

AUSTRALIAN NATIONAL

CONSTRUCTION

MAJOR PROJECT REVIEW

GEORGIU'S

SCARBOROUGH BEACH REDEVELOPMENT

WA'S COASTAL METAMORPHOSIS

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Renyi is a sustainable building design consultancy that bridges the gap between design and 'as built' building performance to provide proficient, cost effective environmental building solutions. Having been engaged by Hutchinson Builders on the University of Wollongong Student Accommodation Project, Renyi performed a thermal comfort study and full Life Cycle Assessment (LCA).

A key challenge was to ensure the interior temperature would remain within a range of 19 to 27°C through all seasons – without the use of air conditioning. Renyi provided a solution, which significantly improved the building's thermal performance. Working within required budget, time and site constraints, they recommended practical adjustments to the design and construction of the façade.

An important design initiative involved exposing the concrete towards the inside of the dwelling rather than the outside. This capitalises on the thermal mass effect of the walls, resulting in a more consistent and comfortable internal temperature. Renyi recommended placing insulation towards the exterior and protected by a rainscreen or 'cladding.' This further minimised thermal bridging, meaning less heat is transferred inside the building.

Renyi's design allows the interior temperature to remain within the target range of 19 to 27°C for 95% of the time, without the use of any mechanical assistance. Even when the ambient weather temperature exceeds 35°C, only minimal use of mechanical ventilation systems are required. The result is a passive building that consumes the least amount of energy possible and can adapt to different climatic conditions without compromising residents' comfort. "This project is a good example of how, with the right advice, buildings can incorporate sustainable design initiatives in a cost effective and practical way," said Allan Ang, Engineer and Director of Renyi.

Another project Renyi is currently working on is a commercial development in Sydney Olympic Park. The building is aiming for a 6 Star Green Star office interiors rating and a minimum of a 4 Star Green Star residential rating. Allan noted it is very encouraging to see more developers embracing highly sustainable building design in Australia.

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