



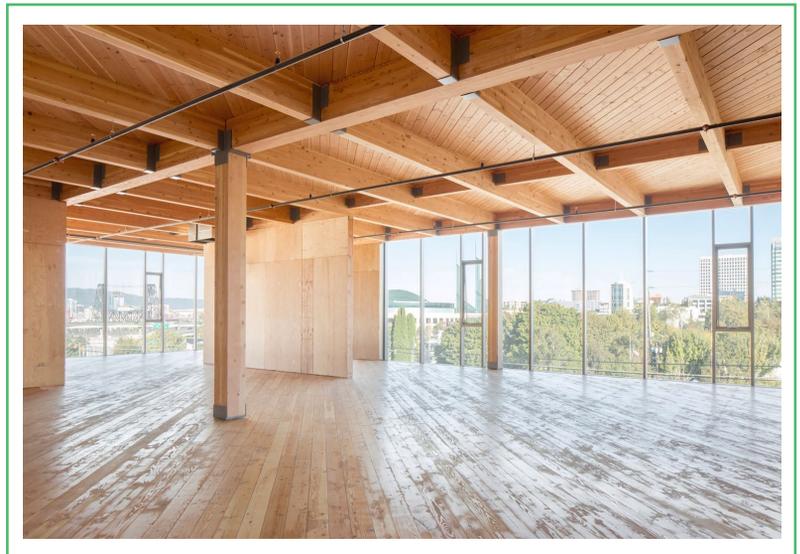
Wood Pathway: Mass Timber

There is a Mass Timber movement growing in the US and significant desire to develop a mass timber industry in California. The Office of Planning and Research held a Mass Timber Building Competition with \$500,000 in grant money for commercial and multi-family projects in California (GovOps). With four awarded projects, California is incentivizing Mass Timber for its many benefits in cost, safety, carbon footprint and aesthetics.

“Because of the added strength of mass timber compared to solid-sawn (light) timber, it can be used to bridge longer spans, support heavier loads, and accommodate a wider array of shapes and orientations. It is also less susceptible to severe fire damage than traditional light timber materials. Unlike other forms of wood construction, it is cut-to-size at an off-site location and then assembled at the construction site, expediting construction schedules and reducing on-site noise and dust.” (Woodworks)

Since its introduction to the US in 2015, mass timber has threatened the long-standing paradigm of carbon intensive building material. The GHG emissions profile of wood products drastically outperform its counterparts steel and concrete. People are calling it the Building Material of the Future (EESI). Especially when combined with California’s hallmark environmental guidance for forest management, sustainably harvest forest supply for Mass timber projects appear to the solution to address multiple problems like forest health, affordable housing and carbon capture. The Joint Institute for Wood Product Innovation had this to say regarding Mass Timber’s policy implications:

“...it seems that California may be in a position to promote smart low-cost/large-volume projects (related to affordable housing) rather than one-of-a-kind, high-profile/high-risk “unicorn projects.” Promoting smart, modular, low-cost/high-volume projects could incentivize local companies to quickly build the production volumes. Creative solutions for such smart and efficient designs appropriate for affordable housing units could be incentivized by state competitions.” (JIWPI Wood Product Literature Review)



1. Mass Timber Building Competition https://www.govops.ca.gov/2019/01/04/2019-california-mass-timber-building-competition/?utm_medium=website&utm_source=archdaily.com
2. “Wood: The Building Material of the Future?” <https://www.eesi.org/articles/view/mass-timber-a-new-tool-in-fight-against-climate-change>
3. Sanchez, D., Zimring, T., Mater, C., Harrell, K.; “Literature Review and Evaluation of Research Gaps to Support Wood Products Innovation”. Joint Institute for Wood Product Innovation Board of Forestry. 2020

There are several different types of Mass Timber. The best-known example is Cross Laminated Timber (CLT) which involves layering wood from small diameter trees or even diseased trees, to create a strong, lightweight building material.

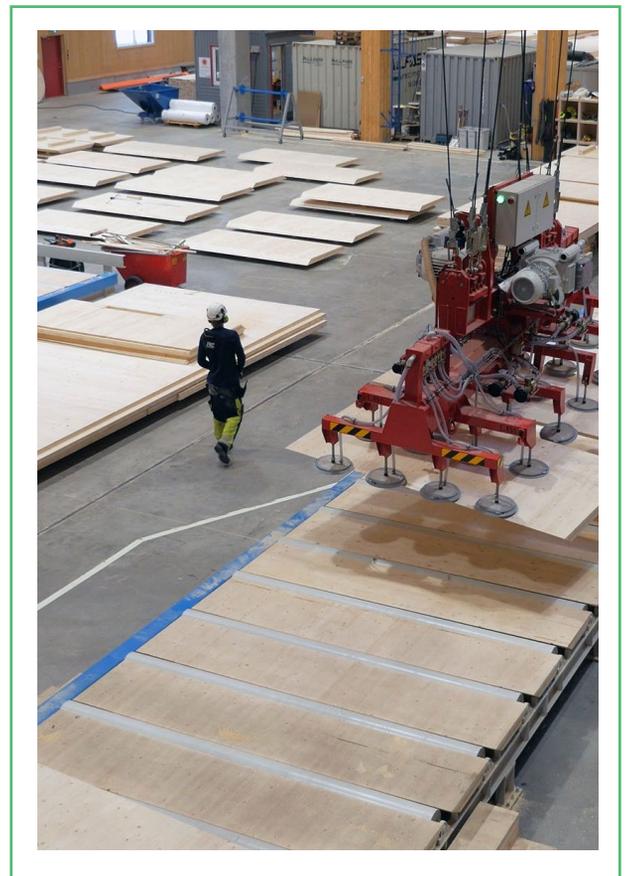
	Cross Laminated Timber (CLT)	Nail Bonded CLT	Dowel Bonded CLT
Carbon Storage	Yes (product)	Yes (product)	Yes (product)
Technology Readiness (1-9)	9	9	9
Commercial Readiness (1-9)	8	7	6
Feedstock Use	Merchantable Logs >8" DBH Min grading: #2 on faces, #3 in cores	Merchantable logs including small diameter	Merchantable logs including small diameter
International Markets	Yes	No	Maybe
Potential Market Size	Medium	Small (young industry)	Small (young industry)

Cost Efficiency and Expedited Construction

Office buildings made from wood cost 20-30 percent less per square foot than their non-wood counterparts and boast the added benefits of fire resistance, strong seismic performance, and high performing thermal and energy efficiency properties.

Additionally, because CLT is custom built off site, the construction of the buildings are quick, straightforward and has less noise and sound pollution for the surrounding community. One of the largest CLT buildings in the world is testament to the speed.

“Treet was built to Passive House standards to maximize operational energy efficiency, and although initial costs were somewhat higher than concrete or steel construction, developers were able to reduce the construction timeline with four stories erected in just three days”



1. Lupien, S. “Removing Barriers to CLT Manufacture and Adoption in California: a game-changer for wildfire, forests and climate change”. Prepared for Bob Epstein and E2 (Environmental Entrepreneurs). 2018
2. “Mass Timber: A Faster, More Affordable and More Sustainable Way to Build Housing”
https://www.woodworks.org/wp-content/uploads/wood_solution_paper-CCA_-Mass-Timber-White-Paper.pdf