

# The Modern Timber House in the UK New Paradigms and Technologies

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A UK registered architect, Peter Wilson's work for the past two decades has focused on the use of timber in architecture and construction. During this time he has been instrumental in the development and promotion of architectural awards, design competitions, lectures, seminars, conferences, publications and built demonstration projects that highlight innovation and design excellence in the use of timber. Prior to his current position as director of Timber Design Initiatives Ltd, he headed the Wood Studio research centre within Edinburgh Napier University's Institute for Sustainable Construction, in which capacity he led a major EU-funded



As with its neighbour, Taigh na Coille appears to hover on an understructure of sturdy green oak posts connected to concrete pads that are set on the rocks so as to cause as little disturbance to the natural landscape as possible. The master bedroom and the living area have their own external timber decks, with stairs down to the rocks below. Overall, this is an architecture of understatement: deferential to its context, its construction providing a robust barrier to the extremes of weather regularly encountered in Scotland's rugged north-west: a quintessentially modern green timber house in which structural form has very definitely followed function.

**Caretaker's House,  
Hooke Park, Dorset (2012)**  
Invisible Studio with AA  
Intermediate Unit 2  
Photographer: Valerie Bennett

Six hundred miles south, the exploration of the contemporary potential of green timber construction could not be carried out more differently. The 350 acre (142 hectares) working forest at Hooke Park near Beaminster in Dorset being home to a hotbed of research and development undertaken by students of the Architectural Association (AA), the owner and operator of the estate. The Hooke Park campus represents a 30-year history of experimental timber construction and rural architecture, with the past 10 years in particular seeing the emergence of an extraordinary range of green timber buildings within the forest that have been designed and constructed by Masters degree students using advanced computing methods and robot fabrication technology. In 2009-10, the school's Intermediate Unit 2 produced a schematic design for a caretaker's house on the site, a project that the AA subsequently commissioned Pier's Taylor's Invisible Studio to develop into a prototypical low-cost exemplar building using only timber grown and felled within the forest and in its green state. The **Caretaker's House**





(2012) thus utilises unseasoned cedar, Douglas fir, larch, poplar and spruce as appropriate, with wood sources also providing fuel to heat the building and for its insulation material. The only non-timber structural elements employed in the project are the steel mini-pile foundations.

The three-bedroom house has a continuous, undulating roof supported on a primary structure of large section Douglas fir posts, its unusual sectional profile generated by, at the house's east end, the wish to gain maximum sunlight penetration into the master bedroom and, at its western end, a first floor living space designed to provide a high-level observation position from which the extent of the campus can be surveyed. The bedroom block is separated from the house's living areas by what the architect describes as a 'dog trot'—a term common throughout the Southeastern United States during the 19<sup>th</sup> and early 20<sup>th</sup> centuries for a covered passageway between two parts of a building and which, when the sliding, timber-clad door on the north face of the Caretaker's House is open, frames the views into the forest.

The plan of the Caretaker's House is organised according to cardinal points: its 'heavy' north wall containing few openings and its 150m deep softwood studs packed with Pavatex wood fibre insulation material, while the south faces of the bedrooms and living areas open to a verandah that runs the length of the building to provide an extension to the living space. Internally the house is lined throughout with fair-faced plywood sheets.

Perhaps the most obviously experimental and visually apparent feature of the house is found in the design and fabrication of its external cladding. Specified to be of either Douglas fir or larch, the rough-sawn boards employed, in the sections of the building that either recess (e.g. in the 'dog-trot') or rise at angles where the roof steps up, are cut from wide boards so as to taper to quite narrow dimensions at their other end. As installed, narrow horizontal cladding boards on the walls meet the narrow end of tapered planks that, broader at their other end, fan upwards to adjoin a plane of wide horizontal cladding boards. Creating a precision-cut geometrical tour-de-force of this sort with unseasoned timber is something of a triumph, delivering to the house an illusory optical effect of perspectival depth.

The Caretaker's House is undoubtedly unusual in that its conception and low-budget realisation have been undertaken within an ongoing research and development programme that not only explores ways in which advanced design and fabrication technology can impact on green timber construction methods, but which also actively encourages experimentation and innovation intended to push the boundaries of what is conventionally termed as 'sustainable timber construction'. The lessons from Hooke Park could well open new doors for green timber construction and, whilst the Architectural Association may deliver only a relatively small cadre of specialists in advanced timber design into the architectural profession each year, these people will, in due course form their own practices and disseminate their hard-won knowledge to others.

Whilst the bulk of new timber housing is now manufactured offsite, the technology involved is unlikely to be able to answer all of the challenges inherent in the UK's current housing crisis. With its ever-increasing band of champions, green timber construction could have an important role to play in dealing with affordable housing shortages in remoter parts of the country, creating opportunities for skills training and employment in forestry, carpentry and construction and thus contributing to local economies and sustaining rural communities. Development and support for the green timber construction sector can play an important role in raising the value of the UK forest resource, with the consequent benefit, in small part, of helping to reduce the amount—and cost—of imported timber: savings that can be redirected to investment in new forest planting. Application of Circular Economy philosophy in this way may be small, but it is also incremental: maximising the use of indigenous materials, as in the Caretaker's House, demonstrates what can be achieved in new residential design when imagination, technical



Caretaker's House,  
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