

## 2 Warren Close

 [warrengreenroof.jpg](#) [1]

Lewes

2016

Day 2

Day 3

**Address:** 2 Warren Close, Lewes, BN7 1HB

**Owner:** Julia Waterlow

**Built:** 1960s, now part rebuilt and remodelled

**Beds:** 3

**Walls:** Originally filled cavity

## Opening Times

[Sunday 16th October](#) [2]

[Saturday 22nd October](#) [3]

## Features

Solar panels

Wildflower roof

Wall insulation

Condensing combi boiler

Solar PV (3 kWp)

Super-insulated roof

Low energy lighting

Vegetable patch and fruit trees

Re-used materials wherever possible

Water-saving features

Low VOC paints

## Summary

In 2013, Julia bought this 1960's bungalow with a plan to rebuild its poor quality extension and overhaul the energy efficiency of the whole building. This has involved demolishing the old and building a new extension, highly insulated and clad in Thermowood with a wildflower green roof on part. The original roof has been super insulated. The original building already has filled cavity walls, but these will be augmented by extra insulation and will be clad in wood to match the new extension. The floor is at present solid concrete but Julia intends to cover this with thick cork flooring and insulating underlay.

During the building works pipework has been installed in preparation for fitting rainwater storage tanks to feed the wcs and garden.

Ten very high efficiency 300 W solar panels have been fitted on inclined frames on the flat roof and are expected to produce 2900 kWh per year. Annual electricity consumption of 1290 kWh is 31% of the Lewes district average and gas is 6930 kWh, 53% of the Lewes average. When we take into account the offsetting effect of solar electricity generated on site, net emissions are minimal which is unusual for such a spacious house.

This is the third time Julia has worked on renovating an older house to make it more energy efficient and sustainable.

Description:- The original brick built part of this detached bungalow was built in the 1960's. A poor quality extension was later added to the western end. This was demolished and replaced by a new timber framed, energy efficient extension designed by Sally Williams, an Architect from Ditchling who specialises in low energy buildings and the original part refurbished. Both parts have flat roofs. The house is in the South Downs National Park

Architect:- Sally Williams of Sally Williams Architects, Ditchling

Size:- Original; 89 m<sup>2</sup>, Extension 50 m<sup>2</sup>

Getting there:- From Brighton Road (A277) opposite the prison take the turning into Warren Drive. Take the left hand branch of Warren Drive and about 60 metres along, you will find Warren Close which is a narrow tree lined lane which runs south on the right of Warren Drive. 2 Warren Close is about 80 metres down the lane. It will not be possible to drive down Warren Close or park down there. There is Parking in Barons Down Road and a short footpath through from the eastern end to Warren Close.

Construction:- The original part of the building has polystyrene bead filled cavity walls of fletton bricks. Although flettons are not the most attractive of bricks, especially without a sand facing as they are here, they have the environmental advantage of needing no fuel to fire them. The clay they are formed from naturally has a small amount of mineral oil and with very careful management it is possible to fire the bricks with it still in the bricks, the heat from the last batch being sufficient to start the firing of the next. The owner is considering adding external 'Thermowood' cladding to match the extension. This is hoped to bring the U value down to 0.55

The extension has timber framed walls, 300 mm thick in all,, with 50 mm thick PUR foam between the frame timbers and 60mm PUR foam over and outside the timbers. It is clad in softwood shiplap treated by the Thermowood process. This is a non-chemical thermal treatment that increases mechanical strength and stability, increases resistance to rotting and improves the thermal insulation by about 20% and bringing the U value down to 0.18

The floor of the original part is at present solid concrete but the owner is hoping to cover this with thick cork flooring Double Glazing is used throughout with low-e glass argon filled units in the extension.

The roof of the original part has been rebuilt to match the extension. 150 mm of PUR foam plus two 40mm thick sheets of straw block underlie an asphalt covering on both parts with the extension having, in addition, 130 mm of specially designed substrate which is planted with wild flowers.

The original part of the roof supports 10 very high efficiency 300 W solar panels which have recently been fitted there on frames inclined at 10°. These are monocrystalline silicon panels, type LG300.They are expected to produce 2900 kWh per year. The annual electricity consumption was 1290 kWh before the solar panels were fitted. This is 31% of the Lewes district average. The panels should reduce this to near zero.

The annual gas consumption of 6930 kWh, used to fuel a high efficiency condensing combi boiler, is 53% of the Lewes district average. Such low fuel figures demonstrate very conscientious minimizing of energy waste as well as a well-designed house.

Piping has been installed to catch rain water for use in the garden which has fruit trees and many flower plants.



### Links:

- [1] <http://lewesecoopenhouses.org.uk/sites/lewesecoopenhouses.org.uk/files/images/warrengreenroof.jpg>
- [2] <http://lewesecoopenhouses.org.uk/booking#2WarrenClose16th>
- [3] <http://lewesecoopenhouses.org.uk/booking#2WarrenClose22nd>
- [4] <http://lewesecoopenhouses.org.uk/sites/lewesecoopenhouses.org.uk/files/images/2warrenplan.png>
- [5] <http://lewesecoopenhouses.org.uk/sites/lewesecoopenhouses.org.uk/files/images/2warrenspgrweb.png>