

19th Century Cottage, IP4 5TL

Chris Davies –

He says:

The property is an extended 4-bedroom semi-detached house from 1850's located in close proximity to Nuffield Health Ipswich Hospital. The original build has solid walls. New extensions have insulated cavity walls. The property is off the gas grid. The house has undergone extensive insulation measures (insulated cavity walls, lofts and floors)

The original property was heated by a small radiator circuit connected to an old AGA solid fuel boiler (phurnacite). By modern standards this provided insufficient heat capacity for the property so once the new extensions were completed a replacement system was necessary to meet the combined heat load. We had an automatic <http://www.evergreenecosystems.co.uk/> wood pellet boiler installed covering both heat requirements of the whole house (radiator circuit & underfloor heating) as well as the demand for hot water.



Low Energy Measures

Energy saving bulbs are a common feature in our house. We started using a display real time energy meter from DIY Kyoto. This help us to keep on the top of the overall house energy consumption. Our goal was to plan and design a heating system meeting heat requirements of the house which is without access to mains gas. We were looking for highly efficient biomass boilers which could give us the independence on volatile prices of fossil fuels, improve the level of comfort and reduce our previous negative impact on the environment.

Overview

Age, Type: 1800-1914, Domestic

Cost of measures: £18,000

Floor area: Living area, 140 m²

Energy usage:

Based on 5 adults, with 2 adults using the house as a work base (occupied 24/7)

Electricity: 5,509 kWh per annum

25,800 kWh wood pellets per annum for heating & hot water

Key features

- Automatic wood pellet boiler
- Insulated cavity walls, loft & floors
- Glazing
- Energy saving bulbs

Professional Contacts

Evergreen Ecosystems Ltd. Biotech's Engineer – Commissioning

<http://www.evergreenecosystems.co.uk/>

Telephone: 01473 727799

One of the key motivations for proceeding with this project was unbearable fuel costs of the old and very inefficient coal fired boiler.

We have not received any grant towards the installation of wood pellet burning biomass boiler yet. However, this and similar installations will be eligible for money from the renewable heat incentive, which is supposed to come into force in April 2011. This information is based on the RHI consultation. <http://www.decc.gov.uk/en/content/cms/consultations/rhi/rhi.aspx>

The importance of proper insulation measures throughout the whole house cannot be overstressed. The family have lived in this house for many years with no insulation to the solid walls before the new extensions were built. To keep the place up to reasonable temperature during winters with a small coal burning boiler was a real struggle and it cost a fortune.

This situation changed dramatically after the new extensions with fully insulated walls, lofts and floors were completed. The house is now capable of holding warmth for so much longer period of time bringing down the overall heat required from a heating system.

Installation of wood pellet heating system was another step towards less pricy heating. The benefits of this type of heating are truly great. Boiler efficiency is over 95 %, loading of fuel is fully automated and the system offers variety of control features.

"What our family loves about this system is the fact that when you are out in the garden you can sense the lovely smell of pellets being burnt which gives you incredible amount of satisfaction realizing that your efforts were worth it and that you are contributing to sustainable living on the planet Earth".

If you have any specific questions about this case study, these can be directed to the building owner via the website

www.greensuffolk.org/sgbn