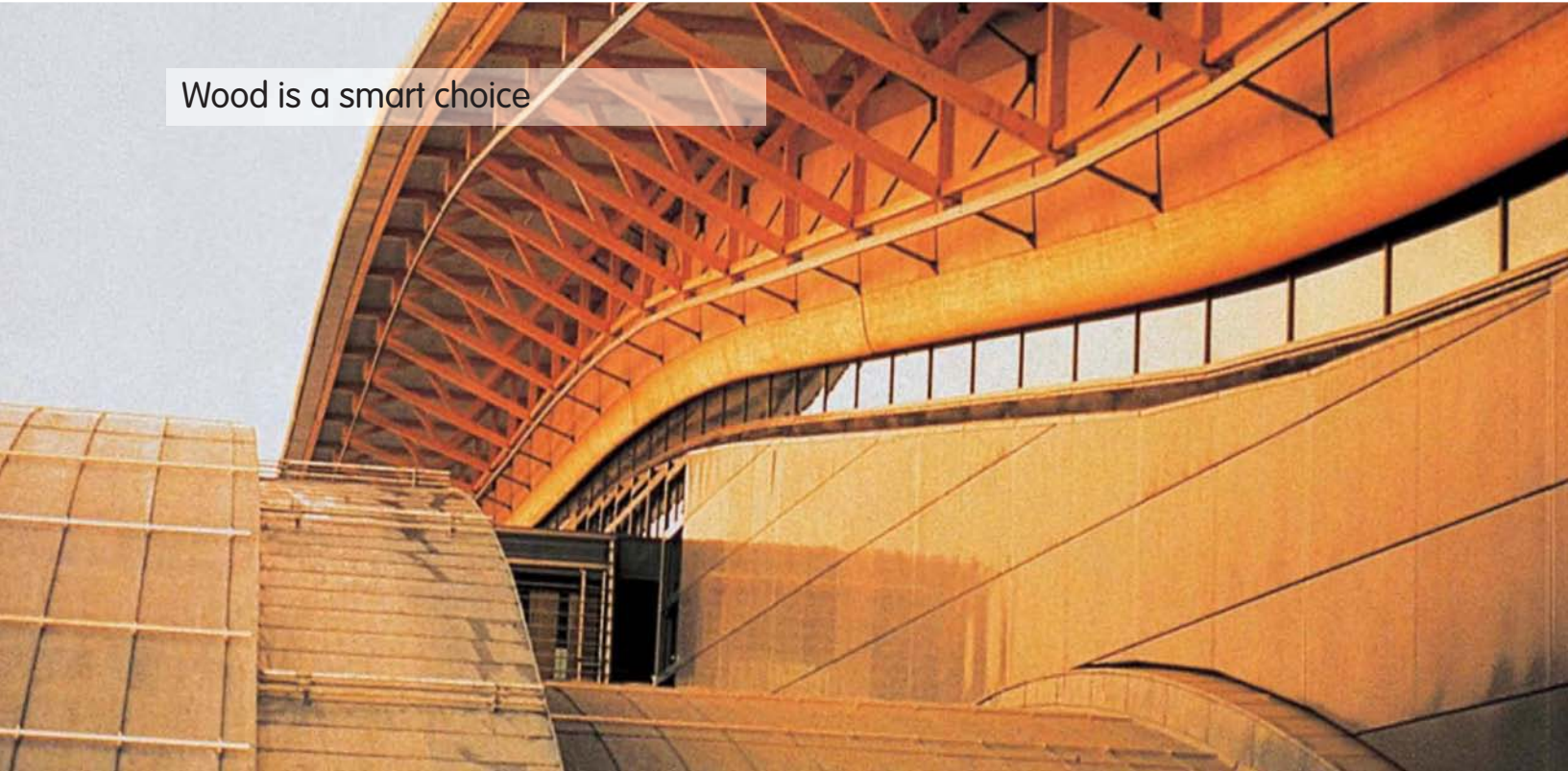


Wood is a smart choice



8 Mitigation: Using timber as a renewable, low energy material

Wood products are unique. They come from a natural, renewable resource, which can be sustainable if managed properly. The carbon they contain remains stored for the duration of the product's lifetime, until it decays or is burned. The longer the wood product is used, the longer the period of time the carbon is stored.

A global increase in the use of industrial wood products would help reduce the amount of carbon dioxide in the atmosphere, as long as the woodlands from which they come are sustainably managed.

When it comes to constructing homes and buildings, wood has the lowest energy consumption and carbon footprint of any commonly used building material. Use of wood in buildings also helps to save energy over the life of that building,

as the cellular structure of wood makes it an excellent thermal insulator. It is:

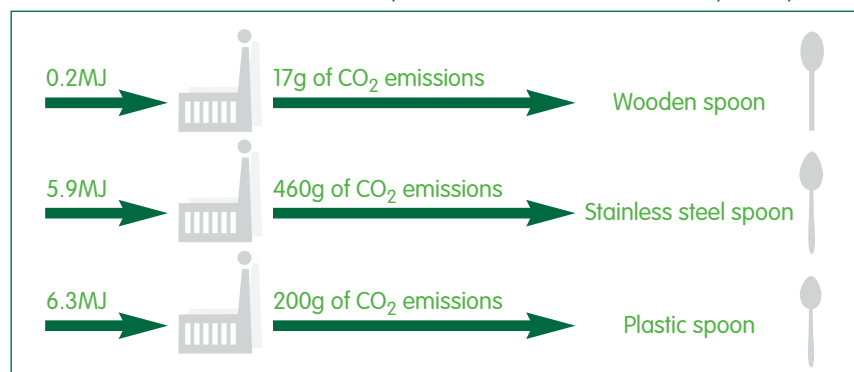
- 15 times better than concrete
- 400 times better than steel
- 1770 times better than aluminium

