

Iowa State engineer studies damage caused by New Zealand earthquake

10 March 2011



Iowa State University's Sri Sritharan studied the damage caused by the 6.3 magnitude earthquake that hit Christchurch, New Zealand, in February. Credit: Photos by Sri Sritharan/Iowa State University

Iowa State University's Sri Sritharan is just back from studying the damage caused by the Feb. 22 earthquake that hit Christchurch, New Zealand, and killed more than 160 people.

Sritharan, the Wilson Engineering Professor of Civil, Construction and Environmental Engineering, spent more than a week in Christchurch as part of a team from the Earthquake Engineering Research Institute's Learning from Earthquakes Program. The team's reconnaissance trip was supported by the National Science Foundation.

"I saw more damage than I expected to see," said Sritharan, who recently won a three-year, \$1.2 million grant from the National Science Foundation to study how walls that are safely allowed to rock during earthquakes can reduce damage to buildings.

In Christchurch, Sritharan said unreinforced brick masonry buildings built in the 1930s and '40s suffered significant damage. Older buildings that

had been upgraded to withstand earthquakes, however, resisted collapse and saved lives and property. Even so, several of those buildings will require significant repair or even replacement.

He said newer buildings tended to survive the Christchurch earthquake if they were regular in shape. Buildings that weren't regular or symmetric tended to suffer more damage.

Researchers take these reconnaissance trips to study the real impacts of earthquakes on buildings. Teams make a quick survey of damage, document important findings and assess the need for new areas of research while helping with any local needs.

The researchers' goal is to reduce the risks of earthquakes by advancing the science of earthquake engineering and advocating realistic measures to reduce earthquake damage.

Sritharan said he left New Zealand with three ideas for further study: the interaction of soils and structures during earthquakes, the role structural symmetry plays in resisting earthquake loads and the significance of vertical accelerations in this and other earthquakes.

And, Sritharan said the emergency response from New Zealand authorities was very effective. There was adequate control. There was no looting. There were few security problems. And so Sritharan said there are civil defense lessons to be learned from the Christchurch [earthquake](#) as well.

Provided by Iowa State University

APA citation: Iowa State engineer studies damage caused by New Zealand earthquake (2011, March 10) retrieved 27 January 2021 from <https://phys.org/news/2011-03-iowa-state-zealand-earthquake.html>

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