



CAENZ

New Zealand
Centre for
Advanced
Engineering

**22 YEARS OF
ACHIEVEMENT**
1988 – 2010



Major Projects

- 2009 Liquid Fuels Trust Board – Review and Commentary
Canterbury Regional Statement of Opportunities for Energy
Review of Default Emissions Factors in the Draft Stationary Energy and Industrial Processes Regulation: Gas
An Options Analysis for the Commercial and Economic Development of Offshore Methane Hydrates as a Future Energy Option for New Zealand
Comments 05: Land Use Planning for Natural Hazards: Stewardship for the Future
Long-term Gas Supply disruption: Impacts on New Zealand's Electricity Generation System
Slope Stability & Landuse – Improving Practice
Methane Hydrates Regulatory and Policy Frameworks Study
- 2008 New Zealand Telecommunications Based Public Alerting Systems Technology Study
Energy Sustainability Plan: Creating Competitive Advantage for the Waitaki Community
Energy Information Handbook
An Analysis of the Effect of Renewable Energy Targets in the Electricity Sector on the New Zealand Gas Industry New Zealand Distributed Generation Inventory for EnergyScape Project
Identifying the Linkages between Energy Policy and other ECAN Policy Portfolios
A Study into the Cyclical Performance of the New Zealand Construction Industry
- 2007 Report on Energy Security Issues in Canterbury
Managing Landslip Risk
Canterbury Clay Bricks: The Feasibility and Economics of Installing a Wood Gasifier to Generate Producer Gas
Feasibility Study to Maximise the Benefits from Blue Mountain Lumber's Combined Heat and Power Plant
Energy Efficiency in the Dairy Shed (completion of three year study)
Understanding the Contribution of Direct Use of Gas to New Zealand's Future Energy Efficiency Objectives
- 2006 Otago & Canterbury Regional Energy System Studies
Renewable Energy Commercialisation Potential
Sustainable Development of NZ's Oceans
- 2005 Key Performance Indicators in the Construction Sector (ongoing)
Southland Dairy Shed Energy Efficiency (ongoing)
Managing Flood Risk
Application Guide for Diesel and Gas Engine Generation in NZ
Current Imperatives for Risk Management in NZ
- 2004 Planning for Natural Hazards in the Built Environment
The Role of LNG in the NZ Thermal Fuels Market
Contribution of NZ Construction Sector to the Economy
Potential for Thermochemical Conversion of Southland Lignites
Best Practice in Construction Procurement & Delivery (ongoing)
Energy from Waste
- 2003 Economic Opportunities in NZ's Oceans
Review of the Environmental Technology Sector
Opportunities for Distributed Generation (ongoing)
- 2002 The Contract in Successful Project Management
Resource Stewardship and Waste Minimisation
Risk Communication: Sharing the Future
- 2001 Assessment of Environmental Effects
Domestic Hot Water: Options & Solutions

- 2000 Hazardous Waste & Landfill Guidelines
Management of Engineering Risk
Energy Use Trends for NZ 2000/2010
- 1999 Assessment of Environmental Effects
Management of Hazardous Waste & Landfill Guidelines
- 1998 The Edgecumbe Earthquake
Risk Communication – Owning the Future
- 1997 Christchurch Lifelines – Risks & Realities
- 1996 New and Emerging Renewable Energy Opportunities
- 1995 Wellington After the 'Quake
- 1994-1996 Energy Efficiency: Current & Emerging Technologies
- 1994-2002 Electricity Supply & Demand
- 1994/2001/2008 Fire Engineering Design Guide
- 1993-1994 Reliability of Electricity Supply
- 1992 Risk Assessment of Industrial & Natural Hazards
- 1990-1992 Our Waste: Our Responsibility
- 1991 & 1999 Guidelines for the Use of Structural Precast Concrete in Buildings
- 1989-1991 Lifelines in Earthquakes

Major International Conferences

- 2005 Resilient Infrastructure
- 2002 The Contract in Successful Project Management
- 1999 Our Oceans: The Next Great Economic Frontier
- 1997 Pacific Coasts & Ports '97
Integrated Risk Management
- 1995 Wellington After the 'Quake
- 1994 The Environmentally Educated Engineer

Workshops & Seminars

Series

- 2007-2010 Distinguished Fellows Forums
- 2002-2007 Distributed Generation
- 2004-2008 New Engineering Contract
- 2004-2006 Risk Communication
- 2005-2006 NZ Construction Industry Key Performance Indicators
- 2006-2008 Infrastructure Vulnerability to Natural Hazards
Sustainable Development of Ocean Resources

Individual

- 2008 Hydrates Session, New Zealand Petroleum Conference
Taking Stock of Hazards and Risks
Cyclic Performance of the NZ Construction Industry
Carbon Abatement
Landuse of Landslip-prone Land
- 2005 Hot Market Procurement Driving Change, National Constructing Industry Conference
Efficient Dairy Shed Project Workshop
- 2005 Biomass Gasification
Critical Infrastructure Systems
Southland Lignites: Opportunities & Challenges
Oceans of Opportunity
- 2004 Best Practice in Construction Procurement & Delivery
Partnering Masterclass
- 2003 Project Alliancing
Planning for Natural Hazard Risk in the Built Environment
Cleaner Production
Integrating Risk Management Processes into Project Management

