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MAINTENANCE MANAGEMENT AND SAFETY FEATURES IN ROAD TUNNEL IN MALAYSIA

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ABSTRACT

This dissertation is done to understand the maintenance management of the tunnel operation and what are the safety precaution that had been provided in the SMART tunnel and the Penchala Link. With more than thousands users every day, safety must be an important subject to take care of. Safety components that have been installed in the tunnel must be well functioning for the users purpose. In the SMART tunnel itself, there are many safety facilities and services provided in the tunnel that has been determine during the study such as emergency lane, emergency phones, variable message sign, fire extinguishers and many more. The dual functioning tunnel such as SMART tunnel must have to plan wisely. In SMART Tunnel, the SCADA system has been installed in the tunnel's system. The SCADA system control and monitor the whole tunnel. Besides, the SMART's management also adopted planning when flood occur. There are three principle modes in the operation of tunnel. In addition, SMART tunnel also have well road deck ventilation system compare to the Penchala Link. There are four ventilation buildings with each containing eight ventilation fans and pressurization fans. There are two control centers that manage and control the tunnel that is stormwater control centre and motorway control center. Every control centre has its own responsibility towards the tunnel. Both control centers are operating 24 hours to make sure that the tunnel is in the good condition for users. Maintenance in the tunnel is done daily. This in-house maintenance is depending on the electrical and mechanical specification of the component to maintain it. The several recommendations are make to enhance the safety in the tunnel.

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