

UPGRADING A VITAL TRANSPORT LINK

The Cardwell Range Realignment will improve traffic flow and safety on the Bruce Highway. A 4km section of the highway will be upgraded and realigned to reduce steepness. Wider road shoulders will be constructed and the sharpness of curves on the road will be reduced.



Located approximately 15 kilometres north of Ingham in Queensland, is a four-kilometre section of the Bruce Highway which forms a vital link across the Cardwell Range.

Around 3,200 vehicles use this important transport link on a daily basis. Therefore it came as welcome news when it was announced that this section of the highway would undergo a \$115 million upgrade, jointly funded by the Federal Government and the Queensland Government.

The project encompasses the overtaking lane on the southern side of the range through to the bottom of the range, and just north of the Rungoo railway crossing. In addition to improving traffic flow, the Cardwell Range Realignment project is a major safety upgrade to this particular section of the Bruce Highway.

Although the realignment is only a small section of road length-wise, the topography and natural heritage environment of the project site has required the construction of substantial infrastructure, including the

180-metre long, high-level viaduct, one of the centrepieces of the project.

In addition, there has been the construction of the Rungoo railway overpass, which is a critical safety upgrade to the highway. A large cutting through the crest of the range and new access roads to the area's upgraded Hinchinbrook Lookout (providing safer access for visitors to the attraction), also form part of the Cardwell Range Realignment.

The alignment has also reduced the steepness of the Bruce Highway through the range, incorporated wider road shoulders and reduced the sharpness of the road's curves. Slow vehicle passing lanes on both the northern and southern side of the range have also improved the traffic flow, enabling the safe overtaking of heavy vehicles.

The site's location, geology and natural heritage environment, combined with the devastating effects of Cyclone Yasi and rainfall seven times higher than average, all posed great challenges on this major realignment project, which began in August 2010.

However, despite these challenges, all key aspects of the Cardwell Range Realignment have been completed, including the project's main infrastructure such as the viaduct, railway pass and access to the lookout (which will officially opened once the project is complete).

Construction of the Cardwell Range Realignment project is being carried out by the Cardwell Range Alliance, which is a partnership between the Department of Transport and Main Roads and Abigroup Contractors.

Ensuring a minimal impact on this natural heritage area was a huge focus of the Cardwell Range Alliance. The four-lane viaduct, a number of fauna passages including underpasses and canopy bridges, improvement of water quality and extensive revegetation plans were all designed to mitigate the impact on the environment.

Extensive consultation and constant communication and liaison with project stakeholders by the Cardwell Range Alliance has also been integral to the Cardwell Range Realignment project.

The Bruce Highway is the only transport link in the area, therefore liaising with stakeholders, including residents, government and non-government landholders, and road users was essential.

Disruption to the flow of traffic has tried to be kept to a minimum, with the road open throughout the upgrade and advertising carried out throughout the project to provide information to road users.

The Cardwell Range Realignment is now open in its entirety to the public with the only part of the project remaining to be completed is access to and the redevelopment of the Hinchinbrook Channel Lookout with that expected to be complete by October/November this year.

For more information regarding the Cardwell Range Realignment, contact Cardwell Range Alliance on 1300 796 662, email cardwell@ebc.net.au or visit their website www.ebc.net.au/cardwell. Alternatively you can write to Cardwell Range Alliance at PO Box 2447, Townsville QLD 4810.





EXPERT INDUSTRY EXPERIENCE AND INNOVATION



Working on the Cardwell Range realignment project, particularly the impressive 180-metre viaduct - the centrepiece of the \$115-million Bruce Highway upgrade, was always going to be an exercise in innovative thinking for the Walter Wright Cranes' team in Mackay.

However, with significant experience in large construction developments, the realignment project was always going to be in expert hands. "We put a lot of planning into installing the girders for the viaduct and the other bridges for the project," says Walter Wright Cranes' Race Ford.

"For the viaduct, we used a Demag CC2500 450-tonne crane in superlift configuration. After we installed the first spans from the abutments we then moved onto the viaduct girders to install the centre spans. The drama being, we had a 7% down fall and a 5% cross fall on the bridge, coupled with the fact that weight was also going to be a problem when lifting from the bridge spans. "We designed lightweight, in-house, engineered ramps to allow for the down and cross falls, enabling us to set up level on the centre spans."

Walter Wright Cranes also installed the project's other bridges including the Rungoo Rail pass, Hinchinbrook Lookout Bridge and a single-span "enviro" bridge to allow fauna to traverse without traffic interaction. From the company's more than 100 staff (at the Mackay depot), around 10 workers were deployed to the project. A 300-tonne crawler crane, 130-tonne all terrains, 45-tonne rough terrain and a 25-tonne Franna crane were used for various stages of construction. Having been in business for more than 40 years, Walter Wright Cranes Australia, which is part of the McAleese Group of companies, continues to work on a number of large projects.