- 2002 Waste Minimisation: Sector Workshops
- 2001 Systems Engineering: Dealing with Complexity
Natural Hazards Management Forum
US/NZ Civil Infrastructure Systems
Fire Engineering Design
Resource Stewardship
Distributed Generation
Effective Risk Communication
- 2000 Innovative Manufacturing
The Risk Communication Challenge
- 1999 Assessment of Environmental Effects
Management of Hazardous Waste & Landfill Guidelines
- 1996 New & Emerging Renewable Energy Opportunities
- 1994 Energy Efficiency: Current & Emerging Technologies
Lessons from the Northridge Earthquake
- 1992 Reliability of Electricity Supply
Cleaner Production
State-University-Industry Linkages
Lifeline Services in Earthquakes
Sustainable Management and the RMA
- 1991 Our Waste – Our Responsibility
- 1994 Environmental Engineering Education
Christchurch Lifeline Vulnerabilities
- 1990 Lifelines in Earthquakes
Waterborne Diseases in Water Supplies
Opportunities for Energy Saving in Industry
Advanced Process Control
Fire Safety and Engineering
- 1989 Economic Conservation and Recycling of Structures
- 1988 Flexible Manufacturing Systems

Prestige Lectures

- 2008 Lessons Learnt from Disasters: Planning for Recovery
Jim Schwab, American Planning Association
- 2007 Meeting the Challenge of Greenhouse Gas Abatement
John Boshier, National Generators Forum (Australia)
Modern Approaches to Infrastructure Resilience
Prof. Tom O'Rourke, Cornell University
- 2006 Professional Performance, Innovation and Risk
Peter North, Chairman, Warren Centre
- 2005 Better Managing Resource Conflicts
Hon. Nick Smith, MP
- 2005 The History Of Reclamation And Use Of Marine-dredged Sand For Construction In Hong Kong
Dr Richard Martin, Hong Kong Government
- 2003 Schools of Excellence
Hon. Nick Smith, MP
- 2003 Natural Gas - How Methanex fits in
Bruce Aitken, Methanex Corporation
- 2002 This Sustainable Development Thing – Does It Matter For Engineers?
Lindsay Gow, Ministry for the Environment
- 2002 The Successful Integration of Research with Business Strategy
Dr Chris Mallett, Fonterra
- 2001 Technologies for Sustainable Development
Lex Holst, Shell Global Solutions
- 2000 Technology of the America's Cup
Prof. Peter Jackson, University of Auckland
- 2000 The Architecture of Energy Systems
Prof. David Sanborn Scott, University of Victoria, Canada
- 2000 Business Responses to the Challenge of Sustainability
Dr Roland Williams, Chairman, Australian Magnesium Corporation

Newsletters

InfoDirect/CAE Information Bulletin – 1989 to date
ConstructingNZ 2006 to date
Energy21 News – 2004 to 2007
DG News – 2002-2003 (*succeeded by Energy21 News*)

Visiting Fellows

Project Workshops/Conferences

Lifelines in Earthquakes (September 1990)

- Donald Ballantyne, Dames and Moore, Seattle, Washington, USA
- Professor Ian Buckle, State University of New York (Buffalo) and Deputy Director of the National Centre for Earthquake Engineering Research, USA
- Dr Dennis Ostrom, Southern California Edison Company (Los Angeles), USA

Our Waste: Our Responsibility (November 1991)

- Professor Donald Huisigh - Erasmus University, the Netherlands
- Kenneth Simpson - President and CEO of the Alberta Special Waste Management Corporation based in Edmonton, Canada
- David Campbell - Head of the Landfill Research and Management Section, Environmental Safety Centre, Harwell Laboratory, England
- Professor Dale Vanderholm - Associate Dean for Agricultural Research and Associate Director of the Nebraska Agricultural Experiment Station at the University of Nebraska-Lincoln, USA

Reliability of Electricity Supply (August 1992)

- Dr Roy Billinton, Associate Dean of Graduate Studies, College of Engineering, University of Saskatchewan, Canada
- Professor Ron Allan, Department of Electrical Engineering and Electronics, University of Manchester Institute of Science and Technology, England

Energy Efficiency: Our Future (February 1994)

- Dr Adam Brown, Renewable Energy Programme Co-ordinator, Energy Technology Support Unit at Harwell, England
- Professor Ian Fells, Professor of Energy Conversion at the University of Newcastle-upon-Tyne, England
- Stephen Selkowitz, Programme Leader, Building Technologies Department, Lawrence Berkeley Laboratory at the University of California
- Professor Daniel Sperling, Professor of Environmental Studies and Civil Engineering and Director of the Institute of Transportation Studies at the University of California, Davis
- Martin Thomas, Principal of Sinclair Knight Merz Pty Limited, Sydney, Australia

Risks & Realities (Christchurch Lifelines Group) (1997)

- Ron Eguchi, Vice President of EQE International

Integrated Risk Management (1997)

