

Case Study



Mersey Queensway tunnel, UK Sound Alert System

Building type and overview

The Queensway Mersey tunnel is a 4km road tunnel under the River Mersey and is the longest tunneled estuarial road crossing in the UK. It carries over 11 million vehicles per year and was opened in 1934. It underwent a \$22 million upgrade to its emergency escape facilities in 2005.

Challenges

- A significant part of the upgrade cost was for 7 new emergency refuges constructed under the road deck. A major challenge was how to ensure that in an emergency people would be directed to the entrances of the refuges, particularly in low visibility such as in the presence of smoke.

Solution

- Install Sound Alert Technology Inc broadband locatable sounders with the exit signs at the refuge entrances.

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 Merseytravel, the tunnel operator, namely "improving escape provisions to meet the highest modern safety standards".