



Bruce Highway Upgrade, Townsville

The Townsville Southern Access Corridor has received a needed transport boost with the completion of Stage 1 of the Bruce Highway Upgrades. The purpose of this stage was to widen the road by duplicating a seven kilometre section of the highway – running from Vantassel St to Cluden Drive – taking the road from two lanes to four. This project is just one part of the major Bruce Highway upgrades, where 22 kilometres of road will be improved to assist access to Townsville from the south. As well as improved access, the project is set to benefit the community with better safety, capacity, freight efficiency and flood immunity on this stretch of road.

The project presented a number of challenges to National Precast member Humes, contracted to manufacture and supply a large variety of precast concrete components for the build. A tight timeframe due to the Queensland wet season and the susceptibility of the old stretch of road to flooding, both impacted on the project deadline.

A variety of precast products

Prior to Queensland Transport and Main Roads (TMR) giving the contract to Lend Lease, Humes had already supplied 148 precast piles to Queensland TMR to ensure the project would meet the construction deadlines.

Precast manufacturer

Humes

Client

Queensland Transport and Main Roads

Contractor

Lend Lease

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Humes

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This particular stretch of highway featured a bridge over Sturt Creek, which required 34 prestressed bridge decks. The new 27 metre two lane bridge was constructed next to the existing bridge, which was then demolished to then construct a second bridge, providing two lanes for both directions. The two new bridges are higher than the previous one, reducing the risk of flooding and flood damage to the bridge.

540 pipes for a 30 cell pipe structure were also supplied for a stretch of road named 'Cluden Bend'. This stretch of road was particularly prone to flooding, however the pipe structure underneath the highway will reduce the impact of flooding on the surrounding suburb of Cluden. Constructed from DN1800 Class 3 pipe, the structure is one of the largest volume pipe structures ever build in Queensland.

Also incorporated to improve safety is a new four lane rail line overpass near Cluden. As well as making that section of road safer, it will reduce travel time for road users. The overpass was constructed with 105 prestressed bridge decks and large box culverts. These culverts had a 3600 mm span, the widest standard culverts that Humes supply. The culverts were custom designed to withstand the pressure of more than nine metres of fill being place on them.

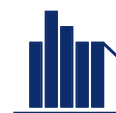
Working with the environment

The surrounding environment had to be taken into consideration for this project, with the precast components needing to withstand the high salinity and low level topography of the area. The precaster used a special mix for the piles to overcome the aggressive saline and marine environment. Exposure class C concrete was utilised for the pipes and culverts to guarantee the products for 100 years and withstand the nature of the environment.

The Bruce Highway Upgrade has allowed Humes to show off their versatility, providing a large variety of precast concrete components. Factoring in the challenging local environment, they were able to provide products for a highway upgrade that is going to help the local area immensely as the country's population continues to boom.

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