

Penmorfa, Aberaeron, Ceredigion
State of the art biomass system heating modern offices
and sheltered housing complex



Hot Desking meets Home Comforts



In a flagship example of commitment to sustainable building and renewable technologies, Ceredigion County Council installed a woodfuel heating system as part of the rationalisation of the systems at their Penmorfa headquarters in Aberaeron.

The Penmorfa development comprises offices for over 150 council staff and elected members. Adjacent is the Min-y-Mor residential care home and Penrodyn sheltered housing flats, each of which cater for about 30 residents. The three buildings have a total floor area of 6,608m², and demand about 1,250MWhrs annually to provide heating and hot water. They were originally heated by a combination of oil and electric boiler systems.

Peter Foale, Ceredigion's project manager on the scheme, comments, "The decision to use biomass demonstrates Ceredigion's commitment to both sustainability and local business. We have also had excellent results from our woodpellet-fuelled installation at Llandysul Leisure Centre over the last few years, which has helped provide the assurance that biomass offers a viable, technologically mature solution."



Locally sourced wood chip to heat a complex comprising offices and residential accommodation

"It makes obvious economic sense for the council to reduce reliance on increasingly expensive oil, particularly when there is a ready supply of wood right on our doorstep. The wood fuel system will save money, help meet our ambitious carbon reduction targets, and provide income for local timber growers and processors."

The Austrian-made Binder 550kW boiler was supplied and installed by Wood Energy Ltd who specialise in the installation and operation of high efficiency automated wood-fuelled heating systems.

The Binder system was selected for efficiency and clean-burning characteristics. The installation can use either woodpellet or locally sourced woodchip, delivered into a specially designed fuel store with one month's capacity. A 300mm diameter, auger system automatically feeds fuel to the boiler in response to heat demand.

The fuel store has an approximate capacity of 150m³ and delivery should be about once a week during very cold weather, and about once every 14 to 18 days at other times. It is estimated that wood chip costs will be in the region of £20K per annum.

Whilst demand from the offices will fluctuate significantly during the working day, the residential home and sheltered flats will require more constant heat. The flexibility of the system, with built-in storage capacity in each flat, a lengthy insulated heat main, and capability to operate at 20% output, means that constant warmth is assured for residents, and rapid response provided to the offices.

The installation	Binder, RRR 640-850 (550), 550KW
Application	Heat and hot water from central boiler house, for offices, sheltered accommodation development and residential care home
Date commissioned	October 2005
Installers / suppliers	Flare (Wales) Ltd and Wood Energy Ltd

Fuel	Locally sourced woodchip
Fuel store	150m ³ concrete bunker integrated into boiler house
Delivery frequency during heating season	Estimated every 7 to 10 days
Fuel specification	G50 'medium' chip
Estimated annual fuel consumption	Estimated at 400 tonnes annually
Annual fuel cost (2006 Q1 market prices)	£23,000 (moisture content related contract)

Estimated Savings		
Cost savings vs Oil (75%) & Electricity (25%)	£24,800 per annum (2006 Q1 prices)	
CO ₂ Emissions	Woodfuel	44.24 tonnes
	Oil	232.26 tonnes
	Electricity	143.78 tonnes
	SAVING	331.80 tonnes



Wood Energy Business Scheme, Brogerddan, Penrhynoch, Aberystwyth, SY23 3ED
 Tel: 01970 821219 Email: woodenergybusiness@forestry.gsi.gov.uk
www.woodenergybusiness.co.uk

