

Ballito Junction

KwaZulu-Natal, South Africa

The Ballito Junction project involved the addition of 55000m² to an existing mall footprint, in Ballito, KwaZulu-Natal.



The project

Extension of existing Ballito Junction shopping centre in Durban, South Africa with 55 000m² leasable area. The project comprised the design and construction of the 14m high permanent lateral support wall and foundation piles.

The challenge

The project is located on a steeply sloped site where earthworks filling operation were required to create piling/building platforms. Careful planning and constant communication with the professional team and other contractors was required to manage the interface and operations of all parties on site and ultimately meeting the stringent programme agreed with the client.

Other challenges included:

- Late approvals from the municipalities delayed the commencement of the works.
- Close cooperation was required with the main contractor as their work overlapped with ours, which meant less working space for both contractors on site.
- Clashes between unknown existing services and the lateral support anchors.
- Rain also caused havoc in the Berea red soil conditions.

The solution

The 4600m² of earth retention included continuous flight auger piles installed at 2.5m spacing with guniting arches between 249 no. 600mm diameter soldier piles. Strand type ground anchors with capacities of between 450 and 750kN were used to provide lateral restraint to the soldier piles.

Foundation piles were 6m, predrilled Franki enlarged-base piles (1590 no.) with diameters ranging from 410mm to 610mm and compressive load capacities of between 1000kN to 2000kN. Pile load test indicated good performance with settlements within 5mm under service load conditions.

Project facts

Owner(s)

Menlyn Maine and Flanagan & Gerard Consortium

Keller business unit(s)

Keller South Africa

Main contractor(s)

WBHO

Solutions

Excavation support
Heavy foundations

Markets

Commercial

Techniques

Anchors
Shotcrete / Guniting
Bored piles
Franki (DCIS) piles

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