

Description

- ◆ In early 2011, a strategic partnership for the South West was formed between MITIE Asset Management, O-Gen and the UNA Group. The consortium agreed a plan to develop five facilities in the South West with the first site being in a £65m energy from waste centre, located in the manufacturing district of Roborough, Plymouth
- ◆ A 40,000 tonne energy centre that will treat wood waste and supply both heat and power through a gasification process
- ◆ The facility will generate around 26,000 MWh of electricity a year which will reduce CO² emissions by around 16,500 tonnes a year compared to grid supply.



Involvement

- ◆ Detailed design of the building services throughout the development including the process areas and administration offices
- ◆ We developed the infrastructure requirements for the process works design team. The design included the selection of the site utility company transformer to serve the parasitic loading of the building
- ◆ The electrical design was developed to satisfy the Employers requirements of a maximum 10% parasitic load including the process equipment
- ◆ We fully coordinated the import and export medium voltage (11kV) network connections with the utility company including the management of the split generation and distribution packages to complete a single connection point to the site wide MV network
- ◆ The earthing arrangement required a detailed design which required coordination with the requirements of the generator manufacturer, lightning protection system and the low voltage earthing network
- ◆ The export ROC's metering was in accordance with the requirements of Ofgem ensuring "green energy" and "brown energy" consumption was defined and monitored correctly to maximise the export return
- ◆ We assisted in the detailed design of the sprinkler system which was developed to comply with the client's insurers requirements
- ◆ A Building Management System (BMS) was designed for the building services, this was fully integrated into the process equipment controls
- ◆ Ventilation was designed to the process hall to limit the ambient temperature to 35 degrees
- ◆ Develop design and equipment selections taking into consideration explosive risk areas.



Benefits Delivered

- ◆ Redesigned the HV network to provide a resilient infrastructure
- ◆ Provision of commentary on concept design and the provision of information for plant spaces prior to construction
- ◆ Detailed design of the building services fully coordinated with the building & structural elements
- ◆ Energy efficient design to satisfy the Clients parasitic load requirements
- ◆ Provision of multiple options demonstrating energy efficiencies against capital cost and ongoing maintenance
- ◆ Identified an issue with the proposed earthing arrangement and provided a solution compliant with the British Standard and the utility company requirements.

The property extends to approximately 2.13 acres (0.86 hectares), which provides a site coverage of approximately 40%