REINFORCED SOIL SLOPE

Product: Green Terramesh, Terrawall & ParaGrid

Problem
The N25 is a strategic link in the Irish road network connecting Cork and Rosslare. The N25 is also part of the Trans-European Network-Transport (TEN-T). The New Ross bypass scheme begins at Glenmore in County Kilkenny and crosses over the River Barrow via an extrados bridge at Pink Point in County Kilkenny and Stokestown in County Wexford. This project involves the design, construction, financing, operation, and maintenance of approximately 13.6 km of new dual carriageway (N25 & N30 routes) and 1.2 km of new/ upgraded single carriageway (New Ross N30) route and various structures (junctions and road bridges), the most notable of which is the 887 m River Barrow crossing, a three tower extradosed bridge. The bridge will be the longest of its type in the world. This significant piece of engineering is a seven-pier extrados bridge with an overall length of 887 m and two main spans of 230 m which are 10 m longer than the next longest concrete-only extradosed box-girder section spans in existence.

The Pier nr 3, was placed in a reprofiled excavation cut and a local road needed realignment. The location of the foundation and pier stem for Pier 3 of the River Barrow Crossing and the topography of the area means 1V:2H slopes cannot be formed, thus 70 degrees sloping reinforced soil were required.

Solution
The purpose of the reinforced earth embankments is to support the realigned L7512 in the vicinity of Pier 3 of the River Barrow Crossing. The reinforced soil slopes are approximately 11.7m high.

As part of the development five reinforced soil slope sections consisting of Maccaferri Green Terramesh units and Paragrid were constructed around Pier 3

Adequate drainage was installed to the rear of the reinforced soil zone, and will adequately control the groundwater level within the structure. The RSS was constructed using Class 6I/6J, and therefore it was considered that a potential increase in pore-water pressure will not negatively affect the stability of the designed RSS structure.

Precast Concrete Retaining Wall has been designed to prevent inundation of the excavation for Pier 3 foundation base of the Barrow River Bridge in the temporary case. In a permanent scenario with mass concrete fill between wall and foundation base will form part of the reinstatement measures, being consistent with the principles considered in the ship impact study.
ParaGrid laid as per design

Green Terramesh during construction in December 2018