



**Local Authority Area – Chiltern DC,
Bucks CC**

**SHORTENILLS ENVIRONMENTAL
EDUCATION CENTRE**



Background

The Shortenills Environmental Education Centre has provided quality environmental education to the children of Buckinghamshire for over 50 years. Ever keen to highlight issues of sustainability, the Centre decided to develop on its existing portfolio of renewable energy generation looking at the possibility of utilising biomass to provide their space heating and hot water needs. The result was a biomass boiler installation in April 2004.

The Technology / Scope of Project

After an energy audit by TV Energy in 2003, Shortenills Centre decided to pursue the option of converting their heat source from oil to biomass. The new biomass boiler proposed was an 80kW Veto boiler which would be housed in a new boiler house and directly fed with woodchips from an adjacent hopper. Econergy Ltd were contracted to conduct the feasibility study and subsequently to install and commission the new boiler.

The fuel for the boiler is sourced from a neighbouring wood owned by the Woodland Trust, Philipshill Wood, and the boiler uses approximately 50 -60 tonnes of wood fuel per year at 30% moisture (wet basis).



Fig 1: The Woodchip Boiler



Fig 2: Loading the Hopper

Importance to the Thames Valley

This project:

- Provides an introduction to biomass as fuel, solar technology, for a whole generation of Buckinghamshire children;
- Is the first small scale biomass heating installation in Buckinghamshire. It is an excellent example of the use of biomass fuel for heating and demonstrates a local solution for the fuel supply.
- Will provide a base on which further replication can be built in other buildings across the county and the Thames Valley;
- Enables for developers and architects to see the integrating PV into the built environment.

Future Plans

The immediate aim of the Centre is to replace the accommodation for an ambitious earth-sheltered, passive solar heated education and catering block. It is also hoped to expand the number renewable energy projects on the site, particularly in wind energy.

Other innovations

As well as incorporating energy efficiency, the centre has also fitted some cutting edge energy efficiency technology, like:

- Solar Photovoltaic Pergola, which provides electricity to offset the power requirements of several lights within the centre.
- Infrared movement detectors, to control the turning on and off of the lighting.
- SunPipes, to pipe natural light from the rooftop into areas where light from windows can struggle to penetrate.

Pictures from Shortenills are below and the SunPipes are also installed at Maidenhead & District Housing Association's Integer homes at Alpine Close, Greenfields, Maidenhead (see case study on this site).



Fig 3: The Sun-Pipes from the Outside of the Building



Fig 4: The Effect of the Sun-Pipes Inside the Building.