

**OOSTERWEEL VERBINDING -LINKEROEVER, K02B+G01  
ANTWERP, ANTWERP, BELGIUM**

Reinforced Soil Walls and Slope Reinforcement

**Problem**

The Oosterweel Link project is a new 15km-long motorway connection developed by Lantis for completing the Antwerp ring road R1 (Belgium). It is a major project in Belgium and its design started in the 1990s to find a solution to the congestion problems in and around Antwerp. The total estimated cost of the project is approximately €4.5bn. The Antwerp ring road is a key part of the Trans-European Transport (TEN-T) Core Network.

Maccaferri collaborated with the design and building of the Mechanically Stabilized Earth (MSE) walls with its main product family „Terramesh“. This is a well-known system used in Europe and in the rest of the world to support or enable the construction of infrastructures in tight urban corridors, forming retaining walls, road embankments, wing walls and bridge abutments known as Geosynthetic Reinforced Soil-Integrated Bridge Systems (GRS-IBS). „Terramesh“ double twist steel wire mesh reinforcements have been used in combination with ParaLink® and Paragrid® geogrids representing an evolution and a significant advantage for both cost-effectiveness and performance. The project includes 15.000 facing sqm of „Terramesh Green®“, 14.000 facing sqm of „Terramesh Mineral® and System® and 5.000 facing sqm of gabion cladding. During 2020, 6.000 sqm of MSE walls have been already installed with a maximum height of 6.5m for the structures erected so far. The Terramesh products can be either with a stone mineral facing or a green facing, according to the architectural plan: in Oosterweel for architectural reasons, most of the structures present a stone facia.

**Solution**

Maccaferri’s Corporate Technical Department has supported and is still supporting the main designers step by step from the first preliminary Global and Internal stability checks with Limit Equilibrium Method (LEM) analyses carried out with MacStars Software to Finite Element Method (FEM) deformation analyses due to the strict restrictions on displacements. Maccaferri provided the designers with all material properties for correct modelling. A 3D-BIM model was created to check and design all possible interferences on the reinforcements.

**Client:** Lantis / Texion Geosynthetics NV

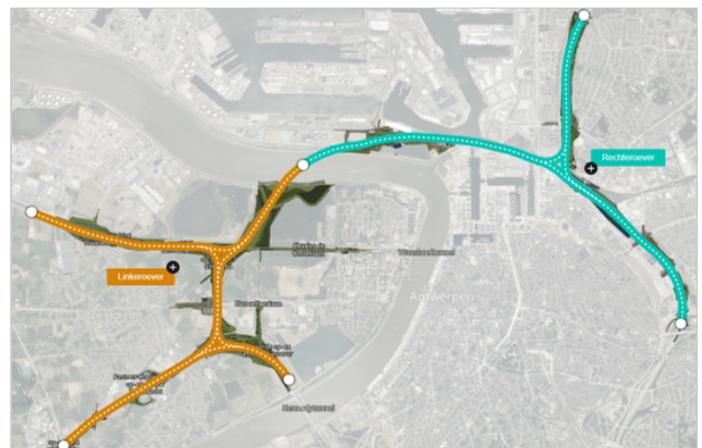
**Designer / Consultant:** Arcadis NV /Lantis

**Contractor:** Stadsbader NV

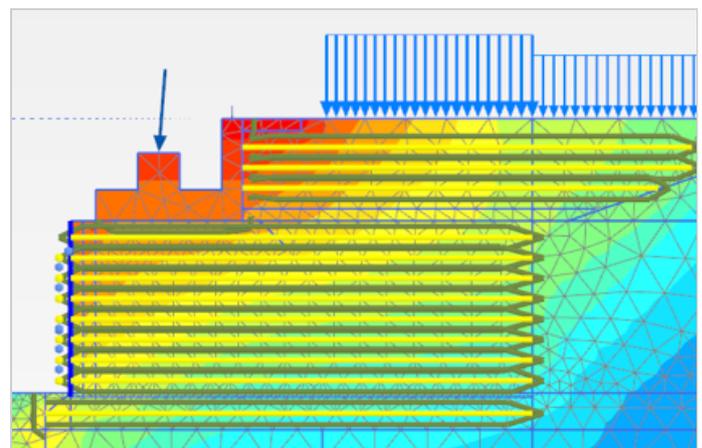
**Products used (Qty.)**

- Terramesh	1.100 sqm of TM System+Mineral
- ParaLink	14.000 sqm of Paralink 700
- ParaGrid	8.200 sqm of ParaGrid 50
- Gabion - Welded	500 sqm of Welded gabions

