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## INSIDE THIS ISSUE

[2010 FIFA WORLD CUP  
SOUTH AFRICA issue](#)

[Penetron® Worldwide:  
Focus on South Africa](#)

[Green Point Stadium -  
2010 World Cup  
Stadium, Cape Town](#)

[Athlone Stadium - World  
Cup Training Ground,  
Cape Town](#)

## Internal Waterproofing for Concrete

**2010 FIFA WORLD CUP SOUTH AFRICA Issue**

**June 2010**

The time for the long awaited Football World Cup 2010 in South Africa has arrived and we take this opportunity to showcase the country as the modern and progressive nation it is. The recent establishment of Penetron South Africa was the perfect way to celebrate our 10 year presence in SA and it is a strong vote of confidence from our entire team in the bright future of this country. Penetron is proud to be associated with the building of some of the World Cup infrastructure as well as other significant projects. Our African adventure has only just begun ... read on!!



**Penetron® Worldwide: Focus on South Africa**



**Green Point Stadium - 2010 World Cup Stadium, Cape Town**

[Cape Town International  
Airport](#)

[Mangaung Intermodal  
Building, Bloemfontein](#)

[King Sebatha Stadium,  
Mthatha](#)

[Cape Quarter, Green  
Point, Cape Town](#)

[Protea Place, Sandton,  
Johannesburg](#)

[The Pepper Club, Loop  
Street, Cape Town](#)

[The Quadrant,  
Claremont, Cape Town](#)

[Alice Lane Office  
Towers, Sandton,  
Johannesburg](#)

## FAST FACTS

Penetron crystals are insoluble and waterproof concrete for the entire life of the structure.



Located in Cape Town's central Green Point district, a stone's-throw away from the Victoria & Alfred Waterfront, Green Point Stadium will host five first round matches, one second round, one quarter-final and one semi-final. Also known as the African Renaissance Stadium, this is an all-weather, multi-purpose stadium that can hold 70 000 people. It is environmentally sustainable, modern, technologically advanced, world class and completely matches up to FIFA™ Match Stadium requirements. It consists of five levels plus the roof and includes parking levels, team rooms, a VIP reception, media areas, FIFA™ offices, fan shops, a business club, a multi-purpose hall, security and police offices, kitchens and VIP lounges. This US\$287-million project was created by GMP Architects, Louis Karol Architects and Point Architects.



In order to effectively protect and waterproof the concrete in the seating stands, Penetron Admix was selected to treat the stitching between the precast seating. Therefore a total of 1100m<sup>3</sup> of concrete treated with Penetron Admix was poured on this iconic project site.



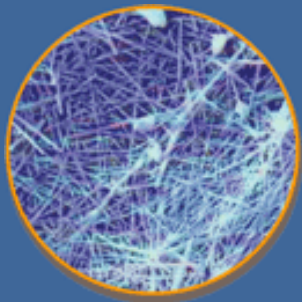
**Athlone Stadium - World Cup Training Ground, Cape Town**



Athlone Stadium is situated approximately halfway between the Cape Town CBD and Cape Town International Airport. It is used mainly for football matches and is the home-ground of teams Ajax Cape Town and Santos Cape Town. The stadium capacity is 30 000 and it was built in 1972. Extensive renovations were conducted in preparation for it being utilised as a training ground for the 2010 FIFA World Cup. Architects MLH required a waterproof, but trafficable surface on the walkways covering utility rooms. Penetron was applied by brush to the designated areas.



## Cape Town International Airport



An intricate web of insoluble crystals forms in the presence of Penetron® and H<sub>2</sub>O creating a permanent protective seal



Cape Town International Airport has been extensively expanded and renovated to accommodate visitors to the World Cup. The main focus was the development of a Central Terminal Building at a cost of R1,6 billion, which links the formerly separate domestic and international terminals and provides a common check-in area.

The new airport ramps posed a particular problem in that there was concern that the self-adhesive membrane specified would soften sufficiently to allow movement on the premix finish over. Penetron was the solution as it forms a complete bond with the concrete.



Witness Penetron's crack sealing ability



Send to a friend or colleague.

Phase one had already been prepared for a membrane and it proved necessary to scabble the existing surface to accept Penetron. Phase two had not yet been constructed so the tamped concrete finish proved perfect for the Penetron application. The use of Penetron also brought about significantly cost-savings.



