
NEWS RELEASE

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Ministry of Housing and Social Development
Ministry of Forests and Range

SEISMIC TEST VERIFIES MID-RISE WOOD BUILDING SAFETY

VICTORIA – A unique earthquake simulation has shown that taller wood-frame buildings can perform safely in a major earthquake, Minister of Housing and Social Development Rich Coleman and Forests and Range Minister Pat Bell announced today.

“This was a unique and exciting opportunity for British Columbia,” said Coleman. “This leading-edge research provides key information about how mid-rise, wood-frame buildings would perform in earthquakes, so the Province can continue to maintain high standards of safety for homes for British Columbians.”

“This shake test also proved to building officials around Asia-Pacific that larger wood-frame construction is resilient to earthquakes,” said Bell. “In particular, the market for wood continues to grow in China as they realize that B.C. forest products and design can help build safer housing for millions of residents in earthquake zones.”

Earthquake engineering researchers examined the seismic performance of a full-size, six-storey wood building on the world’s largest shake table at a facility in Miki City, Japan. The structure was built from B.C. forest products using construction techniques commonly used in Canada.

The research project simulated ground shakings modelled on the Northridge earthquake, which caused major damage in the Los Angeles area in 1994. The strongest test simulated an earthquake expected to occur once every 2,500 years. The building was shaken for about 40 seconds with a force stronger than both the 1995 Kobe and 2001 Seattle earthquakes.

In April 2009, the Province increased the maximum allowable height of wood-frame residential buildings from four to six storeys. The positive test results showed that additional seismic risks in six-storey wood-frame construction can be managed with proper designs. They also support the specific design requirements for mid-rise wood-frame residential buildings in the B.C. Building Code for seismic safety.

The project was led by the Network for Earthquake Engineering Simulation, a group of 15 university labs across the U.S. working together on earthquake engineering research and education to reduce earthquake risks. Lumber and panelling used to build the test structure was provided by Forestry Innovation Investment, the Province’s international marketing agency for B.C. forest products. FPInnovations-Forintek, Canada’s largest wood products research centre, provided technical advice on the project.

Video of the shake table test is available in the Ministry of Forests and Range's media room <http://www.for.gov.bc.ca/pab/media/>, as well as on the Ministry of Housing and Social Development website at http://www.hsd.gov.bc.ca/video/wood_shake.html.

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A backgrounder follows.

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BACKGROUND

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NETWORK FOR EARTHQUAKE ENGINEERING SIMULATION

The Network for Earthquake Engineering Simulation Wood Project (NEESWood) studies the seismic performance of wood-frame buildings. The first phase, completed last year, involved testing a full-size, two-storey building using a device called a shake table to simulate an earthquake. The third and final phase this year involved testing a full-size, six-storey building on a larger shake table. The Province provided \$75,000 to this final phase of the NEESWood project.

Researchers gathered information about how the building performed in the mock earthquakes during the first phase and used it to develop computer simulations for wood-frame buildings. That computer modelling was refined over several months and then applied to the design of six-storey wood-frame buildings. Those findings and approaches were then verified by the major test in mid-July.

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