

I 29 Rivonia Road (Village Walk)

Design & Construct Contract for Lateral Support, Bulk Excavation and Foundation Piling for Mixed Use Development in Sandton, South Africa



Project Facts

Owner

Eris Properties Group

Client

Eris Properties Group

Consultant

Aurecon (Engineers)

Quantity

185 No. Soldier Piles

1 187 No. Strand Anchors

663 no. Rock Bolts / Hollow Bar Anchors

10 400m² Gunite & Anchors

Period of time

April 2015 to May 2016

Franki Africa

674 Pretoria Main Road,
Wynberg, Sandton

P.O. Box 39075, Bramley, 2018
South Africa

Tel. +27 11 531 2700

info@franki.com

www.franki.co.za

In June 2014 the decision was taken by Eris Property Group to redevelop the old Village Walk site. The primary phase would support the existing boundary walls with the Balalaika and Protea Hotels, this paving the way for the second phase.

The second and final phase would encompass the excavation and lateral support to the new proposed basement layout, including the demolition and removal of the existing four-basement parking garage.

This site was surrounded by three hotels and two of the busiest and high-end roads in Sandton CBD (Maude Street and Rivonia Road). Franki Africa was entrusted to laterally support and excavate a super-basement to provide the hollow core for the new building structure. At its deepest point the excavation would reach a depth of 24 meters.

Numerous unforeseen challenges were encountered during the lateral support and excavation phase and these had to be accommodated in the specified programme time. The lateral support was also complicated by diabase intrusions which was encountered as water-bearing and often saturated silt and required additional support. Copious amounts of ground water from approximately 12 meters below original ground level had to be accommodated to maintain access throughout the site.

QUALITY IS OUR FOUNDATION



Product Description

Lateral Support comprising of:

- 185 No. 600mm & 750mm Ø Soldier Piles, ranging in depth from 16 to 28m
- 1 187 No. Strand Anchors, varying in capacity from 600 to 900kN installed through the soldier piles
- 663 No. Rock Bolts / Hollow Bar Anchors
- 10 400m² of 150mm thick Gunite Walls

Meticulous planning and execution in the safe removal of existing slabs and beams, combined with the installation of the new lateral support solution, proved to be one of the secrets to the success of this project. The accurate placing and installation of the concrete soldier piles to avoid services was carried out without any damages or disruptions being caused. Exceptionally long strand anchors were installed along the Maude Street and Rivonia Road faces while exercising extreme care not to drill into neighbouring basements.

A grout design capable of complying with strict quality requirements but still allowing the tight programme to be met was implemented and maintained throughout the project execution.

Blasting of hard rock, constituting a third of the overall basement excavation volume, was undertaken with precision and each blast design individually prepared with its own parameters and restrictions. Overall, in excess of eighty blasts were set off without a single problem.

