CASE STUDY

DISCIPLINE: GEOTECHNICS
PROJECT: SLOPE STABILITY ASSESSMENT
LOCATION: RADSTOCK
CLIENT: NATIONAL HOUSE BUILDER
VALUE: £25,000
DURATION: 1 WEEK WITH AN EXTENSIVE GEOTECHNICAL MODELLING PERIOD

Former coal yard: Slope stability assessment and geotechnical modelling.

SUMMARY

The site was host to a heavily vegetated slope, increasing from a gentle gradient covered with rough grass and shrubs towards the bottom, to a relatively steep slope with mature trees towards the top. Evidence of previous slope movement was noted.

The planned development involved a cut into the slope, which had the potential to reactivate any relict sheer planes, posing an unacceptable risk to the building process.

SCOPE OF WORKS

A ground investigation was planned, which included a grid of boreholes across the slope to provide sufficient information to complete cross sections. One cross section was targeted to bisect the slope across the area where a previous slope movement had been identified.

Relict shear planes were tentatively noted within two boreholes as soft and very soft bands.

The information obtained from the boreholes over the critical area of the slope was used to create a complete model including the possible areas of shear planes. The model was adjusted on the assumption that a failure, which had previously come to rest, would have a safety factor close to 1.

Following completion of the ground model in its existing form it was then adjusted for differing proposed final slope configurations. Soil nails were added to these models to increase the safety factor to an acceptable level for the development.

OUTCOME

Following completion of the modelling regulators and stakeholders agreed the solution and a soil nailing contractor was selected. An extensive soil nailing operation was carried out as shown in the image above.