

AWPR A96

ABERDEEN, ABERDEENSHIRE, UNITED KINGDOM

Reinforced Soil Walls and Slope Reinforcement

Problem

The new ring road around Aberdeen Western Peripheral Route was part of the longest road project in 2015.

The project involved realigning the A96 to avoid a low headroom bridge which had been the cause of congestion and strikes. As the A96 is an extremely busy road, several options were considered to minimise disruption. The final decision was to install a temporary bridge over the road. The bridge allowed construction wagons to cross carriage traffic without disturbing road users.

A temporary works scheme design proposal was required for the support and stability of the embankment fill material using 6N fill material to stand at a 70-degree slope using reinforced earthworks. Reinforced embankment fill was then required between the support frames for the precast concrete beams and the integral bankseat to allow construction of the deck and parapet beams before removing the support frames.

Solution

The bridge, which was sub contracted to Balfour Beatty, began late in 2015 and stayed in place for 6 months until building works were complete. Working with Balfour Beatty, Maccaferri provided a solution using a combination of BBA Green Terramesh and Paralink slopes to support the temporary bridge.

As a result, over 600m² of Green Terramesh® was installed to form the 70degree supporting slopes.

A horizontal load of 50kN/m imposed on the bankseat caused by traffic breaking on the bridge was also addressed separately. A traditional shear key setup would potentially cause deformation in the reinforced soil structure therefore Maccaferri proposed to utilise their high strength Paralink 350 geogrid to act as a frictional anchorage by casting it into the bankseat and compacting an average of 1.5m of granular fill above. Paralink was also installed directly beneath the bankseat to reduce the potential of any deformation caused by the 100kPa vertical backseat load and 240kPa crane load. The temporary bridge had a 24m span and supported a vehicle carrying 80 tonnes of earth. Watch the bridge being erected in fast motion in this video created by AWPR

Client: Transport Scotland**Designer / Consultant:** AWPR JVC**Contractor:** AWPR JVC**Products used (Qty.)****Date of construction:** 06/2016 - 09/2017[Google Maps](#)[Google Earth](#)

View of the Green Terramesh® slope



View of the Green Terramesh® slope



Heavy lifting crane supported by the Green
Towers at the site



View of the completed works



24m span bridge with bank seats directly over the
Great Tower at the site