

# A NEW DIAMOND FOR QUEENSLAND

CLIENT : Department of Transport and Main Roads  
MAIN CONSTRUCTION COMPANY : Seymour Whyte  
CONTRACT VALUE VL2B : \$96 Million

The M1 (Pacific Motorway) – Varsity Lakes to Burleigh project was the first of three projects to commence in mid-2020, as part of the 10-kilometre Transport and Main Roads (TMR) M1 Varsity Lakes to Tugun upgrade. The Varsity Lakes to Burleigh (VL2B) section included the widening of the M1 to three lanes in both directions, introducing a fourth northbound lane between Burleigh and Reedy Creek, and the construction of a new diverging diamond interchange. The innovative use of smart technologies has been implemented across the project to reduce ‘stop – start’ travel, and the existing concrete road surface was replaced for quieter travel and easier maintenance.

**Seymour Whyte was contracted by the Queensland Government to deliver the Pacific Motorway (M1) VL2B upgrade.**

The brief involved the widening of a 2km section of the motorway from two to three lanes in both directions, replacing the existing concrete road surface with stone mastic asphalt, extending and relocating the Exit 85 northbound off-ramp by 250m, adding a fourth northbound lane between Reedy Creek (Exit 85) and Burleigh (Exit 87), installing a new shared bike and pedestrian path on the western side of the motorway and installing smart motorway technologies.

Works also included the construction of the Gold Coast’s first Diverging Diamond Interchange at Burleigh (Exit 87).

The interchange boasts several benefits, including synchronised signals to manage traffic movements from one side of the interchange to the other, a reduction in the number of traffic signals that would normally be required at such a busy interchange, a much safer and more efficient interchange arrangement compared to the previous roundabout, improved active transport connections to and from Bermuda Street (Southport-Burleigh Road) and a compact design that uses a smaller footprint than traditional interchange designs.

“The biggest challenge we faced on this project was the traffic itself and the complexity of the Southport-Burleigh Road interchange,” said Seymour Whyte Project

Manager, David Bicknell. “There are 80,000+ vehicles a day travelling in this section of the motorway and we had to keep traffic flowing during construction which meant designing a temporary process that didn’t impact traffic.”

Seymour Whyte delivered a similar upgrade project in Caloundra on Queensland’s Sunshine Coast and brought a wealth of lessons learned to this project to minimise impacts for motorists. “The complexity of the project required over 80 traffic staging sequences to manage the 80,000+ vehicles per day. This provided us with a lot of data and information to productively plan for the VL2B project,” said David. “We developed a new initiative enabling the upgraded interchange to open to traffic at one time, rather than over five staged switches with traffic in various temporary configurations.”

“It meant a lot more planning and running scenarios, but the benefits to the travelling public were worth it,” said David. “The relationship between TMR, the designer and Seymour Whyte was the best I’ve ever been part of in my 30 years in this business. It’s a credit to all involved that each party was prepared to make concessions to find better solutions. Ultimately, motorists and taxpayers benefited from this highly successful collaboration.”

Another highlight of this project was the use of a construction technique called rubbibilisation, linking to TMR’s W2R (Waste 2 Resource) strategy. Specialised equipment breaks up the old roadway into small pieces to make a base

for the new pavement. This saves the expense of transporting the old pavement to a disposal site, and purchasing/transporting new base materials for the replacement paving. The result is a smoother pavement surface than would be obtained if a layer of asphalt were to be applied to the unbroken concrete surface.

“Rubbibilisation is new to Australia,” said David. “It’s a simple concept with a lot of technical elements. Ultimately it saves so much time and energy and the environmental benefits are enormous.”

Seymour Whyte has earned a solid reputation for delivering complex, innovative projects that often include resolving difficult staging, engineering and environmental challenges, logistical constraints and minimising stakeholder impacts.

With offices in Queensland, New South Wales, Victoria and Western Australia, Seymour Whyte have delivered more than 500 projects over the company’s 35 years in operation.

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*For more information visit the Department of Transport and Main Roads*, website [www.tmr.qld.gov.au](http://www.tmr.qld.gov.au) and search under “Projects” for Pacific Motorway (M1) – Varsity Lakes to Burleigh.





