CASE STUDY

NIMT UTIKU UNDERCUT REPAIR

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INTRODUCTION

In March 2017, Abseil Access was engaged by KiwiRail, with Aecom NZ as consultant, to stabilise a slip below the North Island Main Trunk (NIMT) line at Utiku. The slip posed a risk of undercutting the rail corridor, requiring a rapid and durable slope stabilisation solution. Works had to be carried out without interrupting rail operations or interfering with the overhead traction system.

PROCESS

A purpose-built access road was constructed to keep all operations outside the rail corridor. Crews installed 50 BluGeo 25 mm GRP soil nails for corrosion resistance, at 1.5 m spacing and 4 m deep into papa rock. Drainage works included a crest subsoil drain, strip drains behind the shotcrete wall, and six sub-horizontal PVC drains at 3 m centres. The wall was reinforced with Geobrugg Tecco G65/3 rockfall mesh and finished with 35 MPa fibre-reinforced shotcrete (Forta-Ferro fibres, RDP toughness 400J) applied at a nominal 75 mm thickness. Additional works included Geofabrics erosion control mesh and installation of a new stock fence at the crest.

OUTCOME

The project was completed within the 5-week timeframe, with zero disruption to rail services. The corrosion-resistant GRP nails, combined with fibre-reinforced shotcrete and enhanced drainage, provided a long-term erosion control solution. KiwiRail's QA and health and safety expectations were exceeded.