

# 13 St. James Street

**Address:** 13 St. James Street, Lewes BN7 1HR

**Owners:** Helena Pickup and Kevin West

**Type:** Semi-detached

**Built:** Mid 19th Century

**Beds:** 3

**Walls:** Brick Solid

**Residents:** 2 adults, 2 children

## Opening Times

[Saturday 22nd October](#) [1]

[Saturday 22rd October](#) [2]

## Features

Condensing boiler

Sunlight tubes

Solid wall insulation (internal and external)

Food cultivation

Nest heating controller

Rainwater harvesting

Warm roof insulation

Woodburning stove?

## Summary

When Kevin and Helena bought his house in 2007 it was so poorly insulated that the washing machine froze indoors in winter! That prompted them to overhaul the insulation and make it as cosy as possible.

This has gone through several stages, starting with a well insulated extension built in 2010, attic room ceiling, wall and loft insulation in 2012, solid wall insulation within the bedroom walls in 2013 and the current major phase was finished in summer 2014.

One particular problem was the house's unusual spiral staircase addition, which used to suck heat up and out. However, with external insulation and almost all windows double or triple glazed, this onetime leaky building is now comfortable and economic to live in.

# Energy efficiency measures

## Heating and hot water

The house has its original condensing boiler, which in 2007 was unable to heat the ground floor above 14°C in winter. However, the radiators were very poor and prone to airlocks and have now all been replaced.

In the ground floor living room a woodburning stove has been fitted, which should help cut gas use and keep the core warm.

## Insulation

Insulation is the big feature of this house and has been applied using an interesting variety of techniques to cope with the variety of different wall and roof structures. Kevin has researched this area meticulously, as he found architects and contractors did not fully understand the materials. As a result, he has had a large hand in specifying the jobs.

## Walls

GF front is solid brick uninsulated, but a relatively small area.

GF rear extension is standard cavity wall with filled cavity.

FF front is tile hung on battens over studs externally and originally just had a lath and plaster internal finish. The lath and plaster was taken down, cross battened in 50x50 timber, with 50mm phenolic foam insulation between. This was overboarded with laminated plasterboard consisting of 25mm phenolic bonded to 12.5mm plasterboard, with a final skim finish. Despite being internal insulation, the increase in overall thickness was negligible at only 10mm and the wall insulation now exceeds current building regs.

FF side was slate hung on battens over brickwork. This has been stripped, rebattened with 50x50 timber and 50mm Phenolic insulation in between, before being recovered with slates.

1970s side extension with curved walls is part brick and blockwork and was a major source of heat loss. This has been covered with 110mm XPS carbon foam, formed to the curves and fixed with nylon anchor bolts, finished with WeberthermXP self coloured render system, incorporating reinforcement mesh.

## Windows

Previously all were single glazed and were a major source of heat loss. All are now double, either as replacement units or slimline double glazing within the existing sashes. In the first floor bathroom, the single glazed roof light has been replaced with a triple glazed unit.

## Roof

The main house has attic rooms with sloping ceilings. The plaster was taken down and 25mm phenolic insulation placed between battens, with the whole overboarded with 20mm phenolic and finished with plasterboard. The same insulation was carried up between the rafters within

the small attic space above to create a warm roof.

## **Floor**

The ground floor had existing cork tiles and these have been covered with 6mm Marmox insulation board and a timber floor floated on a further layer of 3mm flexible insulation, with a reflective foam finish. At first floor, it has also been necessary to fit insulation at the perimeter of the first floor, as this overshoots the ground floor by about 600mm and only had a covering of lath and plaster below. Again phenolic has been used between the floor joists.

## **Draughtproofing**

As insulation has been fitted all joints have been taped and this has been carried down to floor level to improve airtightness.

## **Renewables and Low carbon technology**

Solar PV – Because of the limited roof space, orientation and the fact this is in a conservation area, there does not seem to be room for either solar PV or solar thermal hot water.

Woodburning stove -A woodburning stove has been fitted in the central lounge area and should permeate heat throughout the house.

## **Electricity**

Low energy lighting – lighting is largely LED and CFL, but there are some halogens to give a warmer mix. Lighting use is kept down by the installation of light tubes in both the ground floor kitchen and the utility room, which bring natural light deep into the house.

## **Carbon Emissions**

As the majority of the insulation work has been done in 2014, it is not possible to say exactly what the impact will be on emissions and energy use. However, the thoroughness of the insulation suggests that energy use will fall by at least 65% and quite possibly more.

## **Other Sustainable Measures/ Lifestyle Decisions**

Rainwater harvesting – A 1000 litre tank below the rear patio harvests rainwater, which can be pumped up by hand for watering the whole garden.

Food cultivation – Helens and Kevin are keen gardeners and a large proportion of the rear garden has been devoted to vegetable and fruit production.

## **Professionals**

Architects - Waterside Architects, Lewes. [www.wa-arch.co.uk/](http://www.wa-arch.co.uk/)  
Woodburning Stove - [www.home-heat.com/](http://www.home-heat.com/)

---

### **Links:**

[1] <http://lewesecoopenhouses.org.uk/booking#13StJamesStreet15th>

[2] <http://lewesecoopenhouses.org.uk/booking#13StJamesStreet22nd>