**Below** Hazell Bros supplied plant and equipment and operators for the duration of works on the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade

**Hazell Bros were contracted by Seymour Whyte on the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade to supply plant, equipment and operators, working under the direction of the Principal Contractor, Seymour Whyte.**

“We started off with a modest contract for the initial works that grew exponentially over the course of the VL2B upgrade,” said Plant Manager, Brendan Stewart. “We operate extensive workshop facilities and field service units out of our combined office and yard at Burleigh Heads on the Gold Coast, and this proximity to the project has certainly been beneficial in terms of on-the-spot repairs.”

Hazell Bros Plant Hire boasts a late model fleet of quality well maintained plant and equipment with options for wet or dry hire. Our Queensland based fleet includes a range of excavators from 6T to 36T, graders, 25T and 30T articulated dump trucks, D6 dozers and compactors.

“The highlight of these projects has definitely been the great relationship Hazell Bros have forged with Seymour Whyte,” said Brendan. “They are so easy to deal with and we work really well together.”

Founded in 1944, Hazell Bros is a privately owned Australian company specialising in civil construction, plant hire, transport, concrete production, and quarried products with operations in Tasmania, Queensland, South Australia, and New South Wales.

The two business units operating in Queensland and Northern New South Wales are Hazell Bros Plant Hire, which has worked so successfully with Seymour Whyte on the various stages of the M1 Southern Upgrade, and Hazell Bros Queensland the civil contracting business. Hazell Bros offers a wealth of experience and capability in the construction of major roadworks from central Queensland to Northern New South Wales.

“Working in conjunction with our plant hire business, we are able to self-perform the majority of the projects we undertake. Our plant operators are some of the best in the business, which is why they continually get repeat business with the likes of Seymour Whyte,” said Justin Leslie, Hazell Bros GM Northern Region. “The internal working relationships developed between our project managers and our plant department means we can allocate resources to any project with confidence, knowing we’ve got the right operator on the right machine to get the job done.”

“With a continued focus on understanding our client’s critical success factors, we’re able to deliver mutually advantageous outcomes for all parties.”

The Hazell Bros ethos is about building strong and enduring relationships with our clients, subcontractors, and suppliers and the company strives to be the supplier of choice with regards to plant hire, road and bridge construction, urban development, landfills, renewables, and mining infrastructure projects.

*For more information contact Hazell Bros, phone 07 5568 8000, website [www.hazellbros.com.au](http://www.hazellbros.com.au)*





**Below** Downer EDI completed the installation of all the electrical and intelligent transport systems, including traffic lights and temporary road lighting.

**DM Roads is an Australian company that provides a range of market-leading services in integrated Intelligent Transport Systems (ITS), Smart City Solutions, asset management, maintenance and capital works.**

Their scope of works for the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade was the installation of all the electrical and ITS (Intelligent Transport Systems). This includes street and road lighting, traffic lights and electronic signs – both temporary and permanent.

“Probably the biggest challenge on this job was meeting the switch deadlines (the temporary changes to design as the project developed) for the Diverging Diamond Interchange,” said DM Roads Queensland ITS Manager, Sam Keim. “It was an awesome team effort and the collaboration between contractors was fantastic.”

“At one stage, we had crews there day and night from Friday through to Sunday ensuring all the deadlines were met,” said Sam. “We create and deliver solutions to our customers’ challenges through strategic asset management and a leading portfolio of products and services.”

DM Roads is the name of Downer’s road network management and maintenance business in Australia. As part of the broader Downer Group, it’s able to tap into the full capability of the business to provide an unparalleled integrated service offering to deliver better community experiences.

“The focus of our road network management business is to provide services as a partner and trusted advisor to our customers, delivering value-for-money outcomes and efficient networks for road users,” said Sam.

Instead of a one-size-fits-all approach, DM Roads tailor solutions specific to the needs of every customer and location. Rather than simply maintaining the asset, they focus on meeting the needs of road users by adopting the philosophy of road agencies, local governments and road owners.

“We put customers at the centre of everything we do,” said Sam. “By adopting a customer first approach to the services we deliver we are able to ensure that the benefits for road users and the community are maximised.”

The company’s asset management capability provides their customers with the confidence that maintenance activities are being carried out strategically and cost effectively, supported by data driven decision making. The priority is minimising impacts on the network, reducing delay times and enabling smooth and reliable journeys for customers and communities.

