DOUGLAS ARTERIAL DUPLICATION

MAIN CONSTRUCTION COMPANIES : Seymour Whyte
Abigroup

SURVEYOR : GJCM Surveys
PROJECT END VALUE : $110 Million
COMPLETION : December 2011

EXTREME WEATHER CAN'T BEAT A GREAT TEAM

In addition to the usual challenges of a major civil construction project such as rivers to cross, traffic to manage and deadlines to meet, the Douglas Arterial Duplication (DAD) project Joint Venture team of Abigroup and Seymour Whyte also had to contend with the record-breaking wet season and not one but two major cyclones.

The Douglas Ring Road is both one of Townsville's key commuter roads, and a major route for heavy vehicle and commercial vehicle traffic. The completed Ring Road provides a high-speed bypass of Townsville for heavy and commercial vehicles, as well as providing direct access to and from the Port Access Road which is currently under construction. The duplication of the Douglas Arterial, which is Section 1 of the Ring Road, has turned the existing road into a median-divided, four-lane motorway.

Construction has included 5.6km of new road, following the existing Main Roads reservation and alignment of the Douglas Arterial, with two dual carriageways separated by a median or barrier; a three-lane, 250m bridge across the Ross River and Riverway Drive upstream of the existing Vickers Bridge, along with a two-lane bridge over University Creek; and duplication of grade-separated interchanges at Discovery Drive and Angus Smith Drive.

Construction commenced in April 2010, with the Ross River Water around Vickers Bridge closed to all vessels from late May 2010 until after completion to allow construction of the new bridge. The process of bridge construction involved an initial stage of installing silt curtains across Ross River to catch sediment from the construction activity, which included 144 bridge piles. Next, the project team put rock from the Ross River Dam quarry into the river, starting at the Riverway Drive side and extending the bund or rock wall across to the other bank. Four 1200mm pipes, two at each bank, were installed to allow fish to continue to traverse the river.

One of the environmental conditions of the development consent meant the Joint Venture team had to install and remove the bund constructed on the Ross River prior to the start of the wet season. With no platform to place girders using conventional crane methodology a truss was used for installation of the 56 girders over the river. Vegetable oil used in lieu of hydraulic oil in the truss to minimise potential environmental impacts on the Ross River's water quality and aquatic ecosystem. Because the project is being constructed in close proximity to the existing motorway, excavations for the bridge abutments needed to be retained and temporary soil nails have been employed for this purpose. The remaining prestressed concrete girders, between 12m and 34m in length, have been placed using more conventional dual crane lifts, although closing down a major arterial roads as well as the main feeder roads into the hospital have proved challenging.

But of course, it wasn't working with the water below and adjoining work sites which provided the extreme complications, the water falling from above and surging across the ground during flooding potentially threw a spanner in the works program.

"Wet season has been fairly nasty with double the average rainfall for the year in 2010 and five times the monthly average for March 2011. The project has been delayed a few months but excellent preparations for the wet season and cyclones Anthony and Yasi meant very little actual damage to site," said DAD Joint Venture Project Manager, Darren Chilcott.

