



Rocks Green is a development of 91 new affordable homes at Ludlow, which are heated by woodfuel. The development was commissioned by South Shropshire Housing Association (SSHA) who are committed to minimising its environmental impact.

The association teamed up with woodfuel specialists, Econergy, to design an efficient woodfuel district heating scheme that would meet both their carbon reduction target and the budget. The installation of the woodfuel heating system at Rocks Green is estimated to be saving around 120 tonnes of carbon emissions per year.

## objectives

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

## actions

- Under-floor heating was installed rather than standard radiators to maintain an even temperature and reduce the amount of energy required for heating.
- 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 a fuel option, South Shropshire Housing Association decided to avoid the connection charge and distribution costs by omitting gas from the site, and invest this resource in a carbon lean heating scheme instead.

## 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.
- 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 on the Rocks Green Estate to supply all 91 properties was £641,823. The cost of the heating scheme was built into the overall development approval and will payback within 33 years, whilst providing ongoing revenue income from the sale of heat.
- 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 another of Shropshire Housing Group's subsidiaries, Total Response Limited. They 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 pruning 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

Bio Energy Capitol Grant Scheme - £87,036  
Econergy  
Total Response Ltd  
Marches Energy Agency  
Midland Wood Fuel  
J Harper & Sons Ltd  
Vision Mills Architects  
Capitol to Capital

## quote

“South Shropshire Housing Association chose woodfuel as one of the solutions to providing affordable energy to our customers. Woodfuel also contributes to our carbon neutral ambitions by 2033.” Darren Luter, SSHA

Mr Higgs, a resident of the Rocks Green Estate, from Dunn Cow Road, says:  
“The heating is brilliant and very economical. My weekly charge has been reduced from £9 to £8, which includes all the hot water you need.”

## 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.
- Future investment in this type of heating system would require a thorough risk assessment, dependant on location, service user and supply chain management.