

CAENZ: Our Mission

To advance New Zealand's development and well-being through new engineering perspectives, analysis and a broader understanding of emerging issues in engineering and related technologies.

CAENZ at a Glance

- Is a not-for-profit organisation, established as a Charitable Trust in 1987 to mark one hundred years of teaching engineering in New Zealand.
- Based at the university of Canterbury, governed by a Trust Board and Advisory Board comprised of senior academics and industry leaders.
- Is concerned with issues of national importance which have a significant impact of the future success of New Zealand
- Is helping to develop new solutions to these issues through advancing engineering and technology knowledge and practice.
- In 2006 CAENZ reached an important milestone establishing a new partnership with the Faculty of Engineering, University of Auckland, and extending its relationships with the University of Canterbury and the Institute of Professional Engineers.
- CAENZ's work is funded by grants, sponsorships and income derived from hosting educational events is helping inform and educate New Zealand communities about technology matters.

CAENZ: Our Roles

CAENZ as a Think-Tank

Foremost among the roles for CAENZ is the role of the think-tank. CAENZ facilitates the cross-pollination of knowledge across disciplines and institutional boundaries, as well as contributing to projects of national importance.

CAENZ as an Integrator

CAENZ plays a strong integrating role within New Zealand's engineering and technology sectors. Our work is characterised by networking and collaboration which, through broad participation, is addressing some of the most difficult challenges of our time.

CAENZ as an Awareness Raiser

CAENZ provides expert commentary and interpretation on major issues of the day, and highlights the vital importance of engineering thinking and technological advance for a strong and growing society.

CAENZ Philosophy and Approach

The DIRECT Approach:

- D** Decision-focussed
 - Problems quantified
 - Solutions in term of actions
 - Stimulus for collaborative implementation
- I** Independent
 - Not for Profit
 - Trusted information source – broad participation
 - Cross-sector level
- R** Relevant
 - Driven by a national perspective
 - Economic and social performance a priority
 - Each project structured to suit end result/objectives
- E** Efficient
 - Small core team
 - Established project management system
 - Specific time and resource allocation with each project
- C** Connected
 - Strongly networked – specialises in projects with multiple clients/partners
 - Uses recognised subject matter experts on teams
 - Maintains close links with academic and research institutions
- T** Thought Leadership
 - Sources latest national and international thinking for New Zealand
 - Evidence- and research-based thinking and analysis
 - Forward thinking – dealing with tomorrows issues today

CAENZ Programmes

CAENZ is focussing on a targeted and defined programme of issues impacting on New Zealand's future well-being.

Dedicated Programme Directors are responsible for individual programmes of work and responsible for implementation of all projects within their programmes. Currently these programmes are:

Frontier Resources

Programme Director: Dr George Hooper

To maximize New Zealand's resources potential through independent analysis of development potential of New Zealand's frontier resources and ensuring a wider public recognition of the economic opportunities that derive from our frontier resource opportunities.

The CAENZ Frontier Resource programme seeks to maximise New Zealand's resources potential through policy-based research and commissioned studies directed at better understanding the economic value of our frontier resources and how these can provide strategic advantage in a global market place. While Government policy is well formulated for extraction of known resources in common environments, it needs to be prepared and aware, or have access to knowledge sources, of future issues with regards new resources and novel environments.

The programme is as an independent collaborative effort intended to lead and inform public debate and industry strategy on the ways forward for New Zealand. If New Zealand gets its responses to the current issues (for example around ocean policy, climate change, security of supply to suggest just a few) wrong the potential economic impacts will be strongly negative rather than transformational.

Infrastructure Strategy

Programme Director: John Boshier

A more productive economy through improved decision-making frameworks for infrastructure investment.

To be productive modern economies need appropriate infrastructure. New Zealand has fallen behind Australia and the OECD generally in the amount of infrastructure per worker. Government has recognized this in its national infrastructure plan and establishing the infrastructure unit in the treasury.

The importance of infrastructure investment on growth can almost never be overstated. Empirical evidence clearly highlights the two-way relationship over the longer term, although casual links are more difficult to quantify.

Our programme focuses on the essential systems and infrastructure that underpin a modern society. The use of systems approaches to improve understanding of the connections and interdependencies that govern infrastructure investment forms the basis for ongoing activity within this area and develop improved methods of evaluating infrastructure benefits.

New Zealand's Energy Systems

Programme Director: c/o Sue McKenzie, Office Manager

Enhancing cost effective and sustainable solutions through a whole-of-system approach to improve our national energy supply and security.

The government has exited energy planning, and now relies on market mechanisms. There is a need for an independent think tank and integrator, and CAENZ is well positioned to take this role.

NZ's current situation regarding its future energy supply is subject to considerable uncertainty including: a lack of scale and diversity, fuel constraints, industry structures and rules, and insufficient use of alternative strategies. Opportunities abound and the basic infrastructure is in place, yet NZ continues behind the rest of the world in terms of diversification and the mainstreaming of alternative strategies.

Risk, Resilience and Natural Hazards

Programme Director: c/o Sue McKenzie, Office Manager

Bringing an integrated risk management approach to our living in our natural systems we seek to shape strategic and use decisions to better national needs.

New Zealand is vulnerable to natural hazards - extremely dynamic geology and hydrology result in changes to the landscape and when these impact on society's assets, a natural hazard is experienced - natural hazards which cost millions of dollars annually and potentially cost lives.

Choices made in relation to land use, community and economic activity impact on our ability to mitigate those natural hazard risks.

It is essential we understand and adopt a systems approach that recognizes uncertainty and the complex interactions and dependencies that govern today's society.

Raising Construction Industry Capability

Programme Director: c/o Sue McKenzie, Office Manager

Creating a culture for enhanced industry performance.

The construction industry faces many challenges, such as skill shortages, pressure on resources and cost-push inflation, resulting in the well-documented, inefficient and costly boom-bust cycles. There is also lack of recognition of the importance of the industry both to the economy and the greater society but a lack also of a coherent approach or leadership from within industry.

There are a large number of industry interest groups and disparate agendas and Government attention is only present within the industry in the form of regulatory intervention and industry licensing. The Centre Aims to provide an independent view on important issues for this sector.

Foundation Partners



TRANSPOWER

KiwiRail



Distinguished Fellows

Fulton Hogan; Fletcher Construction; NZ Steel; CDEM; Opus International Consultants; Benfield Group; Energy Efficiency and Conservation Authority.

For more on CAENZ and CAENZ's programmes, visit www.caenz.com