

Rabbits Bank - Ground Anchors

Client :
Gateshead Council

Engineer :
Arup

Main Contractor :
BAM Nuttall Ltd

Location :
Gateshead, Tyne & Wear

Date :
2004



Rabbit Banks road is a bus route devised by Gateshead council to relieve congestion in Gateshead town centre. BAM Ritchies carried out ground anchor installations through a sheet piled retaining wall. The length of Rabbit Banks road and retaining wall is approximately 400m and passes under the Gateshead to Newcastle Metro Bridge and runs parallel to the river Tyne.

The one way road, for buses only travelling in an east to west direction, rises approximately 22.5m from start to finish. In order to construct a road on top of the existing Rabbit Banks single-track road, a retaining wall was constructed with sheet pile with lengths varying from 4m to 30m, anchored with Dywidag double corrosion protected bar anchors.

Three sizes of anchors were adopted to retain the pile wall; the following anchors were installed:

- 26.5mm double corrosion prestressed bar anchor (91no) at 39°.
- 7mm double corrosion protected prestressed bar anchor (16no) at 74°.
- 63.5mm double corrosion protected Gewi bar anchors (44no.) at 74°.

The outline tender design was to drill and install 151 anchors at 1.8m centres. Working loads varied from 290kn (26.5mm anchors), 470kn(47mm anchors) and 500kn(63.5mm anchors). Fixed lengths were designed by BAM Ritchies and varied in length from 5.25m (26.5mm) to 8m(63.5mm).

All anchors were inclined between 39 and 74 degrees from the horizontal, were restressable and installed into coal measures.