

## A2 / A282 JUNCTION IMPROVEMENTS MABLEDON, DARTFORD, UNITED KINGDOM

### Reinforced Soil Walls and Slope Reinforcement

#### Problem

The important junction between the A2 and A282 arterial routes adjacent to London's M2 motorway needed widening from three lanes to four. A widened embankment would support the new lane.

At the foot of the existing slope is a mature hedgerow which supports several nationally scarce and vulnerable species, including ladybirds, wood boring beetles, fungus weevils and bark beetles. The bark of the hawthorn trees in the hedgerow supports the jewel beetle, a scarce species in North Kent. If the usual 1:2 slope was built to form the embankment for the fourth lane, this hedgerow and the crucial habitat it provided would be destroyed.

#### Solution

The project team needed a solution that steepened the slope, thereby reducing the land take and saving the hedgerow. The main Contractor on the project, Costain Ltd approached Maccaferri for assistance in providing a design/supply solution for this problem area.

The solution would allow the embankment to be steepened to a maximum angle of 70 degrees, thereby allowing construction of the 4th lane of the highway without the embankment impacting the hedgerow. Two options were considered; a traditional geogrid-reinforced slope with a geogrid-wrapped face, and a Green Terramesh® reinforced earth system. The embankment was a maximum of 9.3m high, of which 6.3m high was to be reinforced with geogrids, with a 1:2 slope above.

Green Terramesh® is an environmentally friendly reinforced soil system used for embankment construction. It can make slopes stand steeper, withstand greater loads and take less land than un-reinforced slopes, yet still offers the ability to revegetate. It is made from Maccaferri galvanised and PVC-coated double-twist steel wire mesh forming the soil reinforcing geogrid tail and the slope face in a single unit. The geogrid tails are sandwiched between layers of compacted structural fill, reinforcing it.

**Client:** Highways Agency

**Designer / Consultant:** Jacobs

**Contractor:** Costain Civil Engineering Ltd

**Products used (Qty.)**

**Date of construction:** 01/2007 - 07/2007

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Green Terramesh reinforced slope under construction



Green Terramesh reinforced slope under construction



Green Terramesh slope showing early vegetation



Green Terramesh reinforced vegetated