DM Roads network solutions are underpinned by industry-leading research, unique asset management tools and a commitment to safety, environment and sustainability through industry awarded Zero Harm programs.

“We are always busier at the backend of a project,” said Sam. “Once everyone else has completed their scope of work the pressure is on us to get the final systems in place and operational in time for the ribbon-cutting.”

DM Roads’ expertise has been developed over more than 20 years and has helped make the company Australia’s largest road maintenance provider. They manage 28,000kms of road across Australia, under 17 different contracts – amounting to half of all managed road networks.

DM Roads works with many of Australia’s state road authorities, large road operators and local government councils. However, private industry is able to capitalise on established systems to deliver far-reaching benefits across a range of disciplines and areas. This includes improved safety and quality of the road network, employment opportunities and skill development and support of local industry.

*For more information contact Downer EDI Works, 60-62 Qantas Drive, Brisbane Airport QLD 4008, phone 07 3348 9847, website [www.downergroup.com](http://www.downergroup.com), [www.dmroads.com.au](http://www.dmroads.com.au)*





**Below** Recent UDCS projects, supplying temporary lighting designs that met code requirements and reduce disruption for road users.



**Below** Recent PowerClear works, utilising a combination of clearing excavators and grinders, as well as their height access arborist crews.



UDCS Consulting is an innovative Brisbane-based electrical engineering company delivering quality services to the energy and civil construction sectors. The company provided the temporary lighting designs for the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade.

“A key feature of our temporary lighting solutions is that they are constructible and fit-for-purpose,” said UDCS General Manager, Craig Bryant. A temporary lighting plan works in partnership with the temporary traffic management plan (which was developed by Roadnet) to provide seamless and integrated visual guidance.

“Imagine you are driving through roadworks at night,” said Craig. “The temporary lighting identifies changes in the road for drivers to navigate their way through. The best lighting scheme is one the driver never notices.” Quality temporary lighting design ensures there is limited glare in drivers’ eyes and that code requirements are met.

Other variables to consider include: Can existing lighting be used? Where is the power source? Is solar an option?

“Last minute alterations to a traffic switch means we have to scramble

to get new lighting in place,” said Craig. “We understand construction requirements and aim to provide an agile service to meet changing requirements as they arise.”

Close liaison between UDCS and the traffic management team is required at all times. “The traffic management team was awesome to work with,” said Craig. “They would take on board our recommendations to modify designs where needed to maximise sustainability (by using solar), efficiency and flexibility for traffic switches and staging. Its really about optimising long-term traffic planning and staging.”

UDCS Consulting has provided designs for electrical installations from simple lighting and signal schemes to commercial HV substations and transmission lines since 2002. The company is built around a core of highly qualified individuals from the electrical industry who pride themselves on delivering quality projects ‘on time, and on budget’.

UDCS also has Queensland Electrical Safety Office endorsed HV Auditors on staff, for any high voltage auditing and inspection needs.

*For more information contact UDCS Consulting*, phone 07 3260 6009, mobile 0432 266 020, email [info@udcs.net.au](mailto:info@udcs.net.au), [www.udcs.net.au](http://www.udcs.net.au)

Based in Burleigh Heads, Queensland, PowerClear is an Arboricultural contractor servicing local, state and federal government organisations and the infrastructure construction sector. On the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade Powerclear was contracted for the clearing and grubbing of vegetation.

“This was a good project to work on,” said PowerClear Owner and Arborist, Campbell Brooke. “There were some steep batters and swamping lowline areas that challenged us, but overall it went really well.”

PowerClear used a combination of clearing excavators and grinders, as well as their height access arborist crews including rope access to complete the job.

Established in 2003, PowerClear has grown to become much more than your average tree service company. Now running up to 100 full-time staff, they thrive on bigger and more difficult projects and can offer a range of services to clients all over Australia.

PowerClear owns, operates and maintains over 150 pieces of heavy-duty, state-of-the-art machinery. From truck and chipper, stump

grinders, elevated work platforms, water knife and hydro excavation units, air knife and soil injection units, water trucks – small, medium and large, zero turn mowers and slashers, tub and horizontal grinders, forestry mowers including excavators, tractors and skid steer, excavators with grapples and stick rakes, skid steer loaders with grapples and stick rakes.

