

HASANKEYF ARCHEOPARK PROJECT BATMAN, BATMAN, TURKEY

Reinforced Soil Walls and Slope Reinforcement

Problem

The 12,000-year-old town city was flooded during the Hasankeyf Dam process. Before it was destroyed, all historical and cultural artifacts were moved from in the Batman district to the new Hasankeyf Cultural Park area through a special technique to preserve and transfer history, environmental and cultural values to future generations. Within the scope of the Hasankeyf Archeopark Project, which is located in the Mesopotamian region and contains many types of artifacts, stability problems became evident during the slope excavations on the banks of the Tigris River. Hence, it was decided to support these slopes with retaining walls. Since the rising of the river waters depending on the seasons and the retaining walls being under water, instead of classical retaining walls, alternative systems which has self-drain speciality is being turned forward.

Solution

The retaining walls, which will reach a height of 27 meters within the scope of the Hasankeyf archeopark project, has been designed with Terramesh System Wall which has self-drain feature, so that a 25 m section of it will operate under water. The berms of Terramesh System Walls that are largely inundated during the winter months, will be used as viewing terrace during the summer months. Terramesh System Walls consisting of two parts: L1 line is 552m long, max. 27m height, R1 line 246m length max. 21m high walls. Terramesh System, which reinforced high-strength Paraproduct geogrids, has been preferred to meet the 20kPa live load, earth pressure and 0.11 PGA seismic load that will affect the walls.

Client: GENERAL DIRECTORATE OF STATE HYDRAULIC WORKS (DSİ)

Designer / Consultant: XXX

Contractor: MAVIGOL ENERJİ YAPI TİC. A.Ş.

Products used (Qty.)

Date of construction: 01/2023 - 04/2023

[Google Maps](#)

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Satellite View



Terramesh System Walls



During Construction—After Rising of Water Level



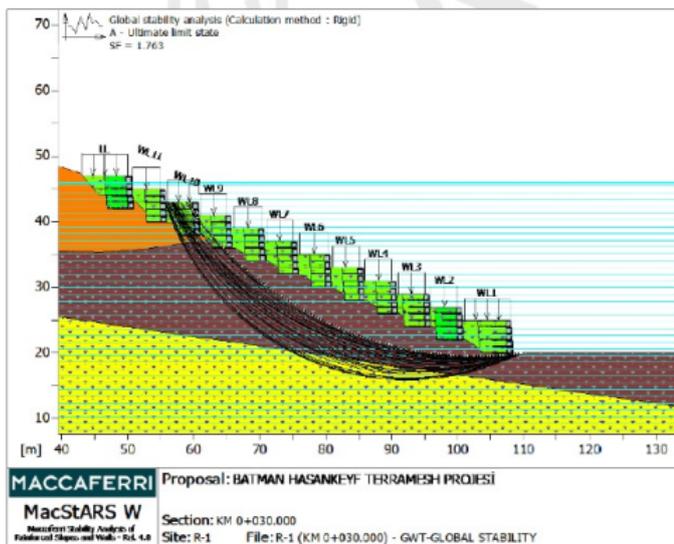
After Construction



After Construction



After Construction



The stability of the structures (both internally and globally) has been checked using specific software called MacStARS (Maccaferri Stability Analysis Reinforced Slopes). This enables the use of different types of reinforcement elements (synthetic and metal), with different mechanical strengths and with any geometrical configuration, thereby simulating the various types of external loads applied to the structure (point loads and distributed forces, seismic forces, etc.). The diagram alongside shows the output for the external stability checks carried out for a section of the embankments, in which the slip circles are highlighted with different colours depending on the safety factor. This diagram enables a fast visualisation of the critical slip surfaces and becomes a powerful and effective tool for design and control.

MacStARS W Software

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