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# **HOW SELF- SUFFICIENT IS HEREFORDSHIRE IN BUILDING TIMBER**

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**The sourcing** of construction materials in the United Kingdom has become an increasing concern in recent times for many people and industry as a whole, with the influx of imported produce flooding the marketplace. This not only affects the economics of an often-termed 'struggling' forestry industry, but also has large consequences on the environment and society. Local sourcing of materials is deemed sustainable practice, as it cuts down on transport costs and emissions, takes into account the resources we have within our own environment, whilst bolstering the region's economy. In the past, homes were built exclusively from local materials such as timber and stone. Much of the hazel woodlands found throughout much of southern England and also found abundantly in Herefordshire were, in the past, grown for the purpose of construction. These hazel woodlands were a much more common feature of our landscape and large areas are now left unmanaged. Plantation forestry is another landscape change over the last 50 years, with coniferous tree species being planted as a solution to the country's low timber stock after the Second World War. It is estimated that in 1999, the latest year for which figures are available, the UK consumed some 46.7 million cubic metres of timber. Of this around 15% comes from domestic sources, with the remaining 85% imported. More than 90% of the UK's imports are from temperate regions, such as Scandinavia and the Baltic States, where good progress has been made in achieving independent certification of forests [<http://www.parliament.the-stationeryoffice.co.uk>]. About 90% of timber felled from tropical regions does not actually leave the country of origin but is used for its own construction purposes.

**Construction timbers** used in house building can be classified as either softwood or hardwood. Softwood used for construction is named as either European redwood [often known as red deal] or European whitewood [white deal] and both have a working density between 450-550 kg per cubic metre. European redwood is derived from Scots Pine [*pinus sylvestris*] and is widespread throughout most of northern Europe, being the only native pine tree in Britain. European whitewood originates either from Norway Spruce [*picea abies*], Sitka Spruce [the leading planted tree in the UK] or European Silver Fir [*abies alba*] and again is a common tree species found in both the UK and throughout much of Europe. Britain is the ideal climate for growing softwoods, with suitable soils present and favourable rainfall suiting their development. Hardwoods are broadleaf tree species that are abundant throughout much of the UK and make up multiple usages in building construction from roofing beams through to veneers used in plywood used as shuttering. The largest supplier of construction timber to local builders in the region is Pontrilas Timber and Builders Merchants Ltd. In conversation they identified what timbers were ordered and from what locality it was sourced. Most of the softwood construction timber supplied by Pontrilas was spruce, with smaller amounts of Douglas Fir. 80% of this softwood comes from various localities in Wales, with 20% coming from throughout England. In hardwood only 20% originates in Wales and 80% is from England, with 60% of the total hardwood coming from the Home Counties [Herefordshire, Worcestershire, Shropshire and Gloucestershire].

**The amount** of house building in the UK is on the increase, with growing population numbers being the main reason. Development in towns and cities across the UK is not a new concept and has provided many of these places with their modern day characteristics and appearances. The downfall of such developments has been largely due to the lack of knowledge of sustainable practice and development has relied heavily on building materials from far a field taking money out of local economies, whilst often being considered as the cheaper option. The Draft Unitary Development Plan [September 2002] sets out the house building programme for Herefordshire over the next seven years. 'The central principle of the UDP requires the Plan to contribute to the achievement of sustainable development' [UDP, 2002]. Two of the criteria set out in the UDP for sustainable development is the prudent use of resources and the effective protection of the environment. The majority of resources are in fact taken from outside the County and it is questionable if housing development should be considered to be protecting the environment in any shape or form. The plan sets out that 3,607 new homes will be created between 2001-2006, and then a further 3,100 homes being built between 2006-2011. This gives an amount of 721 homes being built on average

per year in the first five years, then 620 homes average being built per year for up to the year 2011.

**It is difficult** to ascertain which people will be living in these new developments, but there is concern as demographic data suggest that there is a significant inward migration into Herefordshire by older people and professionals, who are able to offer prices for property beyond the means of younger local people. The outward migration of young people may be associated with limited higher educational opportunities in the County and low wages. There is a concern as the skills of young people are of high importance and the skilled labour they are able to offer to the local community will become lost. As an example, the management of Herefordshire's woodlands will suffer as the knowledge supplied by local people and what constitutes best practice in the interest of the local community will demise. This is a problem and needs confronting as the long term affects may prove catastrophic as the labour skills will be in shortage and information passed down in the traditional form 'from father to son' will be a thing of the past.

**Housing can** be classified into different types suiting a wide range of people from different backgrounds. In conversations with Herefordshire Council and Marches Housing Association it was identified that new housing development in Herefordshire would focus on social housing. Herefordshire Council also identified the four major housing associations or public house providers to be involved and these included:

Marches Housing Association, Leominster.

Elgar Housing Association, Bromyard.

Bromford Housing Group, Wellington, Shropshire.

