Cape Town (South Africa)

CAPE TOWN SILOS

INNOVATIVE WATERPROOFING PRODUCTS FOR REDEVELOPING A FORMER INDUSTRIAL AREA

Polyglass, a Mapei Group's subsidiary, supplied branded waterproofing products for the foundations and roofs of a prestigious redevelopment project in the Silo District in Cape Town, South Africa. This monumental project, inaugurated on the 22nd of September 2017, is an excellent example of the conversion of an industrial area, in this case the historical industrial port area and waterfront in Cape Town. Work on the Grain Silo got underway in 2013 when the owners of the Victoria & Alfred Waterfront Holdings were looking for a suitable destination for this imposing, symbolic structure that had been a feature of the city skyline for decades. Since the start of the 1990's, this former warehouse dating back to 1921 with its imposing 57-m-high structure, had been the capital's commercial centre and a supply, storage and export hub for the wheat grown and harvested in the country. Consisting of 42 concrete silos located near the historic Victoria & Alfred Waterfront area of the city, it now attracts up to 100,000 visitors every day.

The new Grain Silo, which is situated inside the Silo District, was created thanks to the collaboration between Victoria & Alfred Waterfront Holdings and Jochen Zeitz, a German manager and owner of one of the world's most prestigious collections of contemporary African art.

Development of this project was awarded to the Heatherwick design studio from London, which came up with a plan to redevelop the structure and create a home for the Zeitz Museum of Contemporary Art Africa (Zeitz MOCAA), the biggest museum in the world for contemporary African art.

The Grain Silo complex extends over an area of 9,500 m², 6,000 of which are used for 80 art galleries, a rooftop sculpture garden, storage areas, bookshops, reading rooms and bars. The top 6 floors are set aside for rooms for The Silo Hotel.

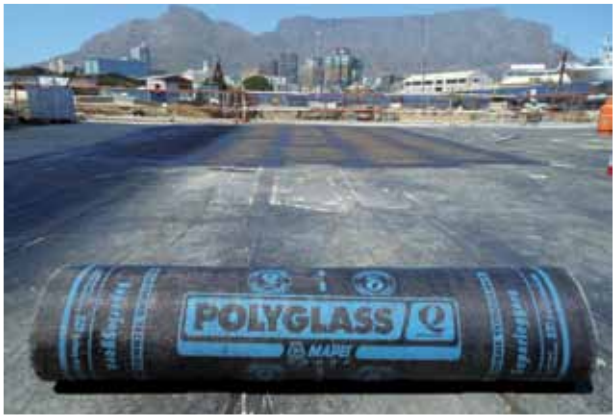
Heatherwick deisgn studio decided to conserve the industrial character and memories of the building by highlighting the geometric forms of the concrete silos and embellishing them with modern materials.

The Silo District includes an entire area of 80,000 m² made up of various new structures: Silo 1 is a commercial building and the head offices of Allan Gray (a major South African investment company), Silos 2 and 3 have 31 and 79 apartments, respectively, Silo 4 is home of the first Virgin Classic Health Club in the province, Silo 5 has been turned into office space and, lastly, Silo 6 has been converted into the Radisson RED Hotel. The complex itself has won numerous awards (six SAPOA, or South African Property Owners Association awards, and three Best Overall awards) for its excellence in the real-estate sector, commercial profitability, aesthetics, innovative design, functionality and environmental sustainability.

A partial view of the new Silo District in Cape Town.

Waterproofing work on one of the terraces in the Silo District.

The foundations for Silo 1 from above.



Application of a REOXTHENE® membrane in one of the silos.

WATERPROOFING AT DIFFERENT LEVELS

Because of the particular forms involved and the sheer size of the project, the designers specified the use of high-quality products that would guarantee durability, elasticity and excellent mechanical properties. The best solution to comply with all these requirements was a waterproofing system made up of products from the REOXTHENE® and ADESO® lines. These products have been available on the South African market for more than ten years and have already been used for a number of important projects. What is more, EVOLIGHT S and SPIDER P have also been awarded Agrément South Africa certification (No. 2017/557 and No. 2018/574, respectively) for waterproofing non-combustible substrates, such as flat or sloping (<60°) roofs, terraces, balconies and various other types of roofs, foundations and retaining walls. The intervention by Polyglass involved all the waterproofing work at different levels in numerous buildings of the district: from the roofs of the buildings to external piazzas, and from terraces to structures below ground level for the underground carparks. For the paved roofs with a heavy protective layer, the waterproofing system was made up of a double layer of 3 mm and 4 mm EVOLIGHT S membrane. For the green roofs and the structures below ground level for the underground carparks, on the other hand, a different two-layer system was adopted, this time with a first layer of EVOLIGHT S and a second layer of 4 mm ANTIRADICE LIGHT P. These membranes are part of the REOXTHENE® line and are made from the latest generation of distilled bitumen-based compound with ultralight technology, and a high percentage of polymers to guarantee several advantages, including a higher level of durability over the years. ANTIRADICE LIGHT P is a dual-function, plastomeric membrane: apart from waterproofing structures, it is also resistant to root penetration and is certified as compliant with EN 13948 standard. EVOLIGHT S and ANTIRADICE LIGHT P are also recommended for use on foundations to prevent rising damp.

Another waterproofing product used for the roofs was SPIDER P, a plastomeric membrane from the ADESO® line which, thanks to its self-adhesive backing, can be installed without using heat or a blow-torch. SPIDER P has excellent dimensional stability, mechanical properties and is easy to work with on site.

By using Polyglass membranes, the structures of this ambitious redevelopment project in the Silo District will remain protected against water infiltrations for years.

TECHNICAL DATA

Cape Town Silos, Cape Town (South Africa)
Year of construction: 1921
Period of the intervention: 2013-2017
Intervention by Polyglass: waterproofing roofs and underground structures
Client: Victoria & Alfred Waterfront Holdings (Pty) Ltd
Design: VDMMA (Van Der Merwe Miszewski Architects), Peerutin Architects, Rick Brown Architect, Jacobs Parker Architects Heatherwick, Heatherwick Studio
Contractors: WBHO, NMC and Group 5
Waterproofing companies: Haefele waterproofing, Storm waterproofing
Waterproofing consultant: Freddie Mc Lennan, Waterproofing Warehouse Pty Ltd
Polyglass coordinator: Andrea Storani, Polyglass SpA (Italy)

POLYGLASS PRODUCTS

Waterproofing paved roofs: Evolight S
Waterproofing roofs and structures below ground level: Antiradice Light P, Spider P

For further information on products see www.polyglass.com