

A STUNNING NEW DESTINATION FOR NORTH QUEENSLANDERS

The \$180 million Stockland Townsville redevelopment is being completed by Laing O'Rourke under a design and construct contract.

MAIN CONTRACTOR : Laing O'Rourke Australia
CLIENT : Stockland
ARCHITECT : Powell Dods & Thorpe Pty Ltd
STRUCTURAL/CIVIL ENGINEER : MPN

PROJECT END VALUE : \$106 Million
SURVEYOR : Brazier Mott
COMPLETION : November 2012

As the major centre for commercial, Defence and industrial activities in North Queensland, it is fitting that the newly redeveloped Stockland Townsville is now the largest retail development in the region. Located at the junction of the Bruce Highway and Ross River Road, two of the busiest roads in North Queensland, the \$180 million redevelopment is being completed by Laing O'Rourke under a design and construct contract. The centre is now the largest retail development in the region, and involved the creation of new retail areas to the western side of the existing site as well as refurbishment of substantial areas of the existing centre.

The redevelopment creates a spectacular new retail centre, with a distinctive architectural profile designed in-house by Stockland Design in conjunction with pdt Architects, that adds a dynamic element to the urban fabric of Townsville. The completed project will deliver an increase in the shopping centre's gross lettable area from 32,422 m² to almost 46,000 m², comprising 55 new specialty stores, two new malls, a food court precinct, a 12,000 m² Myer store (the first in the North Queensland region), and a new 4,200 m² Woolworths supermarket. The construction of new car parking, including a new multi-level car park, has created hundreds more car parking spaces, and the new centre also features an architecturally innovative bus interchange, 'The Verandah', for public transport users.

Stockland Townsville has been designed to high environmental standards, which are mandated through its retail sustainable development policy. The project has achieved a Four Star Green Star Retail Design v1 rating by the Green Building Council of Australia and is registered for an As Built rating which should be finalised early 2013. The centre incorporates a number of environmentally sustainable features including:

- A 40% reduction in greenhouse gas emissions compared to the standard practice benchmark with programmed, energy efficient lighting and efficient air conditioning plant with variable speed drives.
- Water and energy submetering systems to ensure building performance can be tracked and continually monitored and optimised over time.
- Extensive commissioning of all building services to ensure equipment is operating efficiently and as designed.
- Improved air-quality through increased fresh air, low volatile organic compound paints and sealants and low emission plywood, particle board and MDF.

- Reduced water consumption through rainwater collection and reuse and water efficient bathrooms with high WELS rated fixtures and fittings
- Bicycle facilities for staff and shoppers.

In addition, the project was awarded an AusIndustry Green Building Fund grant by the Federal Government Department of Innovation, Industry, Science and Research for the implementation of sustainability initiatives throughout the existing centre.

As part of the goal of creating a quality shopping destination, Stockland Townsville also includes an interactive 'MyFunland' play area for children and state-of-the-art parent's rooms, making it a great place for families, friends, parents and children to come together.

The redeveloped Stockland Townsville represents a significant investment in the future of the region by Stockland, and has already made a positive contribution to the regional economy through the creation of 660 jobs during the construction, 400 new retail jobs and an estimated 1000 further flow-on jobs across the broader community.

The first stage of the redevelopment of Stockland Townsville involved the demolition of the pre-existing IGA supermarket, CBA building and an existing multilevel car park. Approximately 37,000 tonnes of material was removed from the site, with Laing O'Rourke achieving a diversion from landfill figure of more than 80 per cent for the waste materials such as concrete, steel, bricks and copper.

One of the requirements for the construction stage was the continued operation of the shopping centre. Laing O'Rourke needed to manage construction from both the safety and logistical perspectives in a manner which minimised both risk and disruption to retailers and the public. They also had to factor in restrictions on space for storage of materials, take care with the timing of deliveries, and implement traffic

management measures as access routes into the Centre changed as works progressed. Community information and signage were also used to inform shopping centre users of changes to parking areas, entrances and overall traffic access.

The construction proceeded throughout 2010, 2011 and 2012, with the new car parking and Woolworths opening in December 2011, the new food court in mid 2012, a new link mall, and the final stage, the Myer and a second new mall dedicated to fashion all opening in October 2012.

