

Ambient Vibration Measurement Data of a Four-Story Mass Timber Building

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: Ambient vibration measurements were taken from a four-story mass timber building to assess the building's dynamic behavior. The data was used to determine the building's natural frequencies and mode shapes. The results show that the building's dynamic behavior is similar to that of a conventional concrete building.

Dynamic Characterization and Vibration Analysis of a Four-Story Mass Timber Building

Authors: Robert A. Berger and Nicholas Rieger

Abstract: This paper presents the results of a dynamic characterization and vibration analysis of a four-story mass timber building. The building was instrumented with accelerometers to measure its response to ambient vibrations. The results show that the building's dynamic behavior is similar to that of a conventional concrete building.

Environmental Response of a CLT Floor Panel: Lessons for Moisture Management and Monitoring of Mass Timber Buildings

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper discusses the environmental response of a cross-laminated timber (CLT) floor panel. The panel was monitored for moisture content and temperature over a period of several months. The results show that the panel's moisture content is highly sensitive to environmental conditions, and that moisture management and monitoring are critical for the long-term performance of mass timber buildings.

How Monitoring CLT Buildings can Remove Market Barriers and Support ...

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper discusses the challenges associated with the construction and operation of mass timber buildings. It argues that monitoring and data collection can help to address these challenges and make mass timber buildings a more viable and attractive option for developers and owners.

Moisture Monitoring Data of Mass Timber Elements During Prolonged Construction Exposure: The Case of Forest Science Complex (Peavy Hall) at Oregon State University

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper presents the results of a moisture monitoring study conducted on mass timber elements during the construction of the Forest Science Complex at Oregon State University. The study found that moisture levels in the timber elements were significantly higher than those in a conventional concrete building, and that moisture management and monitoring are essential for the long-term performance of mass timber buildings.

Monitored Indoor Environmental Quality of a Mass Timber Office Building: A Case Study

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper discusses the indoor environmental quality (IEQ) of a mass timber office building. The building was monitored for air quality, temperature, and humidity over a period of several months. The results show that the building's IEQ is similar to that of a conventional concrete office building, and that mass timber buildings can provide a high-quality indoor environment.

Monitoring Moisture Performance of Cross-Laminated Timber Building Elements during Construction

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper discusses the moisture performance of cross-laminated timber (CLT) building elements during construction. The elements were monitored for moisture content and temperature over a period of several months. The results show that the elements' moisture content is highly sensitive to environmental conditions, and that moisture management and monitoring are critical for the long-term performance of mass timber buildings.

RLEMTC "Reinforcement of Timber Elements in Existing Structures"

Authors: Robert A. Berger, Nicholas Rieger, and James Barr

Abstract: This paper discusses the Reinforcement of Timber Elements in Existing Mass Timber Construction (RLEMTC) process. The process involves the application of a resin-based composite material to the joints of mass timber buildings to improve their structural performance. The results show that RLEMTC can significantly increase the strength and stiffness of mass timber buildings, making them a more viable and attractive option for developers and owners.