

## Landslip Investigation & Stabilisation

The site is located at a former quarry, which was partially backfilled with Thanet Sand (sand and clay) around 30 years ago. The slope now forms the eastern side of a nature reserve. The embankment is approximately 30m high, and stands at about 38°. The upper slope was subsequently regraded to a reduced slope of 26°. A shallow rotational slip occurred over the lower section of the regraded slope, at a point where there was an absence of established vegetation. Slippage initially occurred over the unprotected area between the tree line and an area of Covamat, and subsequently regressed up the slope, creating a 17m wide scarp, approximately midway down the regraded slope.



## Ground Investigation

We undertook detailed site investigation, comprising boreholes in the failed area and installation of slip indicators and data loggers for monitoring slope movement and groundwater conditions. The soils encountered comprise firm to stiff brown very sandy silty clays and with loose to medium dense brown silty clayey sand. From the field monitoring, there was movement at depths of 850mm and 2m. No groundwater table was detected. Back analysis was carried out for the slipped slope to verify the soil parameters and groundwater conditions for remedial designs.



## Remedial Works – Design and Analysis

Integrated remedial solutions were proposed to ensure future embankment stability using sustainable methods, comprising:-

- **Soil Nailing** 7m long soil nails with hollow self-drilling tendons at a spacing of 2m by 2m over the slipped area.
- **Coated Mesh** placed over the slipped area to retain the soils between nails and protect ground surface erosion.
- **Tree Planting** notch planting of bare rootstock with rabbit protection over the slope and remediated slip area.

We managed the project, undertook the site investigation, long-term monitoring, proposed and specified the remedial methods, and supervised the onsite construction through to completion.

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