Magnolia Close, CB1 9TU

Barbara and Peter – they say:

We’ve always wanted to build our own house, but building plots are rare so we waited until a property suitable for demolition came on to the market.

We bought a 1960s bungalow with poor insulation and internal layout, but a south facing aspect. We were keen to build a low impact contemporary house with ground floor living spaces, kitchen, living and dining rooms connected to garden.

Light and space were very important considerations in the design phase. The planners were very supportive and recommended that the scheme be given approval at committee because the property ‘enhances the local environment’.

Low Energy Measures

The house is constructed using a timber frame on a substantial deep strip concrete foundation. The frame work is partially clad with sweet chestnut and partially rendered and the roof is zinc sheeting.

The insulation for the house comprises blown cellulose fibre, which is recycled newspaper, and wood fibre boards. We also have high performance triple glazed windows and doors.

The building incorporates a number of integrated environmental and MVHR passive (solar) design features. Because we face due south we are able to maximise solar gain and have large glazed units at the back of the house for this purpose.

Also the design allows an abundance of natural light to flood in to all areas. The rear overhang of the upper section prevents the downstairs living areas overheating in summer, whilst upstairs external louvres are fitted for the same reason.

We wanted a mechanical heat and ventilation recovery (MVHR) system and this has been brilliant, controlling the house ventilation and keeping fresh clean air in all parts of the property. We also have six photovoltaic (PV) cells on the kitchen roof, providing half our electrical usage and a net income of £200pa - an efficient return!

Under floor heating throughout is powered by a condensing gas boiler and allows great flexibility in controlling the heat efficiency in parts of the house not being used.

A wood burner provides supplementary heat, which we use on cold winter nights. Our entrance lobby provides an efficient barrier to any heat loss from the house and the utility room puts out lots of heat!
Other environmental features

- flow restrictors on taps, and dual flush toilets,
- large water butt (900L) to collect rain water,
- low energy lighting with numerous LEDs fitted,
- small glazing areas to north facing elevations,
- thermal mass to substructure, floors and features,
- ballasted brown roofs,
- native flower pocket habitats to support bees, butterflies and wildlife.

Overall we achieved 59% performance improvement on then current building regulations for emissions.

Professional Contacts

Architect: Gavin Langford Architects
www.gavinlangfordarchitects.com 01223 847200
Builder: Britania Build  www.britaniabuild.com
01638 666605
Structural Engineer: Haskins Robinson Waters
www.engineers-hrw.co.uk 020 74079575

Products

Biodiversity: pocket habitats on flat roofs, Grey 2 Green  www.gey2green.co.uk
Wood stain: Osmo natural Oil
Flat Roofs: Evalastic membrane
Pitch Roof: CEL Ltd Rheinzink zinc
Floors: Forbo Marmoleum acoustic, Reeve oiled oak and Stonell basalt, honed and sealed
Timber Cladding: Vincent Timber, sweet chestnut

Ironmongery: John Planck Limited
Mesh Screen: Mesh UK
Insulation
Roof and Walls: Excel Warmcell; Excel Panelvent; Natural Building Technologies Pavaclad
Timber framed cavities 200mm; Flat Roofs 280mm; Pitched Zinc Roof 260mm
Floor Insulation: Celotex
Windows and doors – triple glazed throughout
External doors and windows: Green Build Store
Internal doors: Bridgeman Doors
Pitched Roof Windows: Velux
Flat Roof Lights: Glazing Vision

Heating system
MHVR system: £6500
Under floor heating: thermostats in each room, controlled centrally from service cupboard £8500
Condensing boiler: £2000
Wood burner: Ivett & Reed HWAM Vivaldi 4.5Kw
www.hwam.com £2500
Passive solar gain: South facing windows and roof lights
Photovoltaic panels

www.openecohomes.org
www.cambridgecarbonfootprint.org