- Tony Taig, Business Development Director, AEA Technology, UK
- Brent Woodworth, IBM, USA
- Mark Tweeddale, HM Tweeddale Pty Ltd, Sydney
- Stephen Hom, President, EQE Engineering and Design Division, USA
- George Walker, Alexander Howden Reinsurance Brokers, Sydney
- Ray Armstrong, Marsh & McLennan, Sydney

Assessment of Environmental Effects (March 1999)

- Barry Sadler, Chief Executive of the United Kingdom Institute of Environmental Assessment

Ocean Opportunities: The Next Great Economic Frontier (October 1999)

- Mahdi Hasan, Vice President, Shell International, New Orleans
- Ted Brockett, President, Sound Ocean Systems Inc, Seattle
- Alex Malahoff, Chair, Ocean Engineering Department, University of Hawaii
- David Vanderzwaag, Dalhousie University, Canada
- Philip Burgess, Director of Oceans Policy, Marine Group, Environment Australia
- Bev Edwards, Chief Facilities Engineer, Vanco Energy, Houston
- Mike Chapman, President, MECCO Inc., Seattle

The Contract in Successful Project Management (February 2002)

- Dr Martin Barnes, Executive Director, Major Projects Association, UK
- Dr Nael G Bunni, Chartered Engineer, Past President Chartered Institute of Arbitrators, Ireland
- Frank McDonough, CEO McDonough Bolyard Peck, USA
- Tan Wee Teck, Director Asia Construct Publishers, Singapore
- Professor Lu Youjie, Tsinghua University, China
- Ross Clendon, Asian Development Bank, Philippines
- Dr Armando Araujo, Director of Procurement, Operations Policy, the World Bank, USA
- Dr Patrick Tuohey, Director of Risk Management, Worley Ltd, Australia
- Tim Wood, Chief Engineer, Cornwall County Council, UK

Distributed Generation Workshop (June 2002)

- Dr Malcolm Kennedy, Chairman, PB Power Ltd, UK

New Zealand Energy Conference (November 2002)

- Dr Ken Dobinson, Project Director, Sustainable Transport/Sustainable Cities Project, Warren Centre, Sydney, Australia

Seminars

Flexible Manufacturing Systems (November 1988)

- Professor Gunnar Kullberg, University of Lund, Sweden
- Professor Gideon Gerhardsson, Swedish Employers Confederation, Stockholm, Sweden

Economic Conservation & Recycling of Structures (September 1989)

- Poul Beckmann, Arup Research and Development, London, England

Fire Safety and Engineering (April 1990)

- Dr Vaughan Beck, Victoria University of Technology, Melbourne, Australia
- Dr Caird Ramsay, Division of Building Construction and Technology, CSIRO, Melbourne, Australia
- Dr Ian Thomas, BHP Melbourne Research Laboratories, Melbourne, Australia

Advanced Process Control: Opportunities/Benefits (August 1990)

- Dr Mike Brisk, ICI Australia Engineering, Melbourne, Australia

New Opportunities for Saving Energy in Industry (October 1990)

- Dr Greg Ashton, Linnhoff March Limited, Manchester, England

Identification & Treatment of Waterborne Diseases in Water Supplies (Nov/Dec 1990)

- Professor John O'Connor, University of Missouri - Columbia, USA

Lifeline Services in Earthquakes (April 1992)

- Professor Tom O'Rourke, Cornell University, Ithaca, New York, USA

State-University-Industry Linkages (July 1992)

- Professor Gordon Wray FRS, Loughborough University of Technology, England

Improving New Zealand's Competitive Edge through Cleaner Production (July 1992)

- Professor Donald Huisingh, Erasmus University, the Netherlands

The Risk Communication Challenge (November 2000)

- Dr Bernd Rohrmann, Melbourne University, Australia

US/NZ Workshop on Civil Infrastructure Systems (October 2001)

- Donald Ballantyne, EQE Inc, USA
- Professor Ian Buckle, University of Nevada, USA
- Dr Peter Chang, National Science Foundation, USA
- Professor Ross Corotis, University of Colorado, USA
- Professor Tony Dalrymple, University of Delaware, USA
- Professor Rachel Davidson, Cornell University, USA
- Professor Nicholas Jones, Johns Hopkins University, USA
- Professor Anne Kiremidjian, Stanford University, USA
- Dr Richard Little, National Academy of Sciences, USA
- Sarah Millsaps, Johns Hopkins University, USA
- Dr Randall Poston, WDP & Associates, USA
- Dr William Savage, Pacific Gas & Electric Company, San Francisco, USA
- Professor Nobuoto Nojima, Gifu University, Japan

Systems Engineering (October 2001)

- Ian Faulconbridge, Ball Services, Australia

Risk Management (October 2002 & 2005)

- Dr Caron Chess, Director, Centre for Environmental Communication, Rutgers University, USA



22 Years
1988-2010

CAENZ is an independent think tank and research facilitator funded by grants and sponsorships. CAENZ's mission is to advance social progress and economic growth for New Zealand through broadening national understanding of emerging technologies and facilitating early adoption of advanced technology solutions.

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