

**Client**

Boulderstone Hornibrook  
PTY LTD (Owner)

Khalil Manssur – Downer  
RML PTY LTD (Contractor)

**Location**

Sydney

**Services**

- Design, Supply,  
Factory Acceptance  
Test and off-site and  
on-site commissioning  
of the Traffic  
Management and  
Control System  
(TMCS)

**Date**

2002

**Key Personnel**

Rex Lee, P.Eng.

Richard Chylinski, P.Eng.

## Sydney Cross City Tunnel Traffic Management and Control System

**Scope of Services**

The Sydney Cross City Tunnel is a 2.2 km twin tube tunnel which runs under the Sydney Central Business District (CBD) with two side tunnels for traffic ingress and egress. The project is a Build Operate Transfer project with a 42-year operational concession. Delcan was contracted by the mechanical and electrical subcontractor Downer Engineering to supply the Traffic Management and Control System (TMCS) software for the project, and system design and commissioning services.

**Project Description**

The TMCS provides incident detection and response plan management of the traffic in the tunnel and approach roadways. The response plan management facility allows the operations staff to easily and efficiently implement traffic management strategies (i.e. closures, speed control). Implementation was carried out via the coordinated control of traffic equipment including lane use signals, three and four line variable message signs in the approaches, variable speed limit signs, single line tunnel message signs, in-pavement lights, barriers, and traffic signals.

The TMCS integrates with several other systems including; CCTV for monitoring and control of cameras; the fire detection system for monitoring of smoke detectors and heat sensors, deluge system, motorist emergency phones and cross passage and niche doors; plant management system for monitoring of air quality sensors; and, public address and radio rebroadcast systems.

The TMCS is also integrated with the Sydney Central Traffic Management System to provide coordinated traffic operations.

**Results**

In addition to the incident detection and response management facilities, the TMCS was provided with an Air Pollution Exposure Time algorithm, which determines the pollution exposure level based on vehicle journey times and the tunnel air quality measurements. The Cross City Tunnel opened in August 2005.

