

In my opinion

Robert Smith of Sustainable Focus will deliver a seminar with lessons learnt from the SA Pathology solar shading project and other renewable energy projects at ARBS 2014.

Solar shading matters

Sunny South Australia is leading the way in solar shading

In a flagship project for Adelaide, SA Pathology's innovative Hanson Institute building upgrade is a landmark for Australian sustainable building design. The Hanson Institute building, one of SA Pathology's main buildings, now has eaves made up of photovoltaic cells installed around the building. The eaves double up as window shades, providing additional comfort for staff and the PV cells generate electricity. The system, designed by Sustainable Focus, is claimed to be possibly the largest installation of its kind in Australia.

While solar shading has been in use in Europe since the late 1990s, it has not been applied broadly in Australia, but this benchmark project may change all that. It's a winner on multiple fronts, with SA Pathology avoiding the need to substantially upgrade its existing air-conditioning system and simultaneously obtaining good building performance improvements. Energy bills are down and greenhouse gas emissions will reduce by 100 tonnes a year.

The project is predicted to pay for itself within five years and was commended in the Energy Efficiency Council awards for 'Best Commercial Building Energy Efficiency Project' in 2013.

The solar shading project delivers a range of benefits including:

- reduced solar gain, which in turn reduces cooling demand and therefore energy consumption of chillers;
- solar power generation with the integration of renewable embedded generation;
- increased occupant comfort levels (the building windows previously recorded 60°C in summer).

The solar shading project, however, is just the latest enhancement to a program of works undertaken by SA Pathology and Sustainable Focus over the past 10 years. "Solar shading is certainly an exciting technology, but it's not a silver bullet," says Robert Smith,

technical director of Sustainable Focus. "It should absolutely be considered in conjunction with a range of other improvements to building performance."

Sustainable Focus has worked in partnership with SA Pathology since 2004 to implement wide-ranging energy and water saving initiatives to become more energy efficient, reduce costs and engage staff in sustainable practices.

SA Pathology's buildings are a combined 25,000 m², with the largest facility a sprawling 18,000 m² across seven floors and three linked buildings. As a pathology facility, the refrigeration demands are enormous. While seeking improvements for the buildings and the working environment, it was essential that changes did not compromise operations. Substantial energy savings were achieved by improving air-conditioning control and through a comprehensive lighting upgrade. Another innovation was the installation of a bespoke polyurethane panel, which cost approximately six times less than installing factory doors at the facility.

It's this kind of thinking that delivers Australia's best buildings. "Looking at a building - or a complex - requires a whole-of-system approach. Looking to introduce new technologies for technology's sake is far less beneficial than considering which suite of improvements will maximise building performance," says Smith. "And it's important not to overlook simple changes like occupant behaviour or smarter programming of building automation systems."

Elements of SA Pathology's sustainable building initiatives included:

- overhauling building and refrigeration equipment controls to optimise performance;
- switching to more energy-efficient lighting solutions;
- saving approximately 1,500,000 L per year in treated mains water;

Overall, the project delivers a massive 1.25 million kWh reduction in energy use each year.

This project shows that solar shading, in conjunction with other sustainability initiatives, has an exciting future in Australia.



ARBS 2014 will be held at the Melbourne Convention and Exhibition Centre from 20-22 May 2014. Seminar registrations are open on the ARBS website: www.arbs.com.au.