



The Tourism Centre in Kayamandi

Seating for the people

Fifteen years ago, Holger Rust, owner of Terraforce, a local and international pre-cast concrete block licensor, developed a new retaining block, the 4x4 Multi Step block.

Aimed at providing efficient and economical steps in conjunction with the original retaining blocks designed by him, they soon became very popular not only for stairway access but to provide comfortable, practical stairs & seating arrangements at leisure amenities & school sport facilities.

This versatility – and cost-effectiveness - is what attracted the Dennis Moss Partnership to making use of the block for the amphitheater - a simple neatly curved seating area required for viewing performances around a courtyard - that forms the heart of the new Tourism Centre in Kayamandi Stellenbosch.

Initiated by the Program Management Unit of Stellenbosch Municipality, the project is the first phase of an urban renewal strategy for the Kayamandi Town Centre.

Says Widmark Moses, acting Local Economic Development Manager: "The centre is part of a larger 2010 vision for Kayamandi, namely the Kayamandi Tourism Corridor, with which we hope to spark a catalyst that will promote economic development and growth, specifically job creation and small business development.

"The amphitheater itself is one of the first performance spaces available for the residents to showcase their rich cultural traditions and talents, and with this we hope to expand the current Eurocentric tourism experience of Stellenbosch to include a uniquely African feel."

From an architectural point of view, the centre had to fit in with its surroundings. The project is situated in Stellenbosch, in the heart of the Cape Winelands. It is also situated at the entrance to Kayamandi on the way into Stellenbosch.

According to Dennis Moss Partnership, Stellenbosch based architectural firm involved in the design of the centre, the design of the centre responds to this miscellaneous context using structures with Cape



Seating and steps

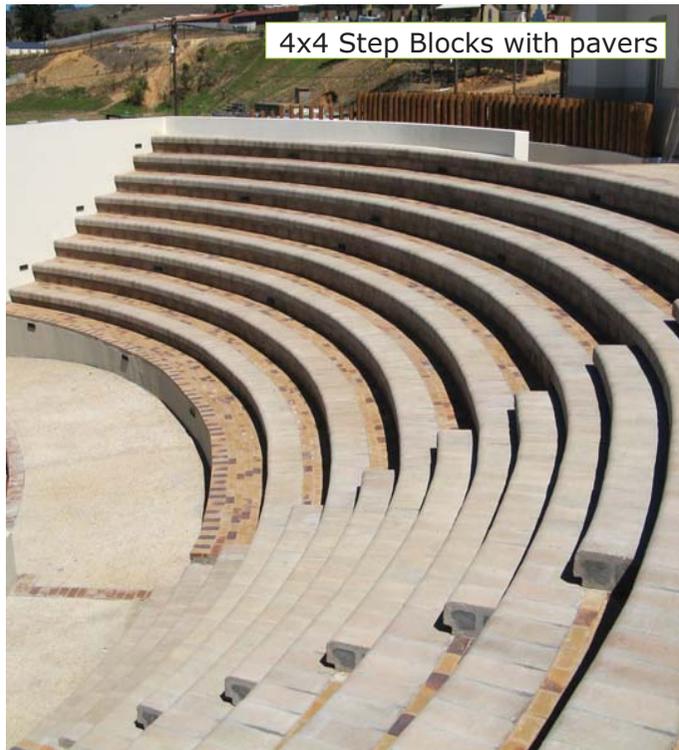
Vernacular forms to create traditionally formed spaces, as well as timber poles, corrugated iron, earth tones with a contrasting red used in combination with textures to reflect it's more African setting.

The amphitheater itself consists of a split level between two circular courtyards. In the split level, the amphitheatre seating acts as a retaining wall, providing seating looking over a performance stage at the lower level. The centre itself contains a museum, amphitheatre, restaurant, Internet Café and formal and informal Kiosks.

Says Darren Allen of Dennis Moss Partnership: "Initially the amphitheatre would have been a concrete structure, supported by ground beams, but the 4x4 step blocks offered a much more cost effective and attractive solution. In addition, they were able to handle the curve of the planned structure very well."

Rust designed the block specifically with such versatility in mind: "When used for retaining, the 4x4 Multi Step block has a unique design that allows you to simply stack up the units without mortar, and the corner interlock gently handles convex and concave curves.

"The wall angle can vary from vertical to shallow



4x4 Step Blocks with pavers

slopes, and steps can be created by turning the block on its side. It can also be rotated for four different elevation choices, and the design allows you to make plants part of your wall."

