



Rocks Green is a development of 91 new affordable homes at Ludlow. The development was commissioned by South Shropshire Housing Association who was keen to maximise its environmental rating.

The association teamed up with woodfuel specialist, Econergy, to design an acceptable woodfuel district heating scheme that would meet both the carbon reduction target and the budget.

objectives

- To develop a woodfuel heating system for a development of 91 new affordable homes at Ludlow in South Shropshire.
- To install a cost-effective and carbon neutral heating system for the whole housing development.
- To meet an environmental rating of 'Excellent' under the Eco Homes rating system.

actions

- Under-floor heating was installed rather than standard radiators to reduce the size of the heat mains required.
- A separate boiler house was created to house two 150kW woodfuel boilers and a standby oil boiler together with an integral fuel store.
- While mains gas was available, it was decided to avoid the connection charge and distribution costs by omitting gas from the site, and invest this resource in a carbon neutral heating scheme.

achievements

- The Rocks Green project was one of the first in the country to run this type of woodfuel system on a scheme of detached and semi-detached properties.
- This Rocks Green woodfuel heating system is saving around 120 tonnes of CO2 emissions per year.
- Elimination of gas boilers within the houses is helping to minimise annual servicing and access issues.
- The woodfuel system has improved safety on the site as there is no gas within the houses.
- There are no flues and little space is required in the houses to accommodate the woodfuel heating system.
- The woodfuel heating system is fully controllable with zoned time and temperature controls and separate room controls.

background

- The total cost of the woodfuel system and additional heating components installed at each property at Rocks Green was £641,823. South Shropshire Housing Association received a grant from the Bio Energy Capital Grant Scheme for £87,036. The expected payback period is 68 years.
- Rocks Green tenants are estimated to be paying between £354.80 and £426.57 per year (9100-14000 kwh) for the woodfuel heat, depending on whether they are living in a small flat or larger detached house.
- The woodfuel boilers are fully automatic and self lighting, with self cleaning boiler tubes and automatic ash extraction. The ash bins have to be emptied approximately once every one to three weeks and the resulting ash can be used as a fertiliser.
- Each house is provided with a monitoring/maintenance unit. The Housing Association have developed an energy contract through its subsidiary, Total Response Limited. They will read the meters using a remote reader and transfer the data to their computer system, allowing them to charge the residents for heat used. Meters ensure that residents are motivated to conserve heat and limit their charges.
- Woodfuel is sourced from sawmill waste, tree surgeons waste and local forestry operations. It is delivered by Midland Wood Fuel Ltd, with charges based on a woodfuel boiler heat output meter. The woodfuel chips have less than 30% moisture content giving a heat content of 3500kWh per tonne.
- The fuel is blown into a fuel store formed within the boiler house building. Annually the system is expected to use around 200 tonnes of fuel to deliver the expected heat demand of 615,000kWh per annum.

partners

Econergy
Total Response Ltd
Marches Energy Agency
Midland Wood Fuel
J Harper & Son's Construction
Vision Mills Architects

quote

"South Shropshire Housing Association chose woodfuel as one of the solutions to providing affordable energy to our customers when off gas grid. Woodfuel also contributes to our carbon neutral ambitions by 2033." Darren Luter, South Shropshire Housing Association

Lessons learnt

- South Shropshire Housing Association needed to spend a great deal of time educating their tenants on how to use the woodfuel heating system in each property.
- Any future investment in this type of heating system would require a more thorough risk assessment.