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IPENZ
ENGINEERS NEW ZEALAND

Engineering Dimension

Fellows' and Achievers' Dinner 2011

Young engineers at the 2011 Fellows' and Achievers' Dinner. Back: Chris Maguire GIPENZ, Sam Garrett, Derek Bon GIPENZ, Mark Fransen GIPENZ, Alban Beaumont GIPENZ. Front: Samantha Boone GIPENZ, Alice Baucke MIPENZ, Francis Stewart GIPENZ, Joel Hung GIPENZ.

Leading his final engagement as President of IPENZ with the message "reflection, recognition, resolve", **Garry Macdonald** opened the 2011 Fellows' and Achievers' dinner in Wellington on Friday 18 March. Despite its celebratory nature, the black-tie event had a serious tone, shaped by the Pike River Mine disaster and the devastating Canterbury earthquakes. Garry encouraged the audience to reflect on the previous year, which also included serious floods in New Zealand and Australia and the Southland stadium collapse.

The awards' presentations and dinner were sponsored by Fletcher Construction. Opus sponsored the Supreme Technical Awards for Engineering Achievers, and GHD sponsored the Ray Meyer Medal for Excellence in Student Design. Two of the awards were particularly outstanding. One, the MacLean Citation, had not been awarded since 2005. It is made to those who have rendered exceptional and distinguished service to the engineering profession. The citation says "There is no doubt [**David Brunsdon**] has been a leader in lifting New Zealand's disaster preparedness. Following the two Canterbury earthquakes it is fitting he be recognised with the MacLean Citation in 2011".

The audience gave a standing ovation for the recipients of the other exceptional award: the 2011 President's Award for Public Service, the Fulton-Downer Gold Medal. It is shared by the engineers who were active in the response phase of the 2010 and 2011 Canterbury earthquakes, recognising their outstanding contribution to engineering in its role of public service. **Noel Evans**, representing those involved in building safety evaluation, **Des Bull**, representing urban search and rescue, and **Mark Christison**, representing utility restoration, accepted the award on behalf of the recipients.

New President **Steve Reindler FIPENZ** concluded with a message for meeting future challenges. "It requires the collective resolve of all engineers to continue setting and maintaining high standards of competence and ethical behaviour, and to act in service of society – the resolve to be truly professional engineers. That is our ongoing challenge."

President's Message

NEW CHALLENGES FOR THE PROFESSION

I was honoured to be inducted as your new President on Friday 18 March and now I have the pleasure of communicating with Members on a monthly basis via this publication. This newsletter is an opportunity for me to outline issues of importance to our profession, as I see them, and to encourage you to think about the wider challenges facing the industry.

My background is in mechanical engineering coupled with heavy industry/manufacturing exposure and large-scale infrastructure works. I spent 22 years in the steel industry in a variety of operational and engineering roles, finishing as head of Engineering and Environment at BHP New Zealand Steel. In 1997 I moved to lead the engineering function at Auckland International Airport and in 2005 I started a transition into governance roles and now work on a number of company boards.

At the Fellows' and Achievers' Dinner on Friday night in Wellington, it was my pleasure to see our highest and most distinguished achievers receive the recognition they deserve. This year the event took place with the devastating Christchurch earthquakes still very fresh in our minds. It was, one might say, a sombre backdrop to our proceedings. It was also a poignant reminder of the ongoing challenges our profession is charged with – to both harness and resist the power of nature.

The Christchurch earthquakes, the Pike River tragedy and the Southland Stadium collapse are powerful reminders of the challenges engineers face as we strive to be the masters of the built environment on which our society is founded. These events will create numerous challenges for our profession and we now have a great deal of work to do. As I mentioned in my speech on Friday, our profession has over the past 50 years delivered such safe systems and infrastructure that failures have been rare. In fact, the public has come to develop a low tolerance for any form of failure, even in above design load events. The recent disasters to have struck New Zealand have increased the need for our profession to inform the public on the risks as we manage them.

The challenge for New Zealand in rebuilding Christchurch within a desired time frame is simply enormous and cannot be overstated; our profession will be deeply embedded in this challenge. IPENZ must also consider how it can best help and provide the required assistance. At the moment IPENZ considers there may be new initiatives centered on:

- Planning processes for the best and most appropriate use of land
- Post-earthquake building evaluation methodologies
- Further advances in professional practice building design, strengthening and construction
- The role of professional engineers in emergencies.

