Insulation

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Perth Arena

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Low Energy –
Low Carbon Buildings

Perth Arena

Project Summary

Project: Perth Arena

Location: Perth, WA

Builder: BGC Construction

Application: Walls

Description

Perth Arena, completed in November 2012, is an individualistic public building featuring a unique set of design and engineering elements – including a customised insulation system developed to overcome some tough challenges.

Standing some 50 metres high, the arena is a multipurpose centre built to host sporting, theatrical and musical events for up to 15,000 guests.

There were two primary insulation-related considerations: how to minimise the risk of condensation; and how to achieve high thermal efficiency (R-value of R_T2.7).

"It's a large steel structure with a unique construction, and there were challenges in relation to condensation and the high R-values that were required within the building systems," says Craig Burr, Kingspan Insulation's State Manager WA.

Approximately 7,200 tonnes of steel were used in the arena's construction. When there is a large temperature differential between structural steel and ambient air, unwanted condensation can form.

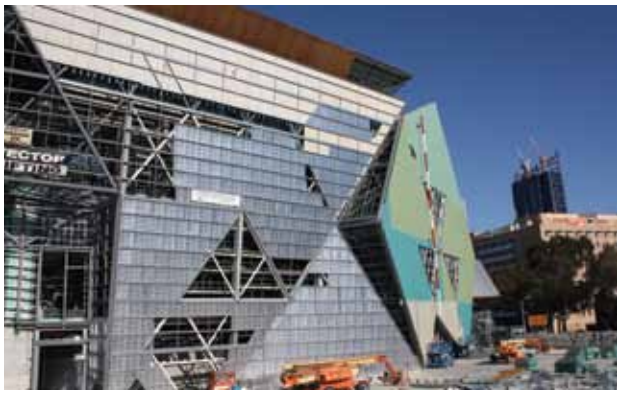
"So, there was a concern about 'cold bridging', or the effect that steel would have with that high insulation barrier," Craig says.

Fortunately, by analysing the building's physical and geographical characteristics, as well as the behavior of all relevant associated wall materials, it was possible to derive a solution to the threat of condensation without sacrificing thermal performance.

"We at Kingspan offered a full-layer wall system promoting passive vapour expulsion even though the system is sealed," Craig says.

"We used approximately 17,000 square metres of *Kingspan* **Kool**therm® K12 Framing Board rigid insulation panels."

The solution solved the condensation problem while safeguarding energy efficiency: a performance worthy of a standing ovation.



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