THAMESIDE ENERGY RECOVERY FACILITY

Tilbury Docks, Essex

Keller was appointed to deliver a major foundation package for the construction of an Energy Recovery Facility (ERF), providing a turnkey solution incorporating piling and associated attendance works.

The project

The project involved the installation of more than 1,000 Continuous Flight Auger (CFA) piles and precast driven piles, designed to support the significant structural loads imposed by the facility. CFA piles, installed to depths of up to 36m and diameters of up to 1050mm, formed the primary foundation solution across much of the site. Precast driven piles were utilised in areas requiring reduced load-bearing capacity. In addition to the piling works, Keller delivered a comprehensive package of support services, including piling platforms, maintenance, muck classification and disposal, traffic management, logistical coordination and UXO mitigation.

The challenge

The scale and technical complexity of the project presented challenges that required careful planning and execution. The foundation design had to accommodate substantial compression, tension and lateral loads generated by the ERF structure, while also addressing chalk ground conditions across the site. Installation activities needed to align with a phased construction programme, requiring piling operations to be carefully sequenced to support the client's zonal delivery strategy and provide access for follow-on trades. The project also required attendance works to be managed alongside the piling operations.

Project information

Application
Heavy foundations

Technique
Deep CFA, precast driven piles and attendance package

Sector
Energy

Client
Viridor

Main contractor
Kanadevia Inova

Contract value
£8 million

Keller companies
Keller UK

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The solution

Keller's in-house geotechnical and structural design teams worked closely with the construction delivery team to develop an efficient and cost-effective foundation solution tailored to the project's requirements. This integrated approach enabled foundation designs to be optimised through value engineering, improving buildability and reducing material usage while maintaining full structural performance. Installation was undertaken using high-capacity CFA piling rigs equipped with continuous monitoring systems that recorded key construction parameters, including penetration rates, torque, concrete volumes and reinforcement placement. This real-time monitoring provided assurance that every pile was installed in accordance with design and quality requirements. A robust testing and verification regime was implemented throughout the project, including pile integrity testing, dynamic load testing and static load testing to confirm foundation performance. Keller also managed all associated attendances and enabling works, including compliant piling platforms, surveying, plant support, muck away operations and logistical coordination, ensuring efficient delivery across all work areas and maintaining uninterrupted progress throughout the programme.

Key achievements

- Successfully installed more than 1,000 foundation elements and delivered a critical foundation package safely and in line with the project programme.
- The in-house design team developed value-engineered foundation solutions that reduced material usage, improved buildability and maintained full compliance with project requirements.
- Comprehensive testing, continuous monitoring and robust procedures ensured the highest standards of quality and technical performance were achieved.
- Acted as standalone piling contractor, completing all piling works and attendance-related activities.

Contact us

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