

**ST. HELIER ROADWAY STABILISATION**  
HILLCREST, KZN

**GEOTECHNICAL / EMBANKMENTS ON SOFT SOILS**

**Product: FlexMesh™**

**Problem**

A new housing development in Hillcrest, KwaZulu-Natal was faced with a problem whereby the only access point to the building site was over a marsh wetland situated within a conservation area.

Of major concern was the need of the roadway to withstand the weight of heavy-duty construction vehicles that would be servicing the site.

Soil tests initiated by the consultants, Moore, Spence & Jones, revealed that the wetland material consisted of silty sand which was very soft and loose. DCP and DPL probes were able to penetrate as deep as 3 metres into this soft environment.

**Solution**

It was decided that FlexMesh™ would provide the ideal basal reinforcement and separation functions required by the proposed fill, which would form the new access road to the proposed housing development.

FlexMesh™ is a multipurpose geo-composite composed of hexagonal double twist wire Mesh Type 8, reinforced with transverse steel rods and lined with a geotextile attached to one side of the steel wire fabric. This was simply installed on site by pegging down the perimeter before placing 1,0m rockfill above.

The 50kN/m strength of the double twist mesh coupled with the flexibility allowed for interlock between the rock particles to develop thus spreading the load and limiting settlement to a 100mm.

The geotextile, an AG300 is a compact double needle-punched non-woven continuous polyester filament which has a high resistance to puncture installation damage and a minimum absorption energy of 10kN/m acting as a separation layer between the wetland soil below and the rock fill layer above.

Client name:

GLASCO PROPERTY DEVELOPERS

Main contractor name:

RAUDIG CIVILS

Consultant:

MOORE, SPENCE & JONES

Product used:

935m<sup>2</sup> - FLEXMESH™

Construction info:

Construction date: APRIL 2003

Completion date: APRIL 2003



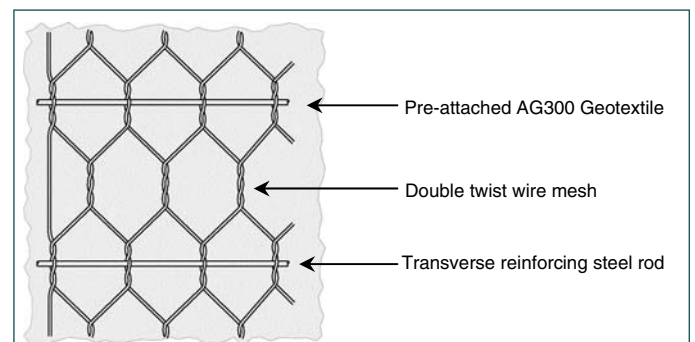
Laying the FlexMesh™

Date: Apr 2003



Lacing & pegging down FlexMesh™

Date: Apr 2003



FlexMesh™ Components

**Solution (Continued)**

The basal reinforced system allowed for quick and easy access to the site that would have otherwise being impossible to accomplish in such tight time constraints.

**Benefits**

FlexMesh™ is an efficient and durable basal reinforcing system that fully exploits the interlocking potential of rock fill layer works. Its light weight and roll ready lengths allowed for quick and easy installation on poor saturated soils.

Once installed, FlexMesh™ provided an appropriate, economical and environmentally friendly solution ensuring a sustainable and relatively free maintenance road through very poor wetland soils.

The quick implementation of the FlexMesh™ enabled heavy-duty construction vehicles to gain immediate access to the building site.

Settlements were factored in during the construction phase of the operation.



**Finished embankment**

Date: Oct 2003

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