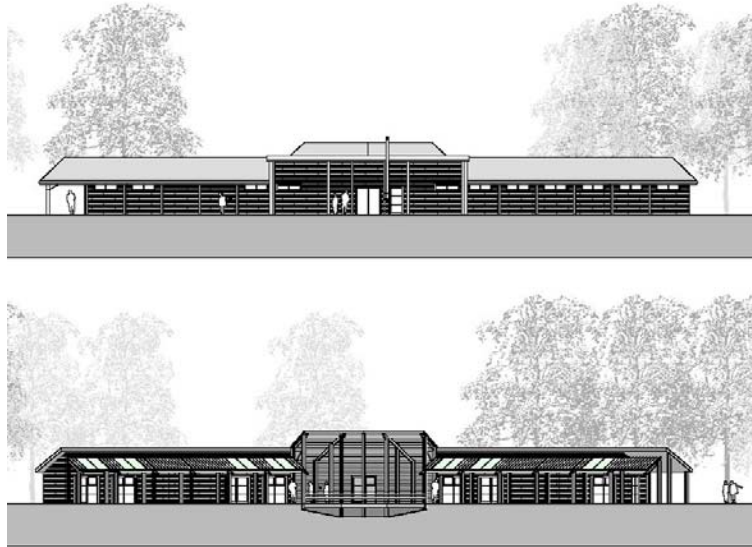


Wood-fuelled heating – Bedgebury Visitor Centre, Kent

Status of Project:	PLANNED – Expected Spring 2006
Location:	The National Pinetum and Forest, Goudhurst, Cranbrook, Kent, TN17 2SL (Grid ref. TQ716335)
Owner / Developer:	Forestry Commission
Description:	Heat-only woodchip-fuelled combustion boiler in new visitor centre



Source: www.bedgeburypinetum.org.uk

Background:

Bedgebury is situated in the Kent countryside near Tunbridge Wells, and is owned and run by the Forestry Commission. The National Pinetum at Bedgebury is one of the county's leading visitor attractions and has the finest collection of conifers in the world. The 850 hectares of timber-producing Bedgebury Forest in which it resides is set to become one of the UK's largest, multi-activity outdoor sport and healthy living sites. New activities will include all-ability cycling, mountain biking, play equipment, horse riding and orienteering.

In a major development project supported by Sport England (£1m) and the Forestry Commission, the site is intended become an environmental showcase, and its completion is scheduled for around Spring 2006. Accompanying the extension of the collection to 100% of the world's temperate conifers will be a new visitor and education centre.

One of the project's objectives is to educate people as to the importance of environmental and conservation measures generally and the significant role that conifers play in the protection of humanity and the natural world. For this reason the new visitor centre will incorporate sustainable design principles, energy efficiency, and renewables in the form of a wood chip boiler.

The heating system and boiler was installed in December 2005, and will be fully commissioned by mid-January in time to be operational for the full opening of the visitor centre in Spring 2006.

Technology / Scope of Project:

The biomass boiler is expected to be fuelled from woodchip coming from the 100 hectares of sweet chestnut coppice growing on the Forestry Commission's own land. Coppicing is the practice of cutting back the re-growth from a cut stump every few years (for sweet chestnut, this will vary between 12-18 years). Chip will be dried over the summer.

The boiler is rated at 40 kW capacity, in order to provide space heating and hot water to the Visitor Centre, educational room, café, and offices for Friends of Bedgebury Pinetum and the education staff.

The boiler, manufactured by KWB USBV-40, has automatic stoking, ignition and tube-cleaning, ash extraction and its onboard 1m³ hopper is expected to require re-filling every 4 days (averaged over the year). This means it will probably consume around 14 oven-dried tonnes of wood-chip per year, equivalent to about 19 tonnes fresh wood consumption annually. In terms of a dedicated plantation of new sweet chestnut coppice on a 5-year rotation, this would perhaps require just 7 to 9 hectares a year.

The main contractor for the visitor centre project is Kingswood Construction. Specialist subcontractor Econergy produced the design specification and installed the biomass boiler.

Importance to the South East:

This installation will have a useful public educational role, given that it connects the interdependent concepts of bioenergy production and renewable energy use, crucially on one physical site and in a tangible form (from energy crop to boiler to heating).

The Forestry Commission are testing this boiler out with a view, potentially, to replicating the heating source in its future boiler replacements or new-build around the region and the country.

The scheme will be an excellent example for other owners of land in the region to emulate, once they have seen the system in operation. Farmers and others who do so may choose to opt for a faster-growing energy crop such as willow, but the use of chestnut coppice will be an interesting illustration of the variety of wood-fuel options for boilers. It is perhaps particularly interesting for other landowners with a similar on-site (or neighbouring) heat demand.

There is also a saving of carbon emissions in respect of the alternative conventional fuels (most likely heating oil) to the tune of around 17 tonnes of carbon dioxide each year. This becomes all the more significant when multiplied by the number of comparable visitor attractions across the region for which biomass is a theoretically viable option.

Acknowledgements: Thanks to Mark Clixby (Bedgebury Manager, F.C.), John Barrett (Building Manager, F.C.), Jim Birse (Manager, Econergy) and www.bedgeburypinetum.org.uk for material used in this case study.



Source: www.bedgeburypinetum.org.uk

Views of Bedgebury's National Pinetum



Source: Forestry Commission