

MONK FRYSTON SUBSTATION

Leeds

Van Elle was appointed to deliver a specialist piling package at the Monk Fyryston Substation project in Leeds, West Yorkshire.

The works form part of National Grid's £400 million Yorkshire GREEN project and SSE Renewables' new Battery Energy Storage System (BESS), helping to strengthen the electricity network, support renewable energy integration and improve grid resilience across the region.

PROJECT BACKGROUND

- Appointed by Murphy Group.
- The project involved the installation of 32 No. bored cast-in-place (BCIP) piles, each measuring 323mm in diameter and 6m deep, installed using ODEX drilling techniques and socketed into rock, along with 2 No. anchors.
- Van Elle also installed 48 No. rotary percussive overburden drilled piles, each measuring 660mm in diameter and 8m deep, using a down-the-hole (DTH) hammer and socket pile methodology.

CHALLENGE

One of the primary challenges encountered during the project was the variability of the ground conditions.

During installation, the underlying rock was found to be weaker than originally anticipated, requiring the project team to carefully manage the piling methodology to achieve the required design criteria.

A further challenge was the significant volume of groundwater encountered at the base of the piles. The presence of water made it difficult to maintain open pile sockets during installation, creating potential risks to programme and pile integrity.

SOLUTIONS

To overcome these challenges, the site team worked closely with the client, adapting installation methods as required and maintaining clear communication throughout the project.

The use of ODEX and rotary percussive drilling techniques enabled the team to continue progressing the works efficiently despite the challenging ground conditions and groundwater ingress.

Communication between Murphy Group and Van Elle remained strong throughout the project, ensuring information was shared promptly and technical queries were addressed quickly to support successful delivery.

Operating within the energy and utilities sector, the works formed part of the development of a new 400kV substation.

AT A GLANCE

Sector: Energy

Solutions & Techniques: Drilled and Cased (Odex/Duplex) Piling

Client: Murphy Group

Van Elle Division: Specialist Piling

EQUIPMENT

- KR7094m Mast
- Grout Pump

