

**DT SLOPE STABILISATION AT VIA CALDERON
ECUADOR, QUITO-CALDERÓN**

EROSION CONTROL

Product: MacMat® R

Problem

After a magnitude 5.1 earthquake struck the Ecuadorian province of Pichincha, between the capital, Quito and Guayllabamba, landslides made some roads impassable. With the epicentre in the immediate vicinity and the risk of further landslides the Ministry of Transportation and Public Works suspended travel on the roads until slope stabilisation work could be carried out on the embankments.

The cause of the landslide was attributed to the soils weakened by erosion from wind and water loss. A solution was needed that would protect the soils from erosion.

Solution

Project contractor and designer, Herdioza Crespo Construcciones S.A. approached Maccaferri de Ecuador S.A. for assistance in determining the appropriate and cost effective solution.

The solution had to deliver two functions:

- To prevent soil loss through wind erosion
- To prevent occasional larger rocks (up to 25cm diameter) from falling from the slope as the soils around them erode

The geomat, MacMat® R, was proposed. This multi-function geomat consists of a 3-dimensional matrix of polymer monofilaments, reinforced with a steel wire double twist hexagonal mesh (8x10 Type). The steel wire mesh is heavily galvanised with an additional polymer coating to provide a long design life.

The 3-D mat component of the MacMat® R provides the slope with immediate erosion protection from wind and rainfall impact. This enables the slope to revegetate, and additionally, provide root reinforcement to the vegetation.

The wire mesh within the geomat prevents the larger, occasional rocks from detaching.

The MacMat® R was unrolled onto the slopes and anchored in a trench at the top of the slopes. The geomat was additionally pinned to the slopes with fixing pins to ensure it was in intimate contact with the soil slope.

Client:

MINISTRY OF TRANSPORTATION & PUBLIC WKS.

Main contractor:

HERDOIZA CRESPO CONSTRUCCIONES S.A.

Designer:

HCC — MACCAFERRI DE ECUADOR S.A.

Products used:

MACMAT® R - 378,500m²

Date of construction

August 2014 - February 2015



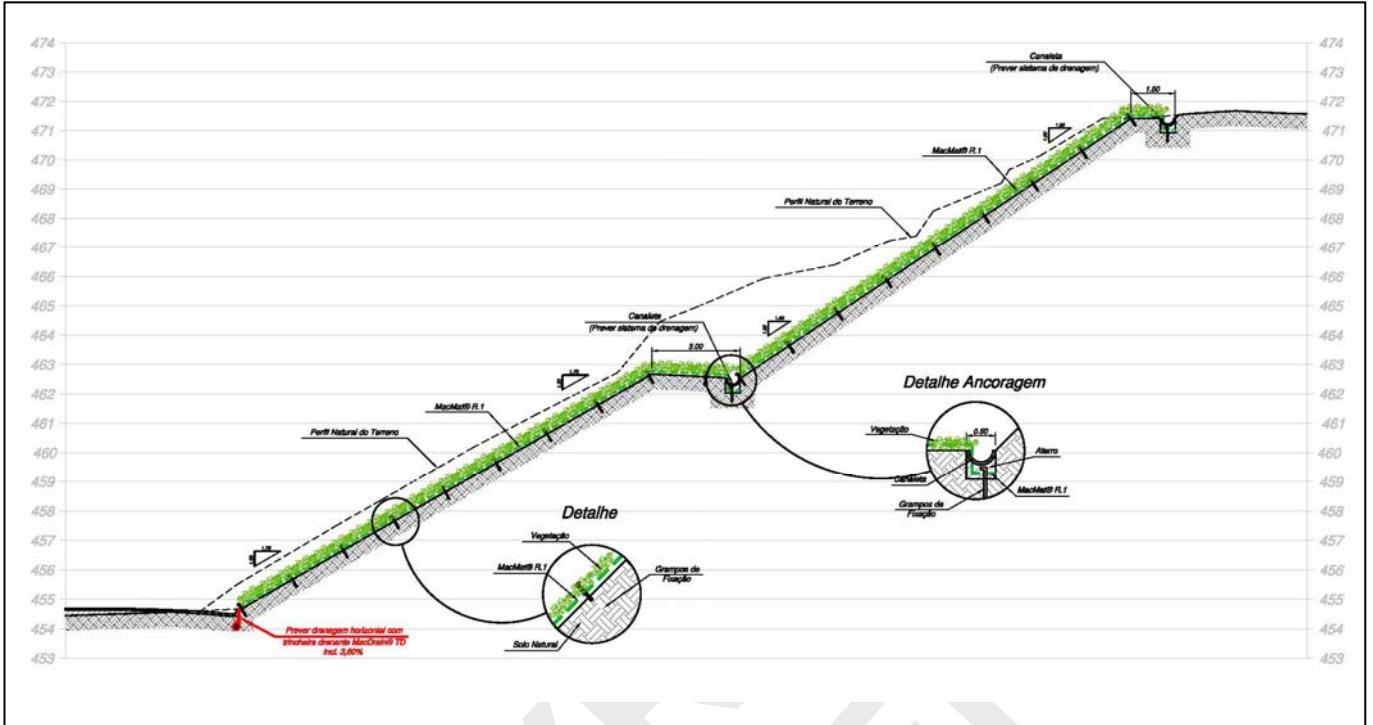
During construction - MacMat® R placed on soil slope



During construction



During construction



Typical cross section through the slope



After construction and awaiting vegetation establishment



After construction and awaiting vegetation establishment

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