

RETENTION WORKS FOR HAJJ HOUSE CALICUT, KERALA, INDIA

Reinforced Soil Walls and Slope Reinforcement

Problem

Hajj Committee constructed a Hajj house in Calicut, Kerala. In the vicinity of the building, there was high level difference between finished levels and existing ground levels varying from 8m to 13m along with an exposed rock at the existing ground level. As a temporary arrangement, soil was dumped on which a road was proposed to be developed. The dumped soil had started to slide at various locations. Therefore, in order to protect the slope, a suitable retention measure was essential.

The soil in the surroundings is lateritic in nature. In a place like Kerala where monsoons have heavy rains for continuous 3-4 months, there is every chance of reduction of strength (especially cohesion) for lateritic deposits. Lateritic soil has a complex characteristic of high shear strength in dry conditions which reduces drastically when in contact with water. Flexible structure with enough permeability to dissipate the excess pore water pressure that may develop in retained fill would be an ideal solution

Solution

Considering the heights to be retained, expected loads, site constraints and client requirements, Maccaferri proposed a Paramesh System which is very quick & easy to construct. Paramesh system consists of Terramesh (gabion fascia units with an integrated double twist mesh) as secondary reinforcement and ParaLink (geogrid) as a reinforcing element.

MacTex N (Non-woven geotextiles) were used behind the gabion fascia units in order to act as a separator and filter, which allowed free movement of water and prevented backfill soil from entering in the voids between stone filling with Terramesh fascia.

With Maccaferri's solution, client had to spend only half the costs when compared to a conventional alternative like a RCC wall. Simple drainage arrangements were provided on top of the slope and within the structure to cater to anticipated heavy pore water pressure.

Client: Hajj Committee, Kerala.

Designer / Consultant: Maccaferri Environmental Solutions Pvt Ltd

Contractor: Nirmaan Construction Pvt. Ltd.

Products used (Qty.)

- Terramesh

1000 sqm fascia area

Date of construction: 02/2011 - 05/2011



Photo 1 : Area to be Protected



Photo 2 : During Construction



Photo 3 : During Construction



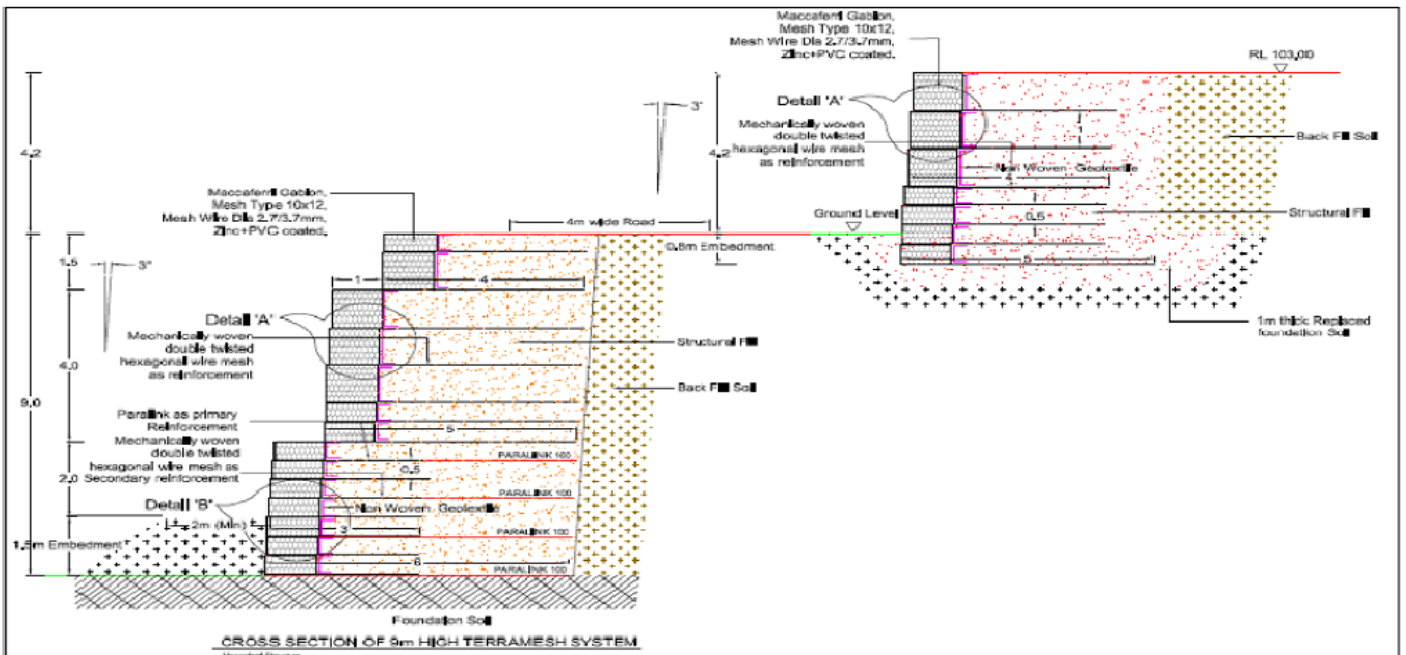
Photo 4 : Completed Structure



Photo 5 : Completed Structure



Photo 6 : Completed Structure



Cross section drawing

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