

**ROCKFALL PROTECTION WORKS FOR PYLON CY288
HEATHCOTE VALLEY, CHRISTCHURCH, CANTERBURY, NEW ZEALAND**

Dynamic Barriers

Problem

Pylon CY288, located in the Heathcote Valley, was hit by boulders during the September 2010 earthquake in Christchurch. This pylon forms part of the main power-line route over the Port Hills providing electricity into Sumner area. It was therefore essential for the pylon to be protected from any future rockfall events to ensure continuity of electricity supply.

The pylon is situated on sloping terrain approximately 75m above sea level. Outcrops of volcanic rocks from the Lyttelton Volcanic Group are located approximately 180m upslope from the pylon. Following on from the earthquake, the client engaged a consultant to carry out a rockfall risk assessment to identify rockfall sources in the upslope region and suggest ways to protect Pylon CY288 from rockfall impacts.

Solution

The proposed solution is a combination of two approaches to arrive at an effective outcome. High risk larger rock outcrops were removed through scaling process which minimises the risk considerably. However, it was not possible to remove all the boulders within the source area. The residual risk was then managed by installing dynamic barriers to intercept any potential falling rocks at the impact point near the pylon. The removal of the high-risk boulders has the effect of requiring a lower energy capacity dynamic barriers and a shorter post height requirement.

Client: Orion New Zealand Ltd

Designer / Consultant: GHD Ltd

Contractor: Solutions 2 Access Ltd

Products used (Qty.)

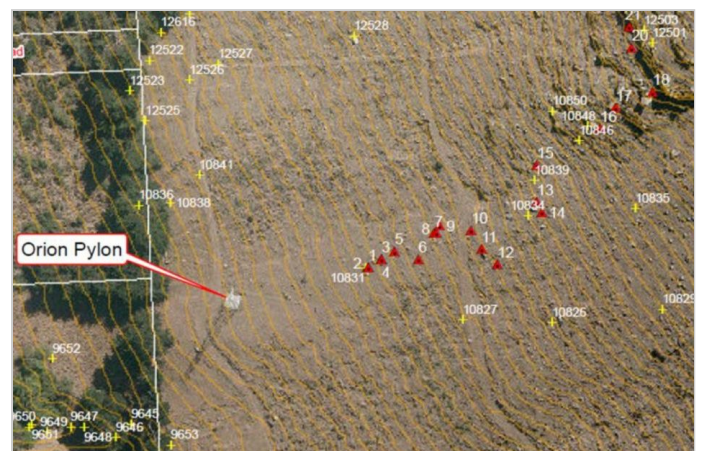
- Dynamic barrier RB 1500

Height:4.0m@10mc/c;
L=30m

Date of construction: 01/2016 - 04/2016



Photo showing multiple rockfall points upslope of pylon



Mapped precarious boulders



Precarious source rocks identified during walkover



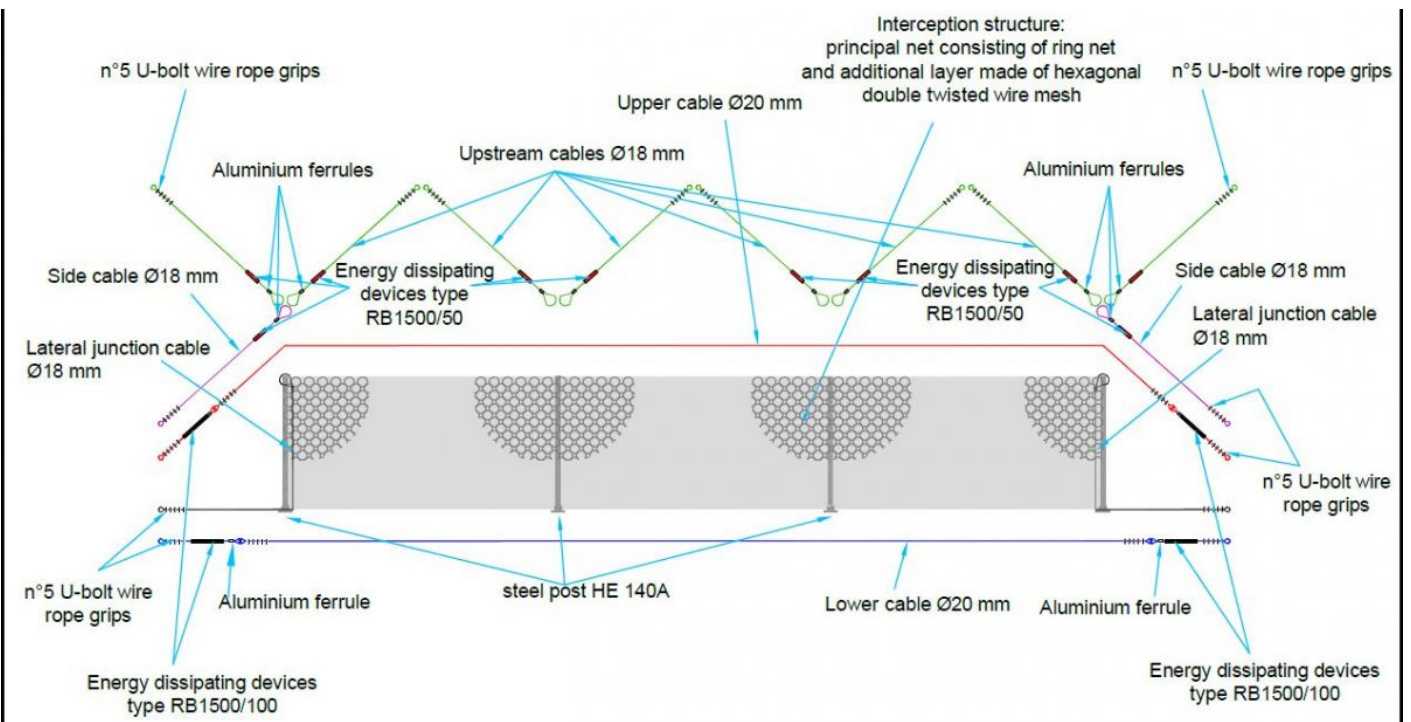
Complete Barrier Installation Works: View From Upslope



Complete Barrier Installation Works: Side View



Complete Barrier Installation Works: Side View 2



RB1500 General Arrangement

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