

# Smart solution for seismic shaking

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Pioneering technology developed at Victoria University has been shown to protect valuable equipment from up to 90 per cent of the forces generated by earthquakes.

QuakeSurfer is a standalone platform designed to protect critical assets such as data centres, control rooms, generators and sensitive equipment.

Victoria University IT Services Director Stuart Haselden, one of the inventors of the technology, says modelling of QuakeSurfer's performance has shown that the system can mitigate most of the effects of both horizontal and vertical shaking.

"There are a number of horizontal protection methods but nothing we know of that would be as effective as QuakeSurfer in protecting against vertical acceleration.

"Before the Christchurch earthquakes, [vertical movement](#) was usually recorded at lower levels than horizontal movement but in Christchurch there was a ratio of one-to-one."

Victoria University's backup data centre is already housed in a QuakeSurfer unit at its Karori Campus. The unit has seismic sliders, known as low [gliders](#), that allow the unit to slide horizontally during an earthquake. It also has a 'torsion bar' [suspension system](#) to mitigate the effects of horizontal acceleration.

Mr Haselden and colleagues came up with the idea when they were considering where to locate the University's disaster recovery data centre.

They wanted to keep it in Wellington, rather than follow a common practise of locating secondary data centres in another city, but couldn't find existing technology that would provide an adequate level of protection from [seismic events](#).

"We started designing our own system and then the Christchurch earthquakes struck, reinforcing that we were on the right track," says Mr Haselden.

The University has worked with a number of partners to design and build QuakeSurfer including engineers Dunning Thornton, MJH Engineering and Robinson Seismic.

"QuakeSurfer is an added form of insurance for industries or companies that need their infrastructure to be available after a big earthquake," says Mr Haselden.

There is international interest in the technology in earthquake prone countries like Japan and the United States.

QuakeSurfer, which was highly commended at the 2013 [Earthquake Strengthening Awards](#), was officially opened by the Minister of Civil Defence, the Honourable Nikki Kaye.

Provided by Victoria University

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