



The Smile pavilion was built for the 2016 London Design Festival to showcase the structural and spatial potential of cross-laminated hardwood | Photo source [Alison Brooks Architecture](#)

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CROSS-LAMINATED TIMBER ADDS STABILITY TO BUILDINGS AND REDUCES WASTE

  PROPERTY & CONSTRUCTION

CLT slabs are difficult to ignite in a fire, remain stable in an earthquake and allow buildings to be constructed faster

Spotted: The hottest new sustainable building material is actually an age-old building material – wood. Wood fell out of favour as a building material in the U.S., especially for constructing larger buildings, after disasters like the Chicago Fire of 1871. It was supplanted by steel and concrete construction instead. However, a method called cross-laminated timber (CLT) has been catching the eye of architects around the world.

To create CLT, lumber boards are glued together in layers, with the grain of each layer facing against the grain of the layer adjacent. The method is used to create slabs up to a foot thick, 18-foot-long and 98-foot-wide. These wood slabs can actually match or exceed the performance of concrete and steel, are very hard to ignite in a fire, remain stable in an earthquake, allow buildings to be constructed faster, and result in lower costs and less waste.

CLT was developed in the early 1990s in Austria and has been used extensively in Europe. However, it was slow to catch on in the US until recently, when CLT was incorporated into International Building Code. Since 2015, real-estate developers like Anyeley Hallová and architects like Thomas Robinson of Lever Architecture have been incorporating CLT in an increasingly wide range of projects. Hallová Lever worked together to design a 60-unit high-rise building in Portland, [Framework](#), and demonstrate the possibilities of constructing multi-story buildings out of wood.

Wood construction with CLT is also more sustainable than concrete and steel. The construction of CLT uses less carbon than concrete and steel manufacture and the wood traps some carbon—

instead of releasing it into the atmosphere. In addition, buying sustainably grown wood contributes to healthily managed forests and supports local economies. Robinson [points out that](#), “People get really excited about solar power but may not be focused on the materials the homes are made of, or the energy used while creating and transporting them.”

There is new excitement from architects around the world over the possibilities of wood construction. In addition to the practical benefits mentioned here, wood is seen to be aesthetically, and even spiritually, pleasing. This has spurred recent innovations such as a [278-foot building](#) constructed entirely of wood and a [wooden satellite](#).

Written By: Lisa Magloff

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Website: leverarchitecture.com

Contact: leverarchitecture.com/contact

Takeaway:

So, with all the advantages of CLT, why isn't everyone using it? One reason, at least in North America, is lack of familiarity. Most residences use stick-frame construction, which is cheap and popular. However, in Europe generally, the flimsy wood stick-frame construction was never popular, so CLT was quick to be accepted for use in residential construction. Development in the U.S. was also hampered by overly prescriptive building codes and limited domestic supply. But that is all starting to change. Governments in places like Oregon and Washington, home to large forestry industries, are now actively supporting CLT construction. It may one day be able to give stick-frame a run for its money.