

ALIAMANU ROCKFALL MITIGATION ALIAMANU MILITARY RESERVATION, OAHU, HI

ROCKFALL MITIGATION

Product: RMC 050 ICAT Rockfall Barrier

Introduction and Problem

The Aliamanu Military Reservation in Oahu, Hawaii was threatened by rockfall near a recently constructed church. There were concerns that the rockfall would cause potential safety hazards and damage to the newly constructed building.

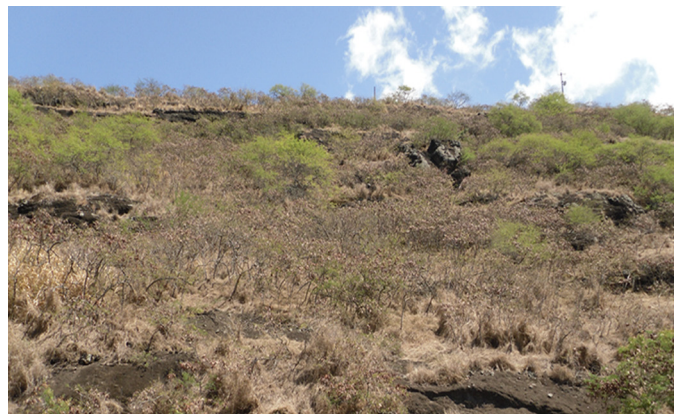
Solution

The project was initially designed for 100 kJ capacity rockfall barrier; however, after the final design was completed, the project called for 500 kJ capacity. At the start of construction, the slope was cleared of as much loose material and scaling as possible.

What was unique about this application was that the slope was in very close proximity to the road, which meant that an uphill bracing cable could not be used. The barrier used was the new Maccaferri RMC ICAT 050 barrier with no uphill bracing cables. This new barrier has a unique system to dissipate the energy from the rock impact.

The posts are fabricated with two energy dissipaters located at the base, as shown in Figure 1. These energy dissipaters allow the fence to perform better during impact. Also, this barrier has an innovative cable net panel where the wire rope cables are woven through the double twist mesh during fabrication. This helps to reduce the installation time by using one panel instead of the two typically used on a conventional cable net rockfall barrier.

Underground utilities along the site posed to be a challenge. It was nearly impossible to use standard ground anchors. Instead, the concrete post foundation had to be designed to accommodate the force resistance on the post. Once in place, the barrier system was installed successfully.



Pre-Construction



During Construction: Clearing for the barriers



Maccaferri RMC ICAT 050 Barrier (Figure 1)

MACCAFERRI



Post Construction: End Post



Maccaferri Panel Detail



Post Construction: Installed Barrier

Client

USACE

Main Contractor

CW CROSSER CONSTRUCTION, INC.

Designer

YEH AND ASSOCIATES, INC.

Products Used

MACCAFERRI RMC 050 ICAT

Date of Construction

SEPTEMBER 2011

MACCAFERRI

www.maccaferri-usa.com

Headquarters:
10303 Governor Lane Boulevard
Williamsport, MD 21795-3116
Tel: 301-223-6910
Fax: 301-223-6134
email: hdqtrs@maccaferri-usa.com

Area Offices:
AZ, Phoenix
CA, Sacramento
FL, Coral Gables
MD, Williamsport

MO, St. Louis
NJ, Iselin
NM, Albuquerque
OH, Westerville

PR, Caguas
TX, Lewisville