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**MAINTENANCE OF TUNNELS IN MALAYSIA
AGAINST GOOD PRACTICE**

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1.1 RATIONALE OF STUDY

1.1.1 General

Tunnels are artificial passages built underground to facilitate transportation. Tunnels have been built from time immemorial for various purposes, such as defense, assault and traffic. Queen Semiramis in ancient Babylon under the Euphrates River to connect her palace and the temple of Jova constructed the earliest known tunnel about 4000 years ago. The tunnel was 1 km long and was of section 3.6 m x 4.5 m. It was constructed using the 'cut and cover' method with brickwork in bituminous mortar and vaulted roof.

Current day vehicular tunnels may be built for highways or railways and may be unidirectional or dual-directional. Often tunnels reduce distances. For example, the Banihal tunnel joining the Kashmir valley with the rest of the country has reduced the road distance by 18 km, besides facilitating year round communication. The world's second largest tunnel is the undersea Channel Tunnel linking Great Britain and France by rail. Considered an engineering marvel of the twentieth century, the tunnel is 50.5 km long and lays 50 m below the seabed for most of its length.