"We've had projects where we've had 12 to 15 of our 170-plus fleet, onsite," explains Race. "Our team at Walter Wright have extensive experience in the crane field. From offshore jetty/wharf construction, wind turbine installation, dragline erection, mine maintenance, bridge construction and general taxi hire."

Offering wet and dry hire cranes and a full range of services, in addition to its crane operators, Walter Wright Cranes has its own service department with boilermakers and painters, and an onsite engineer.

For more information contact Walter Wright Cranes Australia, 102 Farrellys Road Paget, QLD 4740, phone 07 4955 1477, fax 07 4955 1891, email walterwright@walterwright.com.au, website www.mcaleese.com.au

TEAM ROCK ANCHORS – GROUND ENGINEERING AND ANCHORING SPECIALISTS

Over the past seven years TEAM Rock Anchors has established itself as the leading drilling and ground engineering company for major infrastructure and commercial projects in South-East Queensland.

TRA has earned its reputation as a leader in providing effective, efficient and timely drilling, anchoring and shotcrete works for both large-scale government-funded and commercial developments.

Significant commercial & public building basement contracts completed in TRA's relatively short history include the Police Barracks (Milton), Greenslopes Hospital, Polaris Data Centre (Springfield), U.Q. Oral Health, Empire Apartments (Rockhampton) and stage 2 of 111 Mary / 222 Margaret St. (formerly known as Vision). TRA was recently also awarded the retention system subcontract on the new government building at 1 William Street.

Notable amongst the civil and infrastructure projects in TRA's portfolio are multi-million dollar scopes on the Boggo Road Busway, Airport Link, Clemm 7 tunnel, Hale Street Link (Goodwill Bridge), Centenary Highway, Eastern Busway, Cunningham Highway, Clermont Coal Mine,

Gateway Motorway Upgrade, Ipswich Logan Interchange, Dinmore to Goodna Ipswich Motorway as well as a number of Trackstar projects.

To that list can now be added the Cardwell Range Upgrade. TRA were originally engaged in late 2011 to provide acceleration to the ongoing retention works, which, over the 18 months + that followed, involved significant labour and plant resources, including 6 different drill rigs ranging from high-production rock-drilling tophead machines to our 39 tonne excavator rig, capable of significant reach, both above and below its sitting position.

Our works were completed in June 2013, with the road opening to traffic not long after.

TEAM Rock Anchors is proud to be associated with the Cardwell Range Upgrade project as well as the Abigroup / Cardwell Range Alliance and their skilled project team.

For more information contact TEAM Rock Anchors, 8 Andrew Campbell Drive Narangba QLD 4504, phone 07 3888 6775, fax 07 3888 6114, website www.teamra.com.au



Cardwell Range Roadworks, QLD



CUTTING TO THE CONCRETE CORE



The main challenge for the Townsville Concrete Sawing & Core Drilling team working on the Cardwell Range Realignment project was the requirement to cut a large number of kilometers of cement treated base (CTB) at 550mm deep. This was found to be unusually abrasive on the blades, but the problem was quickly resolved by purchasing an 84 horsepower roadsaw and working with suppliers to produce specially made blades to suit the saw. This enabled the team to use harder bond blades, thereby increasing the metres cut, which resulted in a cost effective way for the team to meet production deadlines.

As the name implies, Townsville Concrete Sawing & Core Drilling specialise in concrete cutting and core drilling, as well as asphalt cutting, wall and floor sawing, wire sawing, ground penetrating radar (GPR), and hydro excavation. The company has been in business for over 15 years, and has a team of 12 highly trained staff, many of whom have been with the company for a number of years.

On several occasions throughout the Cardwell Realignment project, there were 6 concrete cutters onsite to keep up with production demands. In addition to this project, Townsville Concrete Sawing & Core Drilling have plenty of experience on large construction jobs.

The team are currently working on Townsville Port Inner Expansion (TPIX), which involves the demolition of the old Berth 8, construction of the new Berth 8, as well as the construction of the new cruise liner terminal buildings. They are also working on the upgrade and reinforcement of Aplin's Weir for the Townsville City Council. Another recent major project was for the Federal Government at Townsville's Lavarack Barracks Single LEAP (Living Environment and Accommodation Precinct).

As one of the largest concrete sawing and core drilling businesses in the area, Townsville Concrete Sawing & Core Drilling are always able to service their customers and offer their clients a comprehensive and skilled team.

To find out more about Townsville Concrete Sawing & Core Drilling Pty Ltd, give the team a call on (07) 4775 7492.

For more information contact Townsville Concrete Sawing and Core Drilling Pty Ltd, 62 Punari Street Currajong, QLD 4812, phone 07 4775 7492, email brett@townsvilleconcretesawing.com