GEOFABRICS CASE STUDY

PROTECTING AN ACCESS ROAD WITH MACCAFERRI ROCKFALL BARRIERS

PRODUCTS USED

MACCAFERRI® ROCKFALL BARRIERS (OR CATCH FENCES)

- Fabricated from a complex system of steel cables connected to structural elements, energy absorbing devices and anchorages
- Deflects under load and absorbs energy, with a range of certified fences available from 35kJ to 9000kJ
- Cost effective when installed within the transit or impact zones which can present technical, topographic or access issues for other mitigation systems
- Easily transported with a ready-to-use “kit” system, which includes all posts, base plates, netting, braking systems, anchor cables and ground anchors for typical ground conditions
- Full scale crash tested and certified in accordance with the European Organisation for Technical Approvals (EOTA) assessment documents EAD 340089-00-0106 and EAD340059-00-0106

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PROJECT DESCRIPTION

The Parnell Baths are located at the end of Judges Bay Road on Point Resolution, with access roads and car parks forming an extension of Judges Bay Road. The cliff beside and adjacent to Judges Bay Road varies in height from 3m to 20m, with geology consisting of East Coast Bays formation (ECBF) rock and residual soils. Over the years, erosion, tree falling, and rock falls have affected the access road.

Temporary measures were taken to mitigate the rockfall and landslide risks by installing a low height concrete jersey barrier and temporary fence at the toe. Recognising the need for a long-term solution, the client, Auckland Council, engaged WSP as the consulting engineer to formulate a permanent solution to ensure the safety of the public using the access road and car parks.

The cliff had been identified into four areas of varying geological features, including height, vegetation establishments, boundary ownership. WSP carried out slope stability and rockfall trajectory analyses. It was proposed that a European Assessment Document (EAD) certified rock fall fence placed beyond the kerb line will be necessary as a passive protection structure against any potential rockfall issue, in addition to upper cliff stabilisation.

OUR SOLUTION

Geofabrics was contacted by Auckland Council regarding the EAD certified fence ranges and available options. After discussions with WSP, the Maccaferri Dynamic Rockfall Barrier RB100UAF was selected for its maximum energy level of 111kJ, meeting the project requirements. The total length of the barrier was 139m, divided into four fences, each approximately 30m long. Fences 1 to 3 shared a post, while fence 4 was separated, allowing for future access and maintenance.

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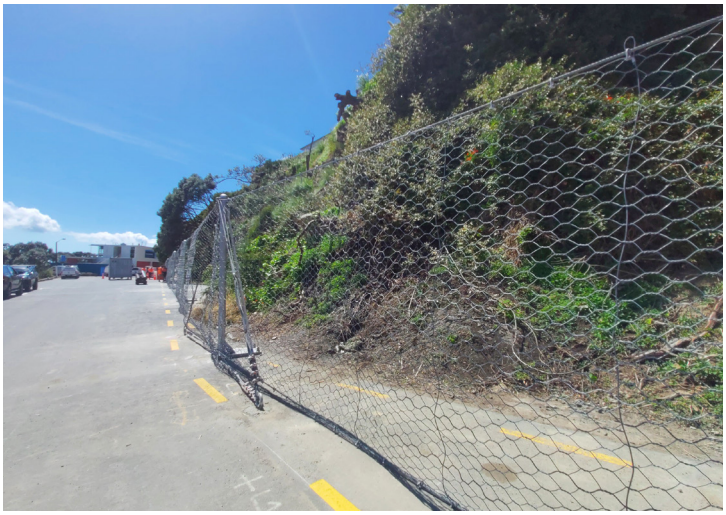
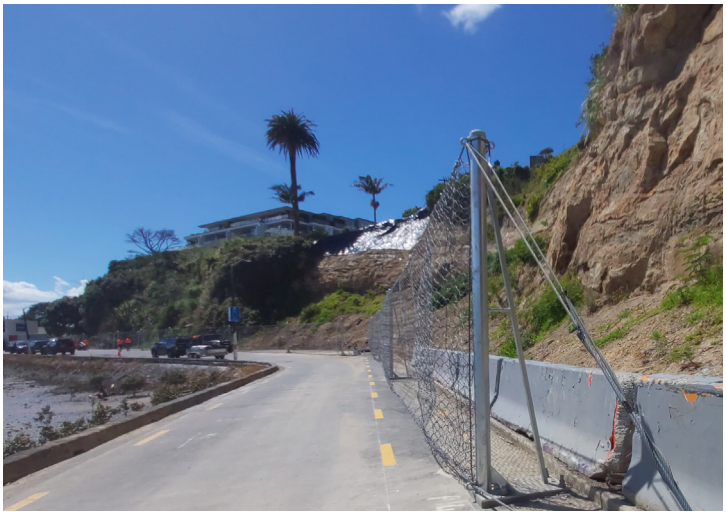
The barrier installation was completed by the specialist contractor, Earth Stability Limited. In total, it took the contractor three weeks to install the 2.5m high posts and the 139m long EAD certified rockfall barriers. Two weeks were spent installing the below-ground components, which consist of threaded bars under the base plates and lateral anchors, followed by the installation of the above-ground components, including the fence.

