



## NEWS RELEASE

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### **NHERI Project Concludes Final Tests of Mass Timber Building**

*Researchers begin compiling data from NHERI TallWood and Converging Design projects to inform future building codes*

**LYONS, Ore., Mar. 18, 2024** – Final testing of the [Natural Hazards Engineering Research Infrastructure](#) (NHERI) Converging Design Project officially concluded on March 1, 2024. The project evaluated the functional recovery of a six-story mass timber structure, which included Mass Ply Panels by Freres Engineered Wood, by subjecting the specimen to a series of simulated earthquakes on the world's largest outdoor shake table. Researchers are now consolidating the results of the project to provide valuable data that will inform future building codes.

The six-story NHERI Converging Design Project followed the successful 10-story NHERI TallWood Project, which concluded tests in August of 2023. The goal of the TallWood Project was to design resilient buildings with affordable design solutions, including Freres Engineered Wood's Mass Ply Panels in the walls. The research team for the TallWood Project, led by Colorado School of Mines associate professor Shiling Pei, conducted more than 150 simulated earthquakes and determined the project to be a resounding success. Following final tests for the TallWood Project, Pei passed the 10-story structure over to the NHERI Converging Design Project team, led by Oregon State University professor André Barbosa.

"In August 2023, Shiling turned over the keys to me," says Barbosa. "Because we had to deconstruct [the 10-story specimen], we saw that as an opportunity to explore additional engineering and science questions. That's where the Converging Design Project came in."

While the purpose of the TallWood Project focused on resiliency, the goal of the Converging Design Project was to integrate the objectives of maximized functional recovery and sustainable building solutions and design principles. The TallWood and Converging Design Project team began by deconstructing the top four stories of the building, leaving a six-story specimen for testing. The three phases of shake-table testing for the Converging Design Project included multiple lateral force resisting systems, such as U-shaped flexural plates (UFPs) and buckling-restrained braces, some of which were never before used in mass timber applications.

"We're really developing a new design paradigm where architects and structural engineers, from the beginning of the design, can start thinking about both the resilient aspect and sustainability goals, which is why we use this idea of 'converging,'" says Barbosa. "We are converging resiliency and sustainability as one bigger metric and objective for these designs."

Phase three of the Converging Design Project concluded on March 1, 2024. A team of researchers and academics — led by Shiling Pei and Reid Zimmerman, technical director at KPFF Consulting Engineers — are now working to compile and consolidate data from the two NHERI projects. The process will take roughly two years, Barbosa estimates, after which the team will present their design methodology and findings to the Building Seismic Safety Council, National Earthquake Hazards Reduction Program and Provisions Update Committee. The findings will inform future computer models and mass timber building codes, allowing structural engineers, architects and various industry partners like Freres Engineered Wood to apply these new validated design solutions.

“I want to thank Freres Engineered Wood, Tyler Freres and the crew for the amazing support throughout the project,” says Barbosa. “Our mass timber solutions and the resilient walls have MPP, and they are really perfect for this type of application.”

For more information about Freres Engineered Wood and their Mass Ply products, call 503-891-2121 or visit [www.frereswood.com](http://www.frereswood.com).

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### **About Freres Engineered Wood Products**

[Freres Engineered Wood](http://www.frereswood.com), formerly Freres Lumber Co., Inc., has a 100-year history of innovation in the wood products industry, beginning in 1922 when T.G. Freres started a small sawmill in Oregon’s Santiam Canyon. Today, Freres’ operations include finished plywood, lumber, veneer and structural composite lumber, Mass Ply products, biochar, and a cogeneration facility that supplies renewable power for the local area. Known for being traditionally innovative, Freres is deeply committed to its community and to sustainable forest management practices. The company uses 100 percent of the wood it processes throughout its three operations—Freres Engineered Wood Products, Freres Timber and Evergreen BioPower LCC—and six wood products facilities. Freres provides family wage jobs to nearly 500 employees. For more information, visit [www.frereswood.com](http://www.frereswood.com) or call 503-859-2121.