



TRADA

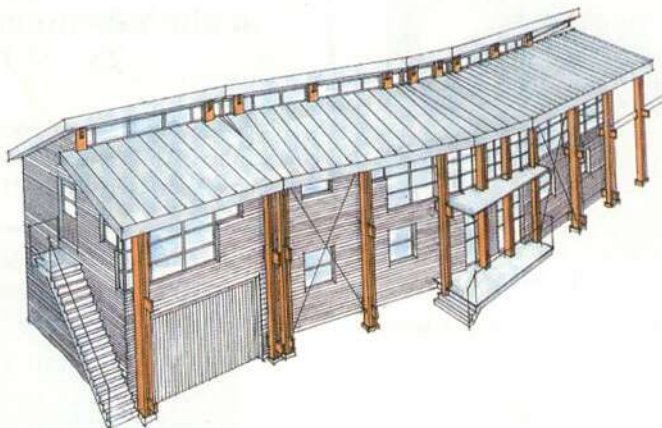
view **POINT**

WARM IN THE WOOD

Winner of the Daily Telegraph /Individual Homes competition, architect Michael Winter's house is highly energy efficient and environmentally friendly. A combination of whitewood glulam and laminated veneer lumber/ plywood I beams form the timber frame structure which was engineered by TTL design consultancy.

The principles of energy efficient design included in the TRADA book Energy Efficient Housing - A Timber Frame Approach, first published in 1989, but just as relevant today, are exemplified in the design of this house.

Windows and living spaces are concentrated on the south side of the building with overhanging eaves and trees to prevent overheating in summer but allow light and warmth to penetrate during winter months. The 254mm deep I sections used for the walls incorporate full depth cellulose insulation which is manufactured from recycled newspaper, giving a U value for the walls of 0.20. The softwood windows are triple glazed with an argon gas barrier between the low emissivity coated glass panes.



Information on the use of composite beams such as those used in this house is contained in the TTL publication Structural Timber Composites, published in September. Design principles are included in Energy Efficient Housing - A Timber Frame Approach. Copies are available from TTL.

Floors

Vibrational

performance can be an important aspect of the acceptability and serviceability of timber floors. This aspect is not considered in design to BS 5268 Part 2; the assumption being that controlling static deflection provides sufficient control of dynamic aspects too. However, this is not always satisfactory and designs to Eurocode 5 are required to consider vibration as a serviceability limit state. The design method for taking into account dynamic parameters outlined in the ENV edition of Eurocode 5 is not appropriate for UK floors. TTL, with support from TRADA and DOE has been developing a simplified method for predicting the natural frequency of floors.

Timber frame house, Tunbridge Wells, Kent.

Architect and owner: Michael Winter
Timber engineering consultants: TRADA Technology Ltd
Construction: Christopher J Arnold
Glulam: Moelven Ltd
LVL Beams: Trus Joist MacMillan
Photograph courtesy Trus Joist MacMillan