Hugo Pienaar, quantity surveyor for Dassenberg Retaining, the contractors responsible for installing the blocks is very pleased with the way the different building materials all came together:

"originally the seating was to be painted, but once the tartan multi-blend pavers were laid between each row the look just came together. The whole area now looks fabulous, the amphitheater is even visible from the road as you drive past coming out

of Stellenbosch. It is a lovely feature to draw attention to the area."

Widmark is hopeful that the new amphitheater will create a link to the existing resources that are already available, such as Spier Wine Estate or other cultural resources in the area: "We are hoping to share shows, promote wine and especially promote local talent and culture. Kayamandi will no longer be isolated from the rest of Stellenbosch, in terms of performance and tourism experience."

Client: Stellenbosch Municipality
Project Team: Dennis Moss Partnership
QS: De Leeuw Group
Civil Engineers: Lyners Consulting ENG.
Electrical Engineers: Africon
Structural Engineers: Africon
Contractor: Masterplan Projects
Landscape Architect: Dennis Moss Partnership
Terraforce installer: Dassenberg Retaining

Project Funding: Stellenbosch Municipality and MIG

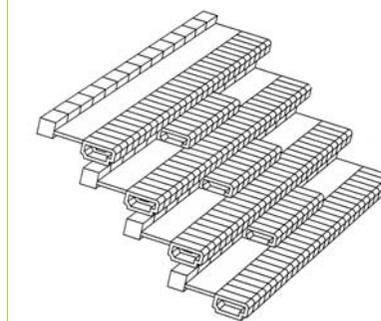
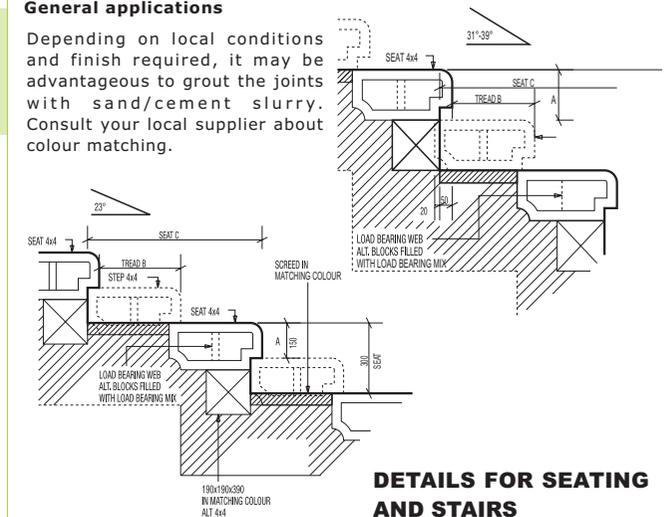
Providing functional combinations

This method of combining low cost seating arrangements with necessary slope stabilisation measures has become more and more popular in all parts of South Africa, especially when the huge level platforms that have to be created for sports or leisure facilities invariably result in cut and fill situations with steep sloping embankments that have to be protected from soil erosion.

Fill slopes are usually protected with instant grass cover or depending on site conditions, with Terrafox or similar concrete blocks. The cut slopes, on the other hand, lend themselves to be terraced with Terraforce concrete retaining blocks - such as the 4x4 Multi Step block or the L18 block - in various configurations, finishes and sizes to provide seating for a large number of people. Especially in Gauteng

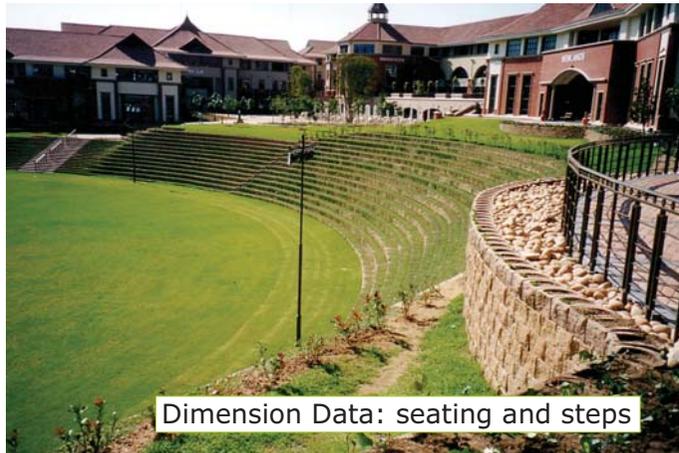
General applications

Depending on local conditions and finish required, it may be advantageous to grout the joints with sand/cement slurry. Consult your local supplier about colour matching.



