

Discovery Basement

Gauteng, South Africa

This project involved the deep basement ($\pm 32\text{m}$) excavation and lateral support works for the development of one of the largest and greenest office buildings in Africa, in the heart of the economic centre of South Africa, Sandton.



The project

The Discovery building has a ground floor plus eight levels of office space, a tier 3 plus data centre and an activities-related feature roof level. The gross floor area (GFA) of phase 1 and 2 combined is approximately 150000m^2 , or approximately 18 rugby fields, with an additional 24 rugby fields of parking space.

The challenge

The programme was extremely tight with a non-negotiable access date for the building contractor. To achieve this programme, close cooperation with the principal earthworks contractor was required.

Halfway through the project a lateral support re-design was necessary as a result of unforeseen ground conditions and an overblast of a section of rock. This required temporary backfilling of some faces to ensure stabilization, while the re-design was being finalized and additional anchors installed.

The solution

Our competent and experienced in-house design team played a crucial part in re-designing the lateral support system, which was reviewed and confirmed by Keller - Special Projects.

Ongoing monitoring of movements of the faces confirmed the competency of our design.

The project involved 15540m² of earth retention comprising of 219 no. 600mm diameter soldier piles between 15 and 18m deep, 1311 no. strand anchors ranging from 12 to 24 meters long, 943 no. rock bolts and 15540m² of 150mm thick scraped permanent gunite walls.

Project facts

Owner(s)

Growthpoint Properties
Zenprop Property Holdings

Keller business unit(s)

Keller South Africa

Main contractor(s)

Zero Azania / Diesel Power JV

Engineer(s)

Pure Consulting

Solutions

Excavation support

Markets

Commercial

Techniques

Bored piles
Anchors
Shotcrete / Gunite

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