

## CHAPMAN'S PEAK DRIVE CAPE TOWN, WESTERN CAPE, SOUTH AFRICA

### Vertical Walls with Concrete Facing Panels

#### Problem

The reconstruction of Chapman's Peak Drive required two reinforced concrete canopies built adjacent to the half-tunnel, to protect motorists using this scenic route from the impacts of any falling rocks cascading down near vertical cliffs 400m high and with energies of 7000kj.

These canopies, one a cantilever structure, the other a portal, had to be safeguarded from the impact of falling rocks.

Furthermore, due to time constraints, the engineers had to plan ways to speed up the completion of the structure and therefore approached Maccaferri Africa/African Gabions.

#### Solution

To ensure the durability of the concrete canopies, a three metre-deep earth fill embankment using a gabion mass gravity wall was selected. Completion of the structure was accelerated through the pre-assembling and packing of the gabions off-site whilst the concrete of the canopy was curing.

Once pre-assembled, the gabions were lifted into place like Lego blocks, and joined together to form the mass gravity wall. PVC pipes in the base of the gabions were used to house the lifting straps.

A concern was the deformation of the gabions when lifting took place. Site trials, however, showed that correctly packed hexagonal woven mesh gabions underwent very little or no deformation as the load was transferred uniformly into the gabion.

Also, the specially manufactured tan colour of the PVC coating ensured that the Cape Sandstones blended in naturally, reducing the visual impact of the gabions.

**Client:** ENTABENI CONCESSION COMPANY

**Designer / Consultant:** ZIETSMAN LLOYD & HEMSTED (PORTALS ONLY)

**Contractor:** HAW & INGLIS AND CONCOR (JOINT VENTURE)

**Products used (Qty.)**

- Gabion unknown

**Date of construction:** 10/2003 - 12/2003



Before gabion construction



Canopy with gabion impact barrier above





Cantilever structure with gabion impact barrier



Prefilled units, with PVC pipes, lifted off the ground



Lifting the prefilled unit



Chapman's Peak Drive: re-opened



Backfill soil being lifted to fill behind gabions

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