

Harvey Goodwin Avenue - CB4 3EX

Extensive conversion of 1920's detached bungalow into two-storey home

Meet your hosts, Phil and Ails

Phil and Ails, with their three children, bought their 1920's chalet bungalow in 2009, having already started sketching various ideas on how to improve it into a family home.

The house structure when they moved in was mostly unchanged from when it was built. As well as the old fittings and cramped layout, it was effectively uninsulated with solid brick walls, draughty floorboards/chimneys and minimal roof insulation. It was not a comfortable place to live, hence when planning their changes key priorities were layout and insulation.

Design and build process

The main aim of the renovations was to create a well-balanced, attractive & spacious house that made best use of the site, while blending into the mixed 1920-30's street style. The original house had some good original features they wanted to retain (particularly the bay window & the staircase), so they opted to keep the ground floor walls, first floor joists and rebuild above / around these. A downside is that renovations incur VAT, whereas complete demolition & rebuilding does not.

It took quite a while to plan the changes, especially as they did most of the design & drawings themselves. This involved lots of research, but allowed flexibility to tweak their ideas and maximise the layout efficiency. For example: removing a corner of the original house to gain off road parking, and adding a mezzanine level to a box room to make it more useable. Sunlight was limited by orientation - the house shaded by next door, and in turn potentially shading the other neighbour.

To minimise building expense, all the renovations and extensions envisaged were undertaken in one go instead of in stages. They got building quotes against a design spec, and employed a local general builder. They moved out when demolition of the main house began, and moved back in after a quick 5 months.

Low energy measures

Phil says: We wanted a warm & cosy house, fully modernised for low maintenance and running costs - but not using 'eco' features for the sake of it, only if worthwhile. Good insulation in every direction is most important; the external insulation continues over the timber frame upper; and we tried to avoid any cold bridges in the structure. Solar hot water was more viable because we were installing new plumbing & tanks anyway. We would have considered solar PV but didn't have the necessary south-facing roof. The gas stove can be controlled on a thermostat, so the lounge can be kept warm without wastefully heating empty rooms.



Photos: © Tim Rawle

www.openecohomes.org

Harvey Goodwin Avenue, CB4 3EX – 2018

Open Eco Homes is a Cambridge Carbon Footprint project. Charity number 1127376



Harvey Goodwin Avenue - CB4 3EX

Extensive conversion of 1920's detached bungalow into two-storey home



Age, Type: 1920's, originally Chalet Bungalow
Wall type: Mix of original solid wall, new timber frame and cavity brick/block
Floor area: was 90 sqm, now approx. 140 sqm
Project timescale: 5-6 months
Cost of build: Approx. £180,000 (in 2011)

Key features

- External wall insulation, rendered over
- First floor timber frame
- Underfloor polystyrene insulation
- Roof insulation (between + under rafters)
- Double glazing + triple glazed roof light
- Low energy and LED lighting
- Condensing gas boiler and radiators
- Thermostatic gas stove
- Solar thermal for hot water

Future plans

No plans to change anything substantial, just finishing off numerous small jobs around the house. All the major renovation work has so far stood up well. CCF's thermal imaging camera was used, which identified one timber frame panel missing insulation and a couple of other leaky spots.

Energy use

Annual usage with 5 people: 5300kWh gas and 2200kWh electricity (approx. £200 + £300 on cheap tariff).
Not recorded for original house.

	Energy kWh/m ² /yr		Carbon kgCO ₂ /yr	
	Elec	Gas	/m ²	/person
Before	n/a	n/a	n/a	n/a
After	16	37	15	430

Contacts

Contracted through builder:

- Groundworks – Coopers
- Steelwork – D&H (Milton)
- Plumbers – LivingSpace
- Electricians – Mark Collins
- Bricklayers, Plastering, Roofer, decorating - self employed tradesmen
- Gas stove fitting – Richard Oakes (Waterbeach).
- Block Paving – Kevin Sheriden. Recommended.

• CAD package (free for personal use):

www.progesoft.com/en/products/progecad-smart/

Employed ourselves:

- Structural engineer – Clive Barnes (Swavesey). Quickly worked through a difficult structural problem.
- Main building contractor – Jim Lucas (Oakington). Great project management of the extensive works in a short timescale. As is typical, we had to be on site every day for detailed queries and to catch anything going awry before it got too far.
- Building inspector – RH Building Consultancy (Waterbeach).
- Solar hot water – Bowler Environmental Systems (Harston).
- Windows: wooden to front – Westside joinery (Bourne); uPVC to rear – Polarglaze (Cottenham); Patio and folding doors – Wickes.

www.openecohomes.org

Harvey Goodwin Avenue, CB4 3EX – 2018

Open Eco Homes is a Cambridge Carbon Footprint project. Charity number 1127376

