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Towards Engineering Excellence

CASE HISTORY

Ref. No.: CH/18/07/V-05-17-011	**Year:** 2017-18
Name of the Work: Rock fall slope Mitigation measures for hill slopes at Shri RamLaxman Gad Mandir Taluka Ramtek, District Nagpur	
Client: Maccaferri Environmental Solutions Pvt Ltd	
Main Client: Public Works Department, Nagpur.	
Site Address: Shri RamLaxman Gad Mandir Taluka Ramtek, District Nagpur	
Type of Work: : Rock fall Mitigation and Slope Stabilization Works	
Start Date: July 2017	**Completion Date:** May 2018
Value of Work: Rs. 60,00,000(approx.)	

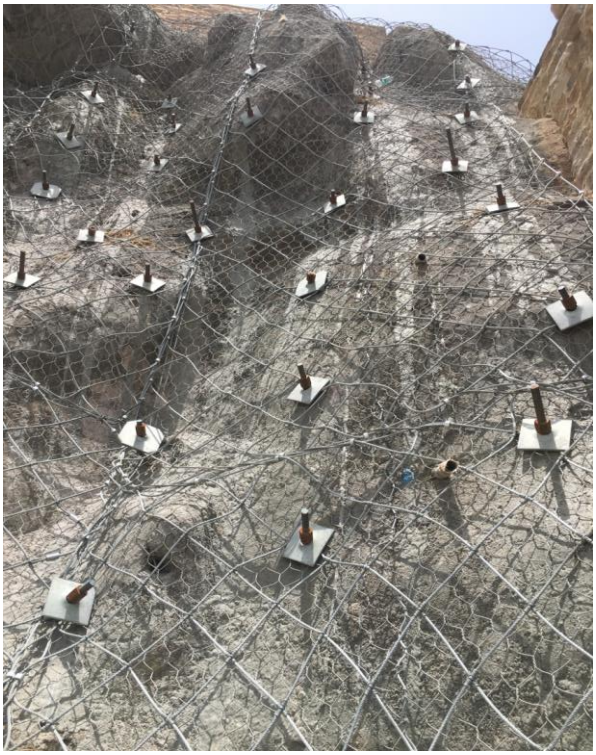
Nature of work:	Rock fall Mitigation and slope stabilization work had to be carried out on a hilly terrain around the temple using HEA and SGMO nets and soil nails. Specifications of the area was such that : • Minimum height = 07m • Maximum height = 19m • Quantity of work done = 8500sqm • Stretch length = 60m • Minimum Nail length =4m • Maximum Nail length =8m The rock present on site was observed to be Quartzite in nature with Miceaous ferrous content. But since the crack width was more than 300mm at certain locations it was evident that drill length for anchors would be more. The temple was founded on the rock which faced vulnerability to weathering due to temperature variation in heavy rains.

	Since the temple was constructed 1400 years ago vibration test had to be done at the bottom before drilling, and along with the help of Seismograph, the test results were approved for further process. The drilling was carried out for 8m depth in locations which were vulnerable to failure prone zones. Remaining stabilization was done with 4m/6m drill anchors. Steel grid mono oriented was used in construction with high energy absorption panels. This would prevent the rock fall and support the rock stability. Several challenges were faced during installation for logistics and transportation of equipment and machinery. Due to presence of Magneferrous Quartzite the drilling into the rock was exhaustive. Hence specific equipments were developed and reinvigorated. This changes in equipments and increased capacity of compressor the performance of drilling activity was improved. Due to the adaptation of upgraded machines the consumption of drill bits was also decreased and rate of drilling was increased. Despite of facing these challenges the work was completed and handed over in stipulated time.

Drilling of rock using Special costumised Drifter 75mm dia Drillbit

Slope stabilization work using HEA and SGMO nets

Soil nailing work to stabilize slope and rock fall mitigation



Side view of temple where work is done

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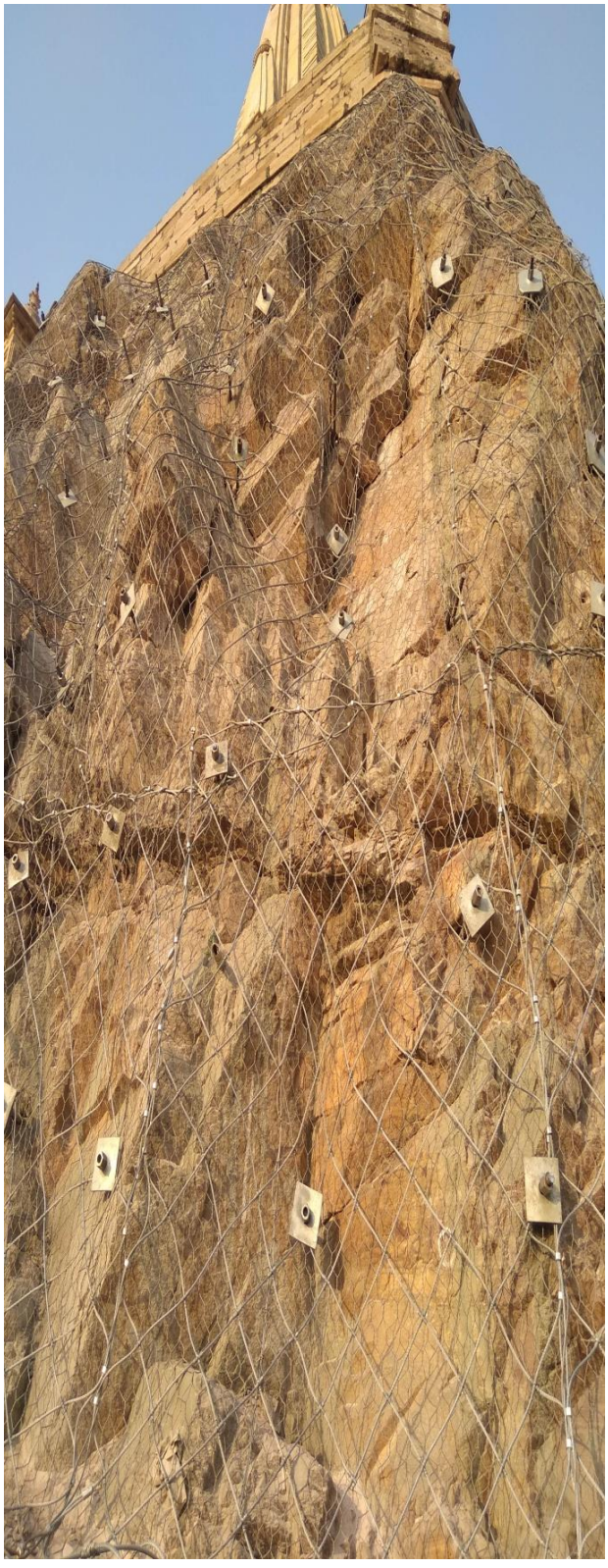

Clear view of net along with soil nails

Side view of Temple where work is in progress