Card Geotechnics Limited

Pembroke to Swansea, South Wales

Our Services

- Geotechnical Walkover Survey
- Desk Study
- Engineering Site Supervision
- Intrusive Ground Investigation
- Temporary Works Design Assurance
- Interpretative Reporting

Overhead Line Upgrade Works

Electricity Alliance West (EAW) is refurbishing and upgrading two parallel 400kV overhead power lines running between Pembroke and Swansea substations in South Wales.

CGL were instructed to undertake a desk study and a geotechnical walkover survey along the 131km stretch of overhead lines. Combining the desk study report with the findings from the geotechnical walkover survey, enabled **CGL** to identify the potential geotechnical risks on a tower-specific basis. We then recommended intrusive ground investigations at specific towers using semi quantitative risk rating derived from identified geo-hazards.

Upon completion, **CGL** were commissioned to undertake intrusive investigations at 27 towers to confirm ground conditions and to allow bearing capacities and uplift characteristics to be determined. Techniques employed included trial pitting at 19 towers, dynamic probing and window sampling at a selected 8 tower locations.

A successful contribution to the scheme led to **CGL** being appointed to provide temporary works designs for crane pads and access roads. We worked in parallel with EAW's earthworks contractor and themselves to meet the stringent construction programme. **CGL** produced a cost effective design based on trial pitting and in-situ California Bearing Ratio (CBR) testing at proposed crane pad and access road locations.

Following the installation of working platforms, **CGL** conducted plate load and sand replacement density testing to verify that the earthwork construction met our design requirements and the specifications of the client, providing insurance backed design assurance.

Client: Electricity Alliance West
(on behalf of National Grid)