State Of California

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION

Governor Edmund G. Brown, Jr.

Phone: 916-263-5506
Cogan@stateseismic.com
www.seismic.ca.gov

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Shake, Rattle and Roll

World's Largest Outdoor Earthquake Simulator Goes to Work Monday Testing Hospital, Multi-Story Building Safety

San Diego– The world's largest outdoor earthquake simulator will start shaking Monday at UC San Diego, kicking off a series of tests designed to improve hospital safety, help us understand how multi-story buildings respond to major quakes and keep people safe during catastrophic earthquakes.

The earthquake simulator, also called a "shake table," will replicate a series of quakes ranging from magnitude 6.7 to 8.8. On Monday it will shake a five story building built and designed at UC San Diego's School of Engineering. Two floors of the building are designed to mimic a hospital, complete with patient and surgical rooms. Those areas are equipped with resources for victims in a natural disaster, including a working hospital emergency room, elevator and medical equipment.

"In a natural disaster of any kind, we expect our hospitals to be functioning and prepared to take in patients," said Seismic Safety Commission Executive Director Richard McCarthy. "Unfortunately, we know this isn't always the case. The research obtained in this shake test will help us retrofit and design hospitals so that they can continue to function after a major earthquake."

Following the shake tests, experts will conduct a controlled burn to determine if damage from the shaking affects the way that fire spreads throughout the building. The controlled burn will help experts understand what happens in a multi-story building after an earthquake, when fire risks are the greatest.

Most losses of property and function from earthquakes are dominated by what are known as "nonstructural building systems," such as sprinklers, stairs, ceilings, cladding, and partition walls. However, until now, very little research has been done to document how these complex building systems perform together.

Several hundred instruments and video cameras will capture the performance of the building during the test. Technical and visual information obtained will be shared with the public and researchers around the world. These tests will help fill key gaps in research and improve future regulatory requirements for building safety.

Video from the tests will be available to show the public what is likely to happen during earthquakes and the fires that may follow. A video detailing preparations before the test is available at: http://www.uctv.tv/search-details.aspx?showid=23597

Financial support for the project comes from public and private partners including the National Science Foundation, the University of California, and the California Seismic Safety Commission. Englekirk Engineers, the Charles Pankow Foundation, Hilti, thirteen medical equipment vendors, and a consortium of other industry partners, 45 in total, are also collaborating in this effort.

The media is invited to observe some of the simulated earthquakes on April 17th from 8:30 am to Noon. Space is limited. Contact the press office at the Jacobs School of Engineering to reserve a seat and obtain more details:

Ioana Patringenaru, Press Office
Jacobs School of Engineering
Phone: 858-822-0899 ipatrin@UCSD.edu

Media who cannot attend the on-site event have the opportunity to take part in a webcast and Q&A with researchers, organized by the National Science Foundation from 11 a.m. to noon PDT. Contact NSF media officer Josh Chamot at (703) 292-7730 or jchamot@nsf.gov for the webcast participant code and phone number.