



## Key achievements

- Keller identified significant constructability and performance risks with tender design
- Proposed an alternative design that created savings for the client
- Keller's alternative design accelerated the work and saved significant time

### • The project

A 56-storey mixed-used development is to be constructed at the city centre of Kuala Lumpur, Malaysia. The development comprised of 723 residential units and 31 commercial units.

### • The challenge

The jobsite is underlain by KL limestone, which is a highly erratic karst formation. The overburden soil was medium to dense silty sand. The site was abutted by a major road and sensitive buildings were within close proximity .

### • The solution

Keller proposed an alternative design using a range of geotechnical solutions to construct temporary retaining structures for a 4-level basement excavation. Being located in karst, the site posed geological challenges such as precipitous changes in rock head levels, highly fractured bedrocks and presence of cavities. Contiguous bored piles, Deep Soil Mixing, Jet mixed columns, Rock fissure grouting and Ground anchors were the solutions applied in this Project. The alternative solution improved on the conforming design by providing a strut-free retention system with minimal water inflow, thereby allowing significant time savings for the excavation works.

### Application

Earth Retention and Shoring

### Technique

Contiguous bored piling, Deep soil mixing, Jet Grouting, Rock Grouting and Ground Anchors

### Market

Commercial Mixed Use

### Client

Macly Equity Sdn. Bhd.

### Main contractor

Prestij Mega Construction Sdn. Bhd.

### Contract Value

RM 15mio

### Keller business unit (s)

Keller ASEAN