As a profession we will need resolve to both fulfil the expectations that will be placed on us and maintain the level of public confidence we have previously enjoyed. Our profession covers a wide range of engineering activities that are represented through many organisations, many of which will be involved in fulfilling the expectations we are now faced with. We must act in a collective manner, both cohesively and with unity, to deliver on those expectations.

Ray Meyer Medal for Excellence in Student Design

The Ray Meyer Medal for Excellence in Student Design is **sponsored by GHD** and presented by **Professor Ray Meyer DistFIPENZ** at the Fellows' and Acheivers' Dinner. The medal is awarded to a student or group of students who present the best final-year design project as part of an IPENZ-accredited qualification.

Winners of the 2011 Ray Meyer Medal For Excellence in Student Design and their supervisors pose with their computer modelling system. From left: Dr Geoff Shaw, Professor Geoff Chase, Alicia Evans, Logan Ward, James Steel and Dr Aaron Le Compte.

A computer modelling system designed to control blood sugar levels in intensive care patients and ultimately reduce mortality rates has picked up this year's prize. University of Canterbury students **James Steel**, **Logan Ward**, **Alicia Evans** and **Chia Siong Tan** developed the project (called "Active Insulin Control, STAR: Stochastic Targeted Glycaemic Control") under the supervision of Professor **Geoff Chase** and **Dr Aaron Le Compte** of the Department of Mechanical Engineering.

Hyperglycaemia (high blood sugar levels) is a prevalent risk in critical care, affecting 30–50 per cent of all intensive care unit patients. Poor blood glucose control increases a patient's length of stay in hospital along with the risk of medical complications, organ failure, the cost of care and the incidence of death. The STAR algorithm targets patients' blood glucose levels to a desired range of values, as opposed to many common approaches which target specific, discrete values. It has the potential to reduce patient mortality by 20–40 per cent and the cost of treatment by between $1000 and $2000 per patient.

The system, developed in consultation with medical staff, was clinically tested at Christchurch Hospital and the Centre Hospitalier Universitaire de Liège in Belgium. It is scheduled for use in hospitals in Belgium and Hungary in 2011.

Project nominator Associate Professor **Susan Krumdieck** says the project's level of uptake internationally is testiment to its quality.

Congratulations to the following Professional Development Partners:

Enercon Ltd

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MSC Consulting Group Ltd

Supreme Technical Awards for Engineering Achievers

The Supreme Technical Awards, **sponsored by Opus**, recognise technical expertise in engineering as exemplified by contributions to the advancement of engineering practice, innovation or technical breakthroughs.

FREYSSINET AWARD – BUILDING AND CONSTRUCTION

Dale Turkington FIPENZ

Dale Turkington is a Senior Technical Director at Beca, and Chair of Beca Carter Hollings & Ferner's New Zealand Risk Committee. While in Australia he was Chairman of Beca's Australian Risk Committee from 2008–2009. He was responsible for the design management and construction of a number of major infrastructure and commercial projects in New Zealand, Australia, Canada and South East Asia. The 328-metre Sky Tower in Auckland is among his prominent New Zealand projects.

Dale has received numerous accolades – in 2005 he was awarded the Association of Consulting Engineers New Zealand President's Award. He led forensic engineering investigations on a number of national and international incidents, and has a profound knowledge of design and construction processes (structural design, design management, project and risk management, procurement, and construction inputs).

As a design team leader he has shared his combination of theoretical and practical knowledge; he is also someone who produces innovative solutions to complex problems. Dale was on the board of the Heavy Engineering Research Association from 2001–2007, serving as Chair from 2006–2007. He led the Construction Industry Council's Design Documentation Working Party, the outcomes of which were used by the International Federation of Consulting Engineers.

ANGUS AWARD – WATER, WASTE AND AMENITIES

G. Alan Pickens FIPENZ

Alan Pickens has had a distinguished career in the water industry and is a leader in dam design. He has been an innovative designer of embankment dams for mining, flood detention and hydropower. More recently, Alan has worked on dam safety, being a major driver in establishing the New Zealand Society on Large Dams (NZSOLD) and a contributing editor to the NZSOLD Safety Guidelines (2000).

