PARAMESH WALL FOR NOMAS MOUNTAIN DEVELOPMENT
JEDDAH, SAUDI ARABIA

REINFORCED SOIL RETAINING WALLS
Product: Terramesh System, ParaGrid, ParaLink, Geotextile

Project Background:
The proposed Nomas Mountain Development project is located in the Al Amir Fawaz district of Jeddah, south of Makkah Al Mukarramah Road. The site is situated on a northern promontory of a range of hills to the south.

The project development plateau is situated at the top of the hill at an elevation of approximately 106m above Datum (AD) with the base of the hill being at an elevation of approximately 76m AD. The project site was approximately 250m long (east to west) and 60m wide (north to south). A large L-shaped building is located along the southern boundary of the site.

Problem & Solution:
In order to attain a flat formation at the uphill area of the project site that is required for the proposed development, a series of retaining walls were required, up to a maximum height of 38m.

Maccafferri’s proposal of ParaMesh wall was approved by the client from various other proposals, finding the ParaMesh wall was more economical, flexible and its simplicity of installation.

The proposed ParaMesh wall is estimated to be between 400m and 500m long and up to 38m high at the junction of wall-2 & wall-3 (refer plan view).

Design Sections:
As per the Geological Report by M/s. Coffey for the project site, most of the area within the location of the proposed ParaMesh wall is bed rock and hence a trapezoidal design section was considered in the ParaMesh Wall design.

Two analytical cases were carried out for each design section, STATIC and SEISMIC with a seismic horizontal coefficient of 0.1g. The primary reinforcement considered in the designs were PG80, PG100, PG200 & PL300 which varied for different wall heights.

A total of 5 different wall alignment are considered separately as seen in the plan drawing.

Client:
Al Mufrif Contracting Company

Retaining Wall Lengths
W1=116m, W2=209m, W3=290, W4=114m, W5=64m

Maximum Wall Height
38m

Designer:
Maccafferri Middle East LLC

Products used
TMS (8x10), ParaGrid, ParaLink, Geotextile

ParaMesh Wall Construction:
Start Date: 2015
Completion Date: Ongoing; completion expected in 2017
Project Site Distance View - Before Start of Retaining Wall Works

Photos of Initial Slope Protection Works & Failures

View of wall outline from top of slope with neighboring buildings

View of installation from corner of wall 3 & 4
ParaMesh Retaining Wall; 18m high under Construction (October 2016)

ParaMesh Retaining Wall - Under Construction (October 2016)