

Maltravers Manor Log batch boiler

Heating an medieval village house with logs



Maltravers Manor in Childrey, Oxfordshire is home to two families. It is a building of medieval origins consisting of two wings: one thatched, one gabled, with tall chimneys. It has 6 bedrooms and covers 460 square metres. It is a Grade 1 listed building in a Conservation Area and its garden contains a 300 year old mulberry tree covered by a Tree Protection Order .

In October 2010 a 47kW Baxi Solo Innova log batch boiler and 800 litre accumulator tank was installed in an old outhouse in garden of the property. A covered area was created for log storage using corrugated plastic roofing against the brick corner walls, and otherwise open for air flow.

The boiler uses maximum 50cm long split logs at 18-25% moisture content (wet basis). The boiler and associated equipment and pipework was installed at a cost of around £18,500 by John Taylor Ewelme Ltd. Logs are supplied by Ford Landscaping, although the owner is also gathering wood for seasoning.

It has replaced 2 oil boilers, one was 18 years old, the other 5 years old. Recent oil bills have ranged from £7-12,000 a year.

objectives

- Demonstrate the green values of families in the house
- Replace 2 expensive oil boilers with a renewable energy based heating system.
- Secure their own source of heating

actions

- One of the owning families had spent a number of years living in Germany. This meant that they were keen to use wood to heat their house as they had experienced the wood using culture that exists there. They also had a good understanding of the need for seasoned logs based on the 3 year system of drying that most German users practice.
- On moving into the house they were keen to move the heating system away from oil
- It took a lot of research to decide which system to install and it was a challenge to get equivalent quotes from different companies, despite giving them all the same information.
- They were constrained by the listed building status, so were unable to put up a bespoke boiler house. Fortunately one of the outbuildings was suitable for installing the boiler
- The boiler is connected to the house by a 40m long district heating pipe laid in a 1.6m deep trench. Due to a 300 year old mulberry tree with a Tree Protection Order in their garden, they were required to dig this by hand in order to protect the roots. They invited friends and 6 people worked for 3 days to finish the job.



Key facts

- The boiler is a 47kW Baxi Solo Innova boiler, attached to a 800 litre accumulator tank. With hindsight they would at least double the size of the accumulator tank (A rule of thumb for accumulator tanks is to have 40 litres of water per kW of heat).
- The boiler is loaded and lit manually once a day (takes about 15 minutes). This burns the 'batch' of wood automatically and when out of fuel closes down. The heat produced is stored in the accumulator tank from which heat is drawn for domestic heating throughout the day and evening.
- The boiler house, including the accumulator tank uses an existing old outhouse. It is likely that they would have had been refused planning permission if they had wanted to construct a new build boiler house in this conservation area.
- The log store has a capacity of 18 stacked cubic metres of logs. They consider they will need between 50 and 60 cubic metres of wood in the first 12 months (for heating and water). A warmer winter and a larger buffer tank would reduce that.
- Logs are delivered seasoned by a local landscaping company to the drive at the side of the house. The owners then take the logs round the outbuildings to the log store at the back of the garden by hand (about 40 metres).

quotes

"I know every bit of energy that I'm burning, some of it I'm chopping myself!" "

"You do have a relationship with the boiler"

"I would recommend this to anyone. You've got so much more sense of what you're doing"

House owner

partners/team

Boiler owner: The joint house owners
Boiler installer: John Taylor Ewelme Ltd
Boiler servicer: John Taylor Ewelme Ltd, plus Baxi technical support team, who came and showed the owners how to use and maintain the boiler, plus hotline for questions

funding

Project cost: £18,500
Funded by the two families in the house.

lessons learnt

- They have too small an accumulator tank and wish to double the size of it in future.
- They burnt logs much more quickly in the first winter season than they expected. This was partly due to the cold winter, but partly due to confusion over different units used to describe logs requirements (cubic metres, tonnes, loose or stacked logs etc). There is a need for clear agreement on which units are being used to describe the amount of logs required, and in sale and purchase of logs.