



Cabling CLEM7

Australia's safest tunnel

The 6.8 kilometre Clem Jones Tunnel (CLEM7) is one of the largest infrastructure projects ever to be undertaken in Queensland. Built as a solution to Brisbane's inner city gridlock, the tunnel under the Brisbane River, which connects north-south traffic, has five connection points with a sixth planned for the Airport Link in 2012.

Promoted as one of Australia's safest tunnels, CLEM7's range of safety features and systems in the tunnel was designed to provide the safest driving environment possible. Due to the large scale of the project, CLEM7 required an excessive amount of quality communications and control cabling for the communications and traffic management infrastructure.

More than 250 cameras positioned at various locations are monitored 24 hours a day. Should a traffic accident occur within the tunnel, the cameras will provide accurate monitoring which in turn will assist in quick vehicle accidents or breakdown responses and in addition, playback of the footage will help determine the cause of the accident.

Taking control

The individually controlled electronic signage, cameras, traffic signals and messaging are operated by up to 40 technicians from the intelligence heart of this major infrastructure facility - the Tollway Control Centre. Located at the northern end of the tunnel, the interior is similar to something you would see in a futuristic sci-fi movie, with hundreds of visual aids and computer controls.

The people who made it happen

In order to make the cameras and direction and variable speed signs operable, sophisticated high bandwidth communications cables were needed to transmit and receive signals from the Tollway Control Centre and the tunnel. The CLEM7 mechanical and electrical subcontractor, UGL Infrastructure, recruited communications infrastructure and cabling specialist company, Madison Technologies, to supply all of the required copper and optic fibre cables. Madison Technologies has worked with UGL Infrastructure on several Australian projects in the past, including the Sydney Lane Cove Tunnel; and their portfolio of cables deployed throughout traffic management and control systems for most of the major arterial connection roads in south-east Queensland and across Australia has helped build their reputation as a company who delivers solutions on time and within budget.



The project involved liaising with UGL Infrastructure to determine the cabling needs for the tunnel. This was a lengthy process, and as plans changed, so did the cabling infrastructure requirement. A state of the art cabling system was designed, enabling continuity of communications traffic for signalling, speed signs, warnings and other forms of electronic messaging without interruption.

Equal to 23 times the length of the tunnel, the optical fibre cable installed in CLEM7 also needed to be brought to the surface to allow access by the Department of Transport and Main Roads for inspection and testing. In addition to supplying all the cabling, Madison Technologies supplied all of the required connectivity and jointing products, along with specialised tooling to provide a total end to end solution, which ensured the integrity of the entire cabling system.

Using new technology

According to Madison Technologies' Managing Director, the CLEM7 project created the opportunity to introduce a Swiss made product to Australia. The R&M security level 2 socket had never been used in Australia for this type of application. The security feature of the socket ensures that cables cannot be switched over, therefore guaranteeing that a whole system crash cannot transpire.

"Securing this part of the CLEM7 project highlights the fact that Madison Technologies remains the leader in Australia for infrastructure communications solutions," said Managing Director of Madison Technologies, David Redfern.

"The successful on time delivery and under budget supply of the communications cabling system for CLEM7's traffic control and management system is testimony to Madison Technologies' capabilities when it comes to rolling out large scale infrastructure projects" said Mr Redfern.

Clem Jones, a former Lord Mayor of Brisbane after whom the landmark tunnel is named, was the pioneer and a visionary who transformed Brisbane from a sleepy country town into a modern vibrant city through the deployment of essential infrastructure. Acknowledging similarities in communications infrastructure requirements, Mr Redfern added, "We are on the cusp of a communications infrastructure explosion in Australia and Madison Technologies is extremely well placed to participate at all levels. Our innovative approach and our attitude to customer service have been benchmarks of the business since its inception and will continue to be so."