

#### **CASE HISTORY**

M3 side roads slope repairs, Surrey, UK

PRODUCT	TENAX TT 201 SAMP monoriented geogrids TENAX MULTIMAT 100 geomats
LOCATION	Laleham road, Shepperton, Surrey, UK, 1994
OWNER	Surrey County Council, UK
PROJECT	Engineering Consultancy Division, Surrey County Council, UK
CONTRACTOR	Geoffrey Osborne Civil Engineering



#### **PROBLEM**

The Motorway M3 side roads were originally constructed using low shear strength soils. In recent years some slip failures have begun to occur at various locations in the side slopes. Surrey County Council therefore decided to repair the slopes, and of the options considered, the use of a reinforced soil technique was selected.



#### **SOLUTION**

The existing side slopes were constructed at 24° to the horizontal, which had led to slip failure in several locations. Several options were considered to reinstate the slopes, such as structural concrete retaining walls or rebuilding the slopes at shallower slopes. Due to restricted land and also for economical reasons, the client decided to opt for the reinforced soil option. TENAX technical team carried out the design which included reinstating the slopes by 1.8 m of reinforced soil built at 45° with the remainder of the slopes being constructed at 18°. The design included the use of granular fill reinforced with TENAX TT 201 SAMP geogrids. Three layers of the geogrids were used at 600 mm spacing. The reinforced fill used was of the Department of Transport Specification granular fill Class 6F2. The facing of the slopes were then protected with TENAX MULTIMAT 100 erosion control matting which were tied to the geogrids and then filled with topsoil and sown with selected grass seed. The foundation soils consisted of superficial deposits with low shear strengths, therefore it was decided to replace these with Class 6F2 granular fill compacted to 95% maximum density.

#### **CONCLUSIONS**

The use of TENAX geogrids in reinforcing the M3 motorway slopes, allowed:

- the reinstatement of the slopes with 45° slopes thus minimising landtake;
- fast construction, using standard plant;
- creating an "environmentally friendly" vegetated slopes;
- the most economical solution.