INCLINATION	RISER (mm)	TREAD (mm)	SEAT (mm)
∠°	A	B	C
23°	150	350	750
31°	200	330	710
35°	200	300	650
39°	200	250	550





Dimension Data: seating and steps

and Western Cape a number of storm water detention ponds have been built with such seating to create truly multi purpose facilities.

The seating sections, if using blocks from Terraforce "L Range", may be planned either as grass roots, i.e. grass cover that is mowed short as required for spectators seating, or with finishes of various levels of sophistication. With the 4x4 Multi Step block it is possible to incorporate comfortable seating and stairway arrangements at varying inclinations between 23 and 39 degrees. Cost per installed 500mm wide seat can thus vary, at current prices, between R250,00 and R500,00 each.

Dimension Data Campus

Recently completed Dimension Data Campus provides a striking example of effective use of earth retaining blocks for seating. Originally specified by Architects Portal TPC as a vertical wall of Mac blocks (Keystone) fell outside budget restrictions.

Gary Campbell of contractors Bullen and Campbell then suggested Terraforce L 18 blocks with rock-face finish in a terraced application to accommodate

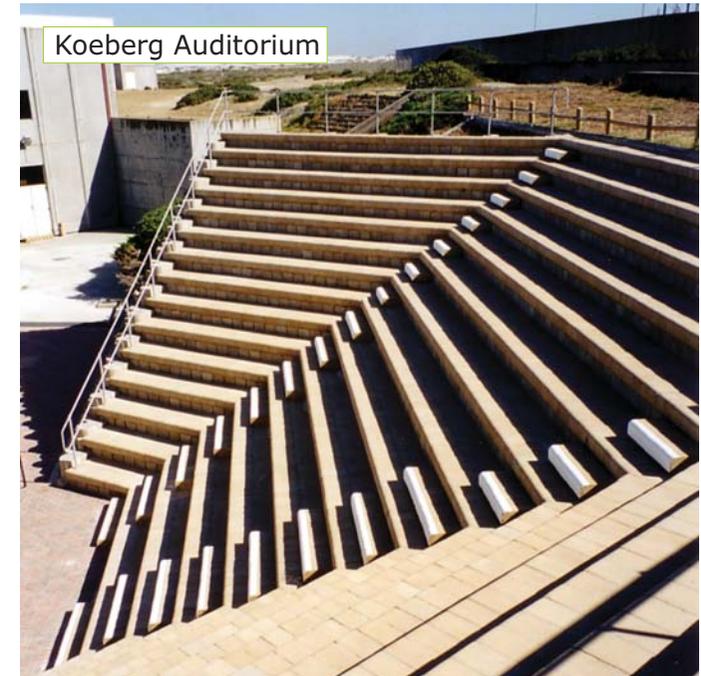
spectator seating. Engineer Johan Joubert did the necessary stability checks and came up with a viable and cost effective cross-section. Stability concerns at the section with steep inclination were overcome with 2m long Y16 bars driven into the blocks and sealed with Bentonite.

Vertical wing-walls and sections tying in with buildings surrounding this oval were constructed with the normal reinforced earth technique, i.e. woven fabrics stretched into the backfill and clamped between the L 18 block. It took 8 months and 38.000 blocks to complete this prestigious installation to the clients satisfaction.

With the finishing touches being applied during March 2003 this water-wise installation has rapidly greened over. Mostly Ivy, creepers to cascade over vertical walls, and fragrant Penny Royal ground cover on the seating terraces with edges of various shrubs and grasses were soon to be fully established.

Koeberg Power Station

During March 2002, Architect Mel Cutting first approached Terraforce for assistance in the costing of an amphitheatre type of seating arrangement at



Koeberg nuclear power station. Incorporated into an existing 6m high sand dune stabilisation of Terraforce L 18 blocks, this open-air auditorium with 500 min. seats would be used as meeting place for staff members.

Terraforce visited the site a number of times to measure and discuss requirements with engineer Dirk van den Eynde. Finally during July 2002 this contract was put out to tender and was awarded in September 2002 to Gordon Verhoef and Krause.

B.V.I. consulting engineers were appointed at this stage to provide stability calculations and supervise the intricate merging of two block types (L 18 for retaining the wing-walls and 4x4 for steps and seating).



