

Lancing Beach Building Lancing, BN15 8RA

Overview

Owners: John, Marilyn, Alex and Carla Hole

Type: Remodelling of existing structure

Age: Original structure 2008, new structure being developed

Beds: N/A

Walls: Block

Residents: N/A

Features

Air source heat pumps

Double Glazing

Low energy appliances

Low energy lighting

MVHR

Solar PV (28 kWp)

Triple glazing

Underfloor heating

Underfloor insulation

Introduction and approach

The original building on this site was erected in 2007, but the development failed and it was left unfinished and abandoned until bought by the Hole family two years ago.

The ground floor will be a cafe restaurant and gym. To make it economically feasible, there will be three amazing apartments on the top floor. This took a huge amount of persuasion to bring the council round, but the work is now approved and the cafe should be operating by mid summer, with the rest finished by year end.

John has worked in sustainability for most of his life, with a successful wood burning stove business and second career in solar panels, eco renovation and development. The front balcony will have a striking canopy made of 28kW of translucent blue PV panels, designed to deliver filtered light to the balcony below. This building will be superinsulated, with



cutting edge renewables such as heat pumps, and has eco architects Zed Factory acting as consultants.

This should become a big attraction, helping to promote and bring life back to a rather neglected part of the coast.

Energy efficiency measures

Heating and hot water

Air source heat pumps will heat each of the separate areas and provide hot water. Units will be hidden behind the northern facade.

Because of the extensive south facing glazed facade, with 270m² of glazing, solar heat gain in the winter months will make a big contribution. Overheating in the summer will be controlled by the solar PV canopy, which is deliberately translucent to allow filtered blue light through.

Ventilation of the building will be managed by MVHR, which will ensure that heat is recovered from outgoing air.

Insulation

The initial aim was to try and get close to the ultimate Passivhaus standard, but this cannot quite be achieved as it is necessary to work around the present steel structure. Nevertheless the building should achieve between level 4 and 5 of the Code for Sustainable Homes.

Walls – block walls have insulated cavities.

Windows – the first floor will have triple glazing and the ground floor high quality double glazing, with insulated aluminium frames finished with a tough coastal powder coat, manufactured by Aluprof. U value 1.0 (triple glazing)

Floor – will have 100mm PIR insulation and underfloor heating

Roof – this is effectively superinsulated to a u value of 0.10 W/m²/K, by using an initial 140mm layer of PIR foam with 200mm glass fibre fleece above.

Renewables and low carbon technology

Solar PV – The canopy will accommodate 28 kWp of solar PV facing due south, which is expected to produce over 28,000kWh of electricity each year. These will be translucent polycrystalline units.

Electricity

All lighting and appliances will have the lowest possible energy rating.

Carbon emissions

This is an unusual development, combining residential and commercial. As a guide, the residential units should have net CO₂ emissions at least 80% less than typical UK dwellings.

Other sustainable measures/ lifestyle decisions

The old glass fibre insulation from the roof will be recycled as sound proofing in the new stud walls.

Professionals

Architects – www.zedfactory.com/zed/

Glazing – www.aluprof.co.uk/

