

LIFE IN THE FAST LANE

MAIN CONSTRUCTION COMPANY : GC Connect Joint Venture
CONSTRUCTION VALUE : \$78 million



The \$78 million upgrade of the Smith Street Motorway and Olsen Avenue Interchange reached practical completion in June 2015, four months ahead of schedule.

GC Connect Joint Venture — a joint venture between Seymour Whyte Constructions and WSP | Parsons Brinckerhoff — designed and constructed the project as part of a \$119 million package of progressive road upgrades for the Gold Coast Health and Knowledge Precinct being delivered by the Queensland Department of Transport and Main Roads.

With around 100,000 vehicle, pedestrian and cyclist movements at the Smith Street Motorway and Olsen Avenue interchange each day, a series of staged road upgrades and improvements was required to provide access to the Gold Coast University Hospital, cater for significant expansion of the Griffith University Gold Coast Campus and service the Gold Coast's first light rail public transport system – G:link.

The structure of the design and construct joint venture was unique—both constructor and designer shared the risks and opportunities which allowed for a greater focus on collaboration and delivery through the design and construction phases.

Construction was divided across four separate work zones with the most complex staging required at the interchange, to maintain access for a large volume of traffic, pedestrians and cyclists.

The project scope included:

- Construction of a free-flowing loop ramp from Olsen Avenue onto the Smith Street Motorway westbound.
- Construction of an auxiliary lane eastbound on the Smith Street Motorway using the existing road formation.
- Widening sections of the Smith Street Motorway and Olsen Avenue from four to six lanes.
- Widening and lengthening the eastbound off-ramp to Olsen Avenue from three to five lanes.
- Construction of a new signalised intersection for access to the Parklands mixed-use development site.
- Construction of shared footpaths, signalised pedestrian crossings and on road cycling provisions throughout the interchange.
- Resurfacing works in both directions on the Smith Street Motorway and Olsen Avenue.

A key feature of the upgrade was construction of a third eastbound lane on the Smith Street Motorway; however this presented one of the most significant construction challenges. In order to accommodate a third lane within the existing road formation, a 2km section of concrete median barrier needed to be removed.

The median contained a fibre-optic cable delivering essential communications services to the Gold Coast University Hospital, Griffith University, City of Gold Coast and Department of Transport and Main Roads. The project team managed to successfully remove the barrier quicker than programmed, with no impact to the fibre-optic cable.

Despite experiencing a significant amount of rainfall during the construction period, the construction program was maintained and the project completed ahead of schedule.

Both partners in the joint venture have an extensive presence in Australia. Seymour Whyte, a diversified Australian contractor, is listed on the ASX and provides infrastructure services to the transport, utilities and resources sectors. Seymour Whyte have recently been awarded the \$33 million contract by Queensland Department of Transport and Main Roads to upgrade the Pacific Motorway, Exit 54 Interchange at Coomera.

WSP and Parsons Brinckerhoff have combined and are now one of the world's leading engineering professional services consulting firms. Together they provide services to transform the built environment and restore the natural environment. Their expertise ranges from environmental remediation to urban planning, from engineering iconic buildings to designing sustainable transport networks, and from developing the energy sources of the future to enabling new ways of extracting essential resources.

WSP | Parsons Brinckerhoff, is one of the principal designers to the Nexus consortium, who were recently announced as the preferred tenderer for the \$1.6 billion Toowoomba Second Range Crossing Project in Queensland.

For more information about the upgrade visit www.tmr.qld.gov.au

GOOD VIBRATIONS

Upgrading the Smith Street Motorway on the Gold Coast required expertise in vibration engineering. ATP Consulting Engineers worked with Seymour Whyte construction team to develop and implement a construction vibration monitoring program for the overall project.

The focus of the monitoring program was on the high impact construction activities such as piling and ground compaction near the recently constructed Gold Coast Light Rail (GCLR) bridge in the vicinity of the University Hospital. ATP used the latest generation of VIBRA vibration loggers, manufactured in Holland, to monitor the ground vibration near the pylons of the bridge.

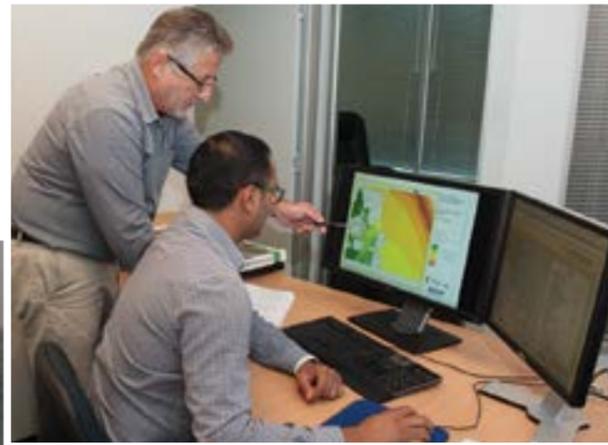
“We were monitoring in real time while the heavy equipment was operating,” says ATP Founder and Managing Director Sasho Temelkoski. “Throughout the construction, he adds, the ground vibration levels remained within the accepted and safe levels for prevention of damage to structures.”

