

Parkend Estate, Hexham: Biomass heating for a rural estate



RURAL



Parkend estate is a country estate, with woodland, near Hexham. The estate has evolved from customer, to major fuel supplier and boiler installer.



Client	Parkend Estate
Application	Large country estate with swimming pool and separate cottages
Solution	An existing outbuilding was converted to house the two wood chip boilers, installed in two phases following an extension on the estate. Existing oil boilers are used for standby.
Boiler type	Two Fröling Turbomatic 100kW boilers
Fuel reception	Two ground level hoppers are fitted with rotary arm fuel extractors. The first, a steel hopper and manual opening hatch, the second a breeze block store with plastic sheet, to allow tipped delivery of wood chip fuel.
Fuel supply	The boilers are expected to use c. 120 tonnes of seasoned wood chip sourced from the estate's fuel supply company. Wood chip is tipped into the fuel stores with a telescopic handler or high lift trailer, depending on store.
CO2 saving	60 tonnes per annum
Start-up	March 2006 & April 2009



Parkend estate breeze brick fuel store bunker with plastic sheet cover

Project history

The owner decided to install a wood chip boiler in order to keep fuel costs down and make use of the low grade wood from his estate.

The first boiler was installed in 2006 to provide heating and hot water for the main house, apartments and three separate cottages via heat mains. Following an extension to the main house, construction of an indoor swimming pool and a requirement to provide more of the heat by the biomass system, a second boiler was installed alongside the first.

Design, installation and operation

Econergy designed and specified the wood fuelled heating system, using Parkend Engineering to install the mechanical and electrical components, and heat mains under Econergy guidance.

Both fuel stores were constructed on site by Parkend engineers.

One of the existing oil boilers was relocated to the wood boiler room to provide peak requirements. The existing main house oil boilers were also left in situ to act as automatic standby boilers. The oil boilers are no longer used following the phase 2 installation.

The wood is stacked and seasoned to the correct moisture content then chipped into an existing stone barn. This barn holds a year supply of wood chip and is situated approximately 400 metres away from the hoppers.

The fuel hoppers hold enough fuel for approximately 10 days in the winter and 2 months in the summer.

Fuel supplier and boiler installer

Parkend estates have subsequently set up as a major fuel supplier in the area, shipping over 4,000 tonnes per annum to a number of Econergy and third-party projects. Parkend Engineering has joined Econergy's installer network, installing commercial and domestic wood chip boilers to the local area.



Fröling Turbomatic boiler



Inside wood fuel storage barn

Similar case studies:

Aske Estates	4 boilers on large rural estate Richmond
Bowood Estate	Golf and Country club Calne
Great Higham	Rural estate with large outbuildings Kent
Grange Farm	Duchy of Cornwall estate Harewood Park

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