

Project: The Christchurch Gondola  
Date: December 2013  
Client: Welcome Aboard  
Location: Christchurch



## Rockfall Bund

The Christchurch Gondola in the Port Hills area is an iconic tourist attraction in the region. The gondola ride from the base to the top of Mt Cavendish Summit is a 1km distance ride that goes through the crater rim of the Port Hills. The ride offers stunning views for the passengers overseeing Lyttelton Harbour. After 22nd February 2011, this favourite tourist attraction was closed due to the rockfall concern and the risk posed to the tourists should another earthquake happen. Since the event the client had been working with the consulting engineer Golder Associates to investigate the rockfall risk and design protection measures to ensure the risk was controlled to a minimum and in full compliance with the council's requirement.

In addition to trajectory analysis using computer software to determine the kinetic energy and bounce height of the falling rock; the engineer also carried out scaling of identified rocks above Summit Road, monitored their size and trajectory. These field test results provided invaluable data to assist the engineer in the simulation work using computer software and planning the necessary protection measures.

The mitigation measures also included an attenuator fence installed up the slope to protect Tower 6. This is reported in another case study.

Another mitigation measure utilising the **Green Terramesh (GTM) Bund** was constructed near the base station protecting the car park; location where visitors congregated. This **GTM bund** is 2.4m high by 40m long. The **Green Terramesh Bund** is a reinforced soil structure. These structures are well known for their versatility and great ability to absorb energy especially during the earthquakes.

The Christchurch Gondola was officially reopened to public by the New Zealand Prime Minister and Minister of Tourism Rt. Hon John Key on 19 April 2013.



Construction of the Green Terramesh Rockfall Bund



Green Terramesh Rockfall Bund growing greenery



Completed Green Terramesh Rockfall Bund

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