

## TALKING TIMBER



### VISIBLE AND INVISIBLE WOOD

*The invisible wood all around us, in our built environment, is contributing to the climate agenda in several ways, says **Dr Morwenna Spear** of the BioComposites Centre*



A host of publications were released in the run up to COP24 in Katowice, Poland in December. One of the most interesting to our industry was the Committee on Climate Change's (CCC) report, "Biomass in a low-carbon economy".

There are several reasons why we should be paying good attention to this. One is the obvious mention of biomass, and the ongoing pressures faced by some parts of our industry

by competition for roundwood in a market that is hungry for bioenergy. Another is the implications of higher demand for biomass on our forests and possible change in land use. But the main, and (in my opinion) most exciting reason is this: the reports makes it clear that wood is needed for construction, currently and in coming decades.

So where is all this wood in construction? We frequently see updates on the newest, tallest CLT structures. We revel in structures featuring glulam, LVL and timber frames in innovative forms. We also see plenty of exciting designs in the Wood Awards – structures prominently clad in timber, or with beautiful exposed interior wood to enhance occupant well-being, and meet demand for biophilic elements. This is excellent progress – and every year brings exciting new concepts. But I would also argue that we are surrounded by far more wood than we realise. The invisible wood.

Just look at all the new build housing that is called for to tackle our housing crisis. Behind the brick facings on many of these buildings there is a timber framed interior. The STA reported a 28.1% timber framed share of housing starts in 2016. The Construction Sector Deal suggests that in future we should be making ever greater use of modern methods of construction (MMCs) such as timber frame, to offer the speed and accuracy needed to deliver high performance homes on a large scale.

Another possibility is structurally insulated panels – SIPs. With two skins of OSB in each structural panel for walls and roofs, this emerging sector is a very relevant but invisible wood user. SIPs are frequently chosen for the ease of delivering low U-values and high air-tightness to meet current building regulations, or to build in the Passivhaus system. Achieving this level of energy efficiency very clearly helps to reduce greenhouse gas emissions.

Finally there are the masonry houses. We have been confidently using timber for roofing and floor elements for decades. So in profiling the national usage of timber in housebuilding, the brick and block systems cannot be

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overlooked. A recent study by the BioComposites Centre compared timber usage in open panel timber framed houses and masonry houses of matched footprints, and showed the structural timber elements to be approximately two-thirds of the quantity in a timber framed house. Of course, you can then add joinery timbers, fitted kitchens, and hopefully timber exterior doors and window frames to both house types...

Why mention this now? Well, the timber framed houses in the study also had lower embodied carbon emissions than the masonry houses. Additionally, this reduction of emissions relating to the construction materials in our new buildings, ie the embodied carbon, is likely to become more significant in meeting climate change targets. Finally, the timber content also serves as a pool of stored biogenic carbon over the length of the service life.

In summary, the invisible wood all around us, in our built environment, is contributing to the climate agenda in several ways. Perhaps this is the reason it features so strongly in the CCC's report. A report that our industry needs to pay good attention to. ■

*Below: It all adds up – timber framed panels locking up sequestered carbon*



**The Wood Technology Society**

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