

Design and access statement

The proposed development will have a huge effect on energy efficiency at Greenhaugh Hall which is currently heated by oil. As the site is already peaceful, secluded and beautiful we have chosen an energy alternative which will barely, if at all, impact on the surrounding area. Even in winter, the trees surrounding the site of the two flues – the only aspect of the proposal potentially visible from elsewhere – will mean that they cannot be seen from the driveway adjacent to the property. Additionally, they are being powder coated in a dark gray colour. In spring and summer, surrounding trees will be in leaf thus obscuring the entire site even further.

The boilers are so efficient that they will produce almost no smoke, far less than a conventional coal or wood fireplace or stove.

Access to the site will remain unchanged. We have already ascertained that a fully-laden wood pellet delivery vehicle can drive in, deliver fuel pellets and drive back out again with no difficulty whatsoever.

The carbon benefits of the proposal are as follows:

1. It is proposed that the site's two current oil boilers will be replaced by 2 x 56kW Biomass ÖkoFEN boilers, housed in the old stable, which will be fuelled by wood pellets.
2. The scheme will qualify under the Renewable Heat Incentive (RHI) scheme.
3. Annual heat consumption in the first year for both space heating and hot water is anticipated at 151,000 kWh. This will be wholly supplied by the new Biomass scheme, which is recognised as carbon neutral.
In the first year 47 tonnes CO2 will be saved (compared to heating by oil).
4. Annual electricity consumption is estimated to be 10,000 kWh – with an estimated carbon impact of 6 tonnes.
5. In terms of carbon emissions heating demand at the property has a greater impact than electricity by a factor of 8 to 1. Carbon emissions in the first year will be reduced by an estimated 89%, based on conversion of the heating system to Biomass.
6. The carbon emission data comes from lifecycle carbon emissions (ie including estimated carbon footprint of supply chains, production techniques, transport distances etc). This is based on information from DEFRA and the world Energy Council, and is taken from the Biomass Energy Centre at:

http://www.biomassenergycentre.org.uk/portal/page?_pageid=75,163182&_dad=portal&_schema=PORTAL

Building regulations require a minimum flue height of 4.5 m above flue spigot (BS EN 15287-1). For the 56kW ÖkoFEN boiler this means that the min. flue height will be 5.5m from the floor. This would put the minimum flue height at 2.65m above ridge height of the stable block.

Materials used to upgrade the stable building:

The existing concrete base in the stable is sufficiently thick to support the weight of the boilers and the fuel stores to either side.

Far eastern hardwood faced plywood

The side walls in the fuel stores have been lined with plywood up to a height of 1.8m.

Fireline Board 2400 x 1200 x 12.5 mm

Both ends of the two fuel stores are lined with with Fireline Board up to the roof.

The central section of the stable, which will house the boilers, has been fully lined with Fireline Board, up to the roof, on all 4 sides.

Celotex 2400 x 1200mm 60mm foil-backed MP insulation

The spaces between the vertical upright timbers in the entire stable structure, *and* the spaces between the roof supports, are filled with Celotex.