ATP also carried out vibration monitoring on the structure of the Olsen Avenue Overpass Bridge to determine the dynamic behaviour (displacement) of the existing bridge under typical traffic flow conditions. The bridge was being widened and the new laneways had to match the level of vibration on the existing bridge. ATP carried out precise measurements of the dynamic behaviour of the old bridge to assist in the detailed design of the new bridge deck.

“An in-situ stitch beam had to be constructed to join the existing Olsen Avenue Overpass Bridge with the bridge widening deck, if the vibration rate does not match, the bridge lanes would break apart,” notes Temelkoski.

ATP is a specialised noise and vibration consulting firm that provides noise and vibration monitoring for the construction, transport infrastructure and the extractive industries. In addition a range of other acoustical engineering services are provided such as: - noise assessments for development approval (DA) applications; building acoustic design (BCA compliance) and airborne and impact noise transmission testing; and acoustic design for houses within QDC MP4.4 Transport Noise Corridors.

For more information contact ATP Consulting Engineers, Suite 5, 23 Main Street, Varsity Lakes QLD 4227, phone 07 5593 0487, email admin@atpconsulting.com.au, website www.atpconsulting.com.au



CLEARING THE WAY

PowerClear is a vegetation management company that specialises in servicing the construction, government and utility industry.

PowerClear has been established since 2003 we have built a reputation on our reliability, diversity, quality and the ability to complete the most challenging of projects in a cost effective manner.

PowerClear have become an industry leader in vegetation management involved in road construction and road maintenance contracts offering expertise to the industry covering a wide range of services including but not limited to, large scale clearing and grubbing, specialised arborist climbing crews, consulting arborists, graffiti removal, transplanting, weed surveys, herbicide treatment, power line clearing, asset maintenance works on street/park and roadside vegetation.

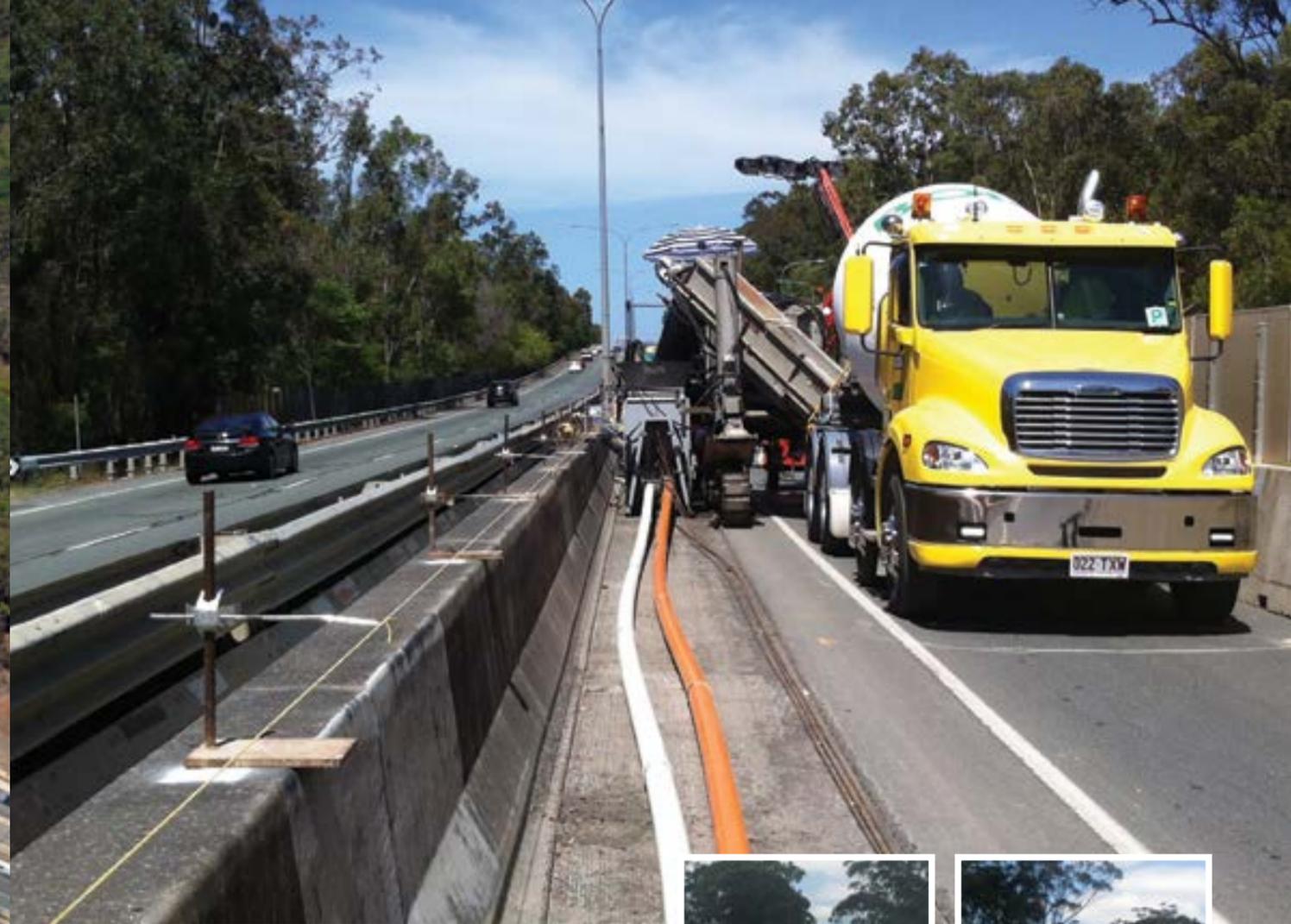
PowerClear was contracted by Seymour Whyte to carry out clearing and grubbing for the Smith Street Motorway upgrade, works included climbing arborist crews to remove trees in confined spaces around roadways, private properties and power line easements. Clearing works under the project had to be completed within tight time frames with multiple stages and in an environmentally sensitive manner due to works bordering on Koala and frog breeding habitat.

