

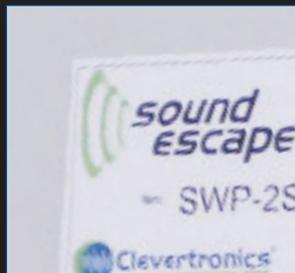


Photo credit: Clevertronics records

## SOLUTION

**Clevertronics Sound Escape products featuring directional/locatable sound dramatically reduce the time for motorists to locate and move to a Cross Passage Exit.**

- Install **Clevertronics Sound Escape units, incorporating directional sound**, at the Cross Passage tunnel points (82 in total) enabling faster evacuation of occupants.
- The Sound Escape units are interfaced to the Tunnel's fire detection, EWIS and PLC control systems to activate specific directional sounders in the event of an alarm to provide guidance to the nearest "SAFE" EXIT.



## CLEM JONES TUNNEL (CLEM7) - BRISBANE, QLD

### BACKGROUND

The M7 Clem Jones Tunnel (CLEM7), known during its development as the North-South Bypass Tunnel (NSBT), is a AUD\$3.2 billion, 4.8km, toll road built under the Brisbane River, which crosses between the suburbs of Woolloongabba and Bowen Hills in Brisbane, Australia.

The CLEM7 consists of two parallel, or twin, tunnels that are approximately 10 meters apart. The two tunnels are connected by 41 cross-passages that are spaced every 120 metres along the entire length of the CLEM7.

### CHALLENGES

A major challenge was how to ensure that in an emergency people would be directed to the entrances of the Cross Passage Escape Tunnels, particularly in low visibility such as in the presence of smoke.

Adequate human behaviour is a life threatening safety issue in time-stressed situations. Additional measures are required to reduce the time for motorists to locate and move to an exit - despite feeling disorientated or with potentially impaired senses in the darkness and smoke.

### RESULTS

- Independent trials in tunnels show that incorporating the locatable sound at exit points improves successful evacuation in smoke impaired situations (visibility 1 -2 metres) from 20% to 90% and of those 98% found the nearest exit point.
- This achieved the desired result being sought by the tunnel operator, namely improving escape provisions to meet the highest modern safety standards.

For the latest product information, IES files & data sheets visit [www.clevertronics.com.au](http://www.clevertronics.com.au)