Alan has completed over 20 safety examinations and reviews of dams in New Zealand and Australia. His expertise was highlighted early in his career when his paper on the design of the Whau Valley Earth Dam (1970) won IPENZ's Fulton-Downer Gold Medal and the Furkert Award. This achievement was repeated in 1986 with a paper on the Aniwhenua Hydro Electric Scheme, and in 1989 with a paper on the Maitai water supply project. Throughout his career, Alan skillfully developed creative and cost-effective designs. He has always been willing to pass on his knowledge and experience to younger engineers, challenging them to think innovatively.

SKELLERUP AWARD – CHEMICAL, BIOPROCESS AND FOOD

Anthony Paterson FIPENZ

Tony Paterson is a Professor at Massey University's School of Engineering and Advanced Technology. His major area of expertise is lactose crystallisation and dairy-based powder processing. Over the last 20 years he has published and co-authored three book chapters, one patent and 43 journal publications along with contributions to industry conferences.

Of particular note is Tony's contribution to the scientific understanding of the dissolution, crystallisation and drying of lactose, a vital industry for New Zealand. The translation of this knowledge into practical solutions addressing critical industry problems has been significant. Tony has been recognised internationally by his peers and the industry. His work has largely eliminated caking problems in lactose and enhanced the reputation of the New Zealand product, resulting in significant cost savings. The caking model has also been successfully used with sucrose and salt.

THE EVAN PARRY AWARD – ENERGY SYSTEMS

Evan Dumbleton FIPENZ

Evan Dumbleton has been a consultant and Principal of Hydromech Consulting Limited for 12 years, after holding a variety of technical positions in the former New Zealand Electricity Department and Electricity Corporation of New Zealand. He has been described by his peers as New Zealand's "number one hydro-turbine guru".

Evan's pioneering contribution to hydropower equipment technology has set a benchmark standard, enhancing New Zealand's reputation internationally as a provider of top-class hydropower technologists.

Combining extensive hydroelectric engineering knowledge with practical experience, Evan has developed innovative and fit-for-purpose solutions to complex turbine engineering problems. He successfully solved a serious vibration-induced fatigue cracking problem in turbine stay vanes by welding simple spoilers on the trailing edge of the stay vanes to detune the Von Karman vortex shedding. He also devised the concept of controllable turbine discharge gates to optimise back pressure, as implemented at Tokaanu Power Station.

He is an expert designer and reviewer of various complex turbine-related issues for a number of international clients. He has also published numerous technical papers and has been a mentor to many young engineers, illustrating his willingness to share his experience and technical knowledge.

Individual Distinction Awards

The President's Award, the Fulton-Downer Gold and Silver Medals, are awarded to acknowledge the effort and achievement of a Member, particularly when that achievement has demonstrated the strengths of the engineering profession in its role of public service.

FULTON DOWNER GOLD MEDAL – THE PRESIDENT'S AWARD

Engineers who responded to the 2010 and 2011 Canterbury earthquakes

The 2011 President's Award for Public Service, the Fulton-Downer Gold Medal, is awarded to engineers who were active in the responses to the 2010 and 2011 Canterbury earthquakes. It recognises the outstanding contribution these engineers have made to the profession's public service role.

Many engineers volunteered to carry out building safety evaluations, while others worked in urban search and rescue. They went well beyond what was expected of them. There were also significant numbers involved in important lifeline utility organisations who worked selflessly to promptly stabilise and restore important services. The work these engineers carried out after the earthquakes epitomises the importance the profession holds in its service to society. They have also significantly enhanced the reputation of the profession in the community. The names of as many as possible of those who made significant contributions are recorded in the Roll of Honour section of the IPENZ website.

FULTON-DOWNER SILVER MEDAL

John Findlay GIPENZ

John Findlay is awarded the 2011 Fulton-Downer Silver Medal, the President's Award for Meritorious Service, in recognition of his contribution to the National Engineering Education Plan project. The success of that project was dependent on his commitment for Otago Polytechnic to be the lead agency contracting to the Tertiary Education Commission to produce the project outcomes.

Over the three years of the project's duration, John put in many hundreds of hours over and above his normal employment role. He showed extraordinary commitment at many levels; attending almost every consultation meeting with the industry and managing relationships with industry training organisations and institutes of technology and polytechnics in an exemplary manner.

