

## Last word

David Evison

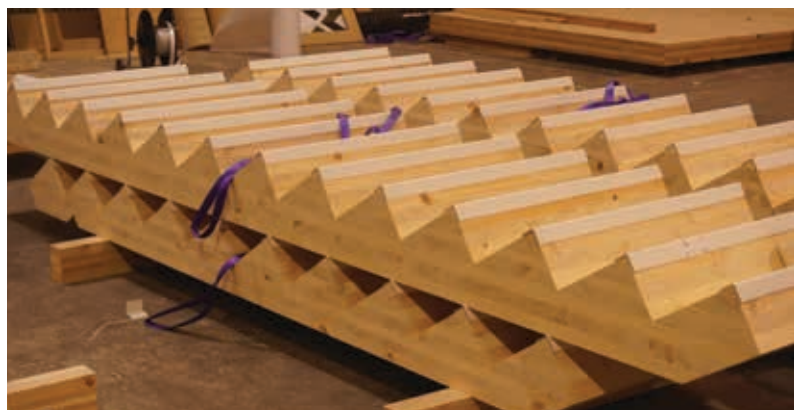
As I write this column I am looking forward to the New Zealand Institute of Forestry (NZIF) annual conference in Nelson. The field trip will feature the use of engineered New Zealand radiata pine products for multi-storey construction. Nelson is well-positioned to demonstrate the potential of these products. It is a very good story, and an instructive case study for the New Zealand forestry sector, with its aspirations to add value to the wonderful resource that we have the privilege and responsibility to manage. Nelson is well-positioned to demonstrate the potential of these products, as at the new airport terminal under construction, see front cover photo.

Like a number of successful examples of value added, this one has a strong element of design. It also takes advantage of some of the best features of radiata pine, including its machinability. Building elements (beams, columns and such like) built out of wood can be designed and manufactured with much finer tolerances than the equivalent elements in steel or reinforced concrete. A wooden element is much lighter than reinforced concrete and much better in fire conditions than steel. And a wooden building is a composite – it will always have concrete and steel in it too, to take advantage of the best features of each of these materials. There is also room for innovation, e.g. stairways for multi-storey buildings made out of cross-laminated timber (CLT) panels.

Wooden buildings also put some pressure on the areas where radiata pine is less fit for purpose – strength and particularly stiffness. The tree breeders and silviculturalists can help to make the timber stiffer and stronger and that will translate through into a wider range of building elements for architects and engineers to choose from. Right now beams and columns might be larger than desirable from an aesthetic point of view, to compensate for the lower stiffness of the available resource.

There are other benefits of using wood for construction. A wooden building has environmental benefits that are real, but we understand these benefits may not determine the choice of which material to use for a building. Wood has benefits that people may not be keen to pay for (does that sound familiar to forest owners?), like low embodied energy and an impressive carbon footprint. Some benefits are harder to even define – people feel good about being in a wooden building, occupants and visitors like the look and feel of a natural material, and builders like building in wood because there is less noise and dust.

Scale is also an important factor when thinking about adding value. Some work done recently by the Building Research Association of NZ (BRANZ) indicated an optimistic scenario for the use of wood in multi-storey buildings would be a 75,000 m<sup>3</sup> increase in the use of timber in New Zealand. That's the log equivalent of four or five bulk export vessels. If a commodity-focused industry wants to foster the development of value-added industries we need to have a way to manage



Stairs for multi-storey buildings made from cross-laminated timber

the different mindset associated with this significant difference in scale.

One challenge for the forestry sector is that it has reduced its level of integration across growing, processing and the market. This may make it more difficult to think and act in an integrated fashion and may also make it more difficult to target the resource to the best and most profitable end uses in the long term. However, if the sector can achieve this we will increase the value of the output of the sector and will get all the benefits this can provide. It may be no coincidence that the theme of the Nelson conference is 'The Power of Collaboration in the Forestry Industry'.

Industry clusters are an important mechanism to get value-added manufacturing established, and the Nelson region has made great progress in this area. There you have the three engineered wood industries – glulam, laminated veneer lumber (LVL) and CLT – all in one city. They are developing a very exciting cluster, which includes wood manufacturers, engineers, architects, property developers and the 'related and supporting industries' that manufacture building components like floors and the all-important steel connections that hold the wooden bits of a building together. They have also invested in the latest computer-controlled design and machining technology and are using this to prefabricate designed building components. They are developing a different supply chain to the traditional sawn timber and wood panels supply chain. These companies employ design engineers, and are involved in the design and build of multi-storey buildings end-to-end.

So bring it on – let's build as many buildings out of wood as we can. Let's become really good at it, develop a New Zealand expertise and style, and export the prefabricated components. Let's really get behind this fledgling industry and help it to grow and reach its full potential. And let's make our goal to have another six or eight new industries based on 'value add', not just one. I just bought a pair of shoes where the uppers are made from South African Eucalyptus pulp ....

