

# CASE STUDY

## FRANCES HODGKINS SHOTCRETE

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## INTRODUCTION

In August 2015, stabilisation works were undertaken on a disused 35-metre-high quarry face located behind the Frances Hodgkins Retirement Home in Dunedin. The steep face, composed of a weak volcanic ash layer beneath basalt, posed a rockfall risk to the building and required targeted remediation to improve slope stability.

## PROCESS

The final mitigation phase involved applying shotcrete and installing drainage to control groundwater within the volcanic ash layer. A flexible rock mesh, anchored into the overlying basalt, was installed as reinforcement across the undulating surface. Ninety drainage holes were drilled to allow water to escape and reduce hydrostatic pressure. Over 500m<sup>2</sup> of the face was then covered with a 100mm-thick layer of shotcrete applied as a dry mix (gunite), delivered via rope access or an elevated work platform where ground access allowed.

## OUTCOME

The project was completed within the scheduled timeframe and with minimal disruption to the retirement village. The combination of reinforced mesh, drainage, and shotcrete provided an effective, long-term solution to reduce rockfall hazards and protect the facility.

