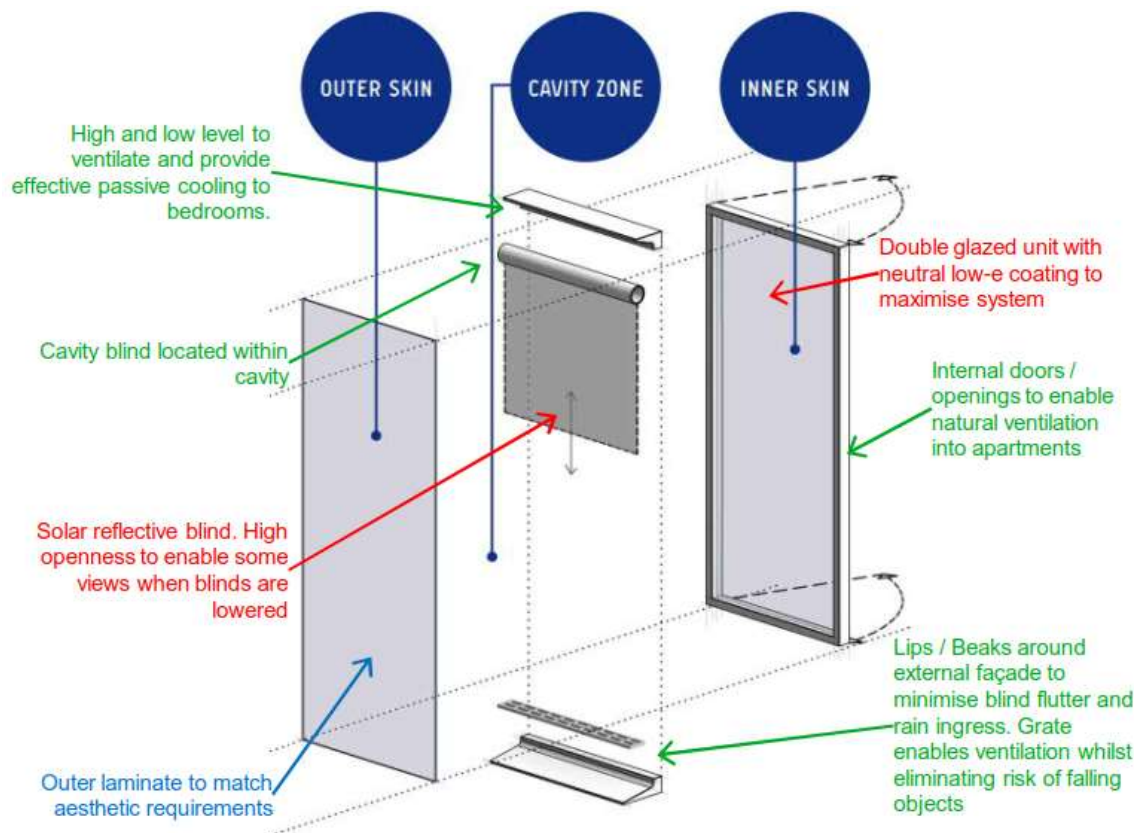


The architectural solution adopted by the project results in an almost completely glazed façade. To enable the design intent to be achieved whilst achieving a high level of thermal performance, an Open Cavity Façade (OCF) system is proposed for the main glazed façade (T1). This façade system includes an outer laminate with fixed ventilation openings, an automated interstitial reflective blind and an operable internal performance double glazing.

The OCF is a key element of the project to allow:

- Natural ventilation;
- Solar radiation to be reflected by the interstitial blind;
- Heat absorbed into the cavity blind to vent out of the cavity thus keeping the cavity temperatures cooler in summer and enhancing solar control.

The image below depicts the key elements of the proposed solution.





The OCF system is proposed to all exposed façade areas where achieving a high level of solar control is important to enable thermal comfort and energy efficiency. This extent of solar control is not as important to the T2 secondary façade vision areas due to their sheltered location.

The thermal performance achieved by the proposed OCF system is well beyond what is typically delivered on multi-unit residential buildings which are typically conventional single- or double-glazed window systems. The following table provides the thermal performance with and without the interstitial blind lowered as well as thermal performance properties for other key vision glazed façade types that impact the environmental performance of dwellings. While the performance of the OCF is well beyond typical residential façade systems, the other vision glazing is consistent with current best practice performance.

While not identified in RPBW document (as does not impact visual appearance), sliding doors adjacent to balconies and winter gardens will impact thermal performance. However, as these are shaded by the associated overhangs achieving solar control equivalent to the main façade areas is not required. Regardless, the associated thermal performance properties are included in the following table.

Façade Type	Description	U-Value ¹	SHGC ¹	
			Blinds Up	Blinds Down
T1 Main Glazed Façade	Open Cavity Façade (OCF)	2.4	0.37	0.11
T2 Secondary Glazed Façade (Vision)	Double Glazed Clear with Low-e	3.2	0.46	NA
Sliding Doors ²	Double Glazed Clear with Low-e	3.2	0.45	NA

1. Total system values inclusive of frame.

2. While not identified in RPBW document (as does not impact visual appearance) sliding doors adjacent to balconies will impact thermal performance. These are however protected by overhangs and therefore do not require the performance provided by the OCF.