Engineering New Zealand
Te Ao Rangahau

ENGINEERING A BETTER FUTURE FOR NEW ZEALAND, TOGETHER
TE PĀTI MĀORI

Engineers are problem solvers whose work underpins almost every aspect of society. High-performing infrastructure is essential to economic prosperity and improving how we deliver and manage it must be a national priority. Engineers are central to this. The profession generates around $16 billion a year for New Zealand's economy – 5.5% of our GDP – and leads the design of resilient infrastructure tailored to our unique natural environment.

Engineering New Zealand is the largest professional body for engineers in New Zealand, with over 23,000 members across a broad range of engineering disciplines. With both a regulatory and membership role, we are a leading voice for engineers and the construction and infrastructure sector within New Zealand.

We are doing what we can to regulate, provide training and advocate for the profession. Our focus is on supporting bold, coordinated and practical system reform; advocating for a sustained pipeline of infrastructure work; ensuring infrastructure is resilient now and into the future – with a workforce to deliver it.

We would like to partner with you to deliver the system improvements that would help not only the profession but improve the lives of New Zealanders. This document outlines our priorities and how we can help support you to drive change.

Effective planning and robust resource management are vital to the delivery of critical infrastructure

- New Zealand needs clear, practical documentation to improve the resource management system. Fewer, well-defined national directions and standards will make it easier for users to navigate and operate within the system.
- Engineering New Zealand supports development-enabling reforms. However, good outcomes require a careful balance between enabling development and protecting environmental resources incentivising sensible, innovative and cost-effective outcomes.
- Integrated spatial planning is essential. Building the right infrastructure in the right places at the right time can transform how we manage growth and support development across New Zealand. Once infrastructure is in place, changes are costly. Without strong planning, there is a high risk that infrastructure will not meet future needs.
- We are concerned that there is an increasing focus on enabling greenfield development and encouraging urban sprawl rather than intensification. As a principle, we support intensification wherever it makes sense, as greenfield developments generally have worse environmental outcomes and higher infrastructure costs.
- Māori must remain central to environmental and development planning. As kaitiaki of New Zealand's natural resources, Māori bring centuries of traditional environmental knowledge. Engineering New Zealand is committed to supporting the integration of Māori innovation and mātauranga Māori into planning and development systems. Our Kimihia Rangihua strategy embeds Te Ao Māori into our work, our organisation and the engineering profession.

New Zealand needs water systems that protect the environment and communities

- Engineering New Zealand envisions a sustainable water system that ensures safe outcomes for all New Zealanders while protecting our most precious natural resources. Current environmental indicators show our waterways are falling short – between 2016 and 2020, 45% of the country's rivers were unsuitable for activities such as swimming, and 55% showed moderate to severe organic pollution or nutrient enrichment. Engineers are vital in designing and implementing solutions to improve and protect our water. We would like to work together to ensure the best outcomes for our waterways.
- Water management systems should be based on scientific evidence, international best practice and embed Te Ao Māori, tikanga Māori and mātauranga Māori. Greater emphasis on natural infrastructure solutions can support thriving natural environments while providing protection to communities by buffering the impacts of extreme weather.
- Standardisation, where appropriate, can significantly enhance our water systems through a pragmatic approach to delivery. Repeatable designs, particularly for infrastructure like wastewater treatment plants, can improve efficiency, reduce costs, and ensure consistent quality across all communities.

We need infrastructure that is resilient

- The engineering profession is at the forefront of designing and implementing the technologies and systems essential for achieving net-zero emissions and supporting society's adaptation to climate change. Engineers shape what is possible, directly influencing our ability to mitigate impacts, adapt to new realities, and drive behavioural and technological change. They play a critical role in both immediate responses to climate-related events and in building long-term resilience.
- We are committed to a clear, pragmatic, and action-oriented pathway to address climate change challenges. This requires empowering the workforce to design with the future in mind, providing practical guidance and training that enable resilient, forward-thinking infrastructure solutions.
- Engineering New Zealand supports reform of the legislation underpinning our emergency management sector. The current framework is outdated and needs updating and clarification to support the high functioning system needed to manage our growing disaster risk. Recent weather events have exposed significant gaps in how the system responds, reinforcing the need for a better approach.
- We recommend a national approach to resilience. Buildings must be located appropriately, and when they are in high-risk areas, they must be designed for resilience. Councils need clear authority and tools to require resilient design in building and resource management systems – such as reliable hazard data, a risk-based consenting model, and the ability to require additional design responses in high-risk areas.
- New Zealand must ensure that our riskiest earthquake-prone buildings are remedied quickly. This will require a balance between remediation progress and protection of human life. Ultimately, the prohibitive costs involved in the existing system have caused inaction by building owners, leaving many buildings unaddressed. We are supportive of ongoing efforts to improve this balance – and engineers are integral to this and are very willing to participate.
- We strongly support the commitment to improve New Zealand's fire safety system. All regulatory and guidance material must be integrated and follow a "Life of a Building" approach to ensure alignment between all parties throughout the construction, use and change to the building.

A sustainable pipeline of skilled workers is required to deliver the infrastructure New Zealand needs

- New Zealand needs a strong cross-government approach to engineering workforce development and planning. This includes attracting engineers back from overseas and those who have left the profession due to lack of work. Strengthening our university and vocational system to support this is key, including stronger investment in engineering tertiary education.
- New Zealand requires 1,500 to 2,300 additional engineers each year to meet demand and sustain economic growth and the current down-turn and loss of engineers is exacerbating the long-term skill shortage. Our historic reliance on overseas talent to fill skill shortage gaps is no longer a sustainable strategy. Engineering New Zealand, Waihanga Ara Rau and ACE New Zealand have developed a long-term skills action plan. This includes the work we are doing, such as our free STEM programme for schools – the Wonder Project.