

Case Study

application	Anchor Wall, Diamond Block	job owner	Texas A&M University Corpus Christi
location	Corpus Christi, TX	engineer	Thomas Rainey
product	Miragrid® 3XT, 5XT, 8XT	contractor	Masonry Construction

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

Situated in the middle of the Texas Gulf Coast, Corpus Christi is one of the oldest cities in Texas, with roots dating to Spanish Conquistadors. So, when Texas A&M University – Corpus Christi needed a facelift for their ocean side campus, philanthropist and entrepreneur Dusty Durill stepped forward with a stunning, yet not so surprising proposal – a ship. With the aid of artist Robert Roesch, an elaborate sculpture was envisioned, a sculpture depicting the history, culture and livelihood of Corpus Christi, Texas. With towering spires and intricate sculptures resting atop an elaborate segmental retaining wall hull, this ship was like no other. But one ques-

tioned remained...how to build it.

THE DESIGN

Artist Robert Roesch turned to Pavestone Company and Anchor Diamond® block. Pavestone® is the largest manufacturer of Anchor blocks, and their experience and knowledge proved helpful in design. A typical batter for Segmental Retaining Walls (SRWs) ranges between near vertical to 10 degrees. The most critical challenge for this sculpture was developing a means of constructing the required 23 degree batter up to 4.3m (14ft) high. Also critical was the need to construct the smooth curved lines of the ship's hull and to keep them stationary and beautiful for years to come.

Due to the complexity and exacting tolerances required to build the 89.3m (293ft) long ship, Miragrid® 3XT, 5XT, and 8XT were required at various elevations to reinforce the soil struc-

ture. Use of high tensile strength Miragrid® geogrids in SRW applications enhances wall design by creating a stable soil mass behind the wall. Because of its internal stability, the soil exerts less pressure on the back of the segmental retaining wall blocks, greatly minimizing bulging and other unsightly problems.

Additionally important was the need to protect the SRW system from intrusion of fines. The design called for top soil to promote vegetation on top of the ship. Fines from the cover material can potentially migrate with rainwater downward into the reinforced backfill, lowering its inherent shear strength, as well as creating unattractive potholes. Also, collector drains constructed of washed gravel were required to intercept encroaching rainwater and transmit it outward through drain pipes. Again, TenCate provided the solution with a 4oz non-woven geotextile placed between the top soil and backfill and drainage rock. Mirafi® N-Series



Using Miragrid® XT geogrids and Anchor® blocks, this retaining wall structure will remain stationary and beautiful for many years.

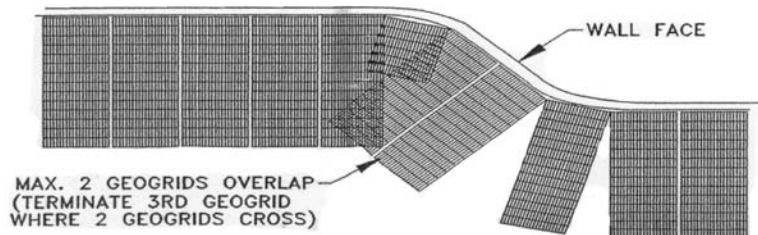
geotextiles are designed for maximum separation and filtration between varying aggregate and fill gradations.

THE CONSTRUCTION

Construction of this uniquely shaped wall required unconventional methods, including a stair-stepped and battered leveling pad at the base of the blocks. Installing the geogrid was also a challenge due to the steep nature of the batter. However, due to Miragrid® XT geogrids' flexible design, the contractor was able to maneuver and affix the geogrid between the individual blocks more easily than with stiffer grids. Also, Miragrid® XT geogrids' high tensile strength properties aided compaction of the backfill material, allowing the contractor to achieve specified densities more easily.

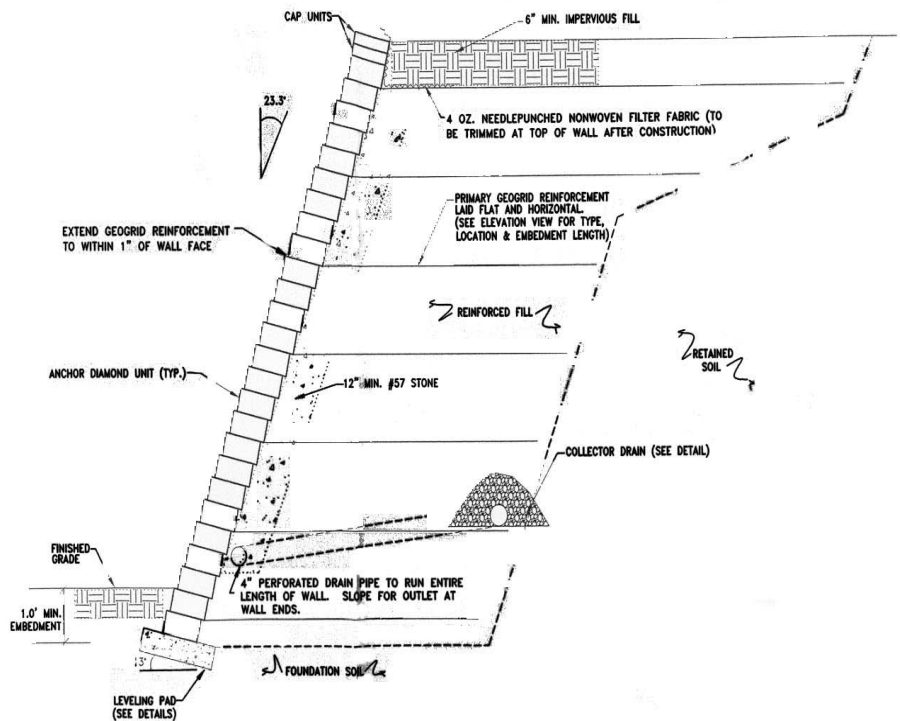
THE PERFORMANCE

The Result - A beautiful icon to represent the people and university of Corpus Christi. From concept to design to installation, TenCate Geosynthetics can help make your most unimaginable projects come to life.



**PRIMARY GEOGRID PLACEMENT
ON CURVES**
NOT TO SCALE

NOTE: SOIL BERMS AND DRAINAGE SWALES SHALL BE CONSTRUCTED AS NECESSARY TO PREVENT SURFACE WATER FROM OVERTOPPING WALL FACE DURING AND AFTER CONSTRUCTION.



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