

CASE STUDY

Drainage and Separation | Subgrade Stabilisation | Mam's Mall, Mamelodi

Jun 2016

Client New Africa Development

Contractor Renico

Consultant D & G Consulting Engineers

Product **Rockgrid® PC** | 16 000m²
Flo-Drain® | 1 602m
TriAx™ | 22 000m²
bidim® A2 | 22 000m²



An equivalent of **101 081** recycled 2l PET bottles was used in this project

Problem

The weak clay subgrade where the new mall was to be built, could neither support massive stormwater pipes nor future construction of the platforms for the structures. The only conventional option was a costly layer of dump rock (over one metre thick) to compensate for the low bearing capacity of the in-situ soil.

Solution

Reinforcement: Composite geotextile, **RockGrid® PC 100/100**, was installed as a separation and reinforcement layer in the bedding of the stormwater pipes.

Drainage: A drainage system comprising 1.6 km of **Flo-Drain®** was installed alongside the stormwater trench to protect the integrity of the platforms.

Subgrade Stabilisation: The mall platform was mechanically stabilised using **TriAx™ TX 160**, and **bidim® A2** for separation from the soft clayey subgrade. All dump rock could be removed from the layer works (G6 fill at 370 mm, the minimum depth as per TRH14, was compacted to 95% MOD AASHTO) due to use of this combination.

Benefits

The use of **Rockgrid® PC** helped facilitate a reduction in the layer of dump rock required around the stormwater pipes which minimised costs.

Flo-Drain® was easier to transport, and easier and quicker to install, than



The low bearing capacity soil proved problematic for heavy stormwater pipes



*With sides lifted, **RockGrid® PC** encapsulates a layer of dump rock to serve as a reinforced base for stormwater pipes*

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conventional aggregate drains. The flexibility gained in using **bidim**[®] as a separation layer, meant up to 50% less fill material was needed.



*The entire platform was compacted, then stabilised with **bidim**[®] and **TriAx**[™]*