As part of the goal of creating a quality shopping destination, the new Stockland Townsville includes an interactive 'MyFunland' play area for children, and state-of-the-art parent's rooms. Other notable innovations included in the redevelopment are a Park Assist parking guidance system, and free wifi for customers.

Stockland have also acquired the Centro Centre across Ross River Road, which is anchored by Coles and Kmart, and made it part of Stockland Townsville Shopping Centre.

Stockland has been completing multiple projects around the nation, including the Stockland Merrylands redevelopment in Sydney's outer west completed in October 2012. Redevelopment works are currently underway at Stockland Shellharbour, 20 km south of Wollongong, and there are new retail centres under construction, including at the Stockland Highlands project on the north western outskirts of Melbourne, which combines a retail centre, a substantial residential subdivision and community infrastructure and facilities.

One thing is certain – Stockland are building a solid, sustainable future for the communities they serve.

For more information contact Stockland Brisbane office, Andrew Hay, Level 4, 99 Melbourne Street Brisbane 4000, phone 07 3305 8600, fax 07 3305 8702, email: geninfo@stockland.com.au



EXPERTS AT SEEING WHAT LIES BENEATH



Identifying what lies beneath the surface of a site or built asset, such as live cable, services or asbestos requires highly specialised technical assistance, like the services Abscan Building Consultants provided for the Stockland Townsville redevelopment. Abscan used the latest technology, including ground penetrating radar, concrete scanners, air monitoring and gas detection equipment to identify a range of risks, allowing builder Laing O'Rourke to instigate mitigation or management measures, and safely proceed to completion.

Abscan's drafting of their findings also contributed to the final as-built survey data for the project, and assisted in achieving the project's high ESD, particularly in regard to identification and safe removal of hazardous materials.

"We provided air monitoring for asbestos fibres, and consultancy services when the subcontractors were removing both the friable and bonded asbestos," said Abscan Director, Stephen Malcolm.

"Our team spent 18 months on the project from early works stage through to near completion. One of our initial tasks was undertaking dilapidation surveys, and identifying areas for demolition. We also undertook 1.1km of footpath survey around the perimeter using ground penetrating radar to identify cables, pipes, drains, sewer, water, and, for Optus, the optic fibre cable locations. The radar not only identifies location, it also pinpoints the exact depth of the services and cables.

"Our service brings together all the existing information, including DIG data, and then ground truths it. We also prepare the Management plans and other relevant documentation, and provide hygienist and supervisory services.

"Other services we provided for this project included detailed concrete scanning of the structure to identify all cables, plumbing, services and the location of post-tensioning cables in the slabs. It was extremely important, for example, that electrical cables were identified before concrete cutting took place."

Abscan operate at the forefront of building forensics, and use leading-edge technology in preparing building reports and audits of built assets and project sites. The company also provides Toxic Mould assessments for residential and commercial structures, with laboratory testing available for mould samples. Their expertise is also invaluable when things go wrong, as they can prepare Expert Witness Reports for court proceedings when a building dispute arises.

Abscan has many decades of construction industry experience informing their approach to their survey work, and are committed to continually enhancing their skills and the level of service they can provide.

"The services we provided to Laing O'Rourke on Stocklands Townsville are a good example of the wide range of technologically enhanced audits and assessments that our company can undertake. These types of high-end, technically driven auditing procedures are becoming more commonplace in the building and construction industry, and Abscan's methods are at the leading-edge in this area of consultancy expertise," said Stephen.

For more information contact Abscan Building Consultants, PO Box 184 Belgian Gardens, QLD 4810, phone 07 4721 5244, fax 07 4721 4607, email: admin@absacan.com.au

GUIDING PROJECTS TOWARDS THE GREEN STARS



Forward-thinking retail developments pursue Green Star goals. For a project like Stockland Townsville, the key to success is the best possible coach. Viridis E3 specialise in assisting projects in achieving cost-effective environmentally sustainable development outcomes. With their extensive track record on leading Green Star projects around Australia, and in-depth knowledge of the green retail sector, Viridis E3 assisted the Contractor, Laing O'Rourke throughout the design, construction and commissioning stages.

