SLOPE EROSION CONTROL

CASE STUDY
Santa Clara, Panama

Bijao Beach Resort

Geo Products, LLC | EnviroGrid® GeoCell
Panaostrich Corporation, S.A. | Panaweb

Background

The Bijao Beach Resort community resides in the balmy region of Panama near Santa Clara's beaches. It was constructed as a luxury resort to compete with nearby Playa Blanca and Decameron. An artificial mountain was created to enhance the geography of the resort. Native soil of the area was compacted and stabilized with biaxial geogrid, but rain has wreaked havoc upon the slopes. Severe erosion has caused extremely large ruts to form in the sides of the mountain, threatening its integrity.

Technical Information

MATERIALS USED:

EnviroGrid® EGA30 4" 2,100m2

APPLICATION:

Slope Erosion Control

PROJECT LENGTH:

2 weeks, 8 man crew

Bijao Beach Resort
Pre-EnviroGrid® Slope Erosion Control System

Bijao Beach Resort
With EnviroGrid®

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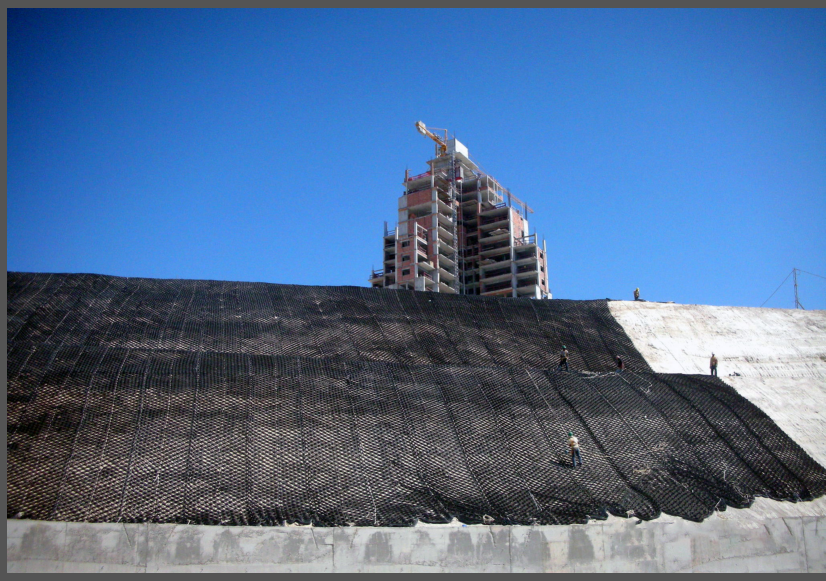
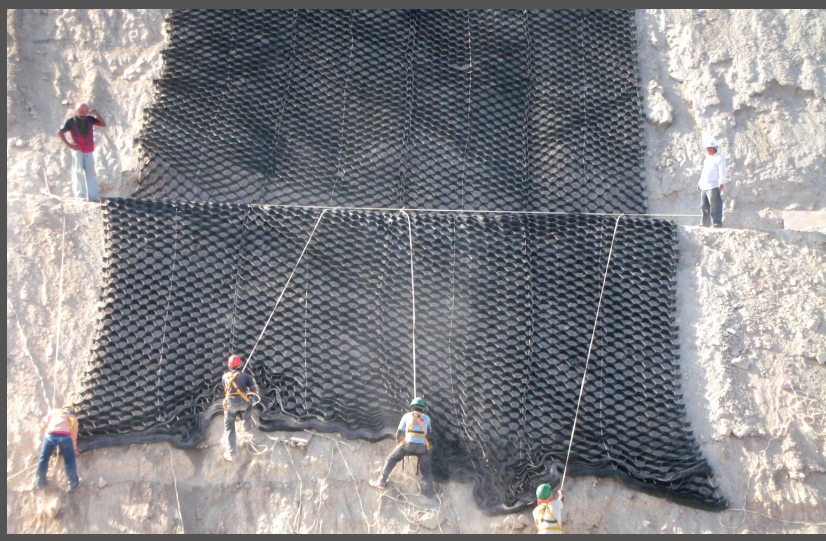
Design Solutions

After analyzing several other products, engineers determined that the EnviroGrid® 3-D cellular confinement system was the most effective solution for protecting the slopes. The slopes consisted of two twenty-three meter long portions seperated by a five meter shelf midway down the slope.

Construction Overview

A 4" perforated EnviroGrid® GeoCell was placed directly on the slopes. The panels were anchored in place with polyester tendons along the entire slope, including the 5 meter shelf area. The tendons were dead-man anchored at the top of the slope and adjacent panels stapled. The EnviroGrid® was filled with local sandy soil and hydro-seeded with Saint Augustine grass seed. The 4,500 m2 of EnviroGrid® were installed in 2 weeks by a crew of 8 men.

Results

After construction contractors continued to irrigate the slope, preventing additional erosion within the cells while the vegetation was taking root. At 4 weeks, abundant vegetation growth was observed and responsible gardeners kept the slope hydrated.

The goal to control the erosion of the slopes from heavy rains and improper initial design was accomplished and the community was able to proceed with the construction of the Bijao Beach and Golf Resort community.