



EERI Student Chapter CEE 249 Lecture Series

March 14th, 2006
4:00pm, Boelter Hall 4275

Farzad Naeim

Vice President and General Counsel
John A. Martin & Associates, Inc. (JAMA)
Los Angeles, California

Are tall buildings more vulnerable than short ones?

The objective of this part of the presentation is to bring the lingering debate over whether more rigid or more flexible buildings fare better during major earthquakes to an end. Historical data, design experience and ground motions obtained from simulation of a magnitude 7.1 blind fault rupture directly below downtown Los Angeles are utilized. We assume that the same level of attention to design, detailing, and construction workmanship is applied to buildings of all heights resulting in well-engineered buildings. We look at the results and try to separate the facts from the myths.

Automated Post-Earthquake Damage Assessment of Buildings

A system for analysis and visualization of seismic response of instrumented buildings (CSMIP-3DV) is introduced. Then an enhancement of the system using a set of methodologies for automated post earthquake damage assessment is presented. It will be shown that these methods can be used immediately after an earthquake to assess the probability of various damage states in the N-S and E-W directions and throughout the height of the buildings. The methods have been applied to more than 80 instrumented buildings. The results indicate that the proposed methods, when used in combination, can provide very useful information regarding the status of a building immediately after an earthquake by simple and rapid analysis of sensor data and prior to any building inspections.