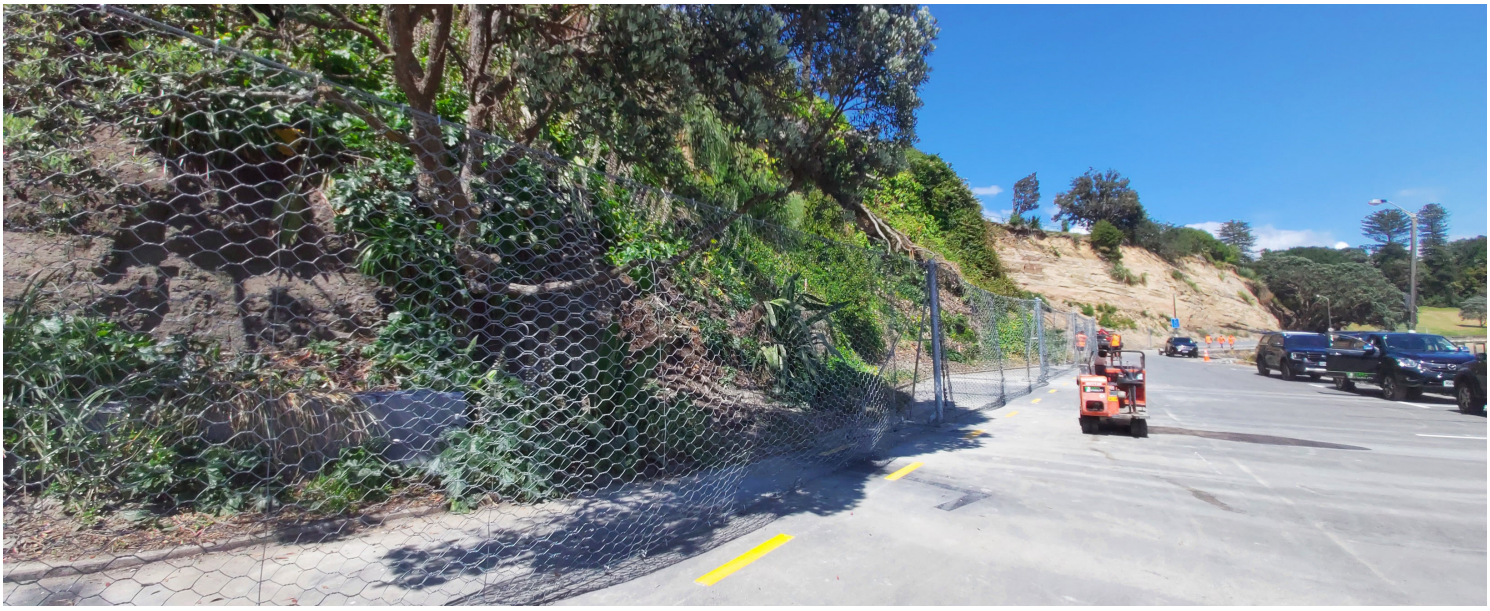
Following the early completion of the rockfall barriers' installation, Auckland Council was able to reopen the popular pool to the public on time.

139m
long rockfall barrier installed

EAD
certified







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