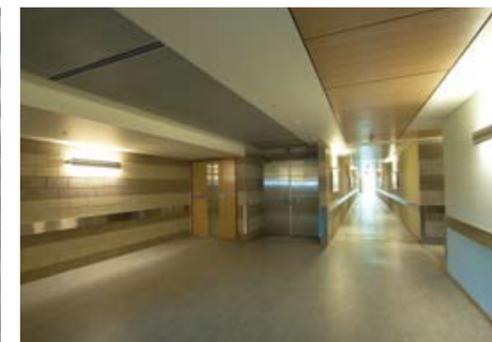
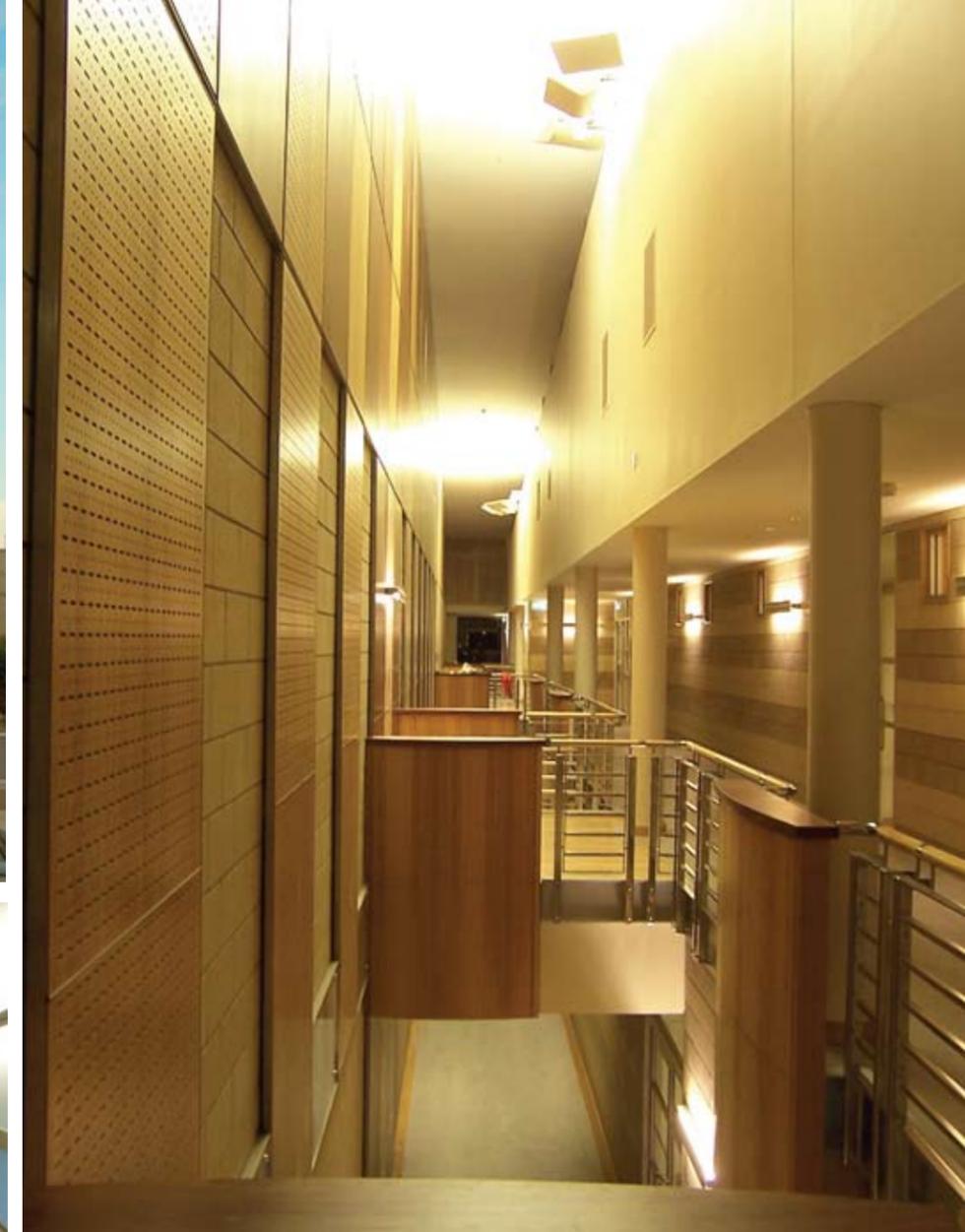


