RETAINING WALL

CASE STUDY
Rio de Jesus, Panama

El Valle del Anton

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

Background

The Rio de Jesus runs through El Valle De Anton, a very mountainous region in central Panama. These conditions, coupled with heavy seasonal rains, cause severe damage to roadways and embankments in the area. Erosion and instability from shifting soils, periodic landslides, and mudslides plague the valley daily and were affecting construction.

Technical Information

MATERIALS USED:

EnviroGrid® EGA30 6"

45m (150ft) long | 3m (10ft) high

APPLICATION:

Retaining wall

PROJECT LENGTH:

5 days
6-man crew
Loader & Operator

Embankment along the Rio de Jesus village road
Pre-EnviroGrid®

Widened road and retaining wall along the embankment
With EnviroGrid®

Geo Products, LLC

12626 N. Houston Rosslyn Rd.
Houston, Tx 77086
Phone: 281.820.5493 | Fax: 281.820.5499
www.geoproducts.org

cont'd pg 2

Problem & Objective

The Ministry of Public Works in Panama could not authorize work to commence on km20 of the Rio de Jesus village road due to erosion of the road and adjacent embankment. In order to permit vehicle traffic, 2.5m of road had to be added to the existing track width.

Design Solution

The Ministry of Public Works conducted a detailed study of the area, including soil stability and current erosion damage to the embankments. Professional structural engineers from the Ministry decided to use the retaining wall system constructed of stacked EnviroGrid® Geocell panels, in order to increase the width of the road and eliminate embankment erosion.

Construction Overview

Construction began with clearing the unstable soil and vegetation from the embankment and road. The base was leveled and miro-piles constructed from PVC pipe were driven into the ground to increase the soil's bearing capacity. The piles were filled with concrete and two were placed per EnviroGrid® panel, tied into the first layer of EnviroGrid®, which was also filled with concrete. Subsequent layers were built on top of the first and filled with on-site soils high in lime conent. The top layer was filled with road material and guardrails were set with concrete.

Results

The EnviroGrid® formed a retaining wall that was structurally resistant to any loads applied and seismic movement in the area. The road was widened and opened up to vehicular traffic. The road expansion was the vital, as it was the only way for local citrus farmers to transport goods to the Capitol. Vegetation naturally occurred after 6 months. Lush vegetation promoting soil containment and adding strength to the structure had grown in only a year after the project.