

# CASE STUDY

# DISTRICT HEATING - 500 kW BIOMASS BOILER

## BESPOKE DESIGN

Each installation is designed to meet specific client requirements with full computer simulation used to prove all designs.

## ENERGY EFFICIENCY

As approved Carbon Trust Consultants, we will ensure that the system energy performance is optimised to produce lower operational costs.

## PROJECT CDM AND MANAGEMENT

Our engineers and consultants will ensure that all aspects of the design and installation are fully compliant and all relevant permissions and safety requirements are fully adhered to.

## MCS ACCREDITED

ESP is an accredited installer, approved under the Government's Micro-generation Certification Scheme.

## CARBON TRUST

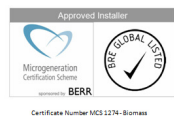
ESP are approved Carbon Trust Energy and Biomass Consultants.



- Full design, install and commission
- District heating network serving teaching, administration and accommodation blocks
- Purpose build fuel store and dump pen
- Designed for chip or pellet
- Web based control with SMS text alerts



Barony College is a specialist agricultural college located in Dumfries & Galloway. The site consists of a main teaching block, two accommodation units and several out-buildings. The college was previously heated by a combination of an oil boiler, several electric boilers and electric storage heaters.



ESP proposed to replace the old systems with a single biomass boiler, with heat distributed to the teaching block and accommodation units via a newly installed district heating system. Following extensive load profiling, the chosen solution was a 500kW Binder boiler, which was selected due to its ability to handle both woodchip and wood pellet.



The boiler was installed in a refurbished plant room with 8000 litres of thermal storage, which is located adjacent to a newly constructed pre-cast concrete fuel store. Fuel is delivered to the boiler via a rotary agitator and screw auger. Heating and hot water is distributed to demand centres via buried PEX piping, which is a cost-effective solution with minimal heat losses and good network reliability.



The district heating network and biomass heating plant have been integrated with the site's existing internal distribution system using a number of plate heat exchangers, and optimal performance is achieved via an advanced control system. Remote monitoring via the internet and SMS means that the system is user-friendly, and will help to reduce system down-time by enabling rapid fault diagnosis.



As part of ESP's full turnkey solution, ESP provided a complete design, project management and installation service, including all elements of the project.



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