

Building Technology

Key facts:

- The construction sector is the fifth largest in New Zealand and employs more than 170,000 people
- New Zealand's total construction value is currently estimated at around \$37 billion, of which \$7 billion is in Canterbury
- Canterbury is home to more than a tenth (14%) of the country's construction and manufacturing companies
- The 2011 earthquake sequence has driven innovation and R&D initiatives in advanced building information modelling, prefabricated manufacturing, disaster-resilience construction, environmental management and sustainable buildings
- The University of Canterbury is ranked 7th in the world for Civil Engineering and is in the top 100 universities in the world for Civil and Structural Engineering.

Post-earthquake Christchurch is a case study in high-tech building design and manufacturing technology. Since 2011, there has been significant investment in construction and repair methods to help manage the country's largest urban regeneration programme. This continues to be supported by a thriving construction sector – now the fifth largest in New Zealand. The University of Canterbury's Department of Civil Engineering – currently ranked 7th in the world for civil engineering – is at the forefront of exploring advanced building design.

New Zealand is known globally for its Kiwi ingenuity, and has built a reputation for high-tech building design and manufacturing technology.

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Fact sheet



As the largest region in the South Island – both geographically and economically – Canterbury is home to more than a tenth (14%) of the country’s construction and manufacturing companies. Around 9000 construction firms and more than 3000 manufacturing businesses operate out of Christchurch – employing more than 12% of the region’s workforce and contributing around 11% to the region’s GDP.

Since the Canterbury earthquake sequence in 2011, there has been significant investment and innovation in construction and repair methods in Christchurch in particular, to help manage the scale of the region’s extensive rebuild – the largest redevelopment project in New Zealand’s history. This has driven innovation and R&D initiatives in advanced building information modelling, prefabricated manufacturing, disaster-resilience construction, environmental management and sustainable buildings.

The city’s newest buildings – innovation precinct, Tūranga Library, Te Pae Convention Centre, and hospitality precinct (the Terrace) – are testament to Christchurch’s commitment to future-focused, tech-enabled infrastructure that is safe and resilient.

Behind some of these innovations is the University of Canterbury’s department of civil engineering. The school has gained international recognition for its research into the behaviour of reinforced and pre-stressed concrete in buildings and bridges during earthquakes. The University of Canterbury is ranked 7th in the world for Civil Engineering and is in the top 100 universities in the world for Civil and Structural Engineering.

The school, in collaboration with PreStressed Timber Limited (PTL), is well-known for its patented timber technology Pres-Lam – a method of mass engineered timber construction using high strength unbonded steel cables and timber beams. More than 10 buildings have been built in New Zealand using the technology.

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