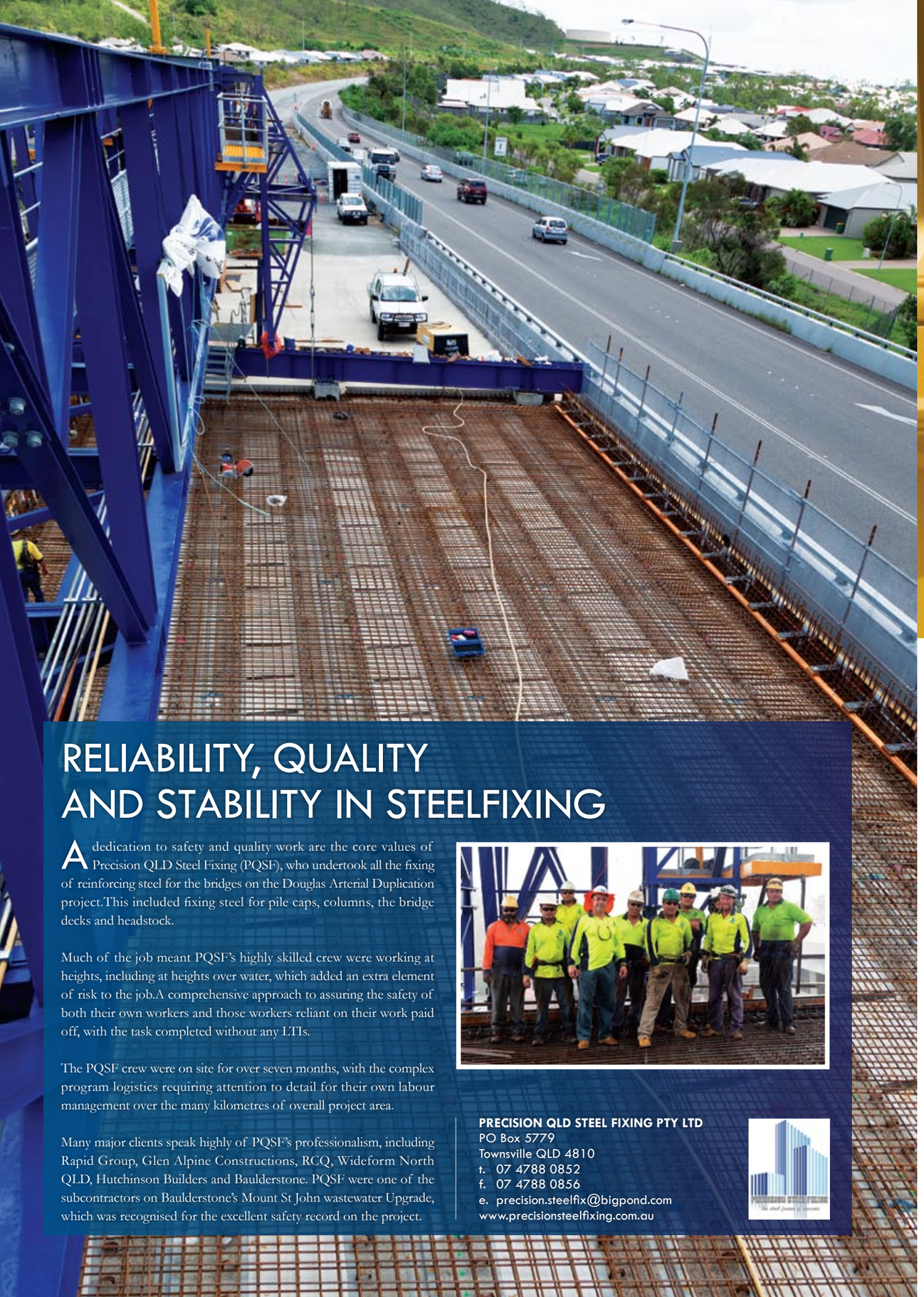
"Another challenge we had was limiting traffic disruptions on the existing motorway to 9am – 3pm."

The Abigroup Seymour Whyte Joint Venture team had around 22 staff directly involved on site, and directly employed another fifty persons in their labour force. Added to this were the multiple subcontractors required for a project of this scope. It is a tribute to the excellent safety management by the team that the project was completed with minimal disruption to the Townsville Hospital, James Cook University and the many residents lining the road corridor, in an environment where there are not only the usual risks of heavy machinery and over water works, but the water also has crocodiles in it, and the surrounding bush some of the world's most venomous reptiles.

The final stages of this $110 million project will be completed by 2012.