Without John's contribution, the project would not have delivered on many of the excellent outcomes it has achieved, including new national qualifications to replace the New Zealand Certificate in Engineering.

The Turner Award is presented in recognition of a continuing contribution to the engineering profession by demonstrating commitment to the ideals of a self-regulating profession.

The MacLean Citation is an award made from time to time to persons who have rendered exceptional and distinguished service to the engineering profession. The Award is adjudicated by the Board and has not been awarded since 2005.

TURNER AWARD FOR PROFESSIONAL COMMITMENT

Jennifer Culliford FIPENZ

The 2011 Turner Award for Professional Commitment is awarded to Jenny Culliford in recognition of her commitment to the ideals of a self-regulating profession. Since graduating as a chemical engineer Jenny has worked in a number of organisations in New Zealand, the United Kingdom and Iran. She chaired the Engineers Registration Board from 1997–2003 and was a Member from 1994–1997.

In her time as Chairperson, she oversaw the transition from the Engineers Registration Act to the Chartered Professional Engineers Act. She was the interim Chair of the Chartered Professional Engineers Council from 2002–2003. She has been a member of several IPENZ and Institution of Chemical Engineers Accreditation panels for chemical and process engineering degrees.

Since 2005, Jenny has been Chair of disciplinary committees, involving a considerable workload and demanding a high level of professional judgement. Jenny continues to mentor young process engineers. Outside engineering, she has served on the AgriQuality Board, and for a period as Secretary of the New Zealand Biotechnology Association. During this time she was a Member of the committee overseeing the merger of the Association and Biotenz, the biotechnology industry organisation, to form NZBio. Jenny is a role model in engineering, giving freely of her time, often on a voluntary basis. She is an inspiration to women in engineering and business.

MACLEAN CITATION

David Brunsdon FIPENZ

The MacLean Citation, an Award made from time to time to persons who have rendered exceptional and distinguished service to the engineering profession, is awarded to David Brunsdon. Since observing the impact of poor disaster preparation after the Newcastle earthquake in Australia in 1989, he has dedicated his professional life, and indeed much of his own time, to ensuring New Zealand is ready.

David has played a major role in promoting the concepts and methodologies of lifelines engineering to improve the resilience of critical infrastructural services. He has been pivotal to the development of building safety evaluation procedures and urban search and rescue arrangements, and has led post-earthquake investigations in Japan and Taiwan, and operational activities in Gisborne, Indonesia and Canterbury.

In his roles as advocate, systems developer, trainer and advisor, he has been tireless, displaying the highest ethical and professional standards. There is no doubt that he has been a leader in lifting New Zealand's disaster preparedness. Following the Canterbury earthquakes it is fitting that David Brunsdon is recognised with the MacLean Citation in 2011.

Distinguished Fellows

Distinguished Fellows are Fellows who have made eminent contributions to leadership in engineering in a technical or wider context.

Bruce Melville

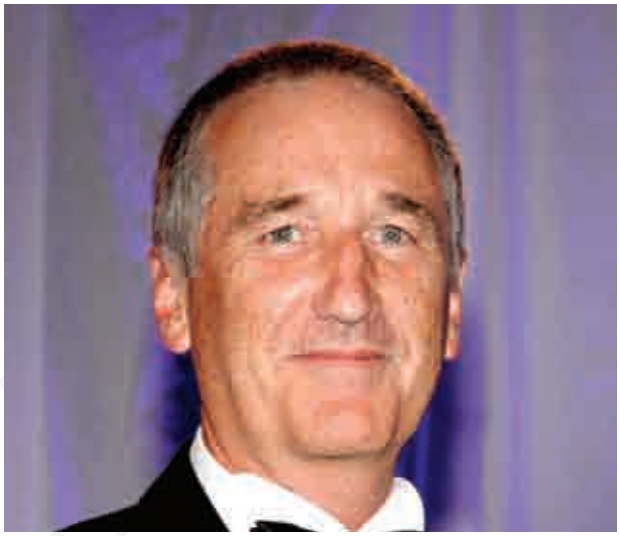
Bruce Melville is elected a Distinguished Fellow of IPENZ for his eminent contribution to the advancement of engineering knowledge. In particular, he is being recognised for his outstanding achievements and record as a researcher and educator in the field of hydraulics. Bruce holds graduate and post-graduate degrees from the University of Auckland. After spending five years as a consultant in New Zealand, England and Abu Dhabi, he joined the staff of the University of Auckland where he is currently a Professor and the Head of the Department of Civil and Environmental Engineering.

