

Light is really the source of all being...
all materials in nature are made of light
which has been spent, and this crumpled
mass called material casts a shadow, and
the shadow belongs to light.
Louis Kahn

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Att. Elizabeth Creswell

Response to: "Western Façade should have additional external sun shading"

Sydney December 17, 2021

The building façade must balance the priorities for daylight, solar ingress, thermal performance, natural ventilation, and glare control among other competing factors.

Ben Jones
Associate Director

It is acknowledged that the proposed shading on the Western façade could be more effective, however, vertical shading (unless angled and of a reasonable size) will be of limited performance, due to the high extent of changes in the altitude and azimuth of the sun's position.

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Large shading devices which would effectively shade the Western façade are likely to compromise good levels of daylight, views, and ventilation. As such, the proposed solution was to:

- 1) Increase the glazing performance on the West from a purely compliant (NCC 2019) SHGC of greater than 0.6, to an SHGC of approx 0.5 (final values to be confirmed)
- 2) To avoid unwanted thermal loads (conduction and solar) and glare concerns, the recommendation for the glazing percentage (window to wall ratio) on the East and West façades, was to be in the order of 25-35%. The initial concept proposed 45%, this has subsequently been reduced to 23%.

Daylight studies have confirmed that with the proposed glazing ratio on the West (23%), the classrooms achieve good levels of daylight (160 lux over 80% of the time in 40% of the nominated areas), as per the EFSG requirements. Sun studies have been undertaken to assess the impact of the sun on the Western façade. When the shading is not effective, blinds will assist for the remaining hours of the school day (up to 15:30).

Kind regards



Ben Jones
Associate Director