SEYMOUR WHYTE
467 Flinders St
Townsville QLD 4812
t. 07 4721 2610
f. 07 4721 0897
e. civil@seymourwhyte.com.au
www.seymourwhyte.com.au

ABIGROUP
52 Walker Street
Townsville QLD 4810
t. 07 4781 0600
f. 07 4781 0699
www.abigroup.com.au



RELIABILITY, QUALITY AND STABILITY IN STEELFIXING

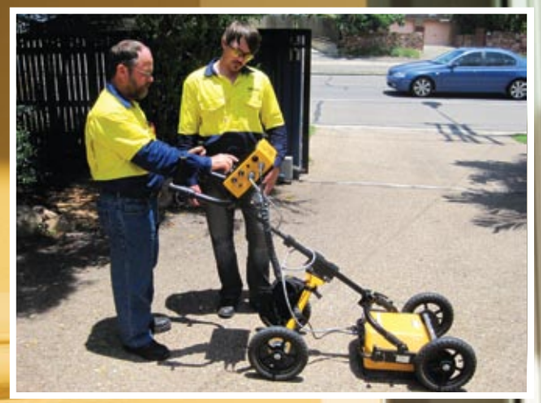
A dedication to safety and quality work are the core values of Precision QLD Steel Fixing (PQSF), who undertook all the fixing of reinforcing steel for the bridges on the Douglas Arterial Duplication project.This included fixing steel for pile caps, columns, the bridge decks and headstock.

Much of the job meant PQSF's highly skilled crew were working at heights, including at heights over water, which added an extra element of risk to the job.A comprehensive approach to assuring the safety of both their own workers and those workers reliant on their work paid off, with the task completed without any LTIs.

The PQSF crew were on site for over seven months, with the complex program logistics requiring attention to detail for their own labour management over the many kilometres of overall project area.

Many major clients speak highly of PQSF's professionalism, including Rapid Group, Glen Alpine Constructions, RCQ, Wideform North QLD, Hutchinson Builders and Baulderstone. PQSF were one of the subcontractors on Baulderstone's Mount St John wastewater Upgrade, which was recognised for the excellent safety record on the project.

PRECISION QLD STEEL FIXING PTY LTD
PO Box 5779
Townsville QLD 4810
t. 07 4788 0852
f. 07 4788 0856
e. precision.steelfix@bigpond.com
www.precisionsteelfixing.com.au



LEADING THE WAY IN BUILDING TECHNOLOGY

To ensure a civil project is not held responsible for sinking foundations adjacent to the works, Abscan Building Consultants can undertake thorough before and after Dilapidation Surveys on properties adjoining major civil construction works like the Douglas Arterial Duplication project. Abscan uses the latest technology, including ground penetrating radar (GPR) equipment, to assess structural deterioration or defects in properties before works commence, and carry out Post-Construction Dilapidation Surveys, to ascertain if the previously audited buildings have sustained any structural settlement or cracking during the course of works.

Abscan surveyed approximately 350 residential houses and apartments, institutional buildings including the CSIRO complex, some of Townsville General Hospital's buildings and structures around the bridge over Ross River.

"It has been a pleasure working with the management at Abigroup Seymour Whyte Joint Venture in providing a successful outcome for the Douglas Arterial Duplication Project," said Abscan Director, Stephen Malcolm.

Where knowledge is a critical safety issue, Abscan provide clear answers, with services including audits for hazardous materials such as asbestos, SMF's, lead paint, PCBs and formaldehyde. They also prepare Expert Witness Reports for building tribunal hearings, and provide fire safety compliance audits and fire safety training.

Their survey services extend below the surface, with the GPR equipment used to identify the location and depth of utilities such as drains, reticulated water pipes, electrical conduits and fibre optic cabling; this information is then generated into electronic drawings for overlaying to the architectural and engineering construction drawings.

Abscan recently prepared electronic drawings detailing underground services and utilities generated from a 500 MHz GPR instrument which was used to survey 1.1km of footpath area to the perimeter of the Stocklands Shopping Centre redevelopment at Aitkenvale. Laing O'Rourke Construction also engaged Abscan to undertake Hazardous Materials Audits and Dilapidation Surveys of the shopping centre, including robotic camera surveys to the underground storm water drains.

