



ANDREW POGUE



CONCRETE AND STEEL, the building blocks of conventional modern architecture, may be tried and tested, but they belong to an era untroubled by climate change. The manufacture of concrete, for example, was responsible for eight per cent of global CO2 emissions, according to a study by Chatham House reported in Architects Journal, while production of steel is one of the most energy-consuming and CO2-emitting industrial activities on the planet.

Wood, on the other hand, is a limitless, renewable resource that literally grows on trees, and stores rather than produces greenhouse gases. Natural timber, however, while a beautiful surface finish, has major limitations for structural building – its weight, sensitivity to moisture and, of course, the average size of a tree, means the concept of building a skyscraper out of natural beams would be laughable from an engineering point of view.

Not so with mass timber – engineered products such as CLT (cross-laminated timber) and glulam (glued-laminated timber)

are proving to be the material of choice for architects around the world, and the buildings are becoming bigger and taller by the month. Anthony Thistleton is a partner at Waugh Thistleton Architects, which specialises in modern timber buildings: He says: ‘For the past 10 years Britain has been a global leader in the adoption of CLT. We build in the most suitable material for each job, but most of the time that is CLT because of the imminent climate breakdown and the need to be truly sustainable. We have been able to demonstrate that building using CLT is faster and cheaper. You can create amazing spaces and beautiful natural interiors, and we are only at the early stages of understanding the possibilities.’

Part of the reason why the UK was able to forge ahead with CLT was the nature of our regulatory environment, explains Thistleton: ‘UK building regulations are unique in that they are not prescriptive. They don’t limit anything, but place the burden of evidence on designers to prove they are complying with the basic tenet of the regulations. That’s what

Above left and right Carbon12 – an eight-storey, 26m-high residential tower in Portland, made from CLT and glulam with metal cladding and a steel core – was completed in 2018 and is currently the tallest mass timber building in the US. *Architect:* Path Architecture. *Structural Engineer:* Munzing. *Construction:* Kaiser Group. *Engineered wood:* Structurlam

Right Dalston Works, a 33.8m-tall, 10-storey mixed-use project in London, was completed in 2017 and was highly commended in the Architects Journal Sustainability Prize 2017. Its structure and core are CLT, with brick external cladding. *Architect:* Waugh Thistleton Architects. *Client/contractor:* Regal Homes. *Construction cost:* £24m. *Structural engineers:* Ramboll / PJCE. *CLT:* Binderholz, installed by B&K Structures



DANIEL SHEARING

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allowed us to build Murray Grove, the first tall timber building. Most other building codes have had limits on the height of timber buildings because of the limits of the technology at the time. The rest of the world has seen what’s happened here and has amended building regulations to allow building in this manner with engineered timber.’

But while governments around the world have been changing building codes to allow greater use of mass timber, the UK has done the opposite, with new restrictions following the tragic Grenfell Tower fire banning all combustible products on the exterior of buildings taller than 18m, regardless of their proven risk. ‘Having been a global leader in the world of CLT, this will push back the UK’s lead as innovators,’ warns Thistleton. Indeed, the government’s impact assessment of the policy noted: ‘It is likely to slow down the use of engineered timber in future development.’

Kristin Slavin is an architect at Path Architecture, Kaiser Group, which has recently completed an eight-storey residential tower in >