

SAHMRI

North Terrace, Adelaide, SA

The South Australian Health and Medical Research Institute (SAHMRI) is the first project in South Australia and the first laboratory building in Australia to achieve LEED® Gold certification.

In another first, the visually striking SAHMRI is the first project to be completed in Adelaide's health and bio-medical precinct, the largest precinct of its kind in the Southern Hemisphere. SAHMRI will accommodate a team of more than 600 local and international researchers working together in the search for better treatments and cures for some of the world's most challenging diseases.

LEED (Leadership in Energy & Environmental Design) is an international green building certification program that recognises best-in-class building strategies and practices. SAHMRI has achieved LEED Gold



Photography © Peter Clarke

certification for implementing practical and measurable strategies and solutions aimed at achieving high performance in sustainable site development, water savings, energy efficiency, materials selections and indoor environment quality.

Cundall provided sustainable design advice, LEED consultancy and peer review services for SAHMRI from schematic design phase through to commissioning and handover. Works included initial owner and stakeholder workshops to define project goals and aspirations for:

- Energy efficiency
- Water efficiency
- Human health
- Environmental outcomes

Cundall also provided peer review, contractor coaching and liaison, development of an operational energy measurement and verification plan and LEED management and LEED submission delivery.

Sustainable Site Development

Sensitive site selection and development is fundamental to sustainable project outcomes. SAHMRI is built on the site of a pre-existing car park and has become the centrepiece of Adelaide’s health and bio-medical precinct alongside the new Royal Adelaide Hospital. The built form responds to its unique sloping site geometry to optimise passive solar heat gains while maximising natural daylight and providing views and connection to the external environment. 78 bicycle parks are provided to complement excellent access to the local public transport network, reserved car parking spaces are provided for low-emitting and alternative fuel vehicles. Water efficient landscaping and public plaza spaces complete the sustainable site development strategies.

Water Efficiency

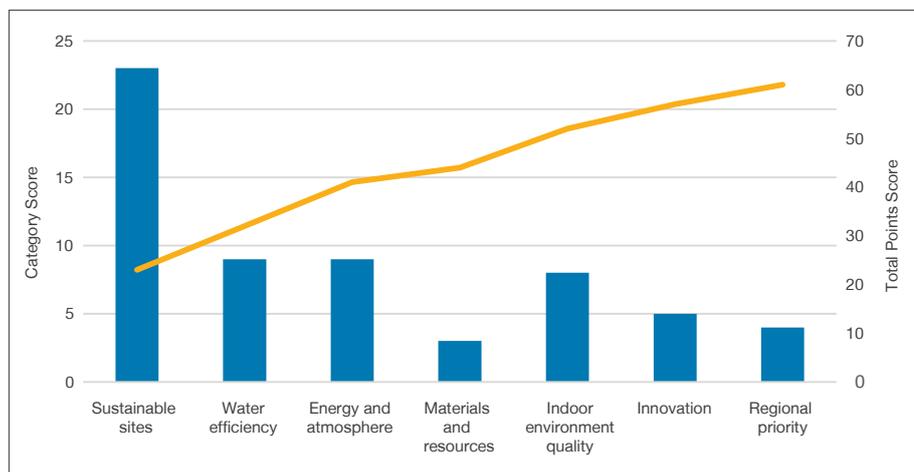
Water scarcity is a serious issue facing Australia’s major cities, especially Adelaide. SAHMRI responds to this issue by achieving a 40% reduction in indoor potable water demand compared to similar facilities. These savings are achieved through a combination of high efficiency fixtures, on-site rainwater harvesting and connection to the Glenelg Adelaide Pipeline (GAP) which provides recycled water mains for all non-potable uses. 100% avoidance of potable water use in landscape irrigation is also achieved through native/waterwise plant selections, smart irrigation controls systems and connection to the non-potable water supply.