Stockland Townsville was awarded a 4 Star Green Star Retail Design v1 rating in June 2011 and is targeting a 4 star Green Star Retail As-Built v1 rating. Viridis E3 provided Laing O'Rourke with ESD and Green Star strategic advice, mentored the project's Green Star Accredited Professional (GSAP) and provided expert peer reviews of the Design and As-Built Green Star submissions to the GBCA.

"Viridis E3 staff have extensive expertise in assessing Green Star Submissions for the GBCA. It is our policy to be very rigorous in our review process, and we believe that this approach allows project teams to address all possible issues that may be raised by the GBCA Assessor(s) in the formal Assessment, thus greatly reducing the risk involved with each credit," said Viridis E3 Project Director and Technical Advisor, Jonathan Dalton.

"Viridis E3 work closely with the design team and construction teams to ensure that all Green Star items are addressed appropriately to maximise the points for certification. Using our specialist document tracking system we provide accurate reports of points being targeted and where points are at risk." The company also undertook subcontractor Green Star inductions, introducing subcontractors to the requirements of Green Star projects and documentation, and providing templates and examples. Some of the specific ESD aspects of the Stockland Townsville Project include an 80% reduction

of demolition and construction waste to landfill; 31% reduction in water consumption; improved indoor environment; efficient HVAC systems; and independent commissioning of the building systems to improve operational efficiency and minimise losses.

Viridis E3 provide an extensive range of services to assist projects in achieving best possible quality and ESD outcomes. The Viridis E3 consultancy team includes specialist staff, who provide a range of project and business development, training and research as well as technical engineering and environmental advisory services. Viridis E3 won the 'ACT Telstra Business Award 2010 – Innovation', and Rory Eames also won the 2011 ACT Future Leader Award.

Key projects Viridis E3 have assisted include Orion Springfield Town Centre – Stage 1 (Mirvac QLD) – the first Australian retail centre to receive a Six Star Green Star rating; Santos Place, Brisbane – 6 star Green Star Office As-Built rating; HQ, Leighton Contractors HQ, Brisbane – 6 star Green Star Interiors rating; Sirius Building, ACT – As-Built 6 Star Green Star rating; Trevor Pearcey House, ACT – the new head office for Australian Ethical Investment and the first 6 star "World Leader" Green Star rated building in the ACT; and 8 Brindabella Circuit, ACT – the first 5 star "Australian Excellence" Green Star building in Australia.

For more information contact Viridis E3, contact Jonathan Dalton, Brisbane Office: L1, 16-20 Walsh St Milton QLD 4064, phone 07 3369 5009. Contact Kristie Martin, Canberra Office: L2, City Walk Centre 2 Mort St Civic ACT 2601, phone 02 6285 2388. Contact Warren Overton, Melbourne Office: 3 Lileura Ave Beaumaris VIC 3193, phone 03 9938 7711. Contact Rory Eames, Sydney Office: Suite 304, 147 Kings St Sydney NSW 2016, phone 02 8064 9965

AN EXCELLENT APPROACH TO PRECAST

Producing excellence in precast concrete is only part of what makes XL Precast a leader in their field, engineering ingenuity also comes into play, resolving multiple challenges on projects such as Stockland Townsville.

XL Precast (XLP) manufactured and installed all the precast wall panels and floor panels for the retail centre, producing over 200 wall panels in three months at their 3,000m² manufacturing facility. The panels for the Myer store required a special formliner in the distinctive corporate style. XLP uses innovative techniques to achieve a high quality finish, with panels cast on polished steel beds and magnets used so as to not affect the finished face of the panels. This results in time savings, and with any finishing completed at the precast yard, usual site works are significantly reduced.

Innovation also made for more efficient delivery, as XLP's director has designed a custom-built loader for the panels which is the only of its kind in Australia, allowing for the manufacture and delivery of larger than normal panels, and cutting the number of delivery trucks going to site.

Installation of the panels at Stockland Townsville was periodically staged over six months, achieving a safe and timely completion. The ability to meet the constantly changing site requirements became a strong benefit for precast.

