



# Sustainability

The **Wood Window** Alliance



**WOOD. AT THE HEART  
OF A GOOD WINDOW**



Sustainability isn't just a single issue.

It covers the impacts on social well-being and economic prosperity, as well as the planet's resources: the so-called triple bottom line.

The wood window industry can make a significant contribution to sustainable construction:

1. Wood is naturally renewable
2. It is independently certified to be sourced from sustainably managed forests
3. New wood windows save energy
4. They last longer
5. They add to our quality of life
6. They have fewer environmental impacts than other materials.

## Climate change

- Wood has the lowest embodied energy of any mainstream building material, including those that are recycled
- Wood's natural ability to sequester carbon offers a more sustainable alternative to materials such as steel, plastic or aluminium, many of which require large amounts of energy to produce. On average every cubic metre of wood used instead of other construction materials saves 0.75 to 1.1 tonne carbon dioxide (CO<sub>2</sub>)<sup>1</sup>
- CO<sub>2</sub> and other environmental impacts are low and result in wood windows having high environmental ratings in measurement systems such as the BRE Green Guide and LCA data.

## Sustainable forestry

- Wood products play an important part in maximising the carbon sink effect of the forest
- As trees grow they soak up CO<sub>2</sub> from the atmosphere at the rate of one tonne of CO<sub>2</sub> for every cubic metre's growth, storing it as carbon in the wood, releasing the oxygen we breathe<sup>2</sup>

- Harvesting mature trees is part of sustainable forest management. Trees sequester CO<sub>2</sub> from the atmosphere most efficiently while they are growing. When they reach maturity, typically after 80 – 100 years for a softwood tree, their CO<sub>2</sub> uptake slows and they begin to die and decay, releasing methane into the atmosphere. To improve the carbon sink effect, forests are managed, so that mature trees are harvested to make way for vigorous new trees
- When trees are harvested, the greater part of their stored carbon is transferred to the wood product, while the carbon store of the forest continues to grow thanks to sustainable forest management. Thus the combination of the growing carbon store of the forests and the wood products has a double benefit, which is why wood products are often described as better than carbon neutral
- The product carbon store can be extended through re-use and recycling
- Further CO<sub>2</sub> gains can be made by recovering the energy from the wood at the end of its life as a biomass fuel. The EU Landfill Directive will lead to greater use of energy recovery from waste wood.

Material	Climate change indication (BRE GG rating)	Overall rating
Softwood	A+	A+ (water based paint)
Hardwood	A+	A+
PVC-U	D	A
Aluminium	D	B
Steel	D	B
Aluminium/timber composite	D	E/F

<sup>1</sup> IIED, Using Wood Products to Mitigate Climate Change, 2004

<sup>2</sup> ECCM



To qualify for the Wood Window Alliance quality landmark, windows must be made using timber that is independently certified as legal and sustainable by one of the schemes recognised by CPET:

- FSC (Forest Stewardship Council)
- PEFC (Programme for the Endorsement of Forest Certification)
- SFI (Sustainable Forestry Initiative)
- CSA (Canadian Standards Association)

## Deforestation

- Tropical deforestation is a major contributor to CO<sub>2</sub> emissions and global warming. However timber from tropical forests is rarely, if ever, used by UK wood window manufacturers. They use timber from European forests that are currently growing at a rate of 661,000 ha every year<sup>3</sup> – that is an area equivalent to three football pitches every hour of the night and day.

## Sustainable wood

- Wood is a renewable material, stores carbon during the life of the product and, when sourced from managed forests, provides a carbon neutral biomass fuel at the end of its life
- Modern wood processing methods generally make use of this biomass energy when converting logs into timber sections and kiln-drying.

## Environmental impacts of wood windows

- Wood windows score well in all Life Cycle Assessment (LCA) studies and are rated A+ / A overall in the Building Research Establishment (BRE) Green Guide
- BRE's Climate Change indicator rates wood windows A+/A compared to D for all other window material

- The Wood Window Alliance requires all members to have responsible sourcing via 3rd party chain-of-custody certification
- Wood windows assist in the energy-efficiency of buildings and can be manufactured across a range of U-values or window energy ratings, many of which exceed current building regulation requirements
- Planned maintenance prolongs the life of the window and its carbon store effect, reducing the impacts caused by new replacements
- At end-of-life, wood windows should be used as a biomass fuel.

## The Code for Sustainable Homes

Wood products can make a significant contribution to the credits required to meet the different levels of The Code for Sustainable Homes. This is because of good Green Guide ratings and responsible sourcing policies. The code is significant because:

- It replaces the EcoHomes scheme, developed by the BRE
- It sets minimum standards for energy and water use within England, encouraging the use of more sustainable materials and the development of more sustainable housing
- It provides homebuyers with information about the environmental impact and running costs of their new home, and builders with evidence of meeting sustainability targets
- From May 2008 the Code became mandatory for all housing developments, whether private or public sector. In effect this means that new homes that have not been assessed receive a nil rating
- Level 3 is mandatory for developments and Government funding through the Housing Corporation or on land held by the Government or Government agencies, like English Partnerships and the Olympics Development Agency
- Level 6 is deliberately ambitious and represents the 'zero carbon house' that the Government is to make mandatory by 2016. The thermal requirements of the Building Regulations are being made progressively more demanding towards this target.

Download the code: [www.planningportal.gov.uk](http://www.planningportal.gov.uk)

*3* FAO, *State of the World's Forests, 2007*