# Shining examples of solar-powered life

## Liz Nicholls visits a family home powered by renewable energy

Sunshine tends to cheer most of us up, but Tim Nicholson now finds himself especially excited by good weather.

That's because he has been working since 2010 to turn his family home — a 1960s end-of-terrace in Benson Place, central north Oxford — into an ultra-low energy property.

As the glorious summer weather works its magic on the 12 solar photovoltaic (PV) panels on the roof, he puts the kettle on to make us a drink. "So, this is actually a zero-carbon cup of tea," he says.

"I find myself more excited about the sun coming out from behind the clouds, because it's gratifying knowing we're using that renewable energy for our needs, instead of taking from the grid. When the sun shines, because of the feed-in tariffs, our house will actually make us money rather than cost us."

Tim Nicholson checks his solar thermal pump station with his sons Sam, three and Benjamin, six Pictures: Simon Williams

Tim, who is technical sales adviser for eco company R-ECO (which stands for Renewable Energy Co-operative) Ltd, was one of 20 people who opened their homes to the public as part of Green Open Homes Oxford. The event, organised by Low Carbon Oxford and funded by the Department of Energy and Climate Change, aimed to show families ways to make their homes more energy-efficient and save on bills.

The government's target is for UK households' usage of fossil fuels to be reduced to about 10 per cent of its current rate by 2050.

"That is one big challenge," says Tim, "and you have to ask yourself, how on earth are we going to meet that? Heating the space we live in is one of the biggest consumers of fossil fuels, so insulation is the first question.

"When we bought this house, we knew it needed refurbishing and decided we would do it in as energy-efficient way as possible while also making sure it was a comfortable family home."

Tim and his wife Joanne Bowlt, who have sons Benjamin, six, and Sam, three, have invested in measures that lessen the family's carbon footprint and save money.

Projects at their house include hyper-efficient wall, roof and floor insulation, triple-glazed windows, solar PV and solar thermal roof panels, Mechanical Ventilation with Heat Recovery (MVHR) system, LED lighting, low-flow plumbing and a wood-burning boiler stove. Upstairs in the cork-floored bathroom is the thermal store, a work in progress which looks like an elaborate *Wallace and Gromit*-style creation of tanks connected by pipes to optimise hot water usage.

"I'm passionate about the need for us all to make these energy saving changes to our homes," adds Tim.

"I know not everyone will want, or be able to afford, to do everything we've done to our house at once. But, hopefully, our home demonstrates the different options and allows people to ask questions. If people are interested, they might want to cherrypick what's most appropriate to them."

Tim wants to dispel some of the myths and caveats around eco 'retrofit' projects such as his. For example, many people assume they will not be able to generate a good rate of power unless they have a south-facing roof, but the benefits are still significant.

Tim and Benjamin Nicholson finish the green boys' bedroom

**Above:** Triangular solar panels fitted by R-Eco in Cutteslowe

During a good summer week, the Nicholson-Bowlt household will generate more than 100 kilowatt hours and use just 30kw hours of that, allowing their house to generate energy sold to the National Grid.

As a general rule, solar electric systems offer a return of about five to 10 per cent on homeowners' investment, with business premises able to see a return of up to 20 per cent. "That's obviously a much better return than you'll get putting your money in the bank," adds Tim.

In 2004 Tim and his future wife embarked on a road trip from Oxford, England, to Oxford, New Zealand, in a black 1950s Oxford Morris Motor to raise money for the Red Cross. Their journey, which took them through monsoon-lashed Bombay and an underground village in sweltering North Africa, opened their eyes to the fragile eco-system.

"There are people all over the world living at the mercy of their climate," adds Tim. "We're more fortunate, here, but we can all do our bit, plus save money and stay warmer."

Another point the family demonstrate is that an energy-efficient home does not have to be an unpleasant one. Far from it, the floor is flush with stylish bamboo (cork flooring in the bathroom), the kitchen sparkles with recycled glass worktops and the boys' bedroom is a light and airy haven of green and blue, complete with a birch branch pillar holding their bookshelf in place.

"Everyone wants a home for their family that's really warm, comfortable and appealing," says Tim.

"I want to help the planet, but I don't want to have a miserable existence where I'm a slave to the woodburner or suffer cold showers!

"I hope our home proves that being eco-friendly can be an attractive way of living."

**To find out more about Tim and Jo's house, visit *oxfordgreen house. co.uk*. For any advice on green money-saving initiatives in your home, visit *R-eco.coop***

Also visit *SaveMoneyCut Carbon. com* which supplied LED lights plus the eco showers and taps to Tim's project and is a great resource for more green home ideas.

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Tim at the hyper-efficient woodburner

Tim, Joanne, Sam and Benjamin in the kitchen

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