

# Nelson building a world first in timber

The Nelson Marlborough Institute of Technology's new Arts and Media building is attracting a lot of interest from the building community for its sustainable approach to timber design.

By **Nick Helm**, *Build* Deputy Editor

**S**tudents enrolling at Nelson Marlborough Institute of Technology (NMIT) are in for a treat this year with the opening of a sophisticated new facility to accommodate the arts and media disciplines on its Nelson campus.

The building is a combined effort by Nelson-based architects Irving Smith Jack Architects and engineering firm Aurecon, who bested a formidable array of design teams from around New Zealand to design the new building. The team's design uses state-of-the-art structural timber technology, including laminated veneer lumber (LVL), and is designed to use local resources all sourced within 100 km of Nelson. As well as its impressive environmental credentials, the multi-storey timber building incorporates a new generation of earthquake-resistance technology.

## Local and sustainable

A key aspect of the design was the diverse and sometimes conflicting requirements of different arts and media activities. Building occupants need quiet spaces and places where there can be a lot of noise, dust-free environments and those where dust can be created. Some activities need to be in restricted zones, and some can be carried out in relatively public areas.

The team from Irving Smith Jack Architects used a series of design innovations to meet these demands and ensure the building remained sustainable. The design includes mixed-mode heating and cooling, heat exchangers, thermal mass, high insulation levels, natural daylight, assisted ventilation and solar water heating to reduce energy consumption. The design also highlights the building's timber construction.



Nelson Marlborough Institute of Technology's new Arts and Media building makes extensive use of locally sourced materials, including these laminated veneer lumber beams, which form the primary structure of the building.

It uses locally manufactured LVL for the primary structural elements, and these remain visible as an aesthetic ingredient of the finished building. Its use of natural light and ventilation can accommodate workflows for a wide range of processes.

## New generation of seismic design

Aurecon structural engineers also created an advanced seismic design for this timber project. Using pairs of rocking timber walls, joined with energy dissipaters, the structure is able to absorb seismic energy and reduce building damage during an earthquake. This is a new generation of seismic engineering known as damage avoidance design. All structural beams, columns and floors use engineered LVL, a strong, durable product that is highly fire resistant. This allows the design of beams, columns and floor systems that are comparable to steel and concrete.

Once the building is occupied, the University of Canterbury plan to do just that – monitor the building's environmental and seismic performance and compare it with traditional construction techniques.

## Benefit to students

Nelson Marlborough Institute of Technology's Chief Executive, Tony Gray, says the new building is a significant addition to the organisation's long-term development of its Nelson campus.

'If we want our community to invest in learning, then we want to be able to make that as motivational, inspiring and enjoyable as possible,' he says. 'Having a building that is state-of-the-art for New Zealand is going to be an integral and memorable part of gaining their qualifications for our arts and media students.'

Minister for Tertiary Education Steven Joyce will officially open the new Arts and Media building on 31 March. ◀



As construction progressed, it became clear that the building's extensive use of exposed timber would offer an aesthetically pleasing interior environment.