

Harvey Goodwin Avenue, CB4 3EX

Phil and Ailish, with their three young children, bought their small 1920's chalet bungalow in 2009 with a view to renovating & improving it.

The house structure when they moved in was mostly unchanged from when it was built. As well as the old fittings & cramped layout, it was effectively uninsulated with solid brick walls, draughty floorboards and minimal roof insulation, so not a comfortable place to live. Hence when planning their changes, a priority for them was to make it well insulated.



The Building Process

The main aim of the renovations was to create a well-balanced, attractive & spacious house that made best use of the site. The original house had some good original features they wanted to retain (particularly the bay window & 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 them 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 refine 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 the orientation, with south shaded by the house next door.

To minimise 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. It was a big complex job but the builder put lots of people on it so made fast progress. They moved out when demolition of the main house began, and moved back in after around 5 months.

Overview

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

	Energy		Carbon		5 people
	kWh/m ² /yr		kgCO ₂ /yr		
	Elec	Gas	/m ²	/person	Notes
Before	NA	NA	NA	NA	
After	11	50	14	395	

Key features

- External wall insulation
- Timber frame first floor, brick/block rear.
- Underfloor polystyrene insulation
- Roof insulation (between/under rafters)
- Chimneys removed
- Double glazing + triple glazed roof light
- Low energy & LED lighting
- Condensing gas boiler & radiators
- Thermostatic gas stove.
- Solar thermal for hot water



Low Energy Measures

Phil says: We wanted a warm & cosy house, fully modernised for low maintenance & 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.



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 (now fixed) and a couple of other leaky spots we plan to put right in due course.

Professional Contacts

Employed ourselves:

- Structural engineer – Clive Barnes (Swavesey). Quickly worked through difficult structural problem.
- Main building contractor – Jim Lucas (Oakington). Great project management of the extensive works to 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 Env Systems (Harston).
- Windows: wooden at front – Westside joinery (Bourne); uPVC at rear – Polarglaze (Cottenham); Patio & folding doors – Wickes
- Gas stove fitting – Richard Oakes (Waterbeach)
- Block Paving – Kevin Sheriden. Recommended.
- CAD package (free for personal use): www.progesoft.com/en/products/progecad-smart/

Contracted through builder:

- Groundworks – Coopers (Cottenham)
- Steelwork – D&H (Milton)
- Plumbers – LivingSpace
- Electricians – Mark Collins
- Bricklayers, Plastering, Roofer, Decorator