



# MADISON'S TIMBER PREVIEW

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Austria, Scotland and the United States are the latest countries to begin construction on taller buildings made from wood. Germany, the United Kingdom and Japan already have such buildings in use. Cross-laminated timber (CLT) is used in these buildings to enable construction companies to build structures more quickly and with a lower carbon footprint than concrete and steel.

Please see the March 11, 2011 issue of your *Madison's Lumber Reporter* for details on cross-laminated timber, and how it is made.

Innovative Timber Systems, out of Montana, hopes to bring cross-laminated timber system of building – already standard across much of Europe – to North America. In Whitefish, MT, the technique is being used on the new home of the Sawbuck DoJang martial arts school. The CLT system uses prefabricated wood pieces, laser cut to fit a specific site, for the entire structure. Last week the two-storey, 5,000-square-foot building took five days to assemble. The only other materials required are concrete for the foundation and screws that are installed with simple hand drills. The prefabricated wood walls are one solid piece, so humidity and moisture, something that can get trapped in a traditional building and create mold, can escape through the wood.

Construction on an eight storey hybrid timber office building in a small city in western Austria will begin in mid September using principles that could be applied to structurally sound buildings of up to 30 storeys. The building's vertical members will be of glulam timber, with much of the wood left exposed, both inside and outside the building. Floor slabs will be of wood on concrete and manufactured off-site. This prototype will have no load-bearing partition walls, which will allow maximum flexibility for interior layout. Core walls will be protected with fire-proof cladding to ensure the required fire rating is achieved. The floor slabs will be constructed so that the concrete in them will extend over the timber columns at each level, providing a break to prevent the vertical spread of fire.

Work has already commenced on Scotland's first ever mass-timber, mixed use, low carbon development, which will create a mix of eco-friendly apartments and commercial units. To meet its low carbon targets, the building is to be constructed from CLT imported from Austria.

Forestry Tasmania's managing director Bob Gordon, in Australia, has stated that there was huge potential to turn veneer products into cross-laminated lumber which can be used as an alternative to tilt slab concrete walls commonly used in high-rise buildings.

"In earthquake-prone areas governments are recognising the benefits of timber buildings, including high rise, which are less prone to collapse than those constructed of steel or concrete," he said to *The Mercury* August 16. "In Europe and Japan, eight to 10-storey buildings have been made from timber."

A feasibility study is under way in Australia for a laminated-veneer lumber plant to be up and running next year. Gordon expects the plant would need an investment of about \$5 million AUD but was expected to generate about \$8 million AUD a year.

Taller wood buildings are not the only use for CLT. Carbon and wood laminated boom sections for yachts and schooners have been developed by Europe's Formula Marine. The booms are constructed with a laminate of carbon core and an exterior surface of laminated wood. The final appearance is of a polished solid wood boom while being super lightweight and exceptionally strong. The company's combined cutting edge carbon technology with traditional wood design to develop the new technology.

North American companies are eager to embark on CLT production for domestic use. Lumber producers with existing glulam, engineered wood, and I-joist operations could easily step into the CLT market. In taller wood building construction, CLT tends to be used in walls and floors, and consists of wood strips stacked crosswise on top of each other. Glulam tends to be used for columns and beams.

Of US lumber producers with a glulam division, Weyerhaeuser, Bluelinx, Louisiana Pacific are publicly-traded. Alpine Engineered Products, which makes steel trusses, wood trusses, connecting plates and lumber, was bought by Illinois Tool Works in February 2006.

In Canada, Goodfellow is the only company listed on the stock exchange currently making glulam. However Tembec, with I-Joists and LVL operations, would need just a small investment to branch into that sector.

The burgeoning demand for CLT production bears watching by savvy investors. Already a very hot product in Asia, and well-established in Europe, as CLT use in taller wood framed buildings spreads to North America and around the world, demand for this specialized product will shoot up.

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