

## NEW SHARJAH-KHORFAKKAN ROAD

### KHORFAKKAN, SHARJAH, U.A.E.

#### Reinforced Soil Walls and Slope Reinforcement

##### Problem

In order to reduce the travel distance between the cities Sharjah and Khorfakkan, a new road project was planned by the Government of Sharjah. This new road targets to reduce the travel time from 2 hrs to 1 hr, between these two cities. However, to accomplish this, the path of this new road must be aligned through the Hajar mountains and this foresees many engineering challenges during construction. Once completed, this 89 km long new road will consist of two sections. The first one is a two-lane road 65 km long. The second section lasts 24 km and here the road lies through the mountains, in which 5 tunnels are required (refer plan view). Due to the presence of weathered rock at the entrance and exit of the tunnels, it is required a robust, durable and aesthetically appealing stabilization solution.

##### Solution

From the previous successful experience of Terramesh system walls, the consultant approached Maccaferri Middle East to propose Terramesh MSE walls as a protection system for the tunnel entrance and exit locations. Terramesh will stabilize the weathered rock at tunnel mouth and additionally will create a bench to contain the probable falling rock from high overlying cutting. The gabion faced Terramesh MSE wall solution will allow the use of locally blasted stone from Tunnel excavation which is expected to give an immediate integration with the mountain surrounding. The project was awarded in two contracts with two different contractors. In order to achieve the consistency of the 5 tunnels done in parts by the two contractors, the client and consultant instructed them to approach Maccaferri to design the Terramesh MSE wall for their project scopes. Accordingly, considering two sides for the 5 tunnels, a total of 10 number small Terramesh walls had to be constructed. Maccaferri was involved in design, supply and site assistance of the project.

**Client:** Government of Sharjah, Roads & Transport Authority.

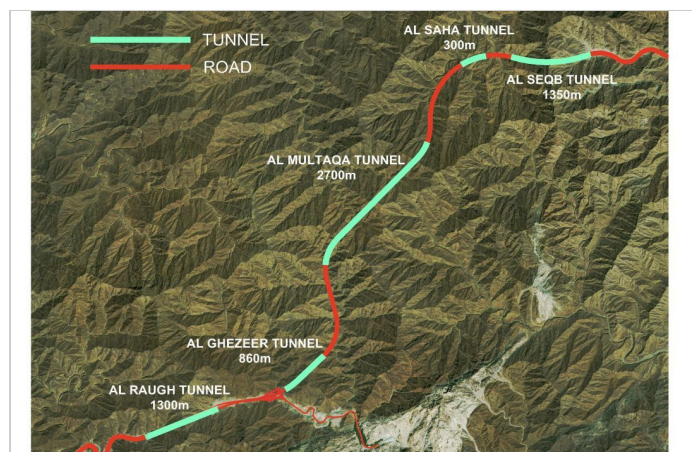
**Designer / Consultant:** Jacobs, Halcrow International Partnership

**Contractor:** General Mechanic Co. & Gulf Rock Engg. Co.

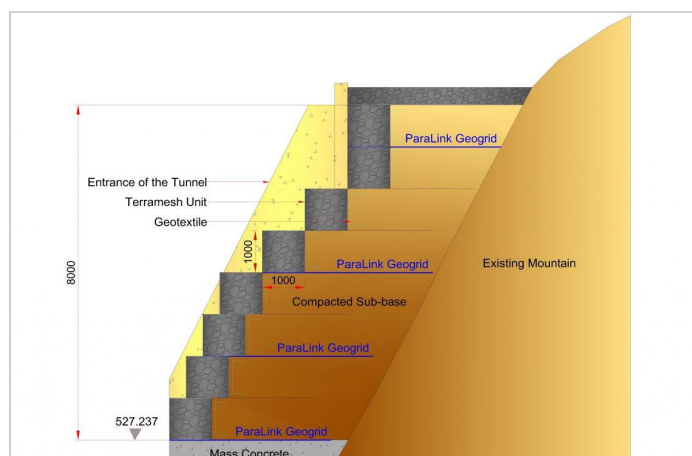
##### Products used (Qty.)

- Terramesh	2,008 m2
- ParaLink	4,000 m2
- MacTex Non-woven Geotextile	3,050 m2

**Date of construction:** 09/2017 - 09/2019



Plan view of the new Sharjah-Khorfakkan road showing tunnel locations



Sectional detail of tunnel entrance stabilization with Terramesh MSE wall





During construction: Initial layer of Terramesh and Paralink geogrid placed



Close view of completed Terramesh wall at 1 location (out of total 10 locations)



Completed Terramesh wall at Al Saha Tunnel



Maccaferri Rockfall Barrier installed at one of the tunnel locations



Completed Terramesh at Al Raugh Tunnel

Maccaferri Middle East  
Dubai PO box 502594  
United Arab Emirates  
Tel: +97143608958  
E-mail: [info.ae@maccaferri.com](mailto:info.ae@maccaferri.com)