Bruce has expertise in most aspects of water resource engineering, including hydraulic, river, environmental and hydro-electric engineering. He has authored over 150 research publications and is an active member of national and international committees and societies related to hydraulic engineering and research. In 2002 he received the American Society of Civil Engineers Hydraulic Structures Medal in recognition of his contributions to the field. He is a Fellow of the Royal Society of New Zealand and in 2007 he received the Society's prestigious RJ Scott Medal in recognition of his outstanding research contribution in the field of fluvial sediment transfer.

Andrew Buchanan

Andrew Buchanan is elected a Distinguished Fellow of IPENZ for his eminent contribution to the advancement of engineering knowledge and education. Andrew has made outstanding achievements in moving research into practice in the fields of fire engineering and timber engineering.

Throughout his career he has worked on problems of direct interest to building practitioners, improving the quality of construction in New Zealand. He graduated from the University of Canterbury before undertaking postgraduate study at the University of California, Berkeley and the University of British Columbia. After 12 years as a consulting structural engineer he joined the University of Canterbury, where he is now Professor of Timber Engineering. He was responsible for introducing fire engineering to New Zealand as a formal qualification and serves on the editorial boards of three fire engineering publications. He was awarded the Queen's Service Medal for Public Service in 2002 recognising this work. He is currently the Research Director of the research consortium for timber engineering, which is developing new methods for multi-storey buildings using pre-stressed timber frames and walls. He is the editor of the *Timber Design Guide*, a management team member of the NZ Wood Initiative and a past President of the New Zealand Timber Design Society.



Geoffrey Hunt

Geoffrey Hunt is elected a Distinguished Fellow of IPENZ in recognition of his eminent contribution to leadership in the profession of engineering, and the application of engineering in the electrical construction and contracting industry. Geoff began his career in the United Kingdom, before taking responsibility for control and instrumentation during the construction of Huntly Power Station in 1978. He then led the growth and expansion of three major multi-industry service companies. The first of these was Electrix, for which he opened up new markets and technologies, and expanded it into Australia to set the foundations for one of today's significant Australasian electrical contracting companies.

As Managing Director of Alstom he built the business to a major multi-industry service company covering high voltage transmission, distribution and heavy electrical, telecommunications and rail in New Zealand and Australia. In 1998 he was instrumental in completing construction, in record time, of temporary transmission into the Auckland central business district to repair a power blackout.

He is currently Chief Executive of Kordia, a State-owned broadcast and telecommunications company with operations in New Zealand and Australia, and has reconfigured its strategy to remain profitable and competitive in a rapidly changing industry. He has demonstrated exceptional engineering leadership across a range of markets and geographies. He has also contributed as the Chairman of Telarc from 2001 to 2008.

Robert Fyfe

Rob Fyfe is elected a Distinguished Fellow in recognition of his eminent contribution to leadership in engineering. After studying mechanical engineering and aero-systems engineering while with the Royal New Zealand Air Force, Rob held a number of management roles in banking and telecommunications in New Zealand and then overseas. In 2003 he joined Air New Zealand as Chief Information Officer, then General Manager Airlines. He has been Chief Executive since 2005.

Rob has applied an innovative engineering mind-set as a core part of the company's business strategy. Achievements include increasing the fuel efficiency of the fleet with bio-fuels; improving the fleet with well-timed replacement aircraft; introducing leading information systems throughout the company, focussing on innovations in information technology to help both customers and operations; humanising the interface at terminals; and world-leading innovative cabin design. Air New Zealand has received many international awards and commercial orders from other airlines. As well as creating the environment in which so many technical successes have occurred, Rob has transformed the face of the airline through working directly with staff and empowering them with a "can do" attitude to embrace technology.

Fellows

Fellowships acknowledge a Member's significant contribution to leadership, or the advancement of the profession or IPENZ.

