

CASE STUDY

DEBRIS FLOW BARRIER KIWIRAIL

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INTRODUCTION

Between November 2022 and June 2023, Abseil Access worked on a project along the NIMT 36.07 KiwiRail Line in Wellington. The client engaged our team, with WSP as consultant, to install a debris flow barrier in a gully between the railway and the pedestrian walkway above, providing protection against debris flows and rockfalls.

PROCESS

The project began with de-vegetation, rock scaling, and profiling to prepare the site. Access and deliveries were carefully managed by mobilising along the railway during Block of Line periods. Three sacrificial test anchors were installed and tested to 420kN, followed by 24 self-drilling T40/16 anchors between 3m and 8.5m deep in 90mm diameter holes, each with a debonded length of 1m. Anchor plinths were built into the bank to support the fence cables, with two suitability and four acceptance tests completed to confirm performance.

A temporary support structure was installed over a culvert to allow drill rig access and designed to be removable in case of weather events. Throughout construction, we worked closely with KiwiRail Rail Protection & Electrical Safety Officers to maintain safe operations under restricted access and train movement hours. The debris flow barrier system was completed with the installation of a Geobrigg VX140-H4 fence, including design adjustments to accommodate the actual site conditions and anchor locations.

OUTCOME

The project was completed successfully, delivering a robust debris flow barrier system that now protects the railway line. The re-designed fence and anchor system was tailored to the site's specific conditions, and all works were carried out in line with KiwiRail's strict QA, H&S, and operational safety requirements.

