

MADABA INDUSTRIAL CITY PROJECT

Jordan



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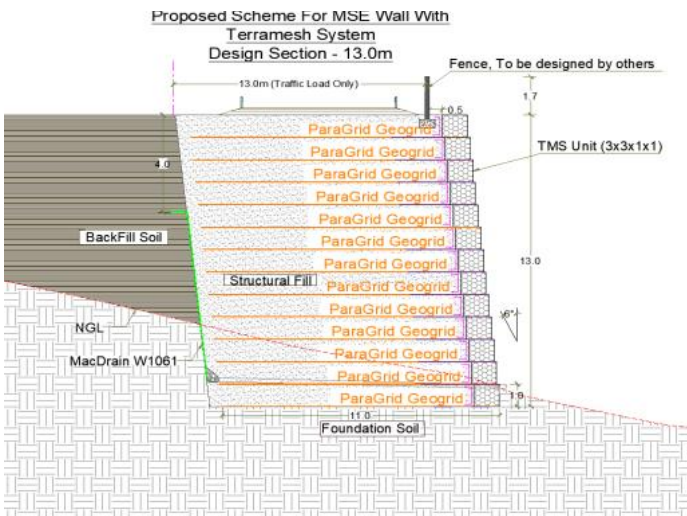
TYPE OF PROJECT Mass Gravity Retaining Walls	YEAR OF CONSTRUCTION 2019	CLIENT MINISTRY OF PUBLIC WORKS & HOUSING	CONTRACTOR ARABTECH JARDANEH	DESIGNER MACCAFERRI MIDDLE EAST LLC
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PROD. RELATED
TerraMesh (2,500 M2)

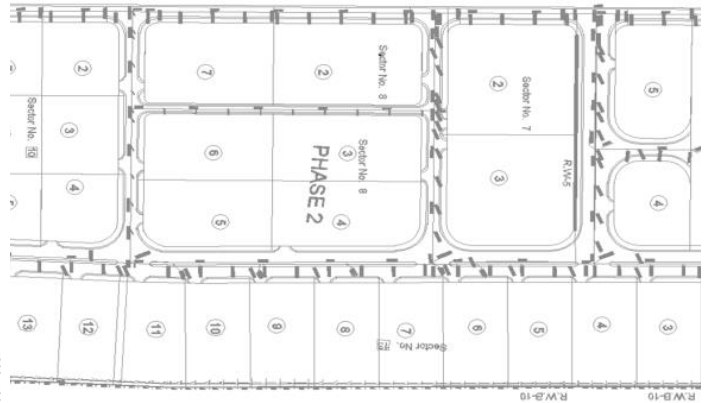
Challenge

As part of the ongoing development of the Madaba Industrial Complex (refer plan drawing in figure 4), the client 'Ministry of Public Works and Housing' planned new plots and roads within the existing industrial area. Originally, a 15m high concrete retaining wall was planned (refer figure 2). However, required time of construction and the resulting cost of such a wall would be significant. Secondly, due to the presence of a slope at the wall base, rotational stability becomes critical and for this wall foundation depth had to be further increased. Also, the foundation soil was not strong enough to carry the heavy load of the concrete wall

with respect to the limiting settlement criteria in bearing capacity check. For these reasons, the client believed that a concrete wall may not be the correct solution. Among the various retaining wall options available in Jordan market, MSE walls are found to be the most economical, in comparison to conventional retaining walls like concrete walls or masonry wall. Being the most successful solution provider in Jordan for retaining walls, Maccaferri Middle East was recommended by the consultant to provide for a better retaining wall solution which meets the requirements of the project's end client.



Section



Section Plan

Solution

accaffferri Middle East proposed a 13m high retaining wall with 1m embedment using Terramesh system and Paragrid geogrids as primary soil reinforcement. On the backside of the wall, a drainage composite type MacDrain was provided to collect any seepage water; thereby avoiding the development of excess pore water pressure on the retaining wall. Terramesh being a flexible system, the bearing capacity requirement of the wall was satisfied without much embedment depth,

thereby reducing the excavation requirements for wall construction. Secondly, by use of high strength ParaGrid geogrids as primary reinforcements at 1m vertical spacing, the critical rotational instability of the wall founded on slope was also addressed. The overall cost of the retaining wall was decreased significantly by using the Maccaferri Terramesh system instead of the heavy RCC wall originally considered by client.



During Construction



After Completion



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