PowerClear has the experience, knowledge personnel and a wide array of specialised vegetation management plant and equipment to complete any conceivable vegetation management project.

We strive to offer our clients the most cost effective and highest quality services with an emphasis put on communication with our clients to ensure that we achieve the right outcomes.

For more information contact PowerClear Pty Ltd, 27 William Banks Drive, Burleigh QLD 4220, phone 07 5568 0541, email info@powerclear.com.au, website www.powerclear.com.au

powerclear



DYNAMIC TEAMWORK

Dynamic Excavations initially engaged on the upgrade of the Olsen Avenue and Smith Street Motorway at Southport. Providing specialised underground locating equipment mapping the depth and direction of services such as fibre optic, electricity, gas, storm water and sewer lines networking the project.

Additionally providing services to the project for Hydro Excavation, also known as non-destructive digging and CCTV inspections which internally record the final condition of the network of pipes installed. Dynamic Excavations are currently providing the same specialised array of services on the Pacific Motorway Major Upgrade at Exit 54, Coomera.

Dynamic Excavations are proud of their project involvement and Congratulate the award winning contractors Seymour Whyte on an important major project professionally delivered.

Available 24/7, for more information contact Dynamic Excavations, National Head Office, 41 Harper street, Molendinar QLD 4214, phone 07 5564 8142, fax 07 5539 1948, email admin@dynamicexcavation.com.au, website www.dynamicexcavations.com.au



KERBING KINGS

Major arteries like the Smith Street Motorway often require more than just lines marked on the road surface. Castle's Kerbing built the 1.6 kilometre median barrier wall that divides the recently upgraded Smith Street Motorway.

The project called for a four-foot barrier that met federal road safety specifications. It originally allotted three weeks for building the wall but Castle's did the job in 4.5 days, according to manager, Allan Gregory. Speed was crucial for this project because the work required a lane on the motorway to be closed and that created serious traffic problems.

"We worked round the clock and never turned the machine off," says Gregory. That machine extruded the concrete barrier in place and with the lane closure, the company decided to bring in an extra crew from Sydney to beat the clock.

The Power Curber 5700-B Max, was provided by a Sydney outfit led by Brian Scattergood. With that second crew on the project, the two 8-man teams worked 12-hour shifts. That allowed the work to be completed far ahead of schedule.

Castle's has been in the kerbing business since 1995 and specialises in extruded kerb detail and slipform kerb work. They offer 50 different extruded kerb moulds and 20 slipform moulds. With 24-hour notice, they can also create a mould for specific jobs.

The company currently has 20 employees. Bringing in an extra crew from Sydney for the motorway barrier allowed the company to continue working on its other projects such as the Acciona project in Palmerston.

Initially reluctant to bid on the project, Gregory says Castle's will probably be doing more projects with Scattergood in future. "The joint venture on the Smith Street Motorway worked really well," he adds.

For more information contact Castle's Kerbing Pty Ltd, P.O. Box 2377, Burleigh Heads MDC QLD 4220, phone 07 5533 8333, email castlekerb@bigpond.com, website www.castlekerbing.com.au

