

CASE STUDY

CHATHAMS SOIL NAIL ANCHORS

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INTRODUCTION

In April 2018, a stabilisation project was undertaken on a sandstone rock outcrop at Waitangi Wharf, Chatham Islands, as part of a broader initiative to upgrade the wharf's structural integrity and usability. The project involved specialised slope stabilisation techniques to support ongoing infrastructure improvements in this remote island location.

PROCESS

The chosen solution featured 100mm diameter, 9-metre-deep fully grouted soil nail anchors installed in a 2 x 2.5m grid pattern. Each anchor used a 32mm galvanised steel tendon and was finished with a 700mm square structural mortar bearing plate. A pneumatically powered DTH-hammer mounted on a suspended A-frame drill rig was used for drilling into the weathered sandstone, proving highly effective for the geology. Temporary works included installing ground anchors and formwork to safely support both personnel and the bearing plates. Despite the island being 1,500 km from mainland New Zealand, equipment and materials were delivered through detailed logistical planning by the Alliance and Abseil Access project teams.

OUTCOME

The project met all quality and timeline targets. Over 10% of the anchors underwent successful load testing, and grout samples were confirmed to meet quality standards. Anchors were tensioned to 40Nm using calibrated torque equipment and finished with corrosion protection. All works were completed as scheduled, with quality assurance exceeding expectations.