PowerClear brings with it a holistic approach to the arboriculture industry. They provide a full suite of inhouse services to complete a project from start to finish.

“We also have a strong horticulture and landscape services team,” said Campbell. “PowerClear owns and operates its own timber mill and mulch trommel. This equipment enables us to recycle 100% of by-products that are produced from our tree pruning and removal works.”

Current projects PowerClear is working on include the Pacific Motorway (M1) upgrade – Palm Beach to Tugun, M1 Pacific Motorway Exit 41 Interchange Upgrade and the Tweed Valley Rail Trail.

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**Below** Conplant provided specialist compaction equipment to the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade, which use specialised vibration technology.

**Below** Lantrack worked as the preferred supplier for the disposal of materials and supply of trucks onsite.



**Conplant is an expert in compaction equipment solutions, hire and sales, and were contracted to provide specialist compaction equipment to the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade.**

Conplant often has its 18 tonne multi-tyre rollers, the 38 tonne multi-tyre rollers (which are a specialty roller, and when fully ballasted the largest roller in the Conplant fleet), and 10-14 tonne smooth drum rollers on sites around Australia providing compaction solutions for a range of project types.

“The 14 tonne Oscillating Smooth Drum roller has specialised vibration technology that delivers dynamic compaction energy without the ‘up and down’ movement of traditional vibration compaction,” said Paul Zeinert. “It’s perfect for projects near sensitive areas including residential locations, bridges, utilities, heritage listed building works and sandy areas known for suffering damage as a result of vibration.”

Conplant has invested heavily in the latest environmentally friendly T4 engines on the 14-20 tonne padfoot units that were also supplied to the site. “We set up a roller to accommodate the use of a specialist

Z-Grid Shell Kit that is used for rubblisation of rock onsite. Without our diverse range of equipment in our fleet we would not have been able to set aside one specific roller capable of doing the job,” said Paul.

Conplant has more than 1,000 rollers in its hire fleet, a multi-million dollar parts inventory and offers support right across the country.

“As Australia’s largest compaction hire specialist it’s not unusual for us to work on projects like this supplying standard compaction equipment plus specialist equipment other companies don’t have,” said Paul. “It’s how we solve our customers’ challenges.”

Currently the Conplant team is engaged in several works including the supply of rollers for the other stages of the Pacific Motorway (M1) upgrade – Burleigh to Palm Beach and Palm Beach to Tugun, in addition to works on the Cross River Rail and Inland Rail Project in Northern New South Wales.

*For more information contact Conplant*, phone 1300 166 166, website [www.conplant.com.au](http://www.conplant.com.au)

**Lantrak Resource Management sourced and supplied all conforming ‘Class A’ Fill material for the Pacific Motorway (M1) – Varsity Lakes to Burleigh (VL2B) upgrade and managed all transport and disposal of unsuitable materials offsite.**

“The challenge was in managing multiple sources of import fill materials and making sure the materials were suitable for the job,” said Lantrak Business Manager, Mitchell Marsden.

Lantrak has worked on three stages of the Pacific Motorway (M1) upgrade with Seymour Whyte as the preferred contractor of material supply, material disposal and onsite truck hire. “We’ve been successful in meeting the client supply and demand requirements and expectations,” said Mitchell. “As well as managing all of the onsite haulage operations during both the day and night works.”

Lantrak were able to source Class A Fill, a product from a local quarry in Stapylton, that had the right materials qualities needed on this project.

From humble beginnings as a transport cooperative in 1959, Lantrak has earned an unrivalled reputation in integrating material and plant

hire solutions – forming one of the largest material management and plant hire businesses in Australia. Annually moving over 10 million cubic meters of clean fill and structural fill, Lantrak has played a major role in many of Australia’s landmark construction projects.

“Lantrak has specialised knowledge in clean fill sites as well as extensive truck and plant hire and soil management systems,” said Mitchell. “We are the supplier of choice to civil and commercial industries, councils, and government bodies.”

Lantrak has offices located in Melbourne, Sydney and Brisbane and guarantees absolute success with integrated solutions including material capture, supply and reuse, disposal facilities, environmental solutions, truck hire and plant hire.

Current projects include Pacific Motorway (M1) – Palm Beach to Tugun Project upgrade, Cross River Rail and the Brisbane Metro.

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