



GROUND TECHNOLOGY



Retaining Wall, Cromer

We carried out Site Investigation and Geotechnical Design works for the design and construction of a retaining structure on a site in Cromer, Norfolk. The retaining wall was required to enable an existing site to be enlarged, which required some land take into an existing slope along the site boundary. The length of slope to be retained was approximately 100m, with a maximum retained height of 8m.

Although the investigation techniques employed were relatively routine, access was difficult as the drilling needed to be carried out along the line of an existing 3m high wall to confirm the soil profile on the active side, which was located some way up the existing steep slope. Following an initial site visit and access appraisal, it was decided the drilling plant would be lifted from the base of the slope onto benches cut into the slope. This was undertaken using a crane and a long reach excavator safely located on the flat ground at the toe of the slope.

The site works were supervised by one of our engineering geologists, who logged the recovered strata and adapted the sampling and in-situ testing regime as the drilling proceeded. This transpired to be very important, as the geological profile was found to be variable along the length.

The drift geology changed part way along the length of the proposed wall, requiring the investigation to be adapted on a hole by hole basis to provide suitable information for design purposes.

Following the completion of drilling and sampling, laboratory testing was carried out on relevant samples to confirm the pertinent soil properties for analysis and economic wall design.

Due to site restrictions, careful consideration was given to the design of the wall with regard to access for the necessary construction plant. Further difficulties were raised by the variable geology and choice of soil profile for design purposes. However, we were able to provide an anchored sheet piled solution which limited any access problems for the installation plant, and also allowed slight variations in the construction detail along the length to take account of differences in the ground profile.

This project demonstrated our ability to adapt the site investigation process in real time based on our findings and their relationship to the design and construction process. This flexible approach avoided the need for unnecessary further work.