### Mangaung Intermodal Building, Bloemfontein

The US\$53-million Mangaung Intermodal Centre project is one of South Africa's 2010 Soccer World Cup legacy projects and is situated in the heart of Bloemfontein, 400km south-west of Johannesburg. The multi-storey transportation centre has ranking and holding facilities for 900 minibus taxis, buses (BRT) and long-distance coaches. Sky bridges and vertical stair-wells link the centre to the adjacent railway and commuter bus stations. A feature of the centre is the incorporation of retail areas. The architects are Incline Architects and the engineers are VelaVKE.



Penetron Admix was specified in 28 000 cubic metres of concrete in the public areas to strengthen the concrete and prolong the life of the building. It is thus a waterproof and maintenance-free facility.

[Click here](#) to view recommendation from the Western Cape Department of Transport and Public Works.





## King Sebatha Stadium, Mthatha

The King Sebatha Stadium is another one of South Africa's 2010 Soccer World Cup legacy projects. Built by Stedone Mechanicos Construction in one of the poorest regions in the country, the stadium has been designed to be a maintenance free, waterproof facility. The concrete was site batched in a six cubic meter "Karoo" plant (dry batch). Additional products used include Penetron Admix, Penetron, Peneseal FH, Penecrete Mortar and Penebar SW45.



## Cape Quarter, Green Point, Cape Town

Cape Quarter Lifestyle Shopping Mall in Green Point offers an alternative shopping experience to Capetonians and tourists visiting the Mother City on holiday or for the 2010 Soccer World Cup. Propfin Architects were careful to preserve the original facade fronting Somerset Road.

The character mix of imported Georgian style architecture combined with the original eastern influence, forged by Malaysian plaster artisans, was incorporated into the final design.

Penetron was applied to the central courtyard and Penetron Admix was used in other areas.



## Protea Place, Sandton, Johannesburg

Designed by Paragon Architects in conjunction with engineer Andre De Lange of DG Consulting Engineers, this commercial office block is situated within easy reach of the new Gautrain station, the BRT station and the highway. Prominently positioned on the corner of Protea Place and Fredman Drive, the building incorporates the latest materials and finishes to complement the unique architectural style.

Penetron Admix has been specified for use in the basement tanks, pedestal and roof slabs. The brief from the architects was for a 'temporary waterproof slab' to be placed at the rear of this development to facilitate future extension.

Having explored the cost of a 3mm torch-on product, the decision to employ Penetron Admix was a commercial as well as a qualitative one. Based on this experience, the practices of Leon Slaven Architects and Alten Hulme have appointed Penetron as their primary waterproofing and steel protection system.



### **The Pepper Club, Loop Street, Cape Town**

A new level of sophistication and unparalleled luxury living has arrived in Cape Town's cosmopolitan city centre. Designed by MLB Architects with structural engineers S& T Consulting, this new luxury hotel and spa is situated on the corner of Pepper and Loop Streets. Innovative design, personalised amenities and unsurpassed service are all part of the five-star experience you can expect as a guest of Pepper Club.

Penetron Admix was employed in the basement, in the lift shafts and on the lower swimming pool and spa decks.



 **The Quadrant, Claremont, Cape Town**



The Quadrant is a modern apartment block in the heart of Claremont. Situated near restaurants and Claremont's upmarket Cavendish shopping centre, the complex is also close to the sporting grounds where international rugby and cricket matches are held. Construction was so hampered by rain last winter that it was decided to abandon the original courtyard waterproofing specification and use Penetron instead, as it is not as weather sensitive. All lift shafts were also treated with the Penetron system. The project was recently completed by Faircon.

 **Alice Lane Office Towers, Sandton, Johannesburg**





"Picture two sculpted towers linked by a vertical atrium. Bridges spiral upwards in a fan-like fashion creating a dramatic internal environment." This is how Paragon architect Anthony Orelowitz's iconic design of the 18-storey, energy efficient Alice Lane Office Tower in the prestigious CBD of Sandton, north of Johannesburg, is described.

The building's green nature is highlighted by its location in an extensive 'greenscape' surrounded by reflective ponds and water elements. The eastern and western facades are thermally insulated with punched windows to reduce glazed areas and the northern and southern facades are double-glazed to cut energy costs. There is also a six-storey parking basement. The Penetron system has been specified in the domestic water tanks.

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