

UCSD shakes five-story tower in major quake test

Gary Robbins, San Diego Union Tribune, 4-18-12

UC San Diego simulated the magnitude 6.7 Northridge earthquake on Tuesday, shaking a custom-designed five-story structure that's part of one of the most ambitious efforts ever undertaken to understand how seismic shaking affects non-structural objects inside buildings.

UCSD collaborated on the project with the National Science Foundation, which posted video of the event not long after the experiment ended at the university's Scripps Ranch test site. The video is of poor quality, but it shows that equipment such as hospital beds moved during the shaking. The top two floors of the 75-foot tall building were made to replicate a hospital intensive care unit and a surgical suite.

The university and its partners will simulate quakes of varying sizes to study how ground motion affects differing areas of the tower, which was built under the direction of San Diego State University. The scheduled tests include an 8.8 quake, which is comparatively close in size to the earthquake that devastated parts of Japan last year.

The research project is under the direction of UCSD engineer Tara Hutchinson, who said during a webcast of the event that, "Today's test was really a success in the sense that the base isolators (shock absorbers) below the building protected the nonstructural components from the damaging effects of the ground motions. Had this building been occupied, it would remain operational after these earthquakes."

"We did observe some minor damage on the interior, in particular things that are quite sensitive or brittle elements, such as partition walls, in the form of cracking of mud, the finish of the walls, movement of contents. But many of these things are actually cosmetic."