

## CASE STUDY

**Slope Reinforcement | Reinforcement | Acornhoek Shopping Centre, Hoedspruit, Mpumalanga** Apr 2013

Client John McCormick Properties

Contractor ALSBEE

Consultant TMW Consulting Engineers

Product **Bidim<sup>®</sup> A2, 75mm Flo-pipe & Miragrid GX 75/75**

Rep Winnie Van Der Merwe

### Problem

A large expansion project at Acornhoek Shopping Centre in Hoedspruit involved the construction of a platform on which to build a new Checkers Centre. In order to stabilize the platform, a reinforced soil wall using concrete retaining blocks needed to be constructed.

### Solution

The Checkers Centre was to be built 3 m from this 90 m long wall, which was constructed at an 85° angle and ranged in height from 2.5 to 7.5 m.

To ensure sufficient drainage, a conventional subsoil drain, consisting of **bidim<sup>®</sup> A2** wrapped stone aggregate and a 75mm **Flo-pipe**, was constructed behind the blocks just above the lowest point of the wall. Outlets were placed along the wall at 1 m intervals through the face of the blocks. A second similar drain was installed and connected to the junction box behind the wall.

With subsurface water as well as storm water collecting at the two lowest points along the retaining wall, creating a saturated, low CBR foundation soil. To solve the problem, a pioneer layer was constructed by placing **Miragrid GX 75/75** geogrid on the saturated base with **bidim A2** wrapped around a 250 mm dump rock layer, thereby forming a blanket drain. Above that was placed a 300 mm layer of 5% cement-stabilised soil which was compacted to 93% Mod AASHTO in 150 mm layers. The foundation was then cast directly above this layer.

### Benefits

With the installation of these products, the developer is assured of a structurally sound retaining wall that will stand the test of time.



*Miragrid GX 75/75 and used to reinforce the retaining wall.*



*The reinforced retaining wall at Acornhoek Shopping Centre.*