

# INTERVENTION SHAFT 2

## SELANGOR, MALAYSIA



### Key achievements

- Provided alternative retaining solution that resulted cost-savings and time-savings for client
- Completed the retaining structure ahead of project schedule enabling excavation works to start early
- Deepest drilling depth (68m) throughout MRT 2 project

### The project

Intervention Shaft 2 (IVS 2) is part of the MRT 2 tunnel project, approximately 17m in diameter and 57.5m deep. Keller was engaged to construct the retaining structure of the shaft based on the alternative Deep Soil Mixing (DSM) method we proposed. Rock Fissure Grouting was also carried out to improve the ground condition, generally underlain by limestone formation with overburden soil.

### The challenge

Apart from boulders, rebar and concrete slab that needed to be removed prior to the start of DSM work, multiple and repetitive cavities were encountered. The low slump grout specified for cavity filling did not flow into the cavities as expected. Our team proposed to an alternative cement mortar with higher slump value and a bentonite to improve the flow properties.

### The solution

Keller proposed a more efficient alternative retaining solution using DSM instead of the conforming Secant Bored Pile design. To minimize the ground water inflow, Rock Fissure Grouting work was carried out as well as rock probing to have a better visualization of the ground condition and the rock profile. This enabled client to implement preventive measures before the start of excavation work.

### Application

Ground improvement/Retaining structure

### Technique

Deep Soil Mixing, Rock Fissure Grouting

### Market

Infrastructure-Transport

### Client

MRT Corporation

### Main contractor

MMC Gamuda KVMRT (T) Sdn Bhd

### Contract Value

RM 2,310,000

### Keller business unit (s)

Keller ASEAN