



Moor Sustainable CIC



**Esk Valley and Coast Green Open Homes**

Saturday 5<sup>th</sup> and Sunday 6<sup>th</sup> April 2014

## Green Oak House



### Information on this home

This house was built in 1991 with sandstone and breeze block walls with filled cavities. It has good loft insulation and has double glazing. Since moving in we have added solar PV panels, and a wood burning stove. We have replaced the LPG boiler with a biomass pellet boiler to run the central heating.

### Renewables:- heat

#### Wood Burning Stove

**Installation:-** September 2012

**Manufacturer :-** Burley

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

**Model: -** Brampton Fireball 9108, 8 kW, wood burning only, 85.5% efficient.

**Installer:-** GFP, Scarborough

[www.gfphomeheating.co.uk/](http://www.gfphomeheating.co.uk/)

**Cost:-** £3,130 including installation, removal of old fireplace, creation of inglenook, hearth tiles and shelf.

**Fuel use:-** 1 trailer load p.a. £140

#### Issues to consider:-

Multi-fuel for convenience or wood burning only for more environmentally friendly and greater efficiency.

External air supply to avoid draughts and for safe operation.

Back boiler or room heating only.

Log storage and ensuring dry wood available before stove purchase.

Three quotes with decision based on proposals for installation, not just price.

*Details of products and installers are provided for information only and cannot be considered as endorsements by Moor Sustainable or the Esk Valley Community Energy Group*



## Renewables:- heat

### Biomass wood pellet boiler

**Installation:-** January 2013

**Supplier & Installer :-** Solarwall, York  
*After just over one year this company has decided to withdraw from biomass.*

**Model:** MCZ RED Compact 24  
**Output :-** 24 kW



**Costs:-** £5,480 for boiler + £1,460 for flue, and £1,030 for 200 kg hopper and auger feed and £165 for thermostatic radiator valves.

**Grant scheme :-** Renewable Heat Premium Payment £3,100 to be deducted from Renewable Heat Incentive (RHI) payments. RHI payments estimated at £2,400 p.a. for 7 years.

**Fuel use:** Estimated for house at 4.5 tonnes which would cost £1,100 p.a. Actual fuel use ca. 2 tonnes p.a. costing £490 (current price £245).

## Issues to consider:-

How surplus heat will be dumped when boiler goes off and the valve system to achieve this.

Pellet storage and access for delivery.

More details on the installation of this boiler and information on pellet prices and suppliers available at:-

<http://www.summations.co.uk/sustainability/mo-or-heating/biomass-pellet-boilers/>

## Renewables:- electricity

### Solar Photovoltaic

**Installation:-** November 2011

**Installer :-** AWE Energy, Sheffield  
[www.aweenergy.co.uk/](http://www.aweenergy.co.uk/)

**Costs:-** £14,000

**Generation:-** 3 MWh p.a. (more than double use)

112% of prediction from

<http://re.jrc.ec.europa.eu/pvgis/apps4/pvest.php>

**Benefits:** £1,450 income per annum from FIT payments for generation and electricity export (plus electricity off-set).

**Technical details:-** 15 × 240 W panels giving total peak output of 3.6 kW

## Issues to consider:-

If not enough space for all panels to be south facing (so panels face two directions) two inverters will be required.

Worth considering ways to use electricity when it is generated. Examples include immersion heater, washing machine, charging battery for lawn mower.

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## Renewables:- heat postscript (November 2014)

### Biomass wood pellet boiler

Now that Solarwall has withdrawn from biomass they recommend annual services are carried out by Biogreen Solutions of York 0800 024 8869. Website is at <http://www.biogreen.uk.com/> The service in August 2014 cost £210 including VAT. The boiler was found to be in a good condition. Other MCZ boilers that have not been properly installed have had clinking problems. These have been solved by Biogreen.

At the same time as the service we found cracks in the combustion pot. A replacement was purchased for £104. The replacement is a new improved design so for anybody purchasing a new MCZ boiler this problem should not arise. At the next service advice we will be given on changing the system to avoid the use of a dump radiator. A quote will be given for a thermal store as Biogreen advises there should always be one.

We have found a very useful website that gives information on problems with MCZ boilers and solutions to the problems. This includes advice on thermal stores and other alternatives to having a dump radiator. See <http://www.heatweb.com/helpdesk/knowledgebase.php?category=5>

### Chimney sweeping

Annual flue sweeping is required. We paid £70 in December 2013 for sweeping the chimney for our wood burner and the flue for the boiler.

### Green deal assessment and Energy Performance Certificate (EPC)

One of the government requirements for payment of the Renewable Heat Incentive is that householders must have a Green Deal Assessment. A typical charge is £150. This is a method to check that you have loft insulation to the current standard and that cavity walls have been filled (if applicable). You will also have received up to date advice on energy conservation measures appropriate to your home. An Energy Performance Certificate is provided with the Green Deal Assessment. We chose a Yorkshire company that offers only assessments and not other Green Deal services, The Green Deal Advice Service, based in Leeds, [greendealadvice.org/](http://greendealadvice.org/)

The new boiler, improved heating controls and PV system have together improved the efficiency rating in the EPC from G to D with required primary energy reducing from 341 kWh per m<sup>2</sup> to 202 kWh per m<sup>2</sup>.

### Renewable Heat Incentive

The Energy Performance Certificate is required before an application for RHI. Ours shows a heat demand for heating and hot water of 19 976 kWh per annum. RHI is currently 12.2 p per kWh for biomass giving an annual payment of £2437 for 7 years. Our RHPP grant is deducted from these payments, so we are not paid twice, so our annual payment is reduced to £1994. Full details of the RHI and how to apply can be found at <https://www.ofgem.gov.uk/environmental-programmes/domestic-renewable-heat-incentive>

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