



Memorandum

To: NSW Department of Planning, Industry and Environment

From: Daniel Grunbaum (Lendlease Integrated Solutions)

CC: David Springford (Lendlease Building)

Date: 28th May 2021

Subject: **Building R4B, Barangaroo South – Glazing Performance**

This memo has been prepared in response to a Secretary Approval Request to the NSW Department of Planning, Industry and Environment associated with the “Exterior Finishes Design Report – Condition B8 of SSD 8892218 (amending SSD 6965)”. 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 four 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.

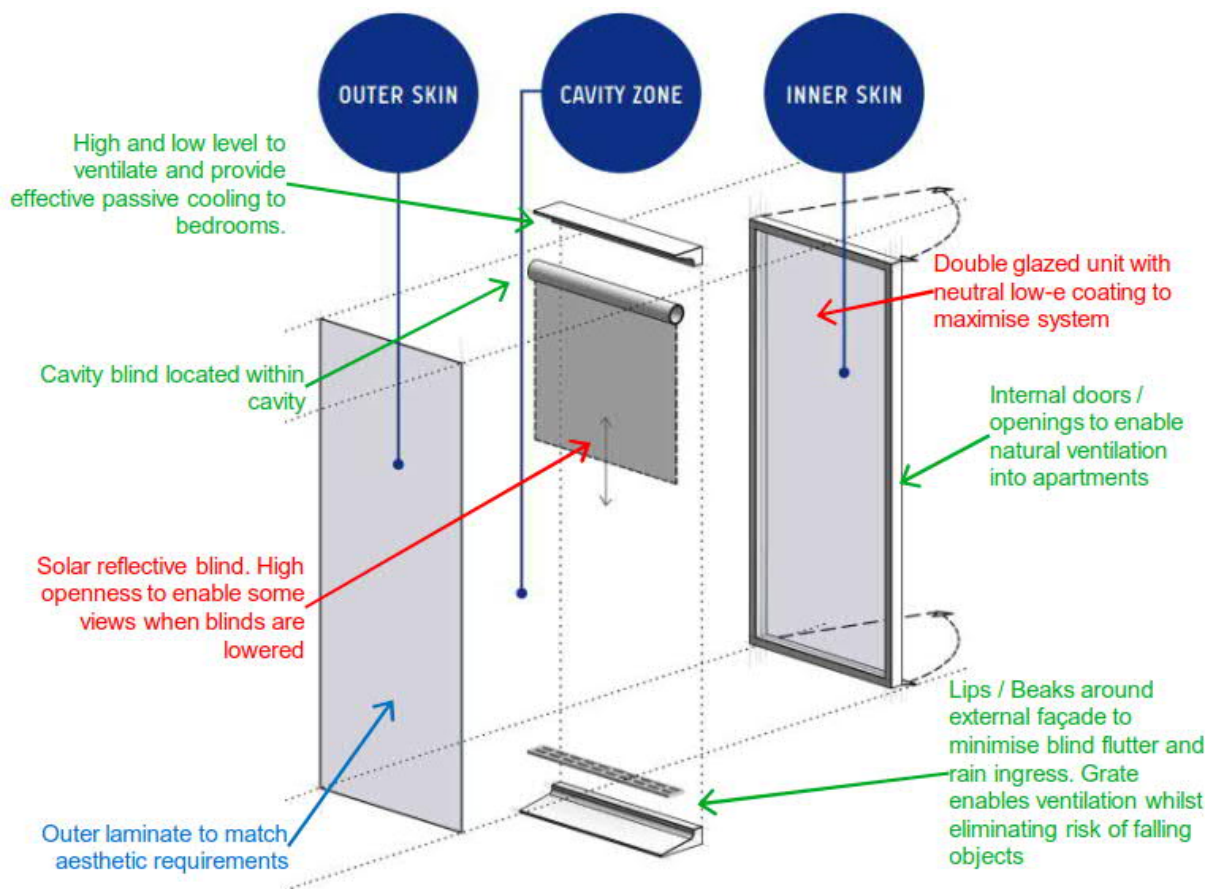


The architectural solution adopted by the project results in an almost completely glazed façade. To enable the design intent to be achieved whilst achieving a high level of thermal performance, an Open Cavity Façade (OCF) system is proposed for the main glazed façade (T1). This façade system includes 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 facing in a western or north eastern orientation 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 secondary façade vision areas due to their southerly aspect.

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. Thermal performance properties for other key vision glazed façade types that impact the environmental performance of dwellings are also provided. 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 and winter gardens will impact thermal performance. These are however protected by overhangs and therefore do not require the performance provided by the OCF.