TRANSPORT & TECHNOLOGY SYSTEMS

UGL

Integrated transport solutions to both government and private sector

Combining innovative solutions with advanced technologies and proven expertise, UGL can deliver a complete technology solution for transport systems. UGL is the leading provider of integrated systems for road tunnels, bus transit ways and other road infrastructure.

Our extensive experience includes the delivery of turnkey electrical, mechanical, fire and traffic management and communications systems for major road tunnel projects in Australia.

Through design, project management, procurement, system integration, commissioning, maintenance and support services our clients are able to meet the most demanding challenges for transport networks.

UGL offers innovative technical solutions for key electrical and mechanical systems: ventilation, fire, hydraulics, lighting, communications, controls, power and intelligent traffic systems.

SUB INDUSTRIES

- Advanced traffic management systems
- Bus tracking and priority
- Bus transit ways and hailing
- CCTV/security
- Integrated control/software
- Integrated tunnel management
- Intelligent traffic management
- Passenger information
- Security systems
- Surveillance management software
- Tunnel communications
- Tunnel electrical
- Tunnel mechanical/ventilation
- Variable speed management signs

Through-life-support

Tunnel & Intelligent Transport Systems

Continuing Maintenance Services

UGL will continue to work with a client to ensure the smooth operation of any system or product we deliver. UGL provides a 24-hour per day, seven day per week hotline to assist clients with service and upgrades.

Airport Link, Brisbane

UGL designed, supplied, installed and commissioned all aspects of the intelligent transport system for the Airport Link

Connecting Brisbane's northern suburbs to the Inner City Bypass and CLEM7 tunnel via an underground toll road, Airport Link comprises two 7 km long tunnels including entry and exit ramps.

Major systems for the project included:

- CCTV and PA system
- Communication backbone
- Database, reporting and computer system
- Fire services and help phones
- HV substations
- Incident detection system
- Lighting
- Plant control and monitoring systems
- Power supply and distribution
- Radio rebroadcasting
- Traffic control and monitoring
- Traffic systems
- Transit way enforcement system
- Variable speed and message signs
- Ventilation

Crossing Traffic Management, Singapore

UGL implemented a computer-based system for the operation and management of traffic at the Tuas and Woodland Border checkpoints

The project comprised:

- Congestion management
- Incident management
- Information to drivers
- Real time traffic detection
- Variable message signs
- Vehicle classification
- Voice interactive response

Eastern Distributor, Sydney

The scope of work involved the design, supply, installation and commissioning of all electrical, mechanical, fibre, supervisory and control systems

UGL was the largest subcontractor employed on the Eastern Distributor Tunnel project

Major systems for the tunnel included:

- Fire services
- Lighting
- Plant control and monitoring systems
- Power supply and distribution
- Radio rebroadcasting
- Traffic control and monitoring
- Ventilation

## CLEM7 (North South Bypass Tunnel), Brisbane

UGL designed, supplied, installed and commissioned all aspects of the intelligent transport system for CLEM7

Clem7 was conceived within Brisbane's Transport Plan to reduce deficiencies in Brisbane's urban road network. The bypass connects north-south traffic under Brisbane via a dual twin-lane tunnel of approximately 4.8 km length.

Major systems for the project included:

- Emergency telephone systems, plant room PABX and public address system
- Fire detection, alarming and suppression systems including deluge and foam
- HV substation and power distribution of a fully redundant network
- Pump station
- Radio re-broadcasting
- Traffic management and control systems including surveillance, incident detection, variable message and advisory signs, moveable barriers and the operations control centre
- Tunnel and emergency lighting systems
- Tunnel ventilation, air monitoring and control systems
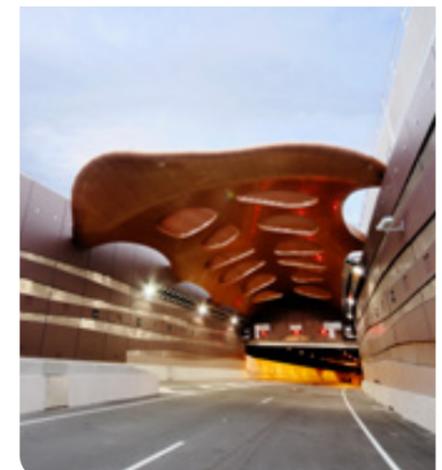
Tunnel & Intelligent Transport Systems

Eastlink (Mitcham to Frankston), Melbourne

Design, supply, instal, commission, electrical and mechanical systems

UGL's scope of work consisted of the design, construction and commissioning of the Road and Tunnel Systems, including:

- CCTV cameras
- Emergency audio break in services
- Freeway lighting
- Freeway surveillance cameras
- High and low voltage electrical systems
- Mobile telephony for multiple carriers
- Operation and maintenance radio
- Operation and management control system comprising tunnel and motorway TMCS and PMCS
- PA system
- Provision of optical fibre backbone network
- Radio rebroadcasting multi-channel AM/FM commercial radio
- Tolling system backbone and integration
- Traffic signals
- Traffic signs
- Tunnel drainage system
- Tunnel fire protection (deluge) and detection systems
- Tunnel lighting
- Tunnel ventilation system
- UHF emergency two-way radio

The Eastlink Project comprised a 42 km motorway, having three through traffic lanes in each direction between the Eastern Freeway and Thompson Road, reducing to two through traffic lanes in each direction from Thompson Road to Frankston Freeway Interchange.

