

CASE STUDY

Le Parc Residential Estate

February
2019

Client: Le Parc Residential Estate

Contractor: Exeo Khokela Civil Engineering Construction

Consultant: Bigen Consulting

Product: **Rockgrid® PC 100/100** | 3 325m²
Biaxial Composite Geogrid

For Kaytech: Norrin Stone

Le Parc is a new residential estate under construction, situated on Lustigan road, between the N1 and R101, adjoining the Boland Agricultural Showgrounds and not far from the Paarl CBD. For more information, see <https://www.leparc.co.za/>



Le Parc Estate Conceptual Layout



Le Parc Estate Earthworks from the Air

An investigation established that the in-situ material where the main access road would run was unsuitable without intervention, as it was clayey in nature and heaved excessively under the load of construction machinery, making the construction of layerworks nearly impossible.



Main Access Road: Unsuitable insitu material

Bigen Consulting requested a site visit from Kaytech to assist with a solution based on the site conditions.

Previously, at other sections, where substantial groundwater was encountered, a similar sort of problem was solved by a thick crushed rock separation and drainage layer encapsulated within a heavy grade geotextile. The new section of the road box cut was dry and did not require an extensive drainage system, however the clay roadbed still heaved under load.

After the inspection by Kaytech and engineers from Bigen, a separation and reinforcement layer consisting of Rockgrid® PC 100x100kN geogrid with sand as fill material was suggested by Kaytech's engineer.

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Installation of Sand Over Rockgrid® PC Geogrid

This technique is a cost-effective alternative to a “conventional” solution of excavating the unsuitable material, carting it to spoil, and replacing the excavated material with rock fill.



The Alternative: Crushed Rock and Geotextile (Expensive!)



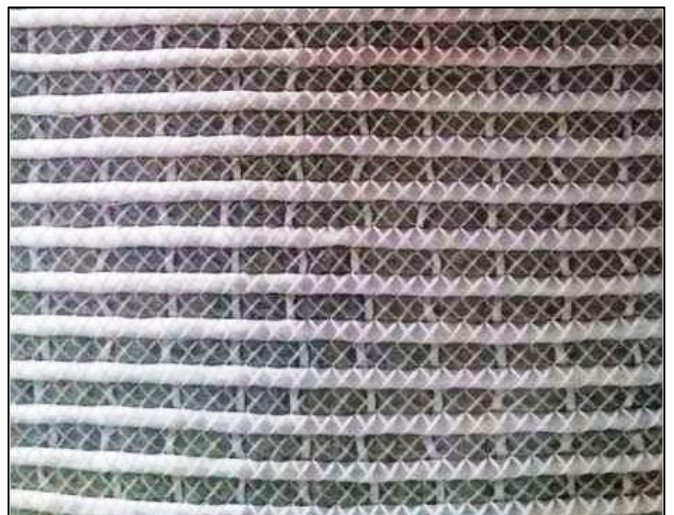
Sand Placed over Rockgrid® PC Geogrid

The consultant and contracting teams were impressed by the ease of placement, and consequent stability exhibited by the roadbed after the Rockgrid and sand layer was placed.

Rockgrid® PC is a South African-developed composite biaxial geogrid, manufactured in Kaytech’s dedicated plant in Atlantis, Western Cape.

It consists of high-tenacity polyester filament reinforcing strands attached to a backing geotextile. The closed aperture structure of the grid means that *interr alia* it can be used with sand as a fill material.

For more information, see <http://kaytech.co.za/product/rockgrid/>



Rockgrid PC-Type Structure: Reinforcing Strands attached to Nonwoven Geotextile.