

DUDLEY WARD ROAD REOPENING

DUDLEY WARD WAY, GIBRALTAR, UNITED KINGDOM

Dynamic Barriers

Problem

Rockfall protection systems are a key element in the design and maintenance of road and railway infrastructure networks and have a direct impact on safety. The issue of rockfall protection for roads, railways and other vital facilities in Gibraltar has been identified to prevent damage to property, vehicles and even more importantly people.

Since February 2002 a vital road around Gibraltar has been closed following an incident caused by a falling rock on the south east side of the island. Due to the closure of this road a diversion has increased pressure on roads throughout the busy central areas.

Consultant, Golder Associates working for the Government of Gibraltar, were involved in investigating what triggered the event and offering solutions to reduce risks of reoccurrence of the rock falls.

Solution

Following their research, Golder Associates proposed a combination of rockfall mitigation measures to protect the 500 m-long stretches of road leading up to the Dudley Ward Tunnel entrance. These included an extended rockfall canopy over the tunnel entrance, passive rockfall catch ditches cut into the lower slope immediately above the road and a network of high-resistance, rockfall catch fences, positioned up-slope of the critical area.

The road protection scheme, was undertaken by contractor Can Geotechnical. The work included the installation of the network of catch fences consisting of a 200m long section split into three lengths, a 70m long and a 90m long fence. All fences included a degree of overlap has been included. Each fence had to have a capacity of 3000kj at the Maximum Energy absorption level.

Maccaferri supplied their OM CTR 30/04/A 5m high catch fences to the project, capable of withstanding 3000kj maximum energy level impacts, or multiple lower energy impacts. This is one of the highest capacity barriers within the Maccaferri range from 500kj to 5000kj fences which is the equivalent of stopping a 16.5-tonne lorry travelling at 57mph.

Client: Government of Gibraltar

Designer / Consultant: Golder Associates

Contractor: CAN Geotechnical Ltd

Products used (Qty.)

Date of construction: 09/2009 - 09/2009

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Rolls of debris mesh being lifted to project site



Raising catch fence posts into position



Using helicopters to lift posts into position



Erecting catch fence posts / drilling anchors



Securing main absorption panels to upper cables and posts