



An Innovative Approach to Working at Height Deemed a Health & Safety Success for Award Winning EfW



## The Project

When Lagan Construction was awarded the contract for a state of the art energy-from-waste plant in Great Blakenham, Suffolk, health and safety was at the top of the agenda.

The energy recovery facility has the capacity to treat 269,000 tonnes of residual waste per year, which would previously have been sent to a neighbouring landfill site, and generates enough electricity to power around 30,000 households.

Part of a £1 billion, 25-year residual waste management contract signed between Suffolk County Council and Suez Environment (previously SITA UK), the facility also includes an educational centre to explain the energy-from-waste process to the wider community.

Suez Environment appointed specialist contractor CNIM to design, manufacture and install the specialist plant. Lagan Construction Ltd were brought on board by CNIM to design, construct and overcome any challenges, from a civil engineering perspective.

After a long tender process CA Roofing services was appointed to help address the health and safety requirements on this non-standard building site, which reached a height of 52m, at its tallest point. The company pioneered the use of safety nets in industrial roofing and has a reputation for finding workable solutions for non-standard schemes where health and safety, and onsite coordination represents a barrier to meeting the client's project deadline.

A range of intricate access solutions, including Mobile Elevating Work Platforms (MEWP), suspended cradles and specialist scaffolding, were employed to overcome the stringent access restrictions and health and safety procedures required to ensure the safety of all those working on site.

Many elements of the project had to remain fluid to maximise productivity each day and ensure any potential delays were identified and where possible resolved, ahead of time. As such, coordination meetings between all relevant parties were held daily to agree on the following day's programme of activity.

**Wall  
Area  
10,000m<sup>2</sup>**

**Roof  
Area  
7,000m<sup>2</sup>**

**£180 million  
project cost**

**1.2 million hours  
on site with no  
serious injury or  
incident**

**Considerate  
Constructor Scheme  
Silver Award**





## Key challenges

In order for the roof membrane installation and the wall cladding to progress simultaneously, the standard cradle arm support solution, usually selected for a job such as this, had to be modified. CA Roofing Services worked closely with Adastra-Access Ltd to find a way to secure the cradle arms without counterweights, constructing the modified cranes at ground level and connecting them via bespoke brackets directly on to the roof light box steel beams.

As the roof is graduated, reaching 52m at its highest point, strong winds had the potential to adversely affect progress. In order to ensure that work was not delayed, the team installed eight double-stacked cradles onto the building, four on one side and four on the other, this gave CA the option to work on either side of the building when wind speeds caused manual handling issues. Having so many cradles available, meant that the roofing services team could work quickly and cost effectively, with nine operatives assigned across three cradles at any one time.

The Danpalon wall panels, which were used to increase the amount of natural light into the process hall helping to reducing the lighting load and improving the building's energy efficiency, were made of polycarbonate and weighed less than 50kg each, but they also measured more than 9m in length, making them difficult to handle.

The installation criteria were further complicated by the tolerance requirements of installing the panels between vertical structural fins in place to provide necessary support to the external feature brise blades.

The issue of getting the panels into place was resolved through the implementation of a monorail, or track system, located at roof level, which used winches and a sucker mechanism to manoeuvre the material safely into place.

Weight restrictions had to be carefully monitored whilst working on completed areas of the roof in order to protect the membrane and ensure the safety of all operatives working at height. The roof was non fragile and fully walkable which facilitated safe access, and storage was kept to a minimum with requisite materials being moved on to site at the start of the day and removed each evening.

Obstructions around the building, including two large chimneystacks of approximately 100m in height, and various large pipes, meant that the modified cradles could not be used to access certain points. When access was an issue, MEWP were brought in and used in combination with the cradles.



Clients: Suffolk County Council / Suez environnement  
Main Contractor: Lagan Construction Limited  
Roofing & Cladding Contractor: CA Roofing Services  
Architects: Grimshaw Architects / Tata Steel Projects (TSP)  
Engineer: Tata Steel Projects (TSP)  
Lead Designer: Tata Steel Projects (TSP)  
Specialist EfW Plant Provider: HZI  
Product Suppliers: Tata Steel - Colorcoat HPS200 Ultra®  
Trimo - Composite Panels  
Everlite (Danpalan) - Façade  
Alumasc - EPDM Waterproofing  
CA Building Products - Roof Profiles  
Bilco - Roof Access Hatches  
SPS - Louvres  
Colt International - Roof Smoke Vents

View Complete Project Timelapse Photography at:  
<https://youtu.be/j7N1Llzesy8>