Steve Abley is elected a Fellow of IPENZ for his contribution to both the advancement of engineering and the development of the Institution. He is recognised for his research and development of techniques for assessing transport network accessibility, seeking better integration of land use and transportation planning. These efforts have helped improve transport network assessment methodologies. Steve has also made a significant contribution to the governance of IPENZ. Through his service to IPENZ, he has earned respect for his fresh, insightful vision and drive to build the professional body.

Simon Aimer is elected a Fellow of IPENZ for his contribution to the advancement of engineering practice. Simon is recognised for excellence in organising and managing major capital works. His achievements have contributed a great deal to the pioneering application of operational improvements to major capital works, thereby increasing the productivity of the processes and practices used for project works. His expertise is sought for very large capital projects both in New Zealand and overseas. He has contributed to IPENZ through service on the governing Board and with the Mechanical Engineering Group.

Richard Brand is elected a Fellow of IPENZ for contributing to the advancement of engineering, in particular his service to the development of fire engineering. Following the establishment of a performance-based regulatory regime, Richard was one of the first in his profession to help implement alternative fire designs. His expertise has been widely shared through his authorship of relevant codes of practice, his contribution to industry working parties, and his involvement as a recent Past President of the Society of Fire Protection Engineers.

Cos Bruyn is elected a Fellow of IPENZ for his contribution to leadership in the engineering profession. He is recognised for promoting safety in the construction industry, and for his wider leadership within Roading New Zealand. Cos is a strong advocate of a behavioural-based safety approach. He actively encourages a culture that values skills-based learning to lift levels of competence in the workplace, and his management style is to lead by example. This has resulted in improved levels of staff engagement, which he uses to lever higher levels of performance. Cos is highly respected for his professional expertise.

David Carter is elected a Fellow of IPENZ for contributing to leadership in engineering. His major achievement has been helping advance professional standards within the engineering and construction industries in New Zealand. In parallel with a leadership role in a major engineering consultancy firm, David has worked to improve health and safety practices more widely in engineering and construction. He contributes to the development of student engineers through teaching and advisory positions, and is sought out for consultation roles by both central and local Government.

John Clarke is elected a Fellow of IPENZ for contributing to the advancement of practice and leadership in the engineering profession, in particular his role in helping develop the electricity transmission grid. His work has been multi-faceted: implementing decision support visualisation software in grid operations controls; determining ways to integrate the wind generation portfolio into systems operations; and most recently, leading grid development to improve capacity and resilience. He has also served on a number of groups formed to address critical national electricity issues.

Steve Couper is elected a Fellow of IPENZ for his contribution to advancing engineering practice and leadership. He is recognised for his innovative development and design work for wastewater treatment, and for his contribution to the wider development of professional services in the water industry. Drawing on his process engineering background and overseas research, Steve has led the introduction of new technologies such as membrane bio-reactors to treat waste through nitrogen and phosphate removal and disinfection. Steve has shared his knowledge through a range of technical papers.

Colin Crampton is elected a Fellow of IPENZ for contributing to the advancement of engineering practice and leadership in the industry. He has been successful in developing the procurement and delivery models used for major national roads projects. Colin is a champion of relationship-based practices as a means of ensuring client value. He played a leading role in introducing project alliances as part of the method for procuring projects. He is committed to the value of professional engineering, which has helped ensure engineering excellence is recognised and valued in national road projects.

Jan Evans-Freeman is elected a Fellow of IPENZ for her contribution to the advancement of engineering knowledge and leadership in the profession. She is recognised for her research into semiconductor applications in electronic devices and for her contribution in both the United Kingdom and New Zealand to shaping the future of engineering education. She has earned an international reputation for her research, much of it undertaken collaboratively with the industry. She has a strong commitment to improving public understanding of engineering. She is also involved in initiatives to improve high technology manufacturing.

Jon Ewer is elected a Fellow of IPENZ for his contribution to the advancement of engineering practice. By setting the standard for best practice across a range of construction projects, Jon has led the development of project procurement and construction contract management. He is recognised for his role in working to improve contract documentation and administration, tender evaluation, and methods for resolving claims and contractual issues without recourse to dispute and arbitration processes. Jon readily shares his knowledge and expertise with other engineers in the profession.

