

Clairwood Logistics Park

KwaZulu-Natal, South Africa

Durban's former racecourse is being transformed into a 368000m² logistics site to service the city's bustling container port, one of the busiest in the world.



The project

Provide a foundation solution for the 368000m² Clairwood Logistics Park located on the existing Clairwood Race Course in Durban, South Africa.

The site is strategically situated near the Durban Port. The project consists of seven warehouse structures with high tolerance floors for stacking. The warehouse footprints range from 25000m² to 130000m².

The challenge

The area is underlain by the estuarine deposits known as the 'harbour beds' and consist of highly compressible silty clay and clayey silts (also known as 'hippo muds') onto sandstone bedrock typically at 30-40m.

Due to the high compressibility and time-dependent settlement, it was proposed that the subsoil be treated to ensure that acceptable settlement behaviour could be achieved.

The design settlement is 50mm under the 40kPa load.

The solution

The solution consists of Controlled Stiffness Columns (CSCs) which support the compacted soil mattress for the warehouse structure.

The CSCs are 370mm in diameter and have a 800mm diameter stone head. The purpose of the stone heads is to reduce the punching forces and bending moments on the floor slabs.

Columns are installed in grids of between 2.5 and 3.5m to depths of between 25 and 38m.

A full scale test phase was implemented on site which verified the design and confirmed the production rates.

Project facts

Owner(s)

Fortress Fund

Keller business unit(s)

Keller South Africa

Main contractor(s)

Franki Geotechnical (Pty) Ltd.

Solutions

Bearing capacity / settlement control

Markets

Industrial

Techniques

Rigid inclusions

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