



TIMBER BUILDING

Timber Building Innovation – NZ Versus the World

Arguably the Kiwi No8 wire mentally is well and alive if one was to judge how NZ stacks up globally in both Research & Development of, and the adoption as well as adaption of International Innovative timber building construction. Even more so if considered on a scaled per capita basis.

New Zealand has a long history of timber in buildings that goes well past industry initiatives such as NZWood and STIC which enabled greater uptake of timber in commercial and industrial buildings, and the recent focus on Mass Timber Construction facilitated by innovative overseas products combined with locally manufactured Engineered Wood Products (EWP).

German born Daniel Scheibmair, in his role as NZ Engineer for Simpson Strong-Tie – a US headquartered

structural building products manufacturer and supplier – and from his previous roles, as well as Past President of the Timber Design Society and engagement in various government and industry initiatives, has accumulated not only significant knowledge across the breadth of NZ design, compliance, and construction sectors but also an appreciation of how NZ compares to the rest of the world in embracing timber as the primary structure in buildings.

He says it is hard to argue that Canada and the US haven't established themselves as the global leaders in Light Timber Frame multi-storey mid-rise construction, whereas Europe has long played a pivotal role in Mass Timber EWPs and associated fastener (screw) development. But NZ hasn't been slow to explore innovative overseas building

methodology and technology and incorporating these into locally designed and built structures.

Of course timber does present its own unique design challenges compared to other materials or when used in larger structures, and engineers must carefully consider these in their designs. By and large these buildings though, although pushing beyond the boundaries of traditional timber structures, still use the same structural design principles, but incorporate new products and systems.

For Light Timber Frame (LTF) mid-rise construction, the use of Strong-Rod Anchor Tie-Down Systems for example replaces traditional holddown connectors found at the bottom corners or brace panels. The other bracing elements like framing, sheathing (plywood), and sheathing

fixings are often very similar to those found in traditional residential design and construction.



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For Mass Timber commercial, industrial and multi-storey design and construction, the timber members become much larger to resist the induced loads and innovative larger diameter and longer length screws, as well as heavier duty connectors are used than in familiar light timber frame construction. While everything is “supersized” the general design concept remains very similar.

“Speaking of supersized”, Daniel says “it’s interesting looking at what others around the world are doing and how NZ compares”. A recent trip, ahead of attending the Mass Timber Conference in Portland Oregon, exploring building innovation in and around San Francisco with 28 other New Zealand construction influencers in architecture, construction, industry/suppliers, developers, investors, and engineering was a good reminder of the successes we should be acknowledging and sharing more back here in NZ.

The US tour site visits were broad and included off-site manufacturing, panelisation, volumetric plants, state-of-the-art supplier in-house test facilities, new start-up businesses, and those seeking to capitalize on the benefits of using aeronautical, maritime, and automotive products and systems in-lieu of traditional building products. Many of the individuals behind these businesses had a common desire to challenge status quo to deliver a better quality, cost, or time outcome to the end user. And while the US, thanks to a much greater population and hence demand, can afford to do things at scale and using technology that NZ cannot always justify, the sites visited weren’t all too dissimilar to what you can find across Aotearoa. It also gives one much greater confidence that new and innovative overseas products often have much more

rigorous in-house evaluations, third party verification, as well as in-service use history than many commodity products we readily accept as being ‘compliant’ product in use in NZ.

Several construction sites and completed buildings also formed part of the US tour. As with the manufacturing site visits, the overall building sizes often were at big scale too, but the innovative aspects and structural design considerations didn’t massively differ all that much to what one would come across in NZ. “Considering NZ’s population compared to that of the US for example”, Daniel thinks “we shouldn’t underestimate our own efforts in building more timber commercial, industrial, and mid-rise buildings. We hold our own and can comfortably be part of the global conversation around designing and constructing more innovative timber buildings”. It provides us the luxury of learning from, and with, others globally to ensure we continue to push the boundaries of timber used in structures, adopting and adapting overseas products, systems, and design standards to safely guide us on our journey.

Daniel Scheibmair – Specification Engineer

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