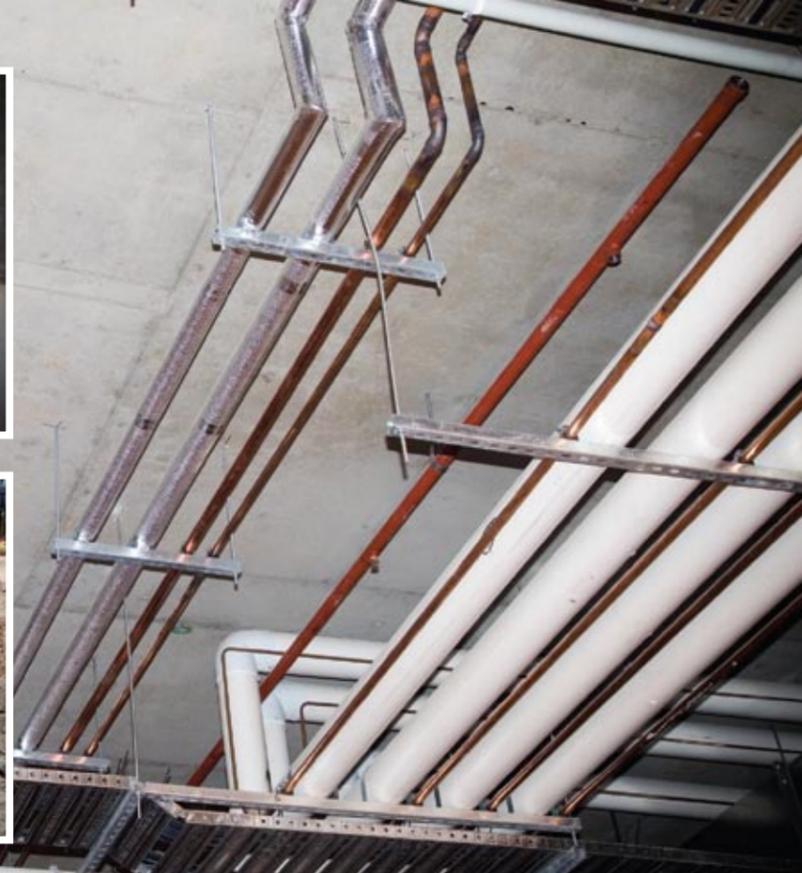
"XL Precast was specifically selected for this project for the high quality of panels we produce, having previously completed Stocklands Northshore project," said XL Precast Project Coordinator, Michael Pappalardo.

"We are members of the GBCA, National Code Compliant, and our Brisbane facility is also DMR accredited. We can produce any specialty panel, and have our own precast flooring system for suspended slabs. XL Precast have grown rapidly, expanding into Brisbane, Sydney and Perth. We also in 2011 commenced casting at our new operation in Uruguay, South America."

Other major projects XLP are contributing to include the AIMS Chiller Building for Boulderstone; Lavarack Barracks WONCO Accommodation Buildings for Watpac; 7kms of tunnel panels for the Thiess John Holland JV Airport Link tunnel; and LEAP2 accommodation in Perth for Department of Defence.

With over 35 skilled employees, management with decades of experience in precast concrete construction, plus ample, well-equipped manufacturing facilities, XLP can ensure the highest quality results for every project they undertake. XL Precast are constantly striving to excel.

For more information contact XL Precast Pty Ltd, 80 Shaw Road Shaw QLD 4818, 45 Eaglefarm Road Pinkenba QLD, phone 07 4774 5442, email: admin@xlprecast.com, website: www.xlprecast.com



INNOVATIVE THINKING DELIVERS RESULTS

For Stockland Townsville, Plumbing Design & Drafting (PDD) had to synthesise the project's past, present and future into an integrated design which meets the requirements of project's Four Star Green Star design rating.

The PDD design included over a hundred water meters for cold water, rain water and hot water throughout the centre, including each retail tenancy, plus a smart metering system and leak detection software. There is 30,000 litres capacity of trade waste treatment over six devices, three pump stations, four gross pollutant traps and thousands of metres of piping for water, sewer, stormwater, downpipes, syfonic rain water, fire and gas services.

There is a 40,000 litre rain water storage tank, with the water reused for toilet flushing and washdown, and heatpumps generating hot water for the amenities. Syfonic rain water collection systems have been used extensively, to minimise the impact of the large roof catchments on the Major retailers, by diverting the rainwater.

"The project was particularly challenging due to the existing infrastructure connections. Since initially being built in the sixties, each subsequent expansion made new separate connections to the council infrastructure," said Plumbing Design & Drafting Director, Mark Laverick.

