

BRITISH ARCHITECTURAL
PROFILE summer 1998

incorporating BRITISH ARCHITECTURAL DESIGN AWARDS

RIBA Awards for Architecture 1997



South East Region: The Boundary House, Tunbridge Wells

Architect: *Michael Winter*

At 3,250 sq ft Boundary House is a large property with four bedrooms (two with en-suite bathrooms) and a spacious family bathroom. The house is orientated to maximise solar gain and natural light. Facing south, its southern elevation features large Low-E, triple-glazed, argon filled, windows, with a K value of 1.4W/m²K. In summer the trees to the south provide a natural solar shading while in winter, when the sun is lower in the sky, the sun's rays are able to penetrate through the bare branches.

The rear elevation, which faces the railway line, is of solid construction, with few windows. This reduces the impact of the passing trains, and ensures privacy.

Internally the house has an unconventional, upside-down plan: open plan kitchen, dining area, living room and studio, on the first floor, with the bedrooms and bathrooms on the ground floor. This allows the natural rise of warm air to be used to maximum effect, particularly in the full length glazed entrance void which rises to an open balcony in the living space. These rooms are planned to minimise heating requirements, with the bedrooms on the south side and service rooms such as bathrooms, the laundry and vented walk-in larder to the north. In order to minimise sound penetration of the lightweight internal walls, storage cupboards are sited between rooms.

The determination to minimise the environmental impact of the house is exemplified in the choice of a timber frame supported on deep pad foundations rather than conventional foundations, which would have threatened many of the surrounding trees. The timber frame structure was developed with the aid of TRADA. It is based on a traditional post and beam system, using glulam beams and steel bolts. The glulam structure incorporates steel rods to tie the framework together which like the steel bolts, have been used as a design feature. The exterior of the house is clad in softwood, stained black using natural stains. The house has a mechanical ventilation system, powered by two 75 W electric fans, connected to a heat exchanger and heat pump. This recycles the heat generated from solar gain and household activities. Furthermore solar panels on the roof provide hot water, backed by electric immersion heaters.

One of the building's most innovative features is the copper roof which is designed in two sections with the 22.5° north pitch elevated above the 17.5° south in order to accommodate a 600mm band of clerestory windows to enhance daylight levels. All the lighting, with the exception of the uplighters feature 200 W halogen lamps.

Regarded as one of the building's most attractive features is the extensive timber decking to the east. This is accessed from the main open plan living area and affords good views on all sides.

For Michael Winter, a working architect, a good studio is a pressing necessity for any home. Boundary House amply fulfils this requirement, affording a split-level open space created above the garage, with its own access stairs. Full height glazing to the south is continued around the west elevation, providing an abundance of natural light.

Credits

Client/Architect/Project Manager: Michael Winter

Structural Engineer (Timber frame): TRADA Technology Ltd

Structural Engineer (Foundations and tank): WSP Consulting Engineers

Electrics: DWS Electrical



insert: The house makes maximum use of solar gain and natural light
The interior is designed to minimise heating requirements