

BARAGWANATH HOSPITAL ROCKFALL PROTECTION JOHANNESBURG, GAUTENG, SOUTH AFRICA

Simple Drapery

Problem

The construction of the Bara 500 Covid-19 hospital required major bulk earthworks to provide a level platform. This created a rock highwall more than 7m high along the northern and eastern perimeter of the site. A rock slope stability analysis showed that the sub-vertical rock face may be prone to instability in the form of a combination of toppling and slab-sliding due to joint sets and ingress of storm water. Numerous vital structures were erected along the northern perimeter, close to the highwall. And on the eastern perimeter, an access road was constructed to service the hospital. Both the structures and the road required protection from rock falling from the highwall.

Solution

Maccaferri Africa was approached by GCS Water and Environmental Consultants to assist with providing a simple rockfall drapery solution, anchored at the top and bottom of the slope. The approved rockfall solution installed consisted of Type 60 Double Twist Mesh, 2.2mm Zinc wire with PVC coating, crest rope and crest anchors, as well as a toe rope and toe anchors. This passive rockfall system would allow rocks to detach from the rock slope and fall behind the drapery mesh in a controlled manner, protecting the infrastructure from damage.

Double Twist Mesh has multiple advantages; it is non-raveling, manufactured locally, economical, easy to install, and coated with a polymer to provide added protection in aggressive environments. Due to the urgency of the project, installation of the rockfall protection system had to be fast-tracked and coordinated with expertise, and installation was successfully completed by Hoffenheim Geotechnik.

Client: GCS WATER AND ENVIRONMENTAL CONSULTANTS

Designer / Consultant: GCS Water and Environmental Consultants

Contractor: Hoffenheim Geotechnik

Products used (Qty.)

- DT Mesh 1600 sqm

Date of construction: 08/2020 - 09/2020



Rock slope before installation of DT Mesh



Installation of the DT Mesh to the Northern Slope



Installation of the DT Mesh to the Northern Slope



Installation of the DT Mesh to the Eastern Slope



Installation of the DT Mesh to the Eastern Slope