

MONTAGNE COUPÉE

MONTAGNE COUPÉE, PORT LOUIS, MAURITIUS

Mass Gravity Retaining Walls

Problem

Montagne Coupée is situated nearby Port Louis, the capital of Mauritius, and in this location the road passed through a relatively narrow gorge, made of weathered and unstable basaltic outcrops, approximately 100 m long.

The height of the slopes reached some 9 m, and required stabilization measures on either side, while having to accommodate an existing access road on top of one of the slopes.

Pedestrian traffic had also to be made safer, by incorporating pavements on either side of the road.

Solution

The initial solution consisted in a mixed design, including a mass gravity gabion wall at the toe, and a Terramesh™ soil reinforced structure in the upper half.

This took into account the presence of weathered material, and removal would have provided sufficient width for this structure, in a fill-type situation.

Due to the need of widening the road, and the constraints imposed by existing structures, a new alignment was set, which determined a change to a cut-type situation.

A new design approach became necessary, so as to minimize the space required by the stabilization measures.

The solution consisted in a rock-filled gabion revetment, anchored to the slopes by using grouted steel nails ; 25 mm thick steel bars, 4,0 m long, were used to anchor a 1,0 m wide gabion revetment.

The grid of the nails was 2,0 x 2,0 m, in a staggered pattern ; dished anchor plates, 150 x 150 mm, were used to anchor the gabion "beam" to the nails.

A concrete base and steel dowels were used at the foundation level, so as to avoid the excavation in hard basalt.

Client: MINISTRY OF ENVIRONMENT

Designer / Consultant: MACCAFERRI SA (Pty) Ltd

Contractor: TRANSINVEST, MAURITIUS

Products used (Qty.)

- Gabion 1300

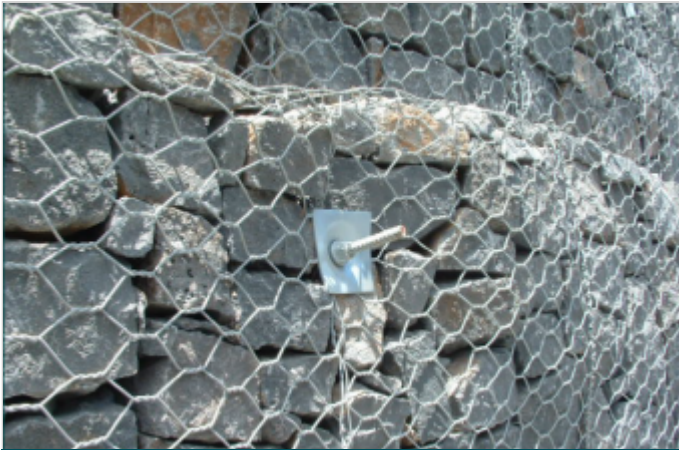
Date of construction: 04/2004 - 10/2004



Before construction



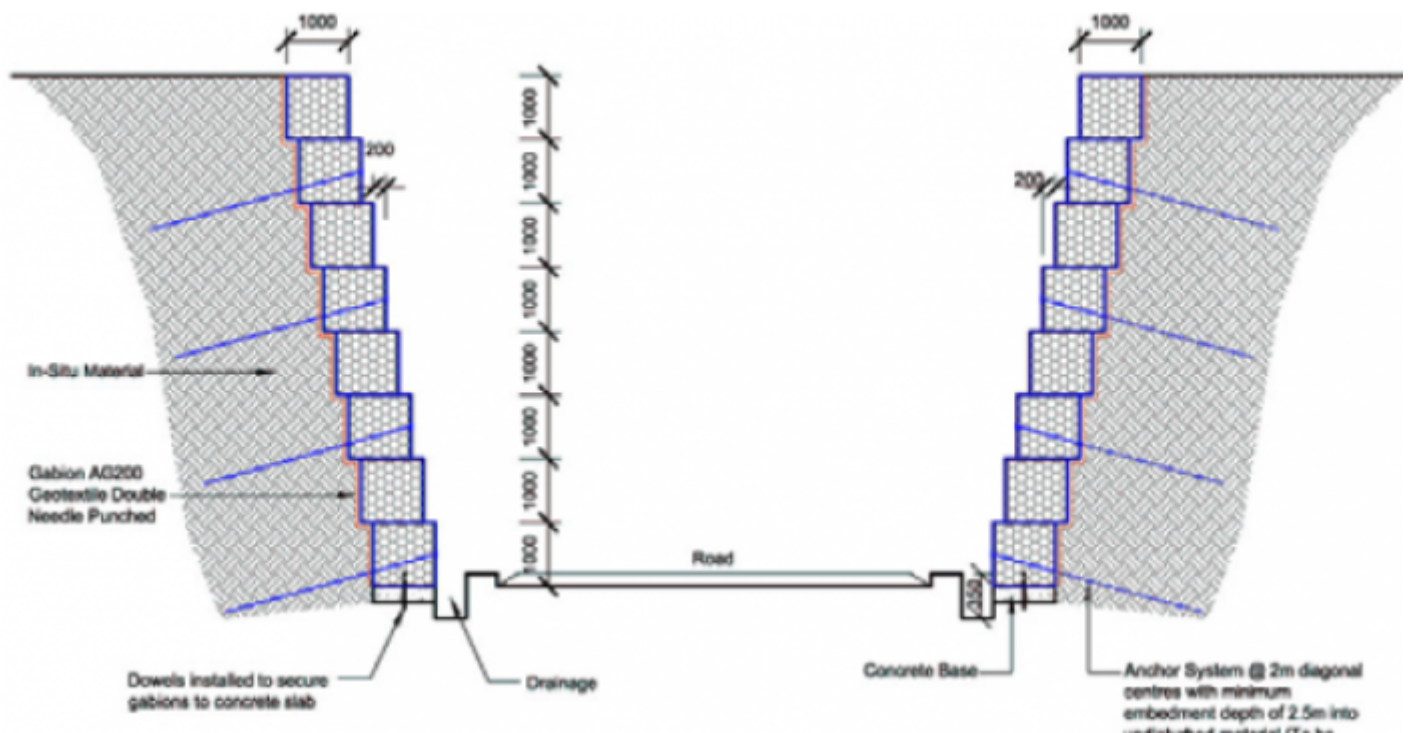
During construction



Close-up view of dished anchor plate



After construction



Final design