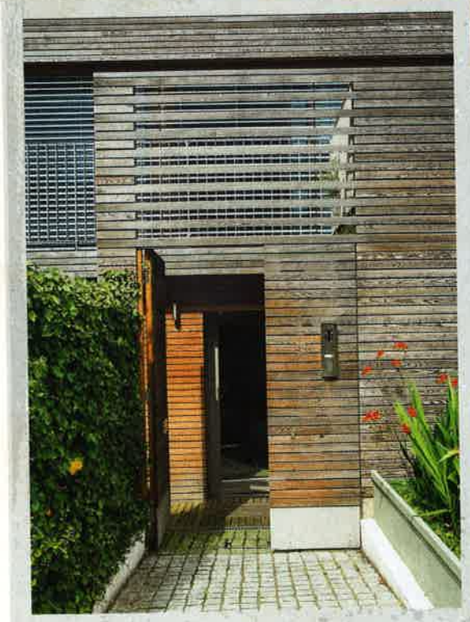
3 PASSIVHAUS BY BERE ARCHITECTS, LONDON

Nine years ago, interior designer Fiona Terry (left) and her property investor husband Malcolm commissioned Bere Architects to design the first certified Passivhaus in London. Fiona talks to us about the benefits of living there and the challenges involved in creating it.



Why did you decide to build an eco home? We weren't interested in Passivhaus per se, but more generally in green living. When researching, my husband came across Bere Architects, who introduced us to the idea of Passivhaus [more details, right]. Justin Bere is a very passionate pioneer of this type of building.

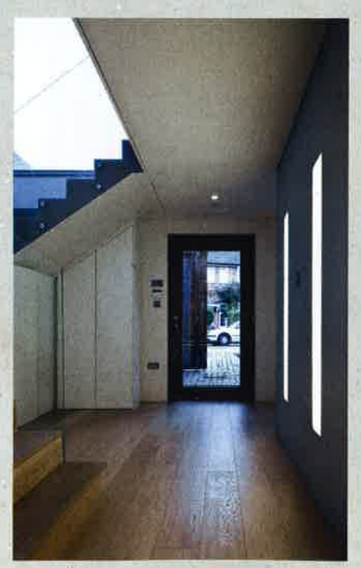
What appealed to you about the Passivhaus model in particular? One of the things that impressed me most was the fact that you don't have to open the window to air your bedroom. The ventilation system constantly sucks in fresh air from outside, so it's always clean. Even if you have teenagers living with you, the whiff of dirty socks can never linger! My daughter lives in the house at the moment and she is asthmatic, so the great air quality is very beneficial to her.

Are there any downsides to a Passivhaus? The cost. At the moment, because there aren't many homes like this being built, it's expensive, but once more people catch on to their benefits and creating these houses becomes more popular that should change. If you're designing a new-build property, a Passivhaus really is a no-brainer: why wouldn't you want an energy-efficient home that saves you money on heating bills?

How does living here differ to living in a non-green home? It's always warm without being stuffy and the property doesn't require heating. Occasionally the filters in the heat exchange system need to be changed and salt tablets added for the water softener. The house also has a wildflower meadow on the roof, underground rainwater harvesting and solar thermal panels. *bere.co.uk*

'Why wouldn't you want an energy-efficient home that saves you money on heating bills?'

PICTURES: TIM CROCKER



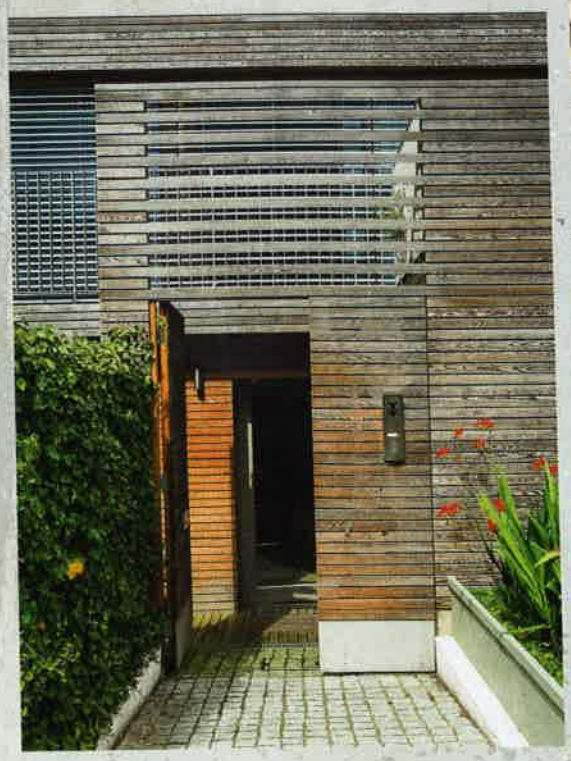
Light and airy, this 118-square-metre two-bedroom house in Camden became London's first Passivhaus when it was completed in 2011. Homeowner Fiona was particularly impressed by the improvement in air quality at the new house in comparison to her previous homes

HOW TO RETROFIT YOUR HOME TO PASSIVHAUS PRINCIPLES

Developed in the 1990s by professors Bo Adamson and Wolfgang Feist in Germany, Passivhaus is a construction concept that requires houses to use very little energy for heating and cooling. The result is energy-efficient homes that render traditional heating methods unnecessary and offer fresh air and a constant, comfortable temperature for living. Retrofitting a home to Passivhaus principles can be trickier than starting from scratch with a new build, but Jon Bootland, chief executive of the Passivhaus Trust, has a few tips to get you started.

- **Tackle the changes step by step** and work towards achieving a Passivhaus standard over a number of years – there is a specific standard for retrofitted homes that takes into account the things you can't alter, such as party walls and the orientation of the building.
- **Consult a Passivhaus designer** to do the calculations using the Passivhaus Planning Package (PHPP). They will be able to advise which aspects of your home it's worth changing to make a difference in terms of how much energy it can create and how much it can save.
- **Concentrate on three key areas:** insulation, airtightness and ventilation. A Passivhaus has a mechanical ventilation system that extracts old air and moisture and replaces it with fresh air. Windows need to be triple-glazed and fitted with high-quality frames.
- **Think of long-term benefits.** A retrofitted Passivhaus can cost up to £100,000 depending on the size of your home, but once a house meets Passivhaus standards it will need minimal heating (at a cost of around £100-£200 per year). However, expense isn't usually the motivation for a retrofit – it's comfort. The indoor temperature will be constant (around 18-24°C). *passivhaustrust.org.uk* ED

⊕ *To see examples of retrofitted eco-homes, visit the Superhomes Network (superhomes.org.uk).*



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