

Pellet Boiler at The Earth Centre

In 2002 the Welcome Building of the Earth Centre replaced its existing log burning boiler and stove with an 'A3' wood pellet burner from Sahlins EcoTec and a Focus 'PE-30' wood-burning boiler. The new system requires significantly less attention than its predecessor, since there is no daily loading of logs or de-ashing required.



How it Works

The bagged pellet fuel is added to a remote silo of 0.5 m³ with special Perspex viewing windows for public viewing. A 4 m auger pipe takes the fuel from here to the boiler compound. The auger turns on demand from the burner to deliver pellets via a flexible drop tube. This air drop ensures a separation of the fuel store and the burner as a safety measure.

Once in the burner the pellets travel through an air-tight rotary valve and drop into an internal store. An optical level switch in this store decides when the external auger should drop the next batch of pellets.

From the internal store another auger feeds pellets along a closed pipe into the boiler combustion chamber where they are fed into the burn-pot from underneath. A fan provides a fixed air supply to both primary and secondary air apertures to give an efficient burn. During commissioning the fuel supply is calibrated in relation to the air supply depending on the pellet quality.

The boiler is designed to be used with pellet stokers and can provide indirect hot water at up to 20 litres/minute via a heating coil within the boiler water jacket. The boiler has been connected to the existing sectional flue pipe.

The pellet system supplies hot water to the 12 existing reclaimed cast iron radiators, each of which are fitted with TRV's. A digital clock and room thermostat control the circulation pump, which draws water from the permanently hot boiler as required.



Maintenance

The ash-pan must generally be removed and emptied after about 2 week's use. At a longer interval the burner must have hard carbon deposits removed and at the same time the heat exchanger channels of the boiler are swept clean. Flue cleaning is required every one to two heating seasons depending on usage.

A simple servicing routine is undertaken by the assigned site staff according to the instruction booklet and entails a shutdown for inspection and service approximately every month.

Costing

To have a system such as this installed would be in the region of £7.5k + VAT, depending on site variations.



Technical Details

Burner:	EcoTec A3 25kW - Sweden
Boiler:	Focus PE-30 - Sweden
Silo Manufacturer:	Mafa – Sweden
Fuel Type:	8mm Wood Pellets
Wood Source:	Clean sawmill dust - first use
Flue requirements:	Sectional Twin wall Stainless Steel 150mm i.d. - 6m length

Installed by: Renewable Heat & Power Ltd & Wood Energy Ltd - Contact Tim Dyer



Wood Energy Ltd

Design, Installation and Service of Wood Fuelled Heating Systems

Wood Energy Ltd - Pinkworthy Barn - Oakford - Devon - EX16 9EU

Tel: 01398 351166 - Fax: 01398 351115 - E-mail: tim@rhpl.co.uk - Website: www.rhpl.co.uk



The National Energy Foundation is grateful to Wood Energy Ltd for the text that they provided for this case study. The National Energy Foundation cannot accept any responsibilities for information provided by a third party.

This case study has been produced as part of the Log Pile project. For more information, please visit www.logpile.co.uk



are you doing your bit?



© The National Energy Foundation - BMCS2 - December 2002



Renewable Energy for the Home Project

Freephone 0800 138 0889 · www.greenenergy.org.uk · renewables@greenenergy.org.uk

NEF Renewables · The National Energy Foundation · Davy Avenue · Knowlhill · Milton Keynes · MK5 8NG

Registered Charity Number 298951