

## THE AVENUE STAGE 3 CHESTERFIELD , DERBYSHIRE, UNITED KINGDOM

### Soil Nailing

#### Problem

The Avenue regeneration scheme is a £95 million, remediation and landscaping project. It is the largest scheme currently being undertaken in the UK by the Homes and Communities Agency and is being delivered by VSD Avenue, a joint venture comprising VolkerStevin, Sita Remediation and DEC.

Wide tension cracks and superficial disturbances happened on the cut slope forming the western boundary of the site. The cut slope has a total length of 250m and the slope forms the western edge of the development area. The slope is approx. 6m high and was cut to a gradient of 1V:2.7H. The slope is composed of Made Ground underlined by the firm to still mottled clay and weathered coal measures deposit.

An analysis by Amec FW concluded that groundwater was the main causal factor for the instability. The trigger for the slope failure was elevated groundwater level following a long period of heavy rainfall events, and consequent pore pressure build-up behind a surface layer of clay.

#### Solution

Drainage was installed at the crest and toe as mitigation measure and a sequence of soil nailing at 2m c/c were designed by Coffey Geotechnics to provide assurance that the slope will remain stable in the long term.

All the work were carried out by Vertical Access in accordance with BS8006-2:2011, BS EN 14490:2010 and MacMat® R was selected as the most suitable product for the soil nailing facing system.

**Client:** VSD Avenue

**Designer / Consultant:** Amec Foster Wheeler & Coffey Geotechnics

**Contractor:** Vertical Access

**Products used (Qty.)**

**Date of construction:** 03/2017 - 04/2017

[Google Maps](#)

[Google Earth](#)



Bulging and tension cracks of the face slope in Winter 2016



During installation of 32mm diameter soil nailing



Soil nailing and MacMat® R installed



View of the site during installation



Vegetation is growing over the MacMat® R (summer 2017)



Drainage installed at the toe