

kent design



2000 - 2002

design innovation
architectural competitions
commercial buildings
urban regeneration
involving communities
environmental building

The Boundary House - a highly energy efficient home

Architect, Michael Winter's house nestling in woodland in Tunbridge Wells sets new standards of self-sufficiency.

For example, the roof, walls and floor are so well insulated with cellulose fibre (made from recycled materials, such as newsprint) that there is no need for a central heating system. A wood burning stove and heat gain through the 'E' coated, triple-glazing are sufficient to heat the entire house on the coldest winter's day. The annual gas bill is just £5. Rain water for domestic use is stored in an underground tank, reducing water rates to a mere £10 a year for the single tap supplying drinking water. Hot water is supplied by solar panels installed on the roof using 40 evacuated tubes. These provide about a third of the heating needs with an electric immersion providing back-up.

A full height wall of glass runs the entire length of the main living area on the upper floor. High ceilings, natural wood floors and soaring internal spaces create an airy, light interior. On the northern elevation there are relatively few windows, both to minimise heat loss and to screen the house from the railway line and footpath.

In selecting materials for the house, Michael Winter considered the environmental impact of the materials he used, such as the energy embodied in their manufacture and the scarcity of the natural resources used in their production. The structure and the cladding are of wood with second-hand timber flooring used throughout. No wood preservatives were used and organic paints and stains were chosen wherever possible.

Although located on a heavily wooded site, only three trees were felled to make space for the building. Instead of conventional foundations, the house rests on concrete pads which have been placed between tree roots so the whole building rests lightly on the soil and damage to tree roots is minimised. The house cost £235,000 to build but has 300 square metres of floor space, double the size of a conventional four-bedroom house.

