



PROJECT SUMMARY

NAME: Barton on Sea

DATE: June 2013

CLIENT: New Forest District Council

CONTRACTOR: Geotechnical Engineering

CONSULTANT: CH2M Hill



OVERVIEW

New Forest District Council in Hampshire commissioned investigation and monitoring works at the seaside cliffs of Barton-on-Sea, an area known for its problems with coastal erosion. A site investigation was required to develop the ground model, cliff-stability assessment, risk assessment and the design of a site-instability management plan. Engineered schemes to mitigate the risks associated with the ongoing coastal cliff instability were also being considered.

The aims of the investigation generally related to the detailed logging and classification of samples and materials recovered from the boreholes, including the description and identification of common fossil fauna and of any potential failure surfaces.

The engineer to the contract (CH2M Hill) was responsible for designing the investigation to supplement and complement data from the numerous previous phases of work.

MONITORING

Ground investigation, included the construction of 18 boreholes. The scheme also included surface geophysical surveys, downhole geophysical logging and the installation of multilevel vibrating wire piezometer installations, inclinometers, open-tube instruments and slip-indicator tubes.

In all, 13 Geosense VW Piezometers were installed at multiple levels. Two inclinometers were installed in the cliff- tip plateau and undercliff seaward Marine Drive.

Between the tender submission and start of work a period of particularly wet weather occurred leading to significant ground movement. The coast erosion was accelerated by storms that shortly followed. The instruments were already installed allowing better understanding of failure mechanisms.

The dataloggers had to be installed in theft and vandal proof flush covers therefore IP67 enclosures was used.

PRODUCTS USED

Multi-level VW Piezometers

Used to measure pore water pressure.

Single Channel Data Logger

A purpose-built logger ideal for remote locations or instruments that require frequent reliable data recording.

MEMS Portable Inclinometer

To measure lateral displacement.

Inclanalysis Software

Reduces large volumes of inclinometer data into a variety of formats suitable for analysis and presentation.

QJ Inclinometer casing

For use with portable inclinometers.

Barometric VW Sensor

Measures barometric pressure to allow barometric compensation of piezometers.