

# Rivenhall Integrated Waste Management Facility, UK



The Rivenhall Integrated Waste Management Facility (IWMF) is a pioneering project aimed at significantly enhancing waste management and energy recovery in the Essex region.

This state-of-the-art facility, located in the former Blackwater Quarry near Bradwell, Essex, will process 595,000 tonnes of waste annually. The project is led by Indaver NV, with Hitachi Zosen Inova the main contractor. Bauer Technologies was entrusted with the task of executing the foundation works, critical for constructing this advanced waste-to-energy power plant.

## SCOPE OF WORK

The scope of work for Bauer Technologies included several key tasks. In the advance works phase, Bauer conducted three preliminary static load tests on 900mm, 750mm, & 600mm CFA piles and constructed guide walls to facilitate accurate piling. For the contiguous wall, 167 piles with diameters of 1200mm and depths of up to 27 meters were installed using rotary bored techniques.

In constructing the capping beam, 171 piles of 900mm diameter were implemented, reaching depths of

up to 20.85 meters, again using rotary bored techniques. The waste bunker and boiler required the installation of 256 piles of 900mm diameter with depths reaching 42.28 meters, while for the bearing piles, 740 piles with diameters ranging from 450mm to 900mm and depths up to 25.15 meters were installed using both CFA and rotary bored techniques.

Additionally, 14 working pile load tests, including two static load tests and 12 dynamic load tests, were performed to ensure the structural soundness of the piles.



## SUSTAINABILITY INITIATIVES

Bauer Technologies are consistent in their emphasis of environmental stewardship as well as community engagement in its projects. Typical measures include the use of local resources, minimising the carbon footprint through strategic logistics, ensuring efficient material usage.

## PROJECT CHALLENGES

The project faced several notable challenges. Maintaining the working platform and managing stockpiles were crucial to ensuring safety and efficiency. Additionally, there were supply shortfalls in concrete and reinforcement materials during peak production periods, requiring careful resource management and contingency planning.

To meet the project's rigorous demands, Bauer Technologies employed a range of specialised equipment. This included several piling rigs such as BG28 and BG30 models, a Llamada P135, and a Soilmec SR75. Various casing and tools, CFA augers, and cranes were also used, alongside concrete pumps, agitators, excavators, and dumpers.



Bauer Technologies' work on the Rivenhall IWMF commenced in October 2022 and was completed by March 2023. The broader project began in July 2021 and is expected to be finished by December 2026.

## CONCLUSION

The Rivenhall Integrated Waste Management Facility is set to become a cornerstone in the UK's waste management and renewable energy

landscape. Bauer Technologies' expertise in complex foundation works has been pivotal in advancing this project, showcasing their ability to overcome significant logistical and technical challenges. Their contribution underscores the importance of innovative engineering solutions in developing sustainable infrastructure.

### Principal Contractor:

Indaver NV

### Piling Contractor:

BAUER Technologies Limited

### Contract Period:

October 2022 – March 2023

### Bauer's Scope of Works:

Advance Works

- 3nr Preliminary Static Load Tests; 900, 750 & 600mm CFA Piles
- Guidewall construction

Contiguous Wall

- 167nr 1200mm, with design depths up to 27m installed using Rotary Bored technique

Capping Beam

- 171nr 900mm, with design depths up to 20.85m installed using Rotary Bored technique

Waste Bunker/Boiler

- 256nr 900mm, with design depths up to 42.28m installed using rotary bored technique

Bearing Piles

- 740nr 900mm, 750mm, 600mm &

450mm Bearing Piles, with depths up to 25.15m installed using CFA & Rotary Bored techniques

Working Pile Load Tests

- 14nr Load Tests: 2nr Static Load Tests & 12nr Dynamic Load Tests

### Equipment Used:

- 1nr. BG28
- 2nr. BG28/BG30
- 1nr. Llamada P135
- 1nr Soilmec SR75
- 450mm, 600mm, 750mm & 900mm CFA Augers