

Balfour Beatty



Gloucester Energy from Waste Facility



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Urbaser Balfour Beatty (joint venture) was the main contractor at the Gloucester Energy from Waste (EfW) project – a huge undertaking for all concerned, not least for PTSG, whose involvement lasted three years.

PTSG Electrical Services Ltd was initially contracted in December 2016 to deliver a combined lightning protection system and earthing installation at the new facility, located at Javelin Park in Haresfield, on the south side of Gloucester.

About the Project

The Gloucestershire Energy from Waste (EfW) facility is designed to significantly reduce the amount of residual waste landfilled in Gloucestershire by using a tried and tested technology, that is thermal treatment using combustion. This process is also monitored and regulated by the Environment Agency.

The EfW facility sits on a 12.6-acre plot. The footprint of the main building complex is around 9,200 square metres. The maximum height of the main boiler hall is 48.5 metres above surrounding ground level, and the chimney stack is 70 metres tall.

For a project as large and complex as the one at the Gloucester EfW Facility, collaboration was key

Aside from safely dealing with residual waste, which cannot readily be recycled or composted, the facility generates the equivalent electricity to power 25,000 homes and contributes to Gloucestershire's overall renewable energy production.

The facility diverts over 90% of the county's residual waste from landfill, producing 14.5 MW electricity and has the potential for heat offtake, metals for recycling and sustainable aggregates. There is a net reduction in CO₂ equivalent emissions of at least 26,500 tonnes each year, through running the facility as compared with continued landfilling.

The facility employs around 40 people across a range of skills and expertise and includes a visitor centre and education suite for use by schools and community groups by prior arrangement.

PTSG's involvement

The sheer size and scale of the new facility meant that PTSG's presence on the site lasted three years, with work project managed and delivered for the most part by Ian Maggs.

Working closely with Urbaser Balfour Beatty, PTSG connected the new lightning protection system to every single steel column of the structure, both internally and externally. As this involved hundreds of individual connections, it was a major undertaking and accounted for a significant part of the three-year on-site presence.

Installation of the lightning protection system also involved cross-bonding. This means connecting protective bonding conductors between elements, reducing the voltage there might have been within the many levels of the structure and thereby reducing the risk of electric shock.

The Group's engineers created exothermic welding connections throughout the facility – making permanent, high-quality earthing connections. The procedure – while straightforward, requiring mould, weld power, handle clamp and exothermic welding tools – was extremely time-consuming due to the scale of the facility.

For a project as large and complex as the one at the Gloucester EfW Facility, collaboration was key and PTSG Electrical Services Ltd, led by project manager Ian Maggs, worked closely and effectively with the Quantity Surveyor and the Project Team. PTSG successfully completed their specialist services at the end of 2019.