Incorporated into the freeway system is a tunnel comprising twin bore parallel tubes of approximately 1.6 km in length, each bore having three lanes, running from East of Park Road to the West of Deep Creek Road, passing underneath the Mullum Mullum Creek.

Graham Farmer Freeway, Perth

UGL's scope of work involved the design, supply, installation and commissioning of supervisory and control systems

UGL was the subcontractor employed on the Graham Farmer Freeway's Northbridge Tunnel project for intelligent transport system.

Major systems for the tunnel included:

- CCTV system
- Fire services
- Lighting
- Plant control and monitoring systems
- Power supply and distribution
- Radio rebroadcasting
- Traffic control and monitoring
- Variable message signs
- Ventilation
- Video based incident detection system

Inner City Bypass, Brisbane

UGL designed, supplied, installed and commissioned the intelligent transport system portions of the motorway and bus way tunnels

The Inner City Bypass is a 4.5km divided motorway connecting Hale Street with Kingsford Smith Drive, Brisbane. At its western end is a new bus way.

Major systems for the project included:

- Fire services
- Incident detection
- Lighting
- Plant monitoring and control
- Power supply and distribution
- Pump stations
- Radio rebroadcasting
- Traffic systems
- Ventilation

Johnstone Hill Tunnel, Auckland

The project involved the construction of nine culverts, six bridges and a 360 m dual lane twin-tube tunnel at the northern end of the motorway

UGL designed, supplied, installed and commissioned:

- Building services to the tunnel utilities building
- Cross passage pressurisation
- Emergency telephone system and public address system
- Fibre optic link to the Auckland Motorway Control Centre
- Fire detection, alarm and suppression systems
- LV power distribution
- Traffic management and control systems including incident detection, CCTV surveillance, height detection and advisory signage
- Tunnel and emergency lighting systems
- Tunnel ventilation, air monitoring and control systems

Tunnel & Intelligent Transport Systems

Lane Cove Tunnel, Sydney

Design, supply, install and commission rail tunnel systems

The Lane Cove Tunnel is a key link in Sydney's orbital motorway network, connecting the Gore Hill Freeway with the M2 motorway. Lower journey times between the city and Sydney's developing North West region is vital to increased economic productivity.

The project comprised:

- 3.6 km of dual tunnels between Epping Road/M2 Motorway at the Lane Cove River, connecting to the Gore Hill Freeway
- Connections to the M2 Motorway, Gore Hill Freeway, Pacific Highway and Reserve Road at Artarmon
- Motorway Control Centre at Sirius Road, Lane Cove
- Shared cycle and pedestrian linkages
- Ventilation Stations at Marden Street, Sirius Road and an air intake structure at 130-132 Epping Road

UGL's scope included the design, supply, installation and commissioning of the following systems:

- Emergency telephone system, plant room PABX and public address system
- Fire detection, alarming and suppression systems including deluge and foam
- HV substation and power distribution of a fully redundant network
- Provision of optical fibre backbone network
- Pump Stations
- Radio rebroadcasting including multi-channel FM/AM commercial radio
- Traffic management and control systems including surveillance, incident detection, variable message and advisory signs, moveable barriers and the operations control centre
- Tunnel and emergency lighting systems
- Tunnel ventilation, air monitoring and control systems
- UHF 2way radio for emergency audio break in services

M5 East, Sydney

As a part of a major electrical and mechanical fit out UGL designed, developed, supplied, installed and commissioned the traffic and plant management systems for the M5 East tunnels and freeway

Major systems included:

- Fire services and help phones
- HV substations
- Lighting
- Plant control and monitoring systems
- Power supply and distribution
- Traffic control and monitoring
- Ventilation

M7 Westlink, Sydney

UGL designed, supplied, implemented, installed, tested and commissioned the intelligent transport system, lighting and communication backbone

The M7 Westlink is a 41 km long motorway connecting the Northwestern region of Sydney to Southwestern areas.

The project included:

- 220 speed signs
- 58 variable message signs (VMS)
- 750 vehicle detectors
- 80 help phones
- 80 pan, tilt, zoom (PTZ) cameras
- WAN networking services

Along the length of the M7 a redundant fibre ring transports LAN data, video and voice between field devices and the central computer system. The control room provides a fully featured video display wall to assist operators in management of the motorway.

Sydney Harbour Tunnel

Upgrade to one of Sydney's most important assets

The scope of works involved the upgrade of existing traffic and plant control functionality towards a high availability PC-based system, along with replacement of existing LAN. UGL was responsible for the design, implementation and supply of computers, networking equipment, software, installation and integration with existing components plus re-commissioning of the system.

All activities were managed to ensure minimal disruption to the operation of the tunnel.

Liverpool to Parramatta Transitway, Sydney

Transport for NSW awarded UGL the contract to design, supply, install and commission all aspects of the intelligent transport system required

The major components of this project included:

- Bus detection system
- Bus priority system
- CCTV system
- Communication backbone
- Database, reporting and computer system
- Expected arrival time system
- Incident detection system
- PA system
- Passenger information system
- Radio rebroadcasting
- Surveillance and PA system at stations
- Transit way enforcement system
- Variable speed and message signs