

Charterhouse Centre, Somerset, 55kW



Charterhouse Centre is located at the heart of the Mendip Hills which is an area of outstanding natural beauty (AONB). The centre provides educational and outdoor activities to approximately 44 children and adults per week. To fit in with the centre's renewable and environmental policies a biomass boiler was installed

Biomass Boiler

Econergy installed a fully automated Fröling Turbomatic 55kW woodchip boiler in March 2004, this provides space heating and hot water for the centre.

Technical summary

- Fröling's unique automatic shaking and tipping grate system and separate high temperature ceramic lined combustion chamber, ensures efficient combustion of a wide range of woodfuel.

- Combustion is regulated by a Fröling H3100 modulating lambdatronic controller, automatically optimising combustion according to fuel type for 91% or better efficiency across the full output range of 16 to 55kW.
- The highly efficient combustion system ensures low emissions, no smoke, smell or visible plume, easily bettering the top, class III, requirements under the EN303-5 standard.

Left; Fröling Turbomatic woodchip boiler



Wood fuelled boilers Biomass energy services District Heating

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- The boiler includes;
 - o automatic ignition by hot air gun
 - o automatic tube cleaning
 - o automatic ash extraction to an easy to empty sealed external ash box
 for nearly attendance free operation between annual servicing.

Operation

- The woodchip is fed automatically via auger from an adjacent fuel store by 3m diameter springarm fuel outfeeder.
- The fuel store holds up to 25m³ of woodchip, which is sufficient for up to three months when on winter time operation.
- The system delivers an estimated 55,000 kWh of renewable heat each year.
- Econergy undertake annual servicing under a rolling fixed price agreement.

Fuel

15 tonnes per year of seasoned woodfuel is sourced locally. The centre is a mile from a large wood recycling centre called Mendip Wood Shavings, where a very clean and uniform specification of wood shred from discarded pallets and demolition wood is produced. The woodchip produced is 10-15% moisture content.

Carbon Saving

In replacing an oil fired system the woodchip boiler will avoid some 20 tonnes of Carbon Dioxide emissions per year.

Grants

The installation was supported by a grant from the DTI's Clear Skies programme.



Above; Boiler room and fuel store (right)



Left; Spring arm outfeeder within the fuel store
Below; Aerial shot of the centre.

