

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: Four

Walls: Brick cavity

Area: 200m²

Residents: Two adults

Key features

Bee hives

Deep flow guttering

Digital water monitoring systems

Rainwater harvesting and grey water

Solar PV & solar thermal

Smoothie bikes

Eco Open doll's house

Come and enjoy making smoothies using their large and small bicycle generators, while learning about renewable energy. You can also explore their interactive Eco Open doll's house—pour “rain” on the roof and watch how it's collected and reused for toilets and more!

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 Hydrotherapy Centre, as they have it all covered.

Whether it be water or energy efficiency, or urban bee-hive management, you really must make a visit..



Water is needed for everything here, both for business and personal use, as is energy. The relationship created by these, through Karen & Rolf's innovative DIY ways of reducing their consumption, in turn positively impacts something else, such as saving money, water recycling, using less mains water, generating income and energy from their solar panels.

They now have two operational bee hives, having collected a wild swarm from Davison High School for Girls, which began producing honey within 6 weeks. As they were such peaceful and productive bees, from that first swarm a second queen was raised so that another colony could be established. So far, the two hives have produced over 50 kg of prize-winning honey. 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 diversity 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.

Energy efficiency measures

Heating and hot water

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

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

Insulation

Walls - the walls are brick cavity, 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 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 had 4kW of Solyndra panels, installed by Suntrader in 2011. New 4KW Solar Edge PV added 2023.

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 originally fitted by Karen's son James in 2003, after completing a LILI training course. Old thermal panels have since been replaced by new more efficient ones and more added on recycling sheds to help heat pool water.

The large flat roof installation of solar PV & solar thermal creates a return of over £2000 a year and helps reduce energy costs.

Electric car - charged from PV panels

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. 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 emissions down over the years.



Retrofitting Barbie's Eco Dream House

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.



Adult smoothie bike in action with Henry House staff

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.

Mulch – Karen uses a shredder to reduce prunings down to mulch, which can be mixed with grass clippings as well, this helps with water retention, suppressing weeds, and slowly feeds the soil as it decomposes.

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 run in the past, 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/materials

Solar PV:

www.suntrader.co.uk/

www.sunupheating.wixsite.com/sunupheating



Junior smoothie bike undergoing transformation