

**PUERTO PRINCESA NORTH ROAD  
TAYTAY, PALAWAN, REGION IV-B, PHILIPPINES**

Slope Protection

**Problem**

Due to the ever increasing tourism industry in the province of Palawan, the Department of Public Works & Highways (DPWH) Palawan 1st District Engineering Office has allocated funds for road widening and improvements that include slope protection works of cut slopes along the Puerto Princesa North Road (PPNR). One of these slope protection works was located along KM 224+300 to KM224+700 of the Roxas-Taytay-El Nido Road in Taytay, Palawan, Philippines.

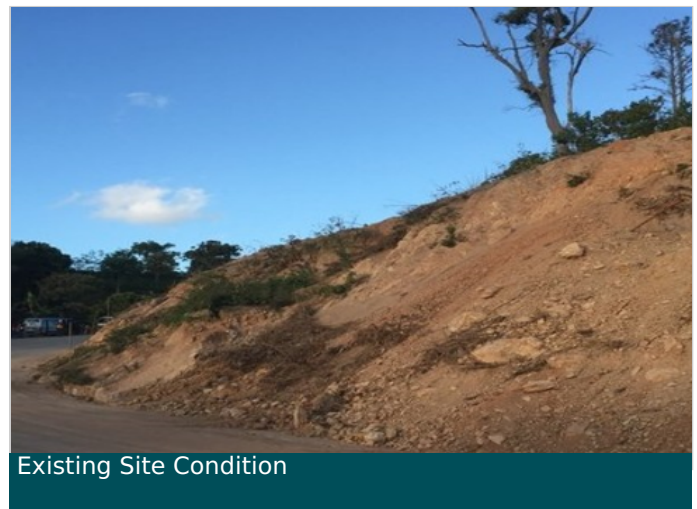
After site inspection in the last quarter of 2015, it has been found that the major slope constituents of the cut slopes were stiff, cemented and dense silty and clayey soils, with disintegrated rock fragments and boulders. The slope height ranges from ten meters to 17 meters, with existing dense vegetation. In this, similar to most of the exposed cut slopes along the PPNR network, erosion problem was the main concern.

**Solution**

A robust erosion protection geoblanket (Maccaferri's MacMat R) has been proposed for the project. In the designed erosion control system, cut slopes were trimmed to achieve a maximum of 65° facing angle, and benches were provided at every five meters slope height for slopes higher than eight meters. The slope benches were lined with horizontal drainage ditches, and vertical drainage canals (dissipators) were designed to address surface run-off.

Besides its constructability and being a cheap alternative to other erosion control systems, another distinct advantages of MacMat R are its ability to be fitted to slope geometry requirements because of its size and flexibility. MacMat R, being made from polymeric materials and reinforced with double-twist netting, does not degrade easily and therefore it has the ability to protect exposed cut slopes while allowing local vegetation to grow. It also reinforces the roots of vegetation for superior erosion protection and has moisture-retention capability during the dry season to promote vegetation growth.

**Client:** DPWH Palawan 1st District Engineering Office  
**Designer / Consultant:** DPWH Palawan 1st District Engineering Office  
**Contractor:** VCH Construction  
**Products used (Qty.)**  
 - MacMat R - Steel N/A  
**Date of construction:** 01/2016 - 07/2016





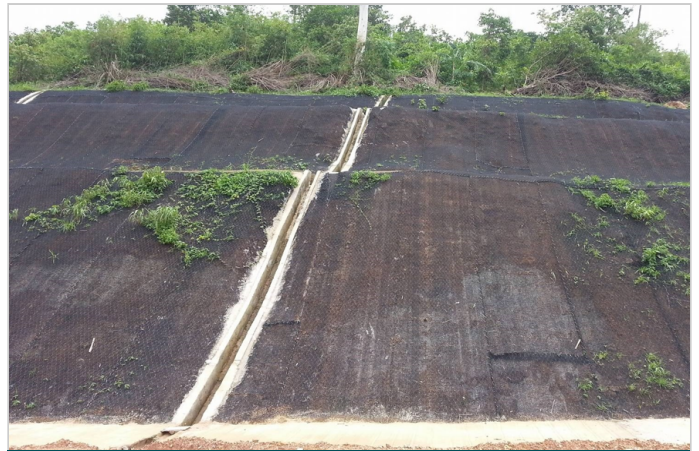
Site Preparation



Project Completed



Project Completed



Project Completed



Project Completed