Sandune stabilisation transformed into seating

According to Leon Pienaar of B.V.I. this proved to be quite a challenge but after some initial teething troubles, the completed arena was handed over to a happy client during January of 2003.

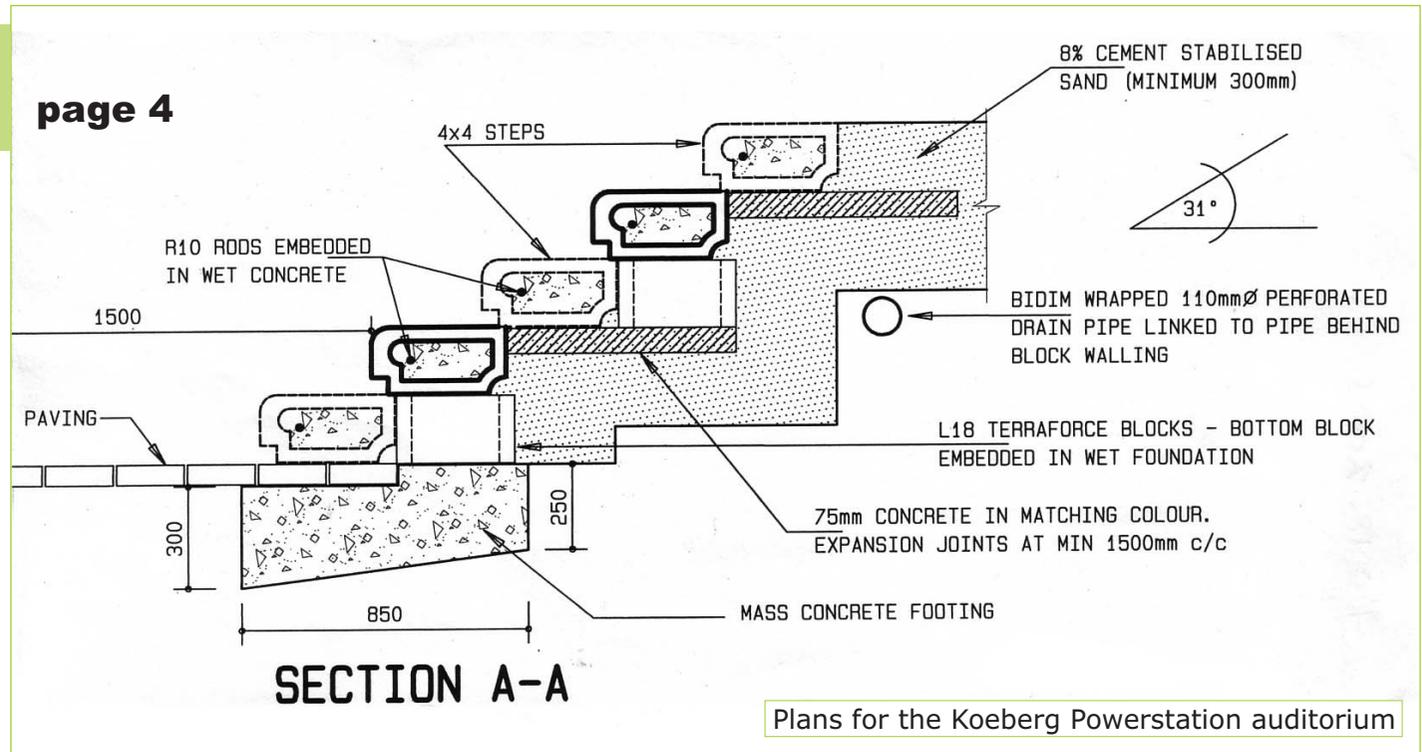
Keep them seated

More good examples of this block's versatility are a seating arrangement at a school in Somerset West, as well as a seating arena overlooking an artificial lake in the same area.

Says the headmaster of Beaumont Primary School: "After many years of waiting for our dream to be realized, we finally have excellent seating facilities in front of our school. We will gladly offer to act as a reference for any future project that you may undertake".

The seating arrangement for 1000 pupils was opened 29 October 2003.

Also in Somerset West, a stair/seating project for 500 spectators was completed in 2004. The site is an artificial lake with a cable water-ski installation. Terraforce L11 and 4x4 (multi) blocks were used throughout.



Plans for the Koeberg Powerstation auditorium



Seating and steps for 1000 pupils



Seating for 500 at artificial lake