



Case Study

application	SRW Reinforcement & Separation for Porous Pavers	job owner	The Living Desert Zoo & Gardens
location	Palm Desert, CA- The Living Zoo	contractor	European Pavers
product	Miragrid® 5XT, 3XT, & Mirafi® 140N		

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

The Living Desert Zoo & Gardens requires that all new construction blend in with the natural desert and to provide a stable and safe environment for the public. A durable, environmentally friendly parking lot was needed for the multitude of yearly visitors. A major concern was the storm water run-off collected from the parking area. With typical asphalt paved parking lots, oils and other contaminants mix with storm water run-off and may potentially harm the natural surrounding areas. The task set forth by the Living Desert was to construct a paving system where the water could be collected and used for the zoo's own watering needs. The Living Desert also wanted the retaining walls that border the parking lot and animal enclosures to blend with the parking area and its natural surroundings.

THE DESIGN

The Living Desert wanted to utilize a porous pavement system (permeable paving system) and chose Pavestone's Infiltrastone. The Infiltrastone paving system can accommodate storm events in excess of 2 inches (50 mm) per hour. Studies are ongoing to measure how well the Infiltrastone system removes contaminants from storm water and actually improves the water quality. Mirafi® 140N was used as a separator between two of the aggregate layers. The Mirafi® 140N keeps the bedding material from seeping into the larger aggregate layer below. The Living Desert did not want any petroleum based products used in the construction of the parking area. The flexibility in the manufacturing of the pavers made possible the elimination of any painted surfaces for handicapped spaces.

The Living Desert also incorporated the use of Pavestone's Anchor Diamond Pro wall system. The multi-colored Anchor Diamond wall was reinforced with Miragrid® 3XT and 5XT. The wall heights varied from 8 to 12 ft (2.4 to 3.65 m) and also utilized two tiered designs to save costs.

THE CONSTRUCTION

For the parking lot, the structural section consisted of an 8 inches (200 mm) layer of crushed granite placed on the compacted subgrade. The Mirafi® 140N was then installed over the aggregate layer before placement of the 2 in (50 mm) gap graded #6 granite bedding layer.



The porous pavement system is a durable and environmentally friendly design. A water truck unloads 1800 gallons (8,183 L) to prove the infiltration capacity.



The retaining wall heights varied from 8ft. to 12ft. and also utilized two tiered designs to save costs.

The Infiltrastone pavers were then installed in a pattern chosen by Matt Estron of the Living Desert.

The construction of the Anchor Diamond Pro wall began with compacting the foundation area. The construction of the block wall commenced with the installation of the Miragrid® 5XT for the larger walls and Miragrid® 3XT for the shorter walls. The contractor used a vibratory roller to ensure it met the compaction requirements behind the wall. The contractor commented on how easy the Miragrid® was to install.

THE PERFORMANCE

The Living Desert’s personnel could not be more pleased with the performance of these systems. In using the porous paver system, it eliminated the need for an elaborate storm drainage system usually associated with other types of constructed parking lots. To prove the infiltration capacity of the Infiltrastone, a water truck unloaded 1800 gallons over a 1400 SF (130 m²) area in 10 minutes, which would equate to a storm event of 12 inches (300 mm) in an hour.

The Anchor-Miragrid® wall is performing as expected. The Anchor Diamond wall was ideally suited for the animal enclosures.



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