

Storm Water Management and Road Tunnel

Kuala Lumpur, Malaysia

Keller's engineering expertise in grouting techniques provided support for one of Kuala Lumpur's most innovative flood and traffic management tunnel. We tackled challenging soil properties as the site sat on weathered limestone formation and delivered with smooth execution of different grouting techniques for tunnel's various needs.



The project

The Stormwater Management and Road Tunnel (SMART) Project was initiated to tackle flooding and traffic congestion problems in Malaysia's capital city, Kuala Lumpur. Keller was engaged to carry out various types of grouting work, including rock fissure grouting, compaction grouting and jet grouting.

The challenge

The project site was located within the highly weathered and cavernous Kuala Lumpur limestone formation, comprising of Silurian marble, fine crystalline and dolomitic rock. Having to work with soft silty and loose sandy soils, Keller had to execute our works with meticulous risk assessment and extensive safety measures. The tunnel, which was 13.2m in diameter, covered 9.7km of distance and challenged us furthermore with variability in soil properties and different requirements for different parts of the tunnel.

The solution

Grouting works were carried out to prevent ground water flow into excavation pits, reduce the risk of ground subsidence and rapidly repair sinkholes inadvertently caused by the tunnelling work. Keller excellently performed various grouting techniques to support the tunnel. Lateral movement was reduced by installing jet grout columns behind micropiles. Rock/fissure grouting was carried out to surround launch and ventilation shafts, junction boxes, tunnel ingress/egress and tunnel cross passages. And, compaction grouting was installed for TBM cutterhead intervention along tunnel alignment.

Project facts

Owner(s)

Department of Irrigation and Drainage, Malaysia
Malaysian Highway Authority

Keller business unit(s)

Keller (M) Sdn Bhd

Main contractor(s)

MMC-Gamuda JV

Solutions

Bearing capacity / settlement control

Markets

Infrastructure

Techniques

Jet grouting
Rock / fissure grouting
Compaction grouting

Email address

info@kellerasean.com

Phone number

+65 6316 8500