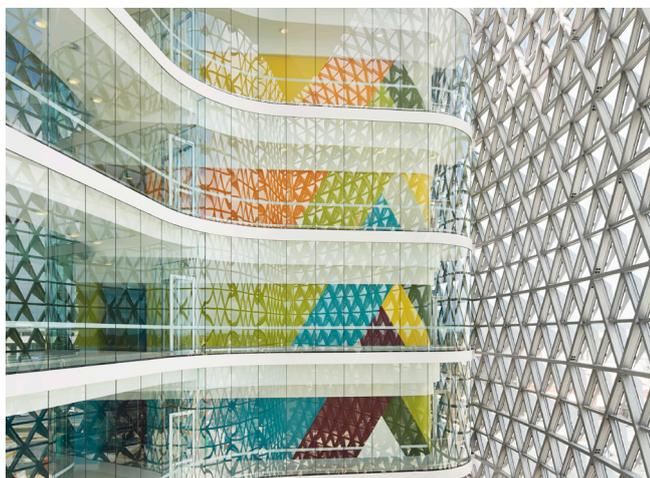
Energy Efficiency

An energy efficient building is not the result of any one initiative or individual responsibility. Recognising this, SAHMRI adopted an integrated, whole-of-life approach among all team members at project inception to optimise the design of all building systems including

- Massing and orientation
- Materials and construction methods
- Building envelope
- HVAC plant efficiency
- Lighting and control systems.

As a result, advanced energy modelling for the project has demonstrated an 18% whole building (including equipment ‘plug loads’) energy saving against ASHRAE 90.1 benchmarks. Energy efficiency doesn’t stop at design - SAHMRI engaged an independent commissioning agent and adopted enhanced commissioning techniques to ensure systems were installed and calibrated to optimise operational performance. The integrated building management system together with a facility measurement and verification plan will also be used to track, review and fine tune building performance over time.





Indoor Environment Quality

SAHMRI provides for a healthy indoor environment which promotes occupant comfort, well-being and productivity through a number of key initiatives including; the unique dia-grid façade and shading solution which is designed to improve daylight, reduce heat gain and solar glare and maintains visual connection to the external environment. There is provision of a 50% increase in outside air ventilation rates above minimum ASHRAE 62.1 requirements with implementation of indoor air quality throughout construction. Adaptive lighting control strategies and extensive use of low-emitting (i.e. 'low VOC') finishes were also employed to ensure a high quality indoor environment for building occupants.

Results

Cundall successfully delivered SAHMRI's LEED Gold certification within two months of final commissioning sign-off and completion. Significantly, the project was awarded sufficient points for LEED Gold certification at its preliminary construction review by the USGBC avoiding the need to pursue additional points and further rounds of USGBC assessment. This achievement saved the project considerable time, resources, documentation and re-work sometimes associated with green building ratings. Without compromising on project outcomes Cundall was able to provide SAHMRI with the maximum opportunity to promote the independent, third-party LEED verification of its environmental and sustainable credentials.

By taking a systematic and whole-of-life approach to building related environmental impacts and human benefits, SAHMRI joins a select group of buildings worldwide to achieve LEED Gold certification.

For further information

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Key Facts	
Client	SAHMRI
Location	North Terrace, Adelaide, SA Australia
Construction Value	Approximately AUD \$200m
Completion date	December 2013
Key Team Members	
Architect	Woods Bagot
ESD/LEED	Cundall
Structure Design	Aurecon
Services Design	NDY and Aurecon
Managing Contractor	Hindmarsh
Independent Commissioning Agent	Aecom
Project Facts	
LEED Certification	Gold
LEED Points Score	61
Cyclist Facilities	78
Occupant Potable Water Savings	40%
Landscaping Potable Water Savings	100%
Energy Efficiency Savings	18%
Demolition and Construction Landfill Diversion Rate	94%
Regional Materials	10%
Minimum Ventilation Rate Improvement	50%

Materials

SAHMRI adopted several key initiatives to address environmental concerns relating to materials selection, waste disposal and waste reduction. The project achieved a 94% diversion rate of construction and demolition waste from landfill, 10% (by cost) of all construction materials were sourced from within 800km of site and a significant portion of timber products were procured from sustainable FSC certified sources.