Basal Reinforcement of Road Embankments
A13 (Contract 3)
Dagenham, Essex, UK

HUESKER
REPORT

Fortrac®R

The realignment of the A13 trunk road through Dagenham into East London involved construction of sections of embankment and viaduct over marshlands and very soft alluvial soils adjacent to the River Thames. In addition to the problem of poor quality sub-grade, this area has a legacy of polluted ground resulting form the deposition of contaminants during its highly industrial past.

A solution to allow construction of the section of high road embankment along the route was devised by the Engineer, Hyder Consulting. They designed the embankment to be supported on a piled foundation, overlain by high strength geosynthetic reinforcement, offering a design life of 120 years.

The materials chosen by the contractor, Tarmac Civil Engineering, were various grades of Fortrac®R, as manufactured by HUESKER Synthetic, in strengths ranging from 500kN/m up to 1200kN/m.

Fortrac®R is a synthetic reinforcement with high unidirectional strength provided by bundles of high tenacity polyester yarn protected from mechanical damage and chemical attack by a polymeric coating.

Two layers of Fortrac®R were positioned above the pile caps, within a compacted sand and gravel layer, in two directions.

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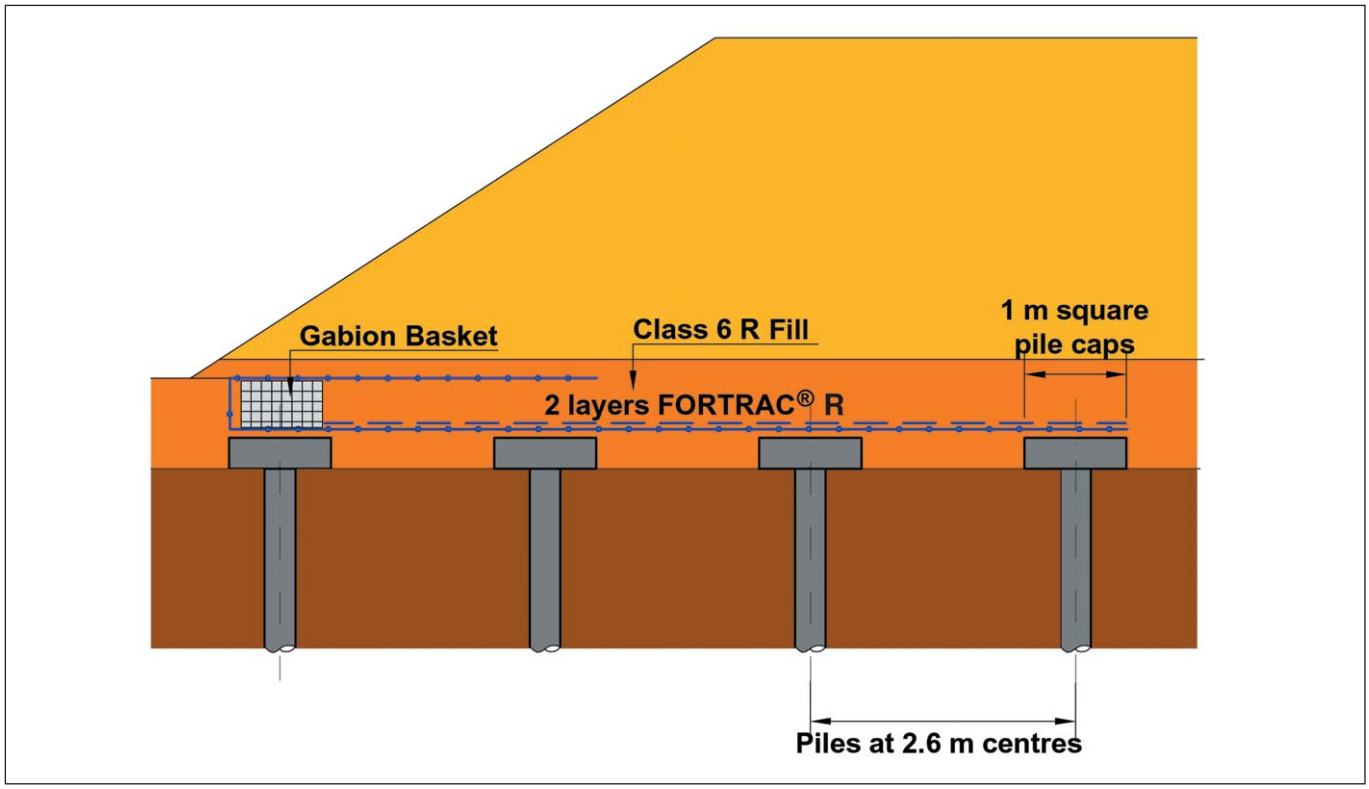

Fortrac®R 500 was installed longitudinally, along the line of the road. The higher strength grades were laid transversely, with the strengths being dependant on the overlying embankment height.

The design required the installation of the transverse material to be in continuous strips (without joints) under the embankment. These strips being secured by a gabion 'wrap around' detail at the toe of the slope, before returning by a designed lap length.

Construction of the embankments took place during September and October 1997.

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