Hestercombe Gardens

199kW, 140kW woodchip boilers and one 40kW log boiler

Scheme	Provision of hot water and heating throughout the Hestercombe Estate, Somerset: manor house, art gallery, restaurant, training centre and offices
Boiler and plant	The system has three biomass boilers heating different parts of the site – one ETA 199kW Hack, one ETA 140kW Hack and one ETA 40kW log boiler.
Fuel	Woodchip sourced from a local supplier feeds the two larger boilers and is normally delivered by tractor and trailer in quantities of up to 40m³. The smaller log boiler runs on timber felled on the estate.
Chip storage	Woodchip is stored in an extension to an existing agricultural building. The store is able to hold up to 96m³ of woodchip allowing a good reserve of woodchip to be maintained between deliveries.
Grant / Funding	This project benefits from annual funding available through the commercial RHI programme and funds awarded have been offset against the capital cost of installation.
Savings / Investment	Despite a considerable investment in a new building and an extensive heat network, it is expected that the capital investment will be paid off through a combination of RHI income and fuel cost savings in a 6–7 year time frame.
CO_2 saving	CO_2 savings of 140 tonnes per annum are expected. This represents a 95% saving compared to the previous oil fired systems.
Commissioned	December 2014

Project overview

Hestercombe Estate is a listed manor house with extensive formal gardens designed by Lutyens and Jekyll. Previously leased by Somerset County Council, Hestercombe has now returned to the hands of the Charitable Trust who are seeking to regenerate the site. The project includes the refurbishment of the house and numerous outbuildings providing an art gallery, conference and education area, tea rooms, commercial kitchens and offices.

When the Hestercombe Gardens Trust regained the leasehold, essential cost-saving alternatives for the oil fuelled heating systems were sought. Dunster were invited to assess the feasibility of integrating renewables across the whole project and to make a proposal for the most appropriate technologies for the site. It was agreed that woodchip systems, in the main, would be the best choice to meet the needs of the two large sections of the estate.

Fuel supply and chip handling

Whilst the Estate does have areas of woodland, this was not considered sufficient to provide enough fuel for both woodchip boilers. Early in the project a local supplier was enlisted to assess the site and make plans for access and loading; access is very tight and an 8-wheeled vehicle is the largest that can get into position. A front-end loader is permanently on site and the decision was made to purchase tipped loads of fuel. A purpose built reception area with low concrete walls has been built allowing the machine to access and load the woodchip directly in to the fuel stores.

System design and installation

Before the project began the entire site was running on four oil boilers with a total output of up to 600kW. The site was reduced to two chip and one log boiler with a combined capacity of 379kW. Existing oil boilers were retained to provide back-up heating. All pumps and controls were upgraded to modernise the heating system and increase efficiency across the heat network. The entire site was fully networked ensuring that all boilers and controls can be managed from one office computer.

The installation of the heat distribution network posed significant problems with a total of 350 metres of pre-insulated heat main having to be laid in areas open to the public. Public access was maintained by careful planning and installing the main sections of heat main during a quiet period, followed by phased installation of the separate buildings.

APPROVED INSTALLER

MCS · REAL RENEWABLE ENERGY ASSURANCE LIMITED · HETAS

DUNSTER
BIOMASS HEATING

Dunster Biomass Heating Limited
Higher Ford, Ford, Wiveliscombe. Taunton TA4 2RL

01984 624 811

sales@dunster.biz

www.dunster.biz

ETA