

# Saint Barnabas Road - CB1 2BY

Feature packed award nominated new-build with emphasis on personal and planetary health. Known as the Treehouse. Built by Baufritz.

## Meet your hosts, Adrian and Judy

“We bought the site from Christ’s College in 2014 having asked each year for seven years. It had previously been lock-up garages. We knew about it because we lived in St Barnabas Rd.

Baufritz UK are a German system-build firm but their UK office is in Girton. We loved their eco approach and quality, and worked with architects Nilsson Pflugfelder on the outline design, with advice from Baufritz. For example, we could have curved walls in the hall, but they would be more expensive.

The design process concluded with four days of detailed choices made on a visit to Germany to chose built-in items, surface finishes and electrical outlet. Baufritz created a walk-in mock-up of our bathroom with walls, loo, bath, basin. The kitchen was the only fixed internal item provided locally (John Lewis).”

## Construction

It was a year from fixing the price to the family moving in, with the main structure construction taking three days. This is because the highly insulated 37cm thick wall panels are made in a factory and lifted into place with a crane. All the internal walls are already fitted with plaster board, saving time on finishing.

## Material choice

When it comes to material choice there has been a consciously strong emphasis on personal and planetary health. There is no MDF, no PVC and no toxins in the paints and glues. There are no carpets but beautiful wooden floors throughout. There is even protection from electro-smog and shielded wiring throughout. One thing that might raise a vegan eye-brow is the use of whey (a by-product of the dairy industry) in the HOIZ wood fibre wall insulation. Dairy also has a high carbon footprint, although it is used here as a waste product.

That being said, the house is recyclable if demolished, or it can be dismantled, moved and re-erected. Because the frame and most of the walls are made of timber, including the larch cladding, the house is carbon positive, locking up carbon absorbed during tree growth.



[www.openecohomes.org](http://www.openecohomes.org)

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## Energy use

Energy use is minimised with the help of Mechanical Ventilation and Heat Recovery and a Solar Cache PV system that uses surplus electricity to heat water. There is a small gas boiler. Though it is little used, the boiler is connected to an underfloor heating system, which can easily be changed to an air-source heat pump if there is a need to reduce gas use further. The house is so well insulated, however, that most of the heating zones have never been turned on.

## Passive solar gain and natural daylighting

Unlike many modern eco-buildings there are no large grandstanding windows in the Treehouse. This was a conscious choice after a bad experience with a previous 'glass box' extension. Instead there are carefully placed but not excessively large triple glazed windows with internally controlled electric blinds and a fixed brise soleil on the south side for further regulation. The house is very light inside, complimented by 7 watt LED bulbs with a true colour spectrum.

**Property age:** 2016

**Type:** Detached

**Project Timescale:** 2015-2016

**Wall type:** Manufactured wooden panel with infill wood fibre insulation, soda and whey

**Floor area:** 2150 ft<sup>2</sup> 200m<sup>2</sup>

**Cost of build:** £600k

**Occupants:** Four adults

	Energy kWh/m <sup>2</sup> /yr		Carbon kgCO <sub>2</sub> /yr	
	Elec	Gas	/m <sup>2</sup>	/person
Before	n/a	n/a	n/a	n/a
After	30	40	n/a	n/a

## Key features

### Insulation and Glazing

- Triple glazing with electric and fixed shading
- Wood walls with HOIZ insulation system
- Roof and floor insulation

### Heating/energy

- Mechanical Ventilation and Heat Recovery
- Underfloor heating
- Solar Cache PV hot water heating
- Underfloor insulation
- 5 kW wood stove

### Materials

- Wooden floor
- No PVC, MDF, Paint toxins
- Electro-smog barrier

## Key contacts

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