CASE STUDY

Henry House, 189 Heene Rd Worthing, BN11 4NN

Overview

Owners: Karen Simporis & Rolf Londal

Type: Detached conversion into therapy clinic and house

Age: 1913

Beds: 4

Walls: Brick, solid

Area: 200m^2

Residents: 2 adults

Key Features

Bee hive

Deep flow guttering

Digital water monitoring systems

Rainwater harvesting and grey water recycling

Solar PV & thermal

Other Features

Double and secondary glazing

Low energy lighting

Vegetable cultivation

Introduction and approach

If you are wondering where to start, but don't know how, but know you want to improve your home, not only to save money but because it's important to you, come to Henry House as they have it all covered.

Whether it be water or energy efficiency, urban bee hive management, yes, I did say bee hive management, you really must make a visit to this venue.

Water is needed for everything here, both for business and personal use, as is energy and the relationship created by these, through Karen's & Rolf's innovative DIY ways of reducing their consumption, in turn positively impacts something else, such as saving money, water recycling, not using mains water, generating income and energy from their solar panels.

The bee hive is brand new, and a wild local swarm is due to arrive in March. Just like us, bees need water, so the hive is situated right next to the pond, which is perfectly safe for all to get a good view of the garden's increasing biodiversity of dragonfly, damsel flies, frogs and toads.

A great synergy has been created by Karen's long-term passion for ecology and her engineering background. Henry House is a perfect learning environment for parents and children, which can be easily replicated.

And to top it off Rosa, Karen's 7-year-old granddaughter will be on site on Saturday to answer your questions as well as help you have fun with bumble bee dress up!

Energy efficiency measures

Heating and hot water

The main house has conventional radiators with TRVs and programmable controls.

Hot water use for pool showers is extremely high and this is effectively managed by input from the solar thermal panels.

Insulation

Walls – the walls are solid brick, with decorative timber panels and dado, which makes insulation impractical.

Windows – all windows are either double glazed or secondary glazed. The pool extension was fitted last year with new double-glazed sliding doors with modern high-performance timber frames. Similarly, reception door.

Roof – the main house has just 100mm insulation between the ceiling joists, which have been boarded for storage. This is a common situation and hard to improve, without emptying the contents and raising the

floor to accommodate more insulation. The pool extension roof, however, is 300mm high performance solid fibre insulation.

Renewables and low carbon technology

Solar PV - The pool roof has 4kW of Solyndra panels, installed by Suntrader in 2011.

Solar thermal – A large array on the south facing roof of the house supplies hot water to both the house and the pool area. This was fitted by Karen's son James in 2003, after completing a LILI training course.

The large flat roof installation of solar PV & solar thermal creates a return of over £1000 a year and helps reduce energy costs.

Electricity

Lighting – one of the biggest uses is for lighting, as this is on for most of the day, even in summer. Lamps have mostly been replaced with LEDs or CFLs. In the pool area even, strip fluorescents have been changed for LED panels.

Carbon emissions

Emissions and energy consumption are larger than for a typical house due to the heavy demand of the hydrotherapy pool. However, measures introduced have progressively whittled energy use down over the years.

Other sustainable measures/ lifestyle decisions

Water conservation - Rolf has created his own digital watering monitoring system that captures every aspect of the water levels and flow within their current water tank system.

Deep flow guttering - Simply by adapting to deep flow guttering (which has been cleverly woven from the front to the back of the house to capture every drop of water), water recycling has been dramatically increased – saving as much as 50%.

Rainwater harvesting - water use is a major headache, as the pool water must be regularly replaced. This is mitigated by rainwater recycling, which is collected from the large roof area and stored in 6 linked recycled former fruit juice transportation barrels. This is used mainly for the weekly pool top up.

Grey water recycling – when part of the pool water is changed each week it is stored in 3 further recycled barrels and used to provide flush water in the toilets throughout the building, which have quite a heavy use by the public of up to 1600 litres/day or over 200 flushes a day by 6 toilets.

Vegetable cultivation – the house has an extensive garden which spreads over a plot behind the terrace. Karen has been an allotment holder and organic gardener since the 1970's and makes good use of this land for organic food produce, as well as creating a beautiful garden.

Ecosanitiser – pool sterilisation is via an Ecosanitiser, which uses ionised salt instead of harsh chemicals, making it kinder on allergies and kinder on the environment.

Pool covers – insulated pool covers are used to limit heat loss when the pool is not in use.

Recycling – All office materials are recycled where possible and other non-conventional recycling, such as sculptures, are encouraged and exhibited.

Paperless office - as far as possible, business is transacted using internet and email to keep it paperless.

Transport – clients and visitors are encouraged to avoid car use, particularly by cycling, with promotions such as rewarding cyclists with a free Fairtrade banana to compensate for the energy expended!

Lessons learned

With an older building there will always be limits on what can be done toward energy conservation, but that does not mean a great deal cannot be achieved by concentrating efforts on all aspects of sustainability, particularly where significant inroads can be made.

Professionals

Solar PV – www.suntrader.co.uk/