



Upskilling industry professionals to meet the climate change challenge

Industry professionals are increasingly committed to acting on climate change, but many feel they don't have the skills or knowledge to do so. Led by committed researchers, BRANZ and Massey University have established a new postgraduate qualification to build construction industry capabilities to address climate change.

The Master of Construction with specialisation in the built environment is a degree for construction sector professionals. With the knowledge and skills they acquire, graduates are equipped to support their organisation and the industry in the transition to a net-zero carbon built environment into the future.

This transition will require a paradigm shift in the design, construction and operation of buildings. It will affect processes, products, and technologies across the sectors and it will require industry people, including designers, engineers and manufacturers, to have the right knowledge and skills.

Seeking to address this issue, BRANZ and Massey University School of Built Environment collaborated on an initiative to build industry capacity in the transition to zero carbon.

An early pilot programme involved seven Master of Construction students currently working in the industry who took the opportunity to undertake a carbon-focused industry research project. The quality of these student outputs, which included papers in peer-reviewed journals and conference presentations, helped lay the groundwork for the new degree, which was first offered in 2021.

Since then, graduates have shown they not only have the knowledge and skills to help industry but also the passion and drive that will help embed change over their careers. Thanks to their efforts, initiatives under way include the use of building information modelling to accurately calculate carbon emissions and embedding sustainability into company-wide project management.

Every year, they will be joined by a cohort of graduates with the skills, knowledge and desire to be a catalyst for change. Together, their passion and commitment will be key if Aotearoa New Zealand is to achieve its ambitious climate change goal of transitioning to net-zero carbon by 2050.

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IN THEIR WORDS



It's crucial that we train current and future industry professionals with the skills to adopt new sustainability initiatives and meet the country's zero-carbon goals.

Dr Niluka Domingo, Senior Lecturer in Quantity Surveying, Massey University

Why is it important to include zero-carbon research as part of the Master of Construction with specialisation in the built environment?

The construction industry has a significant role to play in achieving the national zero-carbon agenda. It's crucial that we train current and future industry professionals with the skills to adopt new sustainability initiatives and meet the country's zero-carbon goals.

Can you share some highlights from the students' research?

There are many projects under way exploring carbon-reduction options for the built environment. Our students are researching waste reduction, energy efficiency, carbon calculations and life cycle assessment as well as contractual, political, technical, and economic implications. Their findings contribute to a wealth of evidence-based knowledge, that will help the industry achieve the zero-carbon targets faster.

A highlight is the students completing the first research project into reusing wind turbine blades in New Zealand. They developed a framework to determine the most viable repurposing options, waste-reduction benefits and carbon dioxide emissions benefits (using the BRANZ CO₂NSTRUCT tool to make these calculations). They also drafted initiatives to improve the uptake of blade repurposing across the country.

How are the students applying what they learned?

By selecting students who are currently employed in the industry, our graduates have the potential to immediately act as change agents within organisations. Many students are already working as quantity surveyors, project managers and engineers and are collaborating directly with their company's sustainability teams to accelerate the transition to low-carbon practices.

Why was this collaboration between BRANZ and Massey important?

Massey University has the only built environment faculty in New Zealand in the tertiary education sector. It prepares more than 200 students to enter the industry every year. The Building Research Levy funding through BRANZ encourages students to focus on research projects related to carbon reduction.

This year, we've received an overwhelming number of requests from students who are eager to participate in the programme. By upskilling today's workforce with knowledge of low-carbon practices, this partnership aims to help improve the future of the industry.