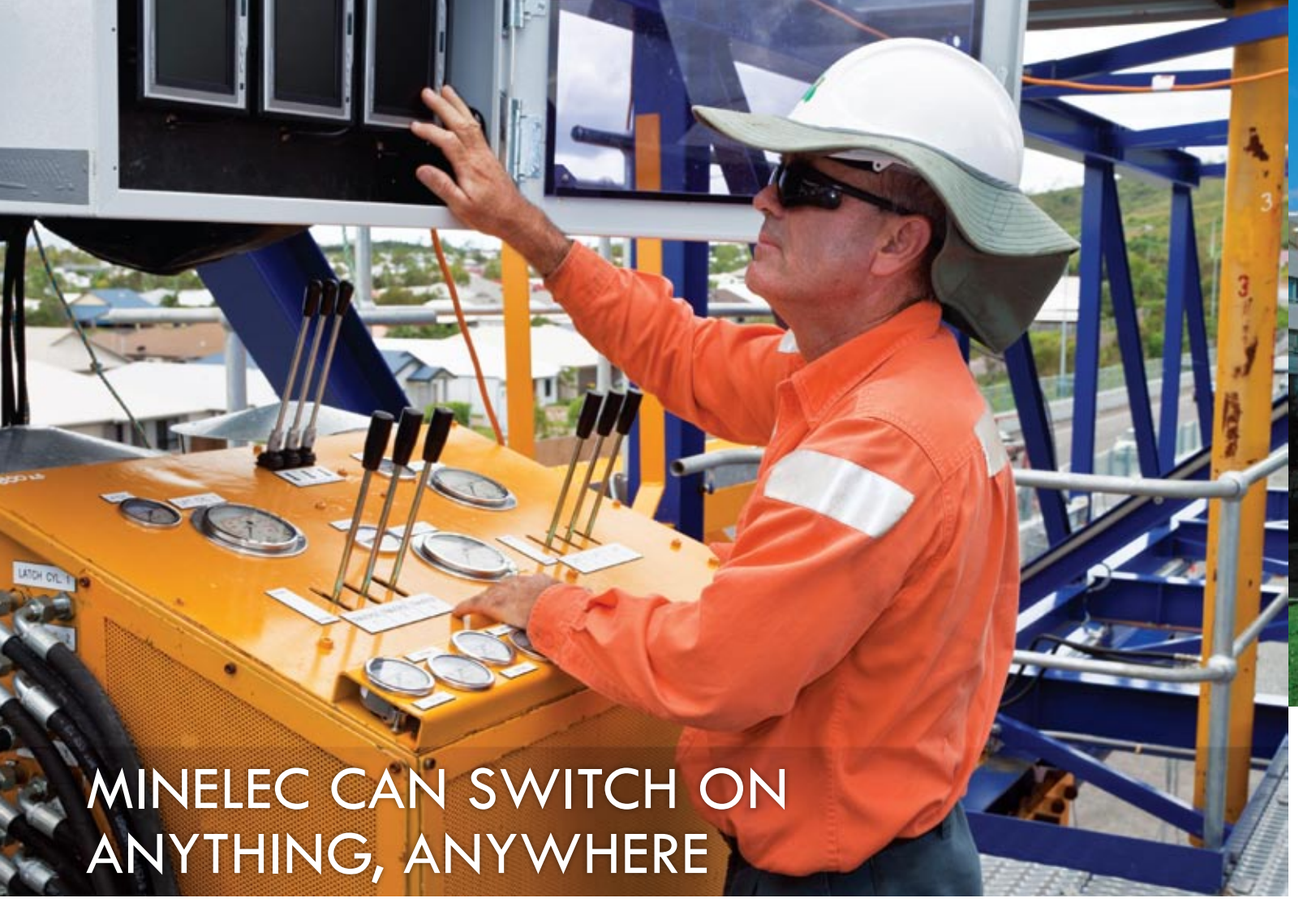
Thiess Pty Ltd has also recently called on the company's expert talents for the arterial Townsville Ring Road Project through the Bohle area, with Abscan undertaking Dilapidation Surveys to the houses and culverts located adjacent to the planned civil works.

