

Timber and Sustainable Building – March 2013

There seems to be little slowing down of our thirst for all things wood in the UK construction industry. If the figures from the Office for National Statistics are to be believed we imported over £0.6bn of sawnwood in to the UK in 2012; consistent with the previous 4 years (but lower than the 2007 high of £0.9bn). Quantities for engineered timber (glulam, CLT, LVL) are not given by the Office for National Statistics but ask around and the word most commonly heard is growing demand.

The 'Wunderkind' of the industry, cross laminated timber, seems to be bucking all trends with production growth of 25%. Industry figures estimate that nearly half a million cubic metres were produced in 2012 and by 2015 capacity could double. The UK market is still small at 25,000m³ but it is projected to grow at a similar rate. The success of CLT lies in its simplicity and robustness and the fact that it is a system from which you can build a 10,000m² weather tight building structure in 16 weeks.

So where does this appetite for wood come from? As one of the least densely wooded EU countries it is probably not surprising that the UK was first to go tall with timber, the lack of timber culture means we are free of the constraints of precedent, a culture shared with Australia who have recently stolen the tall in timber crown from the UK (actually from Italy who held it for a short time). But the wooded nations are fighting back with exciting proposals; Canada with Michael Green's 30 storey tower, Austria with the Life Cycle Tower and Timber in Town, Finland with Wood City, Italy with Via Cenni and Sweden with the Byggsstem in Stockholm. Surely 2013 will see the tall timber crown on the move?

Despite being one of the world's largest importers of timber the UK could do more with wood, both with its own and with other people's wood. We have not yet reached saturation point, we use significantly less timber per capita than Germany and compared to the Finns our use is just one quarter of theirs on a per capita basis. At the same time we are also in the midst of a bumper wood harvest in the UK, the results of significant afforestation in the UK between 1950 and 1980. Interestingly it is being left to our Universities (Edinburgh and UEA) to come up with the research and test data to stimulate new uses for UK grown timber such as CLT and Brettstapel. Couple all this with the fact that the UN predicts the UK will have more citizens than Germany by 2060 and surely the only way for wood is up (quite literally).

So where could this increased use in wood come from? The residential, sports and education sectors have historically hoovered up much of our structural timber but we are now starting to see health and retail building schemes emerge as well as offices (perhaps Google will sign up to a timber structure for their new HQ in London's re-modelled Kings Cross). Many of these timber opportunities are larger scale buildings in urban environments where densities are being squeezed and the need to build taller is called for. It is maybe not just in the structure that timber will be used; interestingly a timber clad building could play a role in reducing the urban heat island effect, replacing thermally

massive cladding materials such as brick and concrete which can contribute to increased summer temperatures in our cities.

Such an increase in our timber consumption will require a re-think about efficient manufacture, design and end of life. If timber is to steal market share from steel and concrete at the same time as the demand for construction materials is predicted to double in 40 years (read Dr Julian Allwood's recent paper presented to the Royal Society); then we can't just rely on Europe's expanding forest stock to carry on business as usual. Whilst CLT presses so many buttons, delivering robust flat pack buildings in super quick time, some argue that the intensity of timber use is wasteful. It might lock up CO2 in buildings more efficiently than any Government backed carbon capture and storage scheme but surely it would be better to use the same volume of wood to deliver twice the number of buildings, hopefully displacing energy intensive steel or concrete structures.

We should not forget the opportunity that increasing environmental regulation will bring the timber industry. The introduction of the 'Sustainable use of natural resources' to CE marking (part of the Construction Products Regulations) and the establishment of environmental product declarations need to be seized by the timber supply chain. The leadership shown by Hackney's Wood First policy review is driven by environmental concerns and will no doubt see them increase their lead in the race to bring wood in to the bustling city.

With modern engineered timbers such as CLT, glulam and LVL we can now say that wood has truly arrived in the urban environment and the corporate jungle. It would be easy to use wood to replicate the pattern of steel and concrete monoliths and squeeze out a respectable market share, however, perhaps the real scoop would be a new wood architecture driven by the advances in timber processing, manufacture and sustainable design. Advances in materials driving a new architecture movement has been seen before; concrete and brutalism in the 1950's and steel and high-tech in the 1970's...what can wood do?