

One of a kind

Heavily insulated – with recycled newspapers, no less – this wood-framed home on Mowbray Road is Cambridge's first PassivHaus (which means it meets a highly rigorous standard in energy efficiency).

Thanks to mechanical heat-recovery and ventilation, the property requires almost no heating; plus the ventilation filters also cut pollen from incoming air, a bonus for hayfever sufferers. Rain collection reduces the carbon cost of water usage, too: rather than being flushed with top-quality drinking water, the toilet system works on rainwater.

"I used to work in bioenergy and am acutely aware of how difficult it is to take carbon out of transport fuels," says host Bea, "and how comparatively easy it is to lower the carbon footprint for buildings."



Major makeover

When owner Antony embarked on the renovation of his 1930s home, he wanted not only to create more light and space – but also to increase energy efficiency and decrease running costs.

An engineer and project manager with a love of DIY, Antony worked closely with the builders – spending two days a week on site – who added a bedroom and two en suites, along with internal wall insulation, triple-glazing and mechanical heat recovery and ventilation.

"The renovations are newly completed," says Antony, "so we hope they will stand up to the job as anticipated!"

Family way

By installing cavity wall and exterior wall insulation, solar thermal panels (to heat the water) and solar photovoltaic panels (to produce electricity) – at a total cost of £20,000 – the owners of this house on Topcliffe Way have seen a radical reduction in energy bills.

Rob, an electronics design engineer, and Anne, a biologist, wanted to create a low-carbon home for themselves and their two children; along with the insulation and solar panels, they've also introduced rainwater harvesting and greywater recycling systems, which have almost halved their water use.

"I started measuring the gas and electricity we used, and decided to take control rather than ignore it," says Rob. "I identified each significant energy use and researched how to reduce it. Most of the insulation and airtightness work has been DIY – which I've actually really enjoyed doing."

Keep it cosy

Since they bought their Coleridge Road semi in 1995, Kim and Charlie have completely eco-renovated the property: the result is a warm and welcoming family home. By using natural materials – such as solid wood and slate flooring and wooden replacement windows – the couple kept the carbon costs of refurbishment to a minimum. And the loft conversion is double-insulated: layers in the roof space, roll-downs in the eaves.

But the biggest energy-saving improvement is, without doubt, the external wall insulation, aided by a £9,400 grant from Action on Energy Cambridgeshire and finished with attractive brick 'slips' along the front wall.

"We've visited a lot of Open Eco Homes and have now implemented low energy measures ourselves," says Charlie. "As a result we're now able to set lower heating temperatures – and maintain comfort."



Now in its sixth year, the Open Eco Homes event is run by the charity Cambridge Carbon Footprint. Running across Saturday, September 19 and Sunday, September 27, the event gives some 700 members of the public chance to view a wide range of energy-efficient homes – spanning retro-fits and new-builds, simple and hi-tech, owned-occupied and rented. Visit openecohomes.org for all the details.

GOING FOR GREEN



Cambridge Open Eco Homes lets us look inside some of the city's most planet-friendly properties – and find out how they tick. Alice Ryan pays an advance visit to five houses about to open their doors for the first time.



Grand design

Constructed from timber-clad insulated panels, and fitted with state-of-the-art water-saving, heat-recovery and ventilation systems, Lingrey Court is officially a zero-carbon home.

Built by Hill just last year, the spacious and stylish semi is home to Lorna, Dave and their three young children – who won a competition to live there for a year, rent-free, in return for their help promoting zero-carbon living.

“The house is so peaceful, thanks to the triple-glazed windows and super-insulated walls, despite being close to a busy road,” says Lorna, who relocated from a traditionally-designed older home. “And the air ventilation system is great: the house feels fresh without the need to open windows. It’s comfortable, well-designed and family-friendly: we love it!”