

## 3 Norfolk Cottages, High St Steyning, BN44 3GT

### Overview

Owner: Maxine Rawlings
Type: Terraced
Age: 1760 (grade II listed), converted 1950
Beds: 2
Walls: solid, flint and lime
Area: 80 m <sup>2</sup>
Residents: 1 adult

### Features

Condensing boiler
Double Glazing (secondary)
Loft insulation (270mm)
Low energy appliances
Low energy lighting

### Introduction and approach

Maxine moved into this house in 2012 and quickly found that although it had been renovated well, not enough attention had been paid to insulation and draughtproofing. Within the restrictions of the house being listed, further remedial work has been carried out.

She has adopted commonsense and economical measures, such as installing an efficient boiler and good heating controls, together with eliminating draughts and fitting high levels of loft insulation. By carefully tailoring heating to occupation and keeping the thermostat at a reasonable level, energy use is kept very low at about two thirds that of a typical house. Yet the building isn't cold and works well as a comfortable and compact living space.

### Energy efficiency measures

#### Heating and hot water

Maxine installed a new efficient Vaillant condensing combi boiler, with a Magnaflow



filter to reduce scaling. Heating is also augmented by an open log fire in the sitting room. The thermostat is in the hall and is normally kept at 15°, which results in a slightly higher, more comfortable temperature in the living spaces.

The house has a modern programmer, room stat and TRVs, which help to tailor use to occupation. Heating is switched off when leaving the house.

#### Insulation

**Walls** – The walls are solid and conservation issues and limited space make insulation difficult. However, Maxine is considering covering the cold east facing wall with slim laminated plasterboard insulation in the summer. This has a finished thickness of less than 40mm and can cut heat loss by two thirds.

**Windows** – the ground floor has good quality sliding secondary double glazing. The sash windows have also been overhauled, with brushes routed into the beading to stop draughts.

**Front door** – The front door has similarly been fitted with draughtproofing brushes along the outer edge to make a good seal.

**Loft insulation** – the loft has been topped up to the recommended level of 270mm of glass fibre insulation, in two layers.

### Renewables and low carbon technology

**Solar PV** - Planning issues make renewables difficult for a listed building, but it may be possible to put solar PV panels on the east facing rear, depending on the opinion of the conservation officer. This is currently being investigated.

### Electricity

All lights are fitted with low energy lamps, particularly LEDs. By being careful about electricity use, this house has extraordinarily low electricity consumption.

### Carbon emissions

**Energy Use:** Electricity 900 kWh pa, Gas 7500 kWh pa.

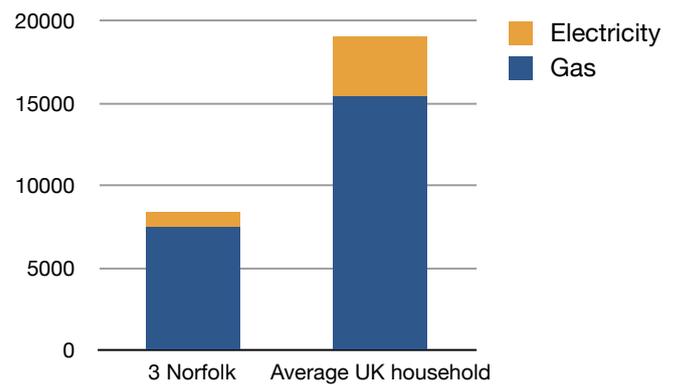
**Net CO<sub>2</sub> emissions:** Total 2.0 tonnes (64% less than average UK dwelling), 24.4 kg/m<sup>2</sup> (62% less than UK average).

### Other sustainable measures and lifestyle decisions

**Food cultivation** – Horsham council has adopted a policy of splitting allotments into more manageable areas and Maxine rents two strips, which correspond to about a quarter of a full allotment. This enables her to grow some food and vegetables. She composts all waste for use on the garden and even has a small sedum roof on the garden shed to promote wildlife.

**Geopathic stress** – after moving in, the lounge was found to be abnormally cold and was diagnosed as suffering from geopathic stress coming from an area below the floor. To counteract this, special rubber matting containing wire has been laid below the carpet.

### Energy and generation (kWh)



### Lessons learned

The sedum roof on the shed was laid by the previous owner, who did not properly design the drainage, which could lead to rotting of the timbers. Maxine will redo this in the summer to direct rainwater away properly.

### Professionals

Renovating windows/doors. Joiner Jim 07980 472412.