# QLD STATE ARCHIVES



## TRIALING 4D ON QSA2

The expansion of the Queensland State Archives facility presented Laing O'Rourke with the ideal opportunity to utilise Advanced 3D Technologies Australia (A3D) world-leading 4D modelling program and services. A cutting-edge program, which allows the project manager to view past, present and future building models of the project at the touch of a button.

While Laing O'Rourke UK have used 4D modelling, QSA2 was the first use of the technology in Australia for both Laing O'Rourke Australia and the Queensland

Government's Department of Public Works, who used this project as a pilot for 4D modelling.

The 4D program is built on traditional architectural 3D models but also provides the additional element of time to allow the project team and the client to view the building at any stage of construction.

A web-based administrative tool, known as e-Contract which streamlines processes to save time and money, was also piloted on the QSA2 Expansion Project.

QSA2 is a joint project between Queensland State Archives and the Department of Public Works' Project Services and Queensland Government Accommodation Office Units to create storage to meet the future archival needs of Queensland.

The new archival facility adjoins the existing QSA facility at Runcorn and will double the current storage capacity, allowing storage of records from over 600 Queensland public authorities for the next 10-15 years.

The project has a floor area of 11,394 m<sup>2</sup> which will increase the total space of QSA to 23,322 m<sup>2</sup> allowing for approximately 90

linear kilometres of paper based storage as well as provision for future digital archives.

While the facility has a practical functionality, the project included both state of the art and innovative design features.

Bretton Watson, QSA2's architect, won Designer of the Year at the Department of Public Works Services Excellence Awards for the design of the project.

Laing O'Rourke is renowned worldwide for their innovative and dynamic approach and their vision for the Australasian operation is to maximise the opportunities to create something extraordinary with every project.

QSA2 gave them the opportunity to not only trial cutting edge technology programmes but also to incorporate a number of environmental initiatives.

A 3 million litre water tank, 20 metres high and 15 metres in diameter was constructed to store chilled water for the air-conditioning system.

A water harvesting system is also installed to harvest water from the roof areas and car park surfaces for re-use in air conditioning, irrigation and toilet flushing.

Recycled materials and fabrics were utilised where possible and drought tolerant plants have been selected for the landscaping, which will in turn be irrigated with recycled water from the water harvesting tanks.

Laing O'Rourke had to ensure there was no interruption to the existing QSA service during the construction process and methodologies were introduced to ensure this was achieved at each stage.

The \$36 million QSA2 project is another impressive addition to the Laing O'Rourke portfolio which already includes a number of

landmark public facilities including Darwin Convention and Exhibition Centre, the Domestic Terminal at Brisbane Airport, the extension to Cairns International Airport and the Walsh Bay Theatre Development which is part of a multi-million redevelopment of Walsh Bay on the Sydney Harbour foreshore.

Laing O'Rourke is a privately owned development and construction company with an operating turnover in excess of A\$7b and more than 25,000 employees worldwide.

In addition to design and construct the company's operations also include development and specialist services.

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The QSA2 project features a number of environmentally sustainable initiatives, which presented Alliance Water Solutions with the ideal opportunity to showcase their capabilities and superior expertise in building purpose-built systems to deliver outstanding outcomes on even the most complex projects.

These initiatives included the installation of pumps and filters to deliver storm water, rain water & recycled cooling tower water to the air conditioning system, toilets and landscape irrigation. This was achieved by using a total of 7 x 27kL poly storage tanks in the basement and a series of pumps, filters and a reverse osmosis unit to deliver recycled water to the cooling towers and treated water to the toilets.

Alliance Water Solutions was contracted to build and supply the highly advanced rainwater and stormwater harvesting reuse system to achieve the project objectives.