**Date of construction:** 02/2020 - 05/2020



Top view of the Oosterweel project



FEM model for displacements-check



K02B supporting the road-bridge



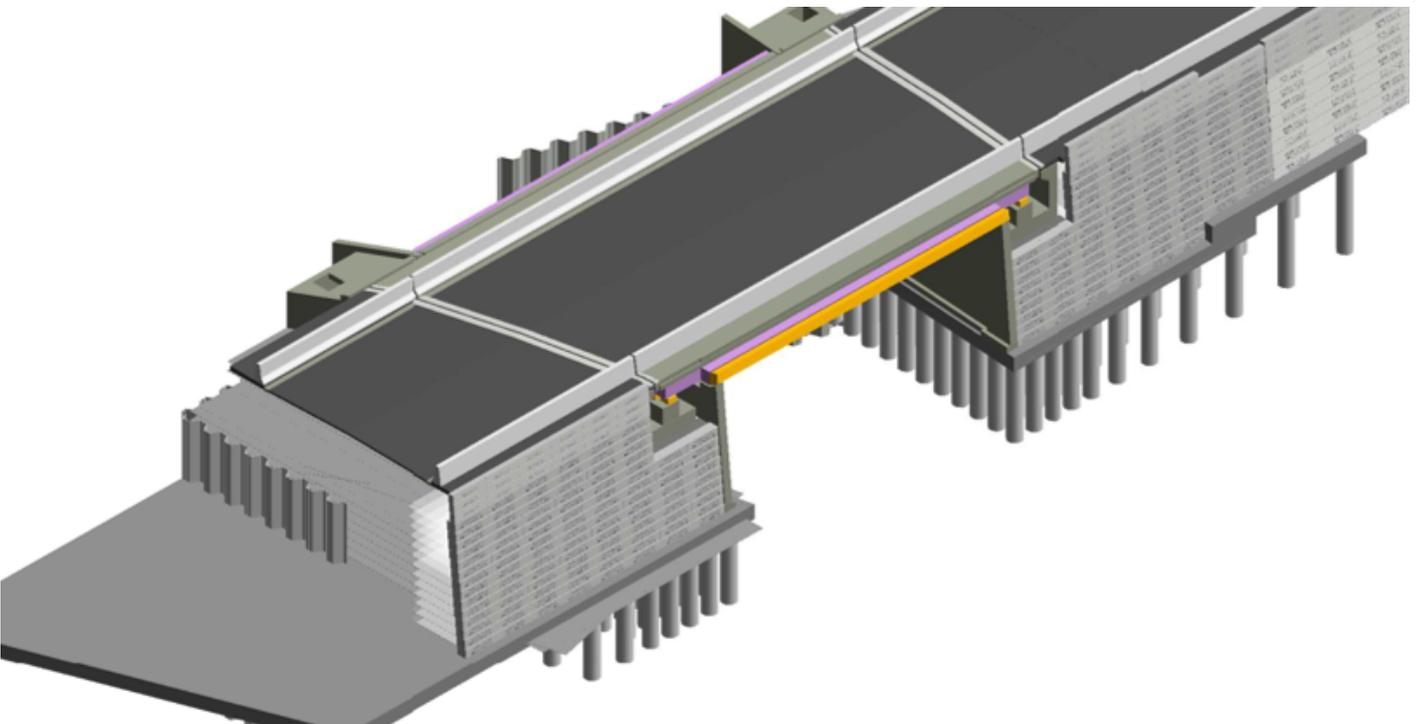
G01 wall - side view of Mineral Terramesh wall



During the installation - corner detail



End of installation



## BIM Design of K02B

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