

DE-WIEBELSKIRCHEN

WIEBELSKIRCHEN, SAARLAND, GERMANY

Reinforced Soil Walls and Slope Reinforcement

Problem

Germany is facing a big challenge trying to reduce as much as possible any kind of waste and finding new environmentally friendly ways to stock un-recyclable material. The opening of new landfills is now avoided enlarging the existing ones. This is the case of the landfill based in Wiebelskirchen (Saarland - Germany) that increased its capacity due to a 20m high retaining wall. The good filling material that has been used, allowed the designers to reach the planned height with geosynthetic reinforcements for the bottom part and steel reinforcement for the upper part. A lower 7m high reinforced earth wall is used as a base for an upper 13m high wall. In between, a berm is placed with a width of 2.5 m. The commercial name of the pre-assembled units is Green Terramesh®. They are fabricated with double twisted wire mesh 8x10, an erosion control blanket, a welded mesh panel, 2 pre-formed steel brackets and 4 steel loose tie rods to be connected at the job site to support the unit at the required slope angle during backfilling operations.

Solution

The external face, reinforcing panel and top return are a continuous woven mesh unit. Attached to the inside facing is a woven polyester mesh fabric that avoids the washing-out of fine material during the installation phase. Since the units are already assembled in the factory, the construction time is considerably reduced and speeded up. The retaining walls were designed according to Eurocode 7 - EN 1997-1, DIN 1054:2010-12 and the EBGE (Recommendations for Design and Analysis of Earth Structures - German Geotechnical Society).

The reinforced soil structure consists of a 7 m high 85° Mineral Terramesh wall and a 13 high 70° Green Terramesh wall on top. The total height is then 20 m and the whole length measures 185 m. As reinforcement DT nets were used in combination with standard Terramesh units.

Client: Beco Bermüller & Co. GmbH

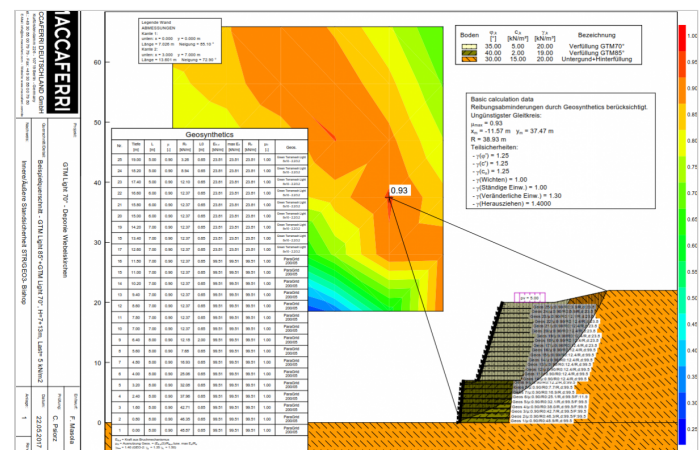
Designer / Consultant: TERRAG GmbH

Contractor: TERRAG GmbH

Products used (Qty.)

- Terramesh 4.000 sqm

Date of construction: 01/2017 - 01/2018



Maccaferri's pre-checks



End of the construction: side view



Detail of the Mineral Terramesh finishing



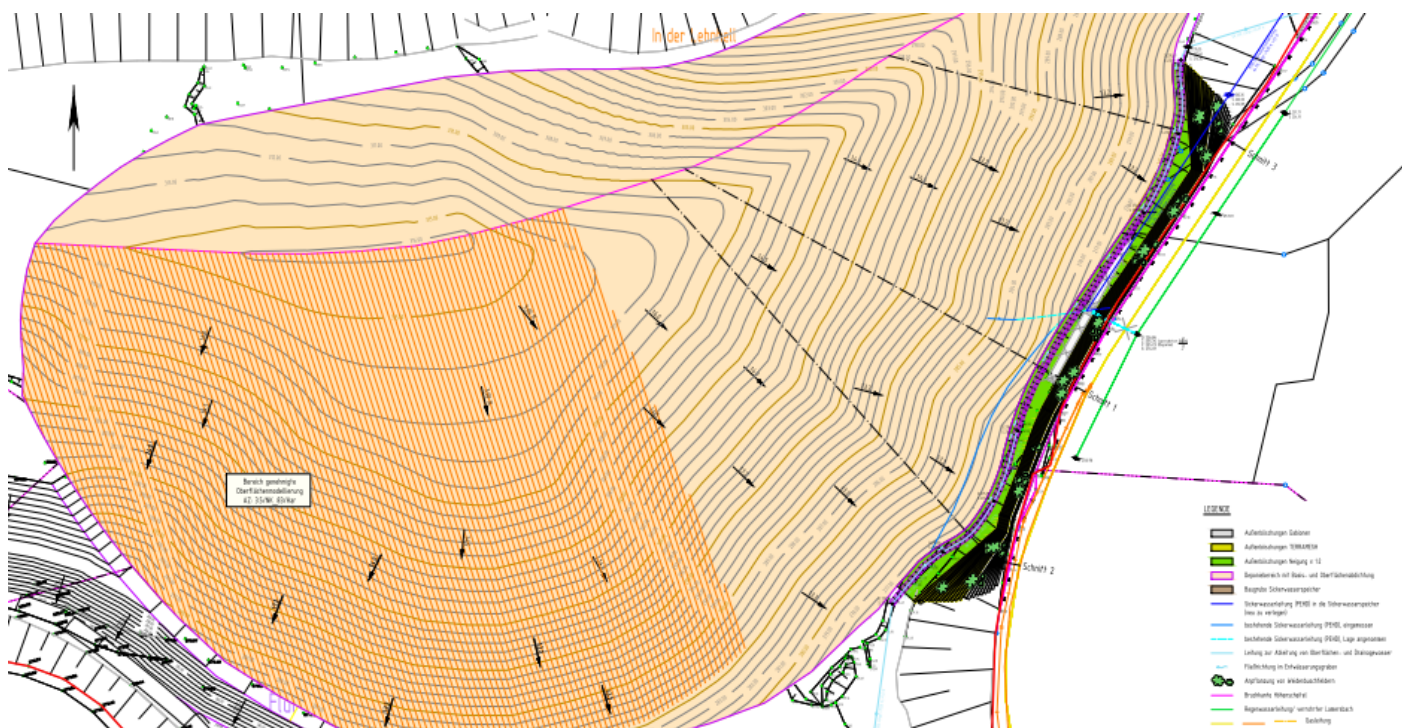
Construction phase: side view



Construction phase: laying of Terramesh units



Construction phase: side view detail



Schematic top view

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