

RAILWAY EMBANKMENT STABILISATION HAINAULT , ESSEX, UNITED KINGDOM

Mass Gravity Retaining Walls

Problem

The London Underground Central Line at Hainault was opened in 1948, although the line dates back to 1903 when the 'Fairlop Loop' was part of the Great Eastern Railway.

At Hainault, the Central Line runs above-ground on an embankment. The embankment crest was to be widened to provide access alongside the tracks. To maintain the embankment slopes at a stable 2:1 angle, the toe of the slope would have to move outward. The operator of the Central Line, Metronet BCV Ltd, wanted to explore alternatives to avoid having to purchase the additional land at the foot of the slope.

Solution

Cementation Foundations Skanska Ltd and their geotechnical design partner, Mott Macdonald Ltd, approached Maccaferri Ltd for assistance to identify a possible solution.

The proximity to residential areas and the confined working area restricting access to heavy lifting plant were key considerations. Furthermore, the solution had to be installed whilst the track above remained operational.

To construct the segmental retaining wall, the railway embankment was locally steepened to 45° to provide space for the construction and a horizontal work area was constructed into the embankment slope.

Client: Mertronet BCV Ltd

Designer / Consultant: Mott MacDonald

Contractor: Skanska Ltd

Products used (Qty.)

Date of construction: 10/2004 - 10/2004

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[Google Earth](#)



Construction of the MacWall Vertica



Post construction of MacWall



Post construction of MacWall