This system provides the best operating

## PUMPED TO DELIVER

process available for the water reuse and harvesting system with integration into the BMS system to provide full reporting capability.

Alliance Water Solutions worked closely with other trades to ensure a guaranteed system with full integration and recommended an Enhanced Control System, a PLC control of system for process control rather than a mechanical operation because of the significant advantages.

These advantages include a fully integrated system operation, full BMS monitoring of all functions, water flow monitoring and water efficiency gains by integrating the filter back flush processes based upon flow.

The system features reliable priority control, integration of all the water harvesting and

reuse components and fail safe operation for critical components.

Alliance Water Solutions specialises in the area of pump system controls and designs filtration and recycling systems, storm water harvest and reuse systems and sterilisation system to suit all commercial, industrial and domestic applications including food process facilities, waste water recycling for factories, truck and car washes.

### Alliance Water Solutions

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## GREEN STAR ENERGY LEADERS

The mechanical services industry plays a significant role in designing and constructing buildings, which meet both their clients' demands and the increasing demand of the wider community in regard to environmental issues.

James L Williams, Australia's longest established Mechanical Services Contractor, is at the forefront of this industry development and continues to set benchmarks with its impressive portfolio of projects.

In 2006, James L Williams was associated with Australia's first 6 Green Star energy rated building – Council House 2 in Melbourne, and in 2008 the company is continuing to play a significant role in installing environmentally sustainable initiatives with its work on the Queensland State Archives Expansion Project (QSA2).

James L Williams supplied Air Conditioning

and Mechanical Services for QSA2, which features efficient air-conditioning services which incorporate a purpose built chilled water tank to utilise off-peak electricity.

A 3 million litre water tank was constructed to store the chilled water. The air conditioning system also utilises water from a water harvesting system that collects water from the roof and carpark areas.

QSA2 is yet another example of James L Williams' modern approach to Project Management, which has been at the core of the company's success for over 130 years.

Project progress is constantly monitored against estimated time and cost through comprehensive, integrated computer programs.

In-house expertise is continually and carefully built up as trends in contracting emerge

to ensure the company maintains a highly motivated, talented and highly trained crew who are determined to complete quality projects on schedule.

Through its modern Fabrication Plants, James L Williams manufactures and supplies Air Handling Equipment and Sheetmetal Ductwork to exact standards.

James L Williams continues to display its innovative characteristics, which has seen the company contracted to manufacture, install, commission and service many of Australia's landmark buildings.

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## IMPRESSIVE SURFACES

With Australia's concrete flooring industry still in its infancy, Seal Hard Australia was proud to be selected to supply product for the Queensland State Government's QSA2 project.

Seal Hard Australia is the sole supplier of the world's leading L&M Construction Chemicals and after only two years in operation, the company has assembled an impressive list of clientele including NSW Rail, Ikea, Orion Shopping Centre, Brisbane Airport Corporation, Gold Coast Convention and Exhibition Centre among many others.

With 11,394 m<sup>2</sup> of floor space and long-term usage planned for the building, the selection of the right products which would withstand the services provided by the facility was critical on the QSA2 project.

The Seal Hard Australia products used on the project are world renowned for their beauty, economy, durability and safety features and guaranteed for long life in areas subjected to even the most demanding conditions including fork lift and tow motor traffic.

Seal Hard increases the wear surface strength of concrete floors by penetrating the surface to seal, densify, harden, dustproof and waterproof them.

L&M Seal Hard was chosen for the 2,200 m<sup>2</sup>



undercover car park and FGS Hardener Plus for the three levels of storage areas with Concord Industrial coatings as the approved applicator.

The project's award-winning architect, Bretton Watson, chose the FGS Hardener Plus for the 6,000 m<sup>2</sup> of storage areas, coloured with the Vivid Free Burgundy Dye and the 550 m<sup>2</sup> of plant rooms with Rock Blue.

L&M Seal Hard is a water based sealer/hardener which has a 10 year plus warranty when applied by an approved applicator. The FGS Hardener Plus is a polishing system that enhances concrete with a choice of clear or vivid dye colour.

Seal Hard offers individual solutions for each project with a guarantee of the highest return

on investment with time-proven products and processes.



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