Reliability-Based Shearwall Design for Multiple Performance Objectives

Project Team:

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The field of structural engineering is evolving toward the adoption of performance-based design procedures with the greatest momentum in the seismic design community. This project focuses on the design and construction of light-frame wood structures. The research objective of this project is to develop a logical, performance-based decision procedure to assist/direct design engineers in the selection of engineered wood shearwalls for use in seismic design of woodframe structures. Specifically, the development of a methodology for performance-based selection of engineered shearwalls taking into account the various performance and dynamic behavior issues, construction costs as well as statistical distributions of losses, and ultimately basing selection criteria on a probability-based lowest expected loss; while still leaving some level of subjectivity to the informed designer.

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