St. John Kemble Hereford Housing Association, Hereford.

**All these housing** associations were approached and asked who would be carrying out the construction work on the new social housing development. The organisations confirmed that various local builders would be carrying out the work over the time period. Work carried out for Marches Housing Association who already owns some 2,600 properties in the region will use the Leominster based company J Harper & Son. Of course this addresses social housing in the County, but there will be other forms of housing that will/would need further assessment to provide a more accurate amount of timber required for housing building, particularly in the less urban environment. Self-build tends to be more prevalent in less urban areas, and in areas where the market for speculative house building is relatively small [<http://www.jrf.org.uk>].

**Herefordshire** has a residential population of 166,000, which is projected to rise to 190,000 by the year 2021 [<http://www.projectcarrot.org>]. Land use within the County is dominated by agriculture and out of the total area of the county [216,200ha] about 180,000ha is farmland [Centre for Rural Research, 2000]. 17,785ha of the county is woodland with a cover of 8.2% [Herefordshire Habitat Plan, 2003]. The amount of woodland is close to England's average of 8%, but exceeds the regional average of 6.6%, whilst being below the UK average of 12% [<http://www.forestry.gov.uk>]. This is shown in Table 1, with the breakdown of woodland types. 12,519ha of ancient woodland [woodland in existence since 1600], is found in the county, and 6,375ha of this are considered Ancient semi-natural woodland. The remaining 6,144ha of ancient woodland are plantations on ancient woodland sites. Some 5266ha of woodland that makes up 2.4% of the overall 8.2% woodland cover is classified as 'other woodland', which may be areas unmanaged or more insignificant stands. 5.8% of the total woodland cover in Herefordshire is ancient woodland and makes up 32.4% of the total in proportion to the regional total. Table 3 shows the breakdown of woodland types in Herefordshire per natural area and clearly shows that broad-leaved woodlands are almost four times more abundant than mixed and conifer woodlands. Some woodlands in Herefordshire particularly in privately owned sites, are not managed at all, and have not been for some considerable time. There also needs to be some consideration of the amount of orchards located in the county. Commercial orchards in Herefordshire occupy a total of 2266ha and in 1997 there was a further 407ha of noncommercial orchards in the old joint county of Hereford

& Worcester [MAFF, 2000].

**The Timber Research and Development Association [TRADA]** is an internationally recognised centre of excellence serving the timber and woodworking industries. They supplied information on the amount of timber required as an average in new house development. They revealed an average amount of timber used for modern social housing requirements was 10.1m<sup>3</sup> per timber framed house and 5.7m<sup>3</sup> for standard block and brickwork designs. An average house of this type will contain around 80% softwood and about 20% hardwood. The 80% figure is produced as most of the framework, roof trusses and stud partitioning is produced from softwood timbers. As data regarding the house type was unavailable in my research I supplied timber amounts in Tables 3 and 4 to demonstrate the timber requirements for each housing type.

**TABLE 1. Woodland composition and cover in Herefordshire in a regional context.**

Woodland Type	Herefordshire Area [ha]	Herefordshire land cover [%]	West Midlands Region Area [ha]	West Midlands land cover [%]	Herefordshire Proportion of Reg. Total [%]
Total Woodland	17,785	8.2	86,100	6.6	20.7
Ancient Woodland	12,519	5.8	38,633	3.0	32.4
Ancient Semi-natural Woodland	6,375	3.0	20,515	1.6	31.1
Plantation on Ancient Woodland site	6,144	2.8	18,118	1.4	33.9
Other Woodland	5,266	2.4	47,467	3.6	11.1

**TABLE 2. A breakdown of woodland types that feature in Herefordshire**

Ancient origin + 1600	12,520 ha [6,140 ha modified with plantations]
Non ancient or unclassified woodland	5,270

**TABLE 3. Woodland type per Natural Area [ha]**

Natural Area	Broadleaved Woodlands	Mixed Woodlands	Coniferous Woodlands	Wet Woodlands	Total
Herefordshire	378	193	36	3	610

**TABLE 4. Showing timber quantities for typical timber framed housing in Herefordshire.**

Year	Number of Homes	Total timber required m <sup>3</sup>	Softwood required m <sup>3</sup>	Hardwood required m <sup>3</sup>
2001-2006	3,607	36,430.7	29,144.56	7,286.14
2006-2011	3,100	31,310	25,048	6,262
	Total m <sup>3</sup>	67,740.7	54,192.56	13,548.14

**TABLE 5. Showing timber quantities for typical brick and block housing in Herefordshire.**

Year	Number of Homes	Total timber required m <sup>3</sup>	Softwood required m <sup>3</sup>	Hardwood required m <sup>3</sup>
2001-2006	3,607	20,559.9	16,447.92	4,111.98
2006-2011	3,100	17,670	14,136	3,534
	Total m <sup>3</sup>	38,229.9	30,583.92	7,645.98