Facts and figures

Every cubic metre of wood that is used as a substitute for building materials saves carbon dioxide:

- Between 0.7 and 2.5 tonnes of carbon dioxide are saved because of the lower energy consumption involved in manufacture, compared with materials like concrete or brick.
- Around 0.8 tonnes of carbon dioxide is stored as carbon in the wood.
- There is currently around 80 million tonnes of carbon stored in wood products outside forests in the UK.

It isn't just wooden housing that can help us mitigate climate change – there are many everyday products for which we can substitute wood for other materials. This picture gives an example of the differences in carbon dioxide emissions for production of a wooden, steel and a plastic spoon.*



*Based on current technologies and energy inputs.

Wood products extend the period that the carbon dioxide captured by trees is kept out of the atmosphere. Increased use of wood products can encourage the expansion of forests, and as long as they are well managed, more carbon dioxide is captured from the atmosphere through new growth.

If the wood construction products sector continues to grow as it has for the past ten years there is the potential to store an additional 10 million tonnes of carbon in the UK's new and refurbished homes over the next ten years.

The benefits of using more wood products

- Wood stores carbon
- Wood products require less energy to manufacture than equivalent materials like steel
- Wood is a good thermal insulator, saving energy and money through running costs
- Wood is a beautiful material
- Wood is a long-lasting material
- Very little waste is generated through the manufacture of timber and wood products
- Any waste material can be burnt as a fuel in place of fossil fuels
- Using wood products can encourage the expansion of forests

Of course, not all products that are currently made from plastics or concrete can be made from wood. However, using wood where possible and where appropriate, can provide a valuable and aesthetically beautiful part of the solution to mitigating climate change.



Frequently asked questions

But what about the durability of wood – buildings made of wood won't last very long will they?

Building with wood has a long history. In Norway churches built from wood in the 12th and 13th centuries are still standing. In Japan there is even a temple still standing which was built in the 7th century.

Today the average service life of a wooden house is between 80–100 years, with some builders guaranteeing a lifetime of 125 years.

Doesn't using wood in buildings create a fire hazard?

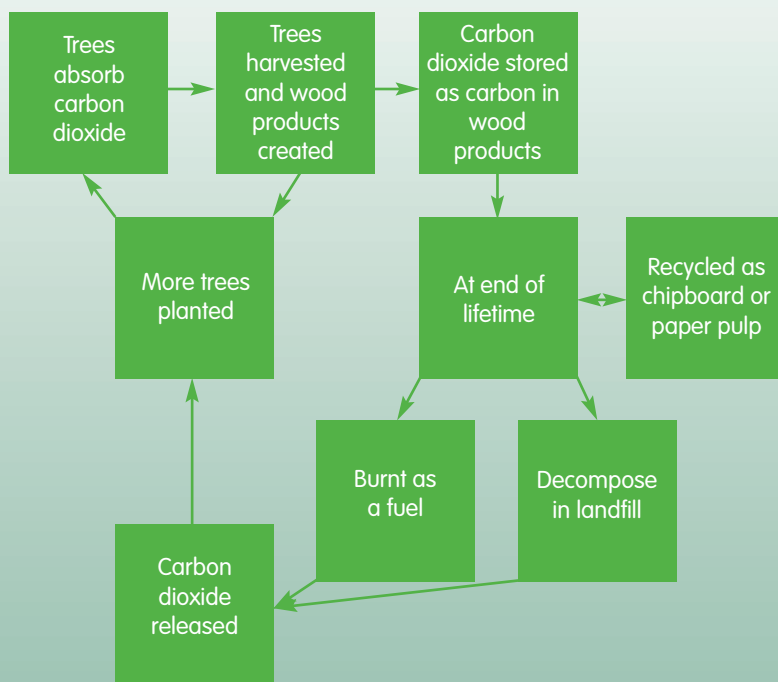
The technology for timber frame buildings has been developed extensively over the last ten years. New fire retardant treatments that last for the life of the building make modern timber buildings fire-safe.

But surely wood products can't go on storing carbon indefinitely?

Wood products increase the amount of time for which carbon is stored. At the end of its lifetime, it is likely that a wood product will either: (a) decay, (b) go into landfill, (c) be recycled e.g. to produce chipboard or pulp for paper, or (d) be burned.

This is where it is important that the wood used in building and in products, comes from a sustainably managed woodland, so that more trees are planted, which can absorb carbon dioxide, to replace those that have been harvested to create the wood product.

If a wood product is burned for fuel at the end of its lifetime, then it reduces the need to burn fossil fuels.



Summary

- Wood products store carbon for the duration of their lifetime.
- As long as the trees come from a well-managed forest, new growth absorbs more carbon dioxide from the atmosphere.
- Less energy and thus less fossil fuels are required in wood product manufacture than equivalent materials.
- Not all products can be made from wood, but a global increase in wood products would help to decrease the amount of carbon dioxide in the atmosphere.