

SE 290 SEMINAR

THE NHERI TALLWOOD PROJECT SHAKE TABLE TEST OF MASS TIMBER BUILDING

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Monday
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Warren Lecture Hall 2204

12:00 - 12:50 PM



ZOOM

[https://ucsd.zoom.us/j/96059374594?
pwd=WE0yQkNrOHdxemNsQTdhY09RZ05nZz09](https://ucsd.zoom.us/j/96059374594?pwd=WE0yQkNrOHdxemNsQTdhY09RZ05nZz09)

Meeting ID: 960 5937 4594

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UC San Diego

JACOBS SCHOOL OF ENGINEERING
Structural Engineering

Abstract

To advance the wood products market, new design solutions for tall wood buildings using mass timber products are being developed. In particular, post-tensioned rocking walls built with cross-laminated timber (CLT) or other mass timber products have been proposed as a seismic resilient lateral system. To advance the seismically resilient mass timber solutions for tall buildings, a comprehensive shake table test program of a 10-story building with mass timber rocking walls is underway. Construction and testing is taking place on the NHERI@UC San Diego outdoor shaking table.

Professor Berman's presentation will focus on the design, model development and analysis of the mass timber rocking walls that serve as the lateral force resisting system in the 10-story test building. The presentation will review the experimental results from the previous 2-story testing and describe how those results were used to develop and validate a nonlinear modeling approach and how that was extended for analysis of the 10-story test building. Additionally, the performance-based design process that was used will be presented which first used simplified approaches and then nonlinear response history analysis in a manner consistent with the intentions of the LA Tall Buildings Design Guide and performance-based practices used in metro areas along the west coast. Finally, some of the unique details of the lateral force resisting system will be presented.

Biography

Jeffrey Berman joined the CEE department at the University of Washington in 2006 after completing his Ph.D. and a short Post-Doctoral period at the State University of New York at Buffalo. He has worked on numerous large-scale destructive experimental investigations involving steel and heavy timber structures and sub assemblages. His research strives to blend experimental and analytical investigations to help develop the tools and understanding necessary for practicing engineers to design structures to resist the forces of earthquakes, blasts, and other hazards. He was the structural engineering lead on the M9 Project, a large NSF supported interdisciplinary research project investigating the impacts of magnitude 9 Cascadia Subduction Zone earthquakes on the Pacific Northwest. He is also the Site Operations Director of the NSF supported NHERI Rapid Facility, a shared use equipment site supporting natural hazards reconnaissance headquartered at the UW. He has been collaborating with the NHERI TallWood team on rocking mass timber walls since 2014.