

Extended 18th Century Stone Cottage

Ashleigh Lane, Bishops Cleeve



2015



NUMBER OF BEDROOMS: 4

OCCUPANTS: 2 

CONSTRUCTION:

Traditional stone cottage with cavity wall extensions

KEY FEATURES:

A traditional stone cottage in a rural area of Cheltenham with wood pellet boiler, solar thermal system and beautiful gardens with a coppice woodland and beehives.

Measures installed

- Fully automated wood pellet boiler
- Solar thermal water heating
- Modern double glazing
- Loft insulation

Carbon savings and potential benefits

- Low carbon heat source
- Free hot water and Renewable Heat Incentive payments
- Improved thermal comfort and elimination of unwanted draughts
- Improved heat retention

The home & occupants

This traditional stone cottage was built in the 18th Century and was originally thought to be part of the local Ellenborough Estate which is in the Cleeve Hill area of the Cheltenham Borough. It is now a 4 bed house having been extended in the 1920s and 1990s. The current owners, now retired, have lived in this family home for over 25 years. Being on an exposed hillside with a stream alongside the house has been susceptible to cold and damp, a challenge for the owners who were also keen to improve the energy efficiency of the house for environmental reasons.



Wood pellet store

“The pellet boiler is fully automated so you don’t have to do anything with it. It was important to us to have a heating system that wouldn’t require any physical work.”



“We are paying less for our heating now than when we had an oil boiler. The cost of the wood pellets has remained steady plus we are happier with it because it is more environmentally friendly!”



What they did

Reducing heat loss

The owners commented that when they moved into the house over 25 years ago that it was in a 'very basic' state. One of the first improvements they made was to fit double glazing which, although helped to keep the house warmer, was not of the standard we expect today from our double glazing. In the last few years they have therefore replaced these old windows with individually made oak framed double glazing. This has been an expensive task, but well worth it in the owners opinion. They now feel that the house is far less draughty, it is cosier, and if there are strong winds and rain they no longer have problems with water ingress around the frames and glazed units.

On either side of the house there are cavity wall extensions that have now also been insulated along with the main loft area.

A renewable heating solution

In 2007 the homes existing oil boiler sprang a leak which, alongside increasing oil costs, was the trigger the owners needed to begin the process of finding a more environmentally friendly heating solution. They initially considered a ground source heat pump but decided that the required groundworks would be too disruptive. The next obvious solution was a wood pellet boiler which was installed in the utility room by the manufacturer Windhager at a cost of £13,700. This cost also included an external pellet store disguised as a shed and an additional £5,600 for the evacuated tube solar thermal system which is the primary source for the domestic hot water. When the solar hot water runs low, additional water is provided by the boiler in line with the settings on the pellet boiler programmer.

The pellet store can hold up to four tonnes of wood pellets and typically needs refilling every 11 months. This takes just 20 minutes or so and the resulting annual heating cost is about £1000 a year. Certainly no more than what the owners would expect to pay if they were using oil.

The pellet boiler functions just like an oil boiler, there is a programmer to define your heating needs and the boiler fires up to provide this heating when required. Pellets from the store are blown along pipes when the boiler demands them so no manual top up of the hopper is required. The pellets are burnt so efficiently that the ash store needs emptying once or twice a year. The only initial difficulties the owners had was familiarising themselves with the new heating controls. They are now quite comfortable with these and eight years on are perfectly happy with their pellet boiler. Should they require any extra heat in the house at cold times of the year, there are also two stoves that burn wood that they self-supply from their own coppice woodland – a free source of fuel!

Wood pellet boilers installed in homes are now typically eligible for the renewable heat incentive which can reduce the payback period on investing in this type of heating system making them competitive when comparing them with oil or LPG boilers.



Biomass boiler and wood pellets

What is the Renewable Heat Incentive?

The renewable heat incentive (or RHI for short) is a government incentive system whereby accredited renewable heat installations (eg. solar thermal, biomass, ground and air source heat pumps) are eligible for per-unit heat payments. Payments are guaranteed for 7 years and are index-linked.

What are the next steps?

The owners are happy with the improvements that they have made over the years and although they don't have any immediate plans, they have been considering adding a solar photovoltaic system for quite some time. Unfortunately the ideal roof space for the panels is shaded by a mature tree that is a key feature of the garden and the only other option, siting the panels on some land beside the house, would involve sacrificing some apple trees!

An easier job in the meantime may be to lift the floorboards of the suspended floor in the main living room and insulating beneath them to help improve the warmth in this room and reduce the draughts.

If I could offer one piece of advice it would be...

"If you have a cold, solid stone floor, consider adding a membrane to help reduce the ingress of damp!"

This home is also participating in the 'open homes' weekend. The garden highlights include a one acre coppice woodland and beehives.