"For example there were four separate fire service connections and associated boosters on the site, each serving a dedicated section of the centre. If there was a fire, the brigade had no idea which booster assembly to set up at, as in some instances hydrants on either side of the mall were boosted from different systems, so the overall fire system had to be addressed.

"Furthermore as the project had nine separable portions each with its own completion date, each portion had to have an operational and compliant fire service. This resulted in significant temporary works, interconnections with

systems and replacement of inferior product. With the increased height of the building a fire pump was also required. Sewer, Stormwater, Cold Water and Gas services were equally challenging."

PDD provide services for projects from small tenancies to complex major projects exceeding \$200 million across sectors including Retail, Education, Commercial, Residential, Industrial, and Aged Care. They have provided their expertise to numerous Stockland projects, including Stockland Rockhampton, Stockland Northshore (Townsville), Stockland Earlville Cairns and Stockland Hervey Bay.

"We have set a benchmark of personalised service and ongoing attention to client needs, and have an unrivalled reputation for creating outstanding hydraulic solutions while managing major design projects to tight programmes and budgets," said Mark. "In this ever changing world it is important for staff to maintain a sound knowledge of design principals, product information, manufacture and design and regulatory frameworks. We do this by regularly attending industry meetings, Conferences, manufacturing plants and expos both in Australia and overseas."

Collectively, the PDD team have over 30 years of onsite construction expertise, over 30 years of design experience and over 50 years drafting experience. All PDD Design Consulting Engineers have a Diploma of Engineering (Construction Hydraulics), and the company is licensed with the BSA (Qld), and a full member of the Association of Hydraulic Services Consultants Australia (Qld Inc)(AHSCA), American Society of Plumbing Engineers – Los Angeles Chapter (ASPE), and Fire Protection Association of Australia (FPAA).

For more information contact Plumbing Design & Drafting, phone 07 5437 7660, email: mail@pdd.net.au, website: www.plumbingdesignanddrafting.com.au

EXPERIENCED AT DELIVERING INNOVATION

Great projects need excellent ideas, like those of DMA Professional Engineers. Their engineering services team made a major contribution to Stockland Townsville's Green Star rating, by providing ESD services from early design stages through to completion, in addition to designing the mechanical services and vertical transportation services. DMA's scope included the Design Development for the Development Application, design documentation relating to Green Star Rating requirements, functional and performance specification for Services and plant, including spatial requirements, and all other critical Services design and interface parameters. They also provided cost planning, inspections during and post-construction, and compliance certification.

As part of their design, all existing air conditioning plant was changed over to chilled water and energy efficiency improved. The corresponding

challenge was achieving this replacement of equipment while keep the centre's air conditioning operational throughout. "DMA is proud to have been involved in another superior Stockland shopping centre project. In particular, we are pleased to have been involved with the Stockland and Laing O'Rourke teams that worked so hard to achieve success," said DMA Professional Engineers Director, Allen Potgieter. DMA is currently at work on a range of projects including the Townsville Hospital Redevelopment; New Children's Hospital Perth as the State's Advisor for Electrical Engineering Service; Stockland Hervey Bay Shopping Centre; and Indooroopilly Shopping Centre Redevelopment.

For more information contact DMA Professional Engineers, Suite 6 / 290 Boundary Street, Spring Hill, QLD, 4000, phone 07 3839 3050, fax 07 3832 5772, website: www.dmaengineers.com.au



FIRE ENGINEERING FOR SAFER SPACES

Fire Check Consultants (FCC) used their expertise in fire safety systems to ensure the redevelopment of Stockland Townsville resulted in a Code Compliant, safer retail centre. FCC also provided engineered smoke management systems, and developed a fire engineering plan for the staged handover of works which ensured everyone's safety during construction.

