

Terraforce supports a tennis court

Contractor: Decorton Retaining Systems.
Engineer: iCOS Engineers. Fred Laker.
Product: Terraforce L11 rock face and 4 x 4 multistair blocks.

A new tennis court at an up-market Bishops Court residence required extensive earthworks with the usual retaining at the fill side as well as at the cut face. iCOS Engineers were appointed by Decorton Retaining Systems (Pty) Ltd to design the rock face Terraforce retaining walls at 35 Claasens Drive, Constantia. Construction commenced in September 2002.

The construction area proved to be very wet and founding in a proper insitu material was essential – such as undisturbed, decomposed granite material. The fill was retained with a 4m high composite wall at 70 degrees with high tensile geotextile stretched out into the cement stabilised backfill as indicated by Fred Laker. On the cut face, due to lack of space, the walls were built to a height of 5m at varying angles and using the mass gravity option - a double layer of Terraforce L11 blocks to a height as specified by the engineer, with reinforced concrete infill in parts as well as cement stabilized backfill behind the near-vertical section.

Incorporated is an elevated platform for the referee and spectators as well as a set of stairs leading up and down from the platform. As always, drainage above and behind the walls was not neglected.

Laker reports that no settlement at the tennis court has occurred after 3 years.

Terraforce Walls as a Retaining System

When a Terraforce wall is specified as a gravity retaining wall, (as opposed to a composite retaining wall) consider the following: Unlike a reinforced concrete retaining wall, which is usually designed to resist bending moments, a gravity wall resists the thrust imposed on it by the backfill by virtue of its own weight only. A certain amount of movement of the wall is required to mobilise the required resistance forces. Under normal circumstances it is assumed that the material retained is free draining and that water pressure is prevented from building up behind the embankment. Due to the inherent flexibility of the wall, it is not usually possible to compact the backfill fully at construction stage. Consequently, some degree of settlement over time is inevitable and this should be borne in mind when proposing rigid structures close to the top of the wall. This is why stabilizing of the backfilled material with cement is very important, to ensure little or no settlement.

As with any retaining wall, adequate drainage of the backfill and equally importantly, adequate surface water removal is absolutely essential to the proper functioning of the wall. The integrity of any retaining wall is very sensitive to the “angle of internal friction” of the retained material. The angle of internal friction in turn is severely compromised by increasing moisture content.

See www.terraforce.com for more information or email us at holger@terraforce.com

