



Blocks placed on 25m.p.a. concrete foundation & built to full height in chainages of +/- 60m.

### Heavy Duty Retaining Walls with Terraforce

Terraforce retaining blocks interlock horizontally as well as vertically with optional keys or gravel infill, and contain no air voids. They have a closed vertical and open horizontal surface structure.

As such they lend themselves ideally to the construction of both light terrace walls as well as heavy gravity retaining walls. The units can be reversed so that a variety of versatile appearances and features can be created.

There are various types of these systems on the

market with elevations ranging from open checkerboard appearance to closed vertical surface structure and many are plant supportive to varying degrees. Some systems are interlinked, while others interlock on the vertical and / or horizontal plane.

All systems rely mostly on interblock friction to derive a measure of sliding resistance and under ideal conditions that is sufficient to prevent collapse when constructing a gravity retaining wall.

Yet, when substantial active lateral earth pressure occurs, considering the slender cross section of these walls, clearly no amount of interlocking or interlinking will prevent such a structure from collapsing.

The most economical solution under such conditions is often found in constructing a multi-



Face area of 2700 m<sup>2</sup> & average height of 9m



Covered in vegetation to soften the wall

skin gravity retaining wall. Such a wall relies upon weight and frictional resistance to obtain stability. Alternatively, earth reinforcing or cement stabilised backfill techniques may be employed:

### Monte Casino, Johannesburg

This Terraforce wall with a face area of 2700 m<sup>2</sup> and average height of 9m was completed within 4 months. The design is based on Terraforce L13 blocks placed on a 25m.p.a. concrete foundation and built to full height in chainages of about 60m.

The lowest - 12 - rows of blocks are filled with a cement stabilized load bearing mix while the fabric reinforced backfill is made up of 5% cement stabilized soil (mixed with a T.L.B, placed with a





Telescopic Loader) and compacted to 93% mod AASHTO. Light and heavy grades of woven geofabric were specified depending on their position within the wall.

In situ concrete shear keys were installed every

row and every other block, including rows with fabric layers. All geotextiles were pre-tensioned in warp direction before placement of backfill.

Project: Retaining wall Monte Casino  
Client: Tsogo Sun Casinos  
Designed: A.F.Wild of B.K.S. (Pty) Ltd.  
Installed: Kalode Construction (Pty) Ltd.

### Tygerberg Office Park

Excavations on this steep building site left the planners with a 5m high x 95m long embankment and 30° surcharge slope above.

The design called for a composite installation with 4% cement stabilised and geofabric reinforced backfill. Further a cut-off drain and subsoil drainage system was specified.

To allow the main contractor an early start with the main building, the block installer worked overtime every day and completed the wall in 12 working days.

Elsewhere on the site, a 12m high fill platform for a future building was created to a similar design with two 6m terrace walls.

Also on the site are various smaller Terraforce walls, such as an L11 rock face weir and various low toe walls. A total of 24000 L11 blocks were specified throughout, some in rock face version, others with round face, plant supportive version.

Planting specified is almost exclusively hardy indigenous.



Retaining for 5m high x 95m long embankment



### 10 Petunia Crescent, Welgedacht

Completed during October 2000, this 6m high split face L11 block wall, represents a growing trend towards low maintenance, yet aesthetically pleasing retaining solutions. Designed as a





6m high split face L11 block wall

meandering composite – wall with planting terraces at various levels, plus a 4 x 4 Multi stairways incorporated.

Architect: Bertie Schreuder  
Engineer: B.V.I. Consulting  
Contractor: Decorton Retaining

The provision of adequate outdoor space at living room level was fully accomplished in a cost effective way.

The owner's brief to avoid sterile overwhelming type retaining walls was met. Feature plants are established on the terraces as well as at the base and in the top row of the blocks. An irrigation system, river pebbles and bark mulching, round off this installation.



4 x 4 Multi stairways incorporated