

# Flax Bourton Cutting Stabilisation Phases 3 & 4

**Client :**  
Network Rail

**Designer :**  
Donaldson Associates

**Main Contractor :**  
Alfred McAlpine Capital  
Projects (GWESPA)

**Location :**  
Near Bristol

**Date :**  
2004 - 2005



Flax Bourton railway cutting has a history of shallow slope failures, the larger of which caused disruption to railway operations. The cutting is slightly under 3km in length, up to 16m deep and was excavated through mudstone and limestone strata of the Mercia Mudstone group, with the slopes varying from 30° to 50°.

Network Rail undertook an assessment to identify areas at risk in order to target and design the deep drains stabilisation works. However, there were some concerns over the logistics of implementation. BAM Ritchies offered an alternative solution, on a design and construct basis, using ground nails and TECCO® high tensile steel wire mesh to stabilise the cutting, together with some drains.

Working in partnership with Alfred McAlpine Capital Projects, BAM Ritchies used their in-house designed and built, rope supported Terrapin rigs as well as specially selected soft formation DTH drilling bits to cope with the weathered mudstone and limestone bands. The principal quantities were:

Area of mesh:	22,555m <sup>2</sup>
Number of anchors:	332
Number of soil nails:	1411
Number of dowels:	349
Number of drains:	280

There was no disruption to railway operations and only a few possessions were required.