

Application Story

PROJECT EMERALD POINT, TURKS & CAICOS ISLANDS
Product Geotube® Marine Structures Technology
Application Jetties

Location Emerald Point, Turks & Caicos Islands, BWI
Installation 2008

The Challenge:

The Turks and Caicos Islands, in the British West Indies, are a popular vacation destination. The Emerald Point Resort, located at the end of Grace Bay on Providenciales Island, faced beach erosion and loss of sand dunes due to intense tidal currents. The developer need to restore and protect the beaches fronting their resort property. [The site is indicated by red ovals in photos 1-2.]

The Solution:

First the resort developer dredged native white sand onto the beaches to begin renourishing the beachfront [photo 3]. Partnered with TenCate™, the next step involved the creation and installation of three natural-looking T-Head groyne structures to protect the resort's beaches from further erosion [photos 4-5]. The developer required the structures to: (1) appear as part of the natural environment even if the surface was exposed; (2) use materials from the site; and (3) be able to withstand the severe marine environment, including periodic Atlantic hurricanes.

Geotube® marine containment technology addressed all of these requirements. The construction involved three custom manufactured 9 meter circumference Geotube® T-shaped structures. The length of the units ranged between 20-30 meters. This installation took advantage of two unique Geotube® product features: patent-pending Flat Ends Design and Polyurea Coating. [Both features are

shown in photo 6.]

The Geotube® units utilized the patent-pending Flat Ends Design. This resulted in a continuous, uniform top level elevation from one Geotube® section to the next. The design also created tight joints between the junctions, eliminating gaps.

All potentially exposed surfaces of the Geotube® units were applied with a Polyurea Coating that matched the color of the native beach sand. This tinted coating allowed the Geotube® structures to easily integrate into the natural landscape, while adding a protective barrier to the containers.

As aesthetics play an important role in marine project design, the end of every Geotube® "arm" for each T-Head groyne featured a sloped end that gradually tapered back to the natural shoreline [photo 7]. All of these features improved the finished installation of the Geotube® units.

The Results:

This installation proved to be a big success. The Geotube® T-Head structures blended harmoniously into the unspoiled coastline of the resort's secluded peninsula [photo 8].

Only five months after the installation, the project site was hit by two Category 3 hurricanes -- Hanna in August 2008 and Ike in September 2008. All of the Geotube® marine structures held their position without any damage and they prevented any erosion of the island's shoreline [photo 9].



Contact Information:

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