

CASE STUDY 2.

CLEM07 TUNNEL, BRISBANE - SOUND ESCAPE™ SYSTEM

TUNNEL TYPE AND OVERVIEW

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 meters 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.

SOLUTION

- 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.

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.

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