



The New Zealand Society for Sustainability Engineering and Science (NZSSES) held the second of their International Conferences on Sustainability Engineering and Science, with the theme of *Talking and Walking Sustainability* at the University of Auckland, New Zealand, 20-23 February 2007.

For those unfamiliar with the work of NZSSES, The Society is a Learned Society with members from the engineering, science, corporate and government arenas. The Society's aims are to contribute to knowledge development, identify good engineering practice, and create national and international networks for collaboration and research in the field of sustainability engineering and science. The *Talking and Walking Sustainability* conference went a long way towards achieving those aims.

The conference was attended by 200 people, attracted twelve highly respected national and international keynotes, and showcased some eighty-four papers under the sub-themes of Philosophy and Science, Liveable Communities including transport, Sustainable Tools, Sustainable Technology, Education and Business and Governance. The conference also attracted a contingent of academics, researchers, and students from the United States of America, supported by the National Science Foundation, to encourage international collaboration and the development of a global perspective on sustainability engineering.

In the area of Philosophy and science especially the papers demonstrated that some people and some disciplines are still coming to terms with the meaning and definition of sustainability, whereas others demonstrated that discussions have now move passed what sustainability means in their area of expertise and talked about what is being done. Panel discussions and interactive workshops generated some high-level discussion and, at times, disagreement, which in turn developed networks for further talks and possible areas of research.

International keynotes speakers such as Professor Peter Guthrie, of Cambridge University, whose focus is on sustainable development spoke about the need for a collaboratively developed, highly detailed and specific definition. From that definition, specific to that country or region, all further work can flow including how to design, what to design, how to implement and how to maintain and use, how to decommission and prepared for onward use. He also pointed out that the impact of climate change has taken many years to be recognised and response time has been slow. He believes his must change if policies are to benefit future generations.

Professor Tim O'Riordan a Commissioner on the Sustainable Development Commission for the UK also looked at the challenges of defining and implementing sustainability. His presentation provided examples of how electoral democracy can move towards ecological democracy and how schools and higher education can adapt towards sustainable science.

Dr Jorge Vanegas from the Centre for Housing and Urban Development, at Texas A&M University, outlined Sustainable Urbanism as a framework for interdisciplinary expertise in the environmental design and engineering professions working alongside the earth and social sciences. His focus was on the rapidly urbanizing world and the need for sustainable infrastructure, and land development.

Dr Chris Hendrikson of Carnegie Mellon University Pittsburgh USA addressed the conference on the use of the Economic Input-Output Life Cycle Assessment website developed at Carnegie Mellon University to evaluate the economic and environmental effects across the supply chain of the vast number of industry sectors in the US economy.

Simon Upton former Chair of the OECD Roundtable for Sustainable Development whose role with the issue at both New Zealand governmental level and at the international government level provided him with the ability to analyse past discussions and point out the barriers to sustainable progress and highlight some future actions to mitigate these.

New Zealand speakers included Dr Morgan Williams, New Zealand's Parliamentary Commissioner for the Environment at the time, who outlined the institutional educational and leadership 'ingredients' that are essential to become a sustainable nation;

Professor Tord Kjellstrom who operates the Health and Environment International Trust in NZ and is a professor at the National Institute of Public Health in Sweden. Professor Kjellstrom took the view that there are limited natural resources on the planet many of which are essential for human life and health, such as shelter, water, clean air, soil for growing food, energy and mobility. With the increasing urbanization of people and the need to transport everything to them and then transport the waste away, he points out the need for new technological design to protect and improve human health.

Dr Steve Thompson, CEO of the Royal Society of New Zealand, maintained that whilst the 'reduce, re-use, and re-cycle' slogan is ingrained in some sectors of society, the one tool for sustainable development is yet to be achieved: a mechanism for consensus on what action to take. His presentation proposed such a mechanism and proposed that 'rethink' should be added to the list of "r's."

Other speakers included Dr Jim Salinger from the National Institute of Water and Atmospheric Research who outlined the overwhelming evidence that climate change is going to have on the way we currently live; Dr Carol Boyle, Director of the International Centre for Sustainability Engineering and Research at the University of Auckland; Jim Bradley, of MWH Global Limited; and Kathryn Maxwell from the Ministry for the Environment in New Zealand all presented viewpoints on sustainable development.

In conjunction with, and immediately prior to the conference, the University of Auckland Students for Sustainability Group, NEXUS, (www.nexusnz.org) organised a students day entitled *Joining the Dots*, where many of the keynote speakers spoke

both formally and informally to students. The opportunity to address students at this level was considered an added bonus by the conference speakers, as today's students are the engineers, scientists and educators of the future.

Immediately following the conference an invitation only workshop hosted by NZSSES and the National Science Foundation, USA, on *Frontier Research Directions and International Collaborations in Sustainability Engineering and Science* was held. International and national keynote speakers, students and NSF nominated researchers attended. The workshop report states that as a result of facilitated panel and group discussions numerous valuable insights for sustainability engineering were achieved, and the workshop provided an unusual opportunity for international interaction.

All of the conference speeches, presentations and papers from the *Talking and Walking Sustainability* Conference are available on line on the NZSSES website at www.nzsses.auckland.ac.nz