Founded in 2002 and drawing on Director Stephen Malcolm's Bachelor or Architecture studies and 30 years experience in compliance audits, Abscan's focus is on providing clients across the development spectrum with the knowledge they need to ensure safe, secure progress on their projects. The company's numerous accreditations include Qld MBA, Asbestos Industry Association and Institute of Building Consultants memberships plus BSA Contractor and Supervisor licenses for Building Design, Building, Building Inspections, Termite Management and Fire Emergency Procedures. Stephen also adds to his list of qualifications registration as a Workplace Health and Safety Officer.

ABSCAN
BUILDING CONSULTANTS

PO Box 184
Belgian Gardens QLD 4810

t. 07 4721 5244
f. 07 4721 4607
e. enquiries@abscan.com.au
www.abscan.com.au



MINELEC CAN SWITCH ON ANYTHING, ANYWHERE

Wherever a project needs to be switched on, Minelec have the skills and experience to safely supply, install and maintain the appropriate electrical infrastructure. With twenty years of experience in their trade, they have tackled jobs in some of the roughest, most isolated and hazardous sites Australia offers, from mining operations in the outback, through to major civil construction undertakings.

For the Douglas Arterial Duplication, Minelec supplied and installed the temporary site power for the project, and also supplied and installed the truss assembly used for bridge construction.

"The truss assembly was a pre-packaged system which hadn't been tested before it was brought to the site," said Minelec Director, Rob Smythe.

"We did the electrical installation, which included the control panels and control wiring, and then undertook the extensive testing and commissioning on site."

Many of the project power set ups were fairly standard, with mains power available. Others required generators, and one site offered particular challenges with getting the load balancing right.

"There was a fair bit of coordinating with the contractor, and with Townsville City Council for locating services."

With services including not only basic electrical infrastructure but also instrumentation, specialist mining equipment such as extractor fans, PLCs for industrial projects and automation, Minelec have an extensive skill set based on the decades of experience held by Directors Rob Smythe, Ben Clive, Matt Richardson and Colin Norris and their long-term staff of 28.

Most of their clients have developed long term relationships with Minelec, such as QNickle, where Minelec has maintained a fulltime crew since 1995.Explosive environments are a speciality, with BOC gases, refineries and many industrial operations relying on their expertise; Other major clients include BMA, Anglo Coal, Rio Tinto, Howdens Australia and Controls Engineering. Major projects have included Argyll Diamond Mines in WA, MacArthur Mine in NT, the new T17 refuelling facility and cargo building at Townsville, and work in East Timor during the reconstruction. Minelec are currently working on the Ammunition Bunker at Live Range in Queensland, and as part of their commitment to giving back to the community, have just completed the electrical work for Ronald MacDonald House and The Townsville Hospital Palliantive Care Facility on behalf of the Cancer Council Queensland, an at-cost basis, also encouraging their suppliers to donate materials to the project.

Minelec have extensive professional accreditations, including being accredited for OH&S by the ECA, accreditation for High Voltage works and Live work; having a fully ratified EBA agreement which is code compliant; and the Green Tick for Defence and Government works. Their philosophy is to be able to supply a diversified range of services to their clients, on budget, and on time, and anywhere in Australia, no matter how remote.

MINELEC PTY LTD
54 Leyland Street
Garbutt QLD 4814
PO Box 7262
Garbutt QLD 4814

t. 07 4728 2111
f. 07 4728 2112
e. sales@minelec.com.au
www.minelec.com.au