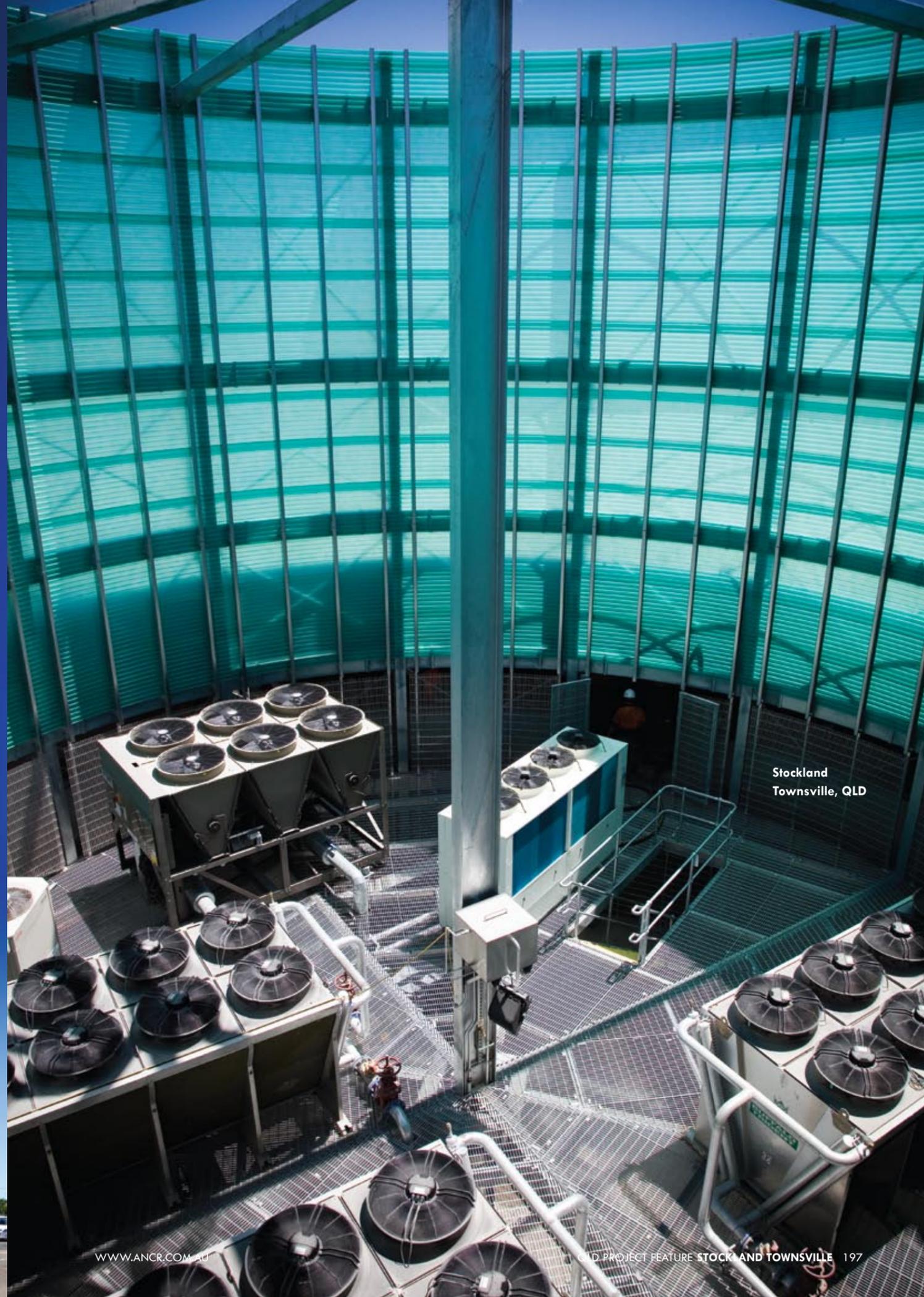
Their analysis involved an expert and scientific approach to fire phenomena and occupant safety risks.

FCC specialise in performance based fire engineered solutions which address Building Code Non-Compliances, fire protection engineering, fire safety audits, resolving unwanted alarm issues and creating asset registers for your building's fire safety systems.

The company was established in 1999, and now services clients across Queensland, with other recent major projects including Brisbane Entertainment Centre, Cairns International and domestic airports, Westfield Carindale and Northlakes shopping centres, Indooroopilly Shopping centre and Eclipse Apartments.

Through their understanding of fire and the use of state-of-the-art computer modeling FCC can deliver innovative and cost effective fire engineering solutions for your project.

For more information contact Fire Check Consultants, Head office: Phone 07 3205 2370, Sunshine Coast, Phone 07 5327 1157, Website: www.firecheck.com.au, Email: reception@firecheck.com.au



Stockland
Townsville, QLD