Inspiring eco homes

How can we best encourage home-owners to make their houses more energy efficient? **Allan Shepherd** reports from Cambridge on a scheme that opens doors to conversation and inspiration.

The past few years have seen a rolling back of government regulation, incentives and other support designed to improve home energy efficiency. In the absence of effective government policy, environmentally aware individuals and communities are finding new ways to encourage and support people in making improvements to their homes and businesses.

One of the most simple and effective methods is to provide real examples and the opportunity to meet up with others who have already made changes to their homes and lifestyles. Sharing the experience of creating and living in a low energy home allows people to see first-hand what changes they could make and how these could improve their quality of life, as well as saving them money and helping the environment.

For the past six months I've been working on the Cambridge Open Eco Homes project, speaking directly to enthusiastic home-owners who have made substantial changes to their homes and are incredibly happy to share their experiences with members of the public for two days of the year, showing them round their homes and giving the case for energy efficiency in a non-sales environment.

All of the Open Eco Homes hosts in Cambridge are experts on their own home. Some of them, it being Cambridge, are also experts in related fields such as climate change research, engineering and architecture. This year one of our hosts is Cambridge University itself. An estates team from St John's College will be showing people round a Regency student house they have just retro-fitted.

What you quickly learn talking to the hosts is that there is no standard house, and no one-size-fits-all approach. The age of houses participating runs from Regency, through Victorian, Edwardian, Interwar and post war to new builds. These houses all present a range of different problems and opportunities that must also match up to what the homeowner actually wants from their home – perhaps an extension for example.

This year there is even a co-housing project that has yet to be built. Visitors will see the site and the plans and get a chance to think about the bigger picture beyond simple home ownership. It is more efficient to be part of a community sharing some resources.

It's possible over the course of two days to visit eight homes, so you can experience eight different approaches. Visitors not only get to see the houses themselves; they can have conversations with people who can pass on their knowledge and help them get to where they want to be. Often people aren't necessarily motivated by the 'eco' label; they just want to live a better life. To this end we're also running Cosy Cambridge, a one day event to help people turn the inspiration gained from the home visit into active plans.

I've been struck by how many of this year's new hosts are previous visitors to this or to other Open Eco Homes events. The events give people impetus and a positive feeling to move forward. Cambridge Carbon Footprint, the charity that runs Open Eco Homes and Cosy Cambridge, estimates, based on questionnaire answers, that the event saved around 660 tonnes of CO_2 emissions in 2015 – that's a big impact from just two days of conversation.

Cambridge Open Eco Homes is on 18th and 24th September. Free guided-tours can be booked online at www.openecohomes.org Cosy Cambridge is on 8th October. Find an event or eco homes near you at www.greenopenhomes.net and www.superhomes.org.uk

About the author

Allan Shepherd is an author and CAT's Publisher. He has written over 15 books, including The Home Energy Handbook *and* Voices from a Disused Quarry, an oral history of CAT. *His work on Cambridge Open Eco Homes is an independent project.*

The co-housing scheme

Co-housing scheme Cambridge K1 is building 42 factory-constructed timber panel houses designed by Swedish company Trivselhus. Factory manufacture enables high standards of airtightness to be achieved. Triple-glazed windows and doors will be built into the panels in the factory. The walls, floors and roofs will provide a high standard of insulation (U-values of around 0.18). The houses have been designed to have very low heating requirements and are fitted with heat pumps and mechanical ventilation with heat recovery. There is no gas on site. Residents will have their own home, garden and balcony but also have access to a common house, a shared garden, workshop and gym. These extra shared facilities and spaces allow – but don't require – members to do things together.

The new build

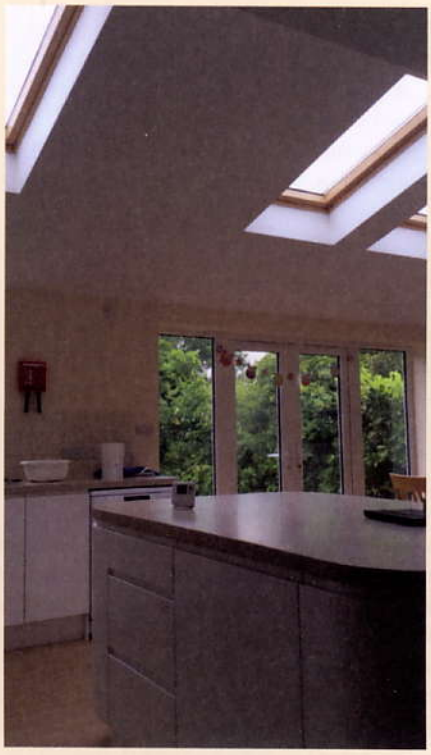
William and Deborah McVey's stunning four bedroom new build has been built for sociability and low running costs. Constructed from their own design by kit home specialists Fjordhus, the house is packed full of interesting environmental features designed to maximise comfort, beauty and functionality whilst minimising energy use. This has all been achieved in a garden plot on an Edwardian street and is William and Deborah's shared vision for an affordable retirement home big enough to host family visits and social gatherings. Highlights include a rainwater harvesting system connected to household toilets and a sprinkler system, a seven-zone underfloor heating system for the ground floor, triple glazing, insulation between rooms as well as around the thermal envelope to allow minimal heating in used rooms, PV and solar thermal, plus motion sensor lighting.

The environmentalists' retrofit

Suzie and Ian Webb's home is an expression of their passion for the environment. "We sometimes put our ideology before our finances or convenience but are happy about this." They have created a snug house and brought utility bills down to only £30 a month. They switched to Good Energy as soon as they moved in and then made other changes when they could afford them. These included cutting off the gas and replacing the heating system with a solar thermal hot water system and a 9kW wood-burning stove. This was combined with a highly insulated Akvaterm hot water tank, designed to be heated by wood, the sun, or electricity if they're desperate. As well as wall, loft and pipe insulation they have also insulated the bath (re-using coats and pillows), and installed a thermally-lined curtain which reduces the size of the sitting room in winter. Other DIY measures include low-energy and LED lighting, draught-proofing and secondary glazing. They don't run a fridge, preferring to use a 'terracotta evaporation fridge' instead. A friend of theirs invested in a solar photovoltaic (PV) system for their roof. When their friend has recouped their costs from the Feed-in-Tariff, the Webbs will get any future profits.

The non-environmentalist's retrofit

When I visited Jenny Gell at her 1930s detached home in North Cambridge, Jenny was at pains to tell me that hers was not an eco-home and that she wanted to show what people could do if they weren't necessarily environmentalists. When she and her family arrived in their house it was a museum piece, unchanged since the 1950s. A substantial renovation, including a large extension, was needed for aesthetic and practical reasons. There was also a damp problem. The extension provided much better insulation on the back wall plus substantial passive thermal gain from double glazed velux windows. They also added ground floor, loft and interior solid wall insulation for comfort. Jenny is pioneering a Ventive passive ventilation with heat recovery (PVHR) system. These are far more unusual than the mechanical alternatives. As the name suggests, they have no moving parts. The heat leaves the house via a heat exchanger in the chimney, warming cold air as it comes in.



All photos on this page Open Eco Homes; facing page Darcstudio