

Cottage industry

Heating controls are not just about efficiency, they can also provide an extra degree of comfort. PHPI reviews a recent installation in a West Country cottage.

At first glance, picturesque West Mill Cottage is a nostalgic vision of a bygone age before pumped central heating, thermostats and motorised valves. But a peep inside Fred and Wendy Sutton's extensively refurbished and extended home reveals a complex, specially designed heating system that uses a 90,000 Btu/h Worcester boiler to provide underfloor and radiator space heating in four separately controlled zones, as well as domestic hot water. The entire installation and its controls were designed and installed for superior comfort and reliability by The Stove Shop, heating specialists based in Liskeard, Cornwall.

"All system components including the boiler are carefully hidden from view, using roof space and a boiler room constructed under extended eaves at the side of the cottage," reveals Neil Austen of The Stove Shop.

The emphasis on quality has been followed through in the choice of controls: "Honeywell programmers and valves were used throughout," says Neil, "and, to

Below: West Mill Cottage. Right: the kitchen and conservatory (visible at rear) are heated by radiators, a 4-oven AGA and an AGA companion.



avoid drilling the walls and decorations, two of the home's three Honeywell CM67 programmable thermostats have the wireless RF option."

The central heating zones are:

- The main house, heated by radiators.
- A 45m² lounge with underfloor heating.
- A kitchen and conservatory with a total floor area of 70m², heated with radiators, a 4-oven AGA and an AGA Companion.
- The towel rails, which operate through a dedicated 40-litre reservoir cylinder, governed by a thermostat and motorised valve.

Domestic hot water is normally heated by the home's AGA cooker and 'topped up' by the boiler when necessary. An immersion heater is provided in reserve. "We installed a high efficiency unvented hot water storage cylinder, specially-built with two heating coils," explains Neil.



Temperature sensing is by means of CM67 programmable thermostats.

The lower coil is fed from the AGA via a gravity circuit, which provides enough hot water for most circumstances, while the higher coil is fed by the boiler. A Honeywell cylinder thermostat senses the temperature of the cylinder and initiates a short burst of boiler heat, ensuring the boiler

runs efficiently. A pumped recirculation loop reduces wastage and ensures prompt delivery at the taps.



Boiler room at West Mill Cottage, with wiring centre on the left hand wall.

The domestic hot water and four heating zones are each regulated by a motorised valve, housed in the boiler room with the main controls. The electrical controls required special expertise and attention to detail so, for their design and installation, the Stove Shop called in Alan Gregory, a Liskeard-based independent electrical specialist. Each of the three main heating zones (the lounge, the main house and the kitchen/conservatory underfloor) are controlled by a Honeywell CM67 programmable thermostat and motorised valve.

"The wiring centre is located on a board in the external boiler room along with the motorised valves," explains Alan. "At top left are the

RF receivers for the two wireless CM67 thermostats. A frost thermostat, mounted to their right, opens the motorised valve in the kitchen/conservatory heating circuit in cold weather, so starting the boiler system to prevent freezing. A pipe thermostat on the kitchen/conservatory zone return operates at 10°C to shut down the heating."

Channel hopping

A Honeywell ST699 timer provides two timing functions. Its first channel allows the boiler to boost the hot water during two periods daily by opening a motorised valve via the cylinder thermostat.

The second channel of the ST699 provides a single daily 'on' period for both the domestic hot water recirculation pump and the towel rail circuit. "A pipe thermostat fitted to the domestic hot water recirculation return is set to switch the pump off at 55°C, so reducing heat wastage by preventing hot water being pumped round unnecessarily," says Alan.

The Stove Shop installed the towel rail circuit as a separate zone at the householders' request. "Special attention was necessary to prevent bathroom users being harmed by hot towel rails, which would have happened if they had been heated to the temperature of the boiler, 75°C," explains Neil. "It was also necessary to prevent the boiler cycling frequently due to the

small demand from this circuit. Our solution was to provide a small indirect cylinder – in effect, a thermal reservoir – with pumped circulation to the towel rails via its high recovery coil."

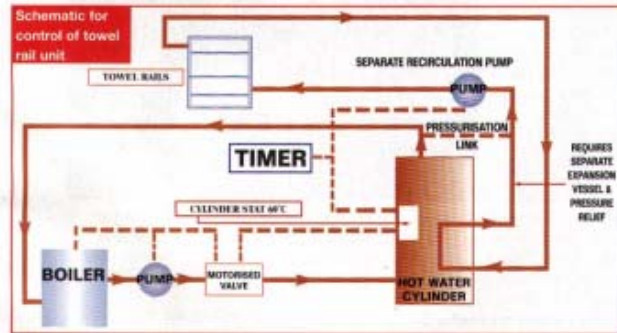
A cylinder thermostat calls for heat when required by switching on the motorised valve and oil-fired boiler. At 60°C, the cylinder thermostat switches off the motorised valve and boiler, whilst switching on a recirculation pump to the towel rails. "In this way the cylinder thermostat controls the towel rail temperatures indirectly. There is sufficient demand for the boiler to run efficiently during the short periods required to keep the towel rails satisfied."

Satisfied customer

Owner, Wendy Sutton is delighted with the comfort, control and efficiency provided by her heating system. "It's excellent," she says. "The best thing about it is its controllability. It means our entire house is always comfortable – and the underfloor heating in the living area is wonderful."

West Mill Cottage is one of several luxurious refurbishment projects for which The Stove Shop has provided heating systems in the district during recent years. Neil explains the demand: "The majority of our installation work relates to upgrades of older properties, particularly as many people are selling up their homes in the South-East, buying local cottages for a fraction of the price and spending the difference on extending and improving their new homes to luxurious standards."

Clearly, Neil Austen and Alan Gregory enjoy the challenges of each project. Their success is confirmed by the growing number of satisfied customers in the area.



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