Ian Greenwood is elected a Fellow of IPENZ for contributing to the advancement of engineering practice. He is recognised for developing techniques for infrastructure asset management. Ian held a significant leadership role in pavement performance modelling, in New Zealand and offshore. He has advised on asset management issues across a range of infrastructure portfolios to central and local government and to international lending institutions. His expertise is highly sought after internationally, his work is widely published, and he gives lectures and seminars.

Tiina Hall-Turner is elected a Fellow of IPENZ for her contribution to the development of the Institution. Tiina has demonstrated strong commitment to IPENZ's regional programmes and strategic leadership. She has been a powerful advocate for ensuring the efforts of committees and other volunteers are supported effectively to create successful programmes for Members. Her four years on the governing Board includes leading the Young Professionals Taskforce and serving on the Standards and Accreditation Board. Tiina has also served on three Branch committees.

David Hood is elected a Fellow of IPENZ for his contribution to leadership in the engineering profession. He has played an important role in the development of IPENZ's sister organisation, Engineers Australia, of which he is the Deputy National President. He has served Engineers Australia in many roles over the past two decades, including periods of service with division committees, on awards' judging panels, and as Chair of a college. He is currently Chair of the Australian Green Infrastructure Council. David is committed to encouraging the engineering profession to demonstrate its relevance to wider society.

Simon Lovatt is elected a Fellow of IPENZ for his contribution to advancing engineering knowledge. He has developed mathematical models for simulating the behaviour of agri-food systems. Starting with food refrigeration and adding new features such as product quality models, Simon has developed software modelling tools for the food and agricultural industries. His research prowess has been recognised by the International Institute of Refrigeration. He has been involved in engineering accreditation and served IPENZ at Branch level and through and the Standards and Accreditation Board.

Wallace McQuarrie is elected a Fellow of IPENZ for his role in enhancing engineering practice. He is recognised for his work developing *Dam Safety Guidelines* in collaberation with the New Zealand Society on Large Dams (NZSOLD). These guidelines are the benchmark for the verification method to establish whether dams meet *Building Code* requirements. Wallace's contribution follows his earlier work on procedures for safety evaluation of existing dams which were adopted in the Auckland region. The procedures set the standard for others to follow. Wallace has been an active contributor to NZSOLD.

Chris Mak is elected a Fellow of IPENZ for his contribution to advancing engineering practice. He is recognised for his contribution to the development of fire protection standards. Chris took on a major leadership role in revising the New Zealand standard for commercial and industrial automatic sprinkler protection, the outcome of which was a new standard recognised as leading to some of the most reliable fire protection systems in the world. He received a meritorious service award from Standards New Zealand in 2006, recognising wider activity in standards development. He is current President of the Society of Fire Protection Engineers.

Alexander Malahoff is elected a Fellow of IPENZ for contributing to the advancement of engineering knowledge and leadership. He helped develop ocean engineering and led New Zealand research on natural mineral resources and geohazards. A feature of his research career has been the development of well-engineered systems to support undersea exploration, including vessels and onboard equipment. Since returning to New Zealand, he has played a major role in identifying important undersea natural resources. He has helped ensure geohazard research has become better coordinated.

Gordon Mallinson is elected a Fellow of IPENZ for advancing engineering knowledge and education. We recognise his contribution to the fields of computational fluid dynamics, thermodynamics, computer graphics and visualisation, both in research and in engineering education. In these fields he has undertaken research that has influenced and assisted the industry either directly through consultancy or by equipping graduates with new skills. He has led new developments in engineering education: computer-assisted design and advancing team-based experiential learning.

Ian McCrae is elected a Fellow of IPENZ for innovation in the creation of technological products. Ian is recognised for creating a New Zealand-developed information technology product aimed at the global healthcare industry market. He conceived the Rhapsody Integration Engine and despite the fact his company has grown to several hundred employees he is still committed to further development work. He has contributed to the wider industry, including spearheading the formation of a health information technology cluster in New Zealand. He was the 2010 Engineering Entrepreneur of the Year.

Robert Mawdsley is elected a Fellow of IPENZ for the contribution he has made to innovation in the creation of engineering works. Robert is being recognised for setting the standard for best practice by identifying and applying innovative construction methodologies in major civil engineering projects. He has particular expertise in the construction of marine structures including the use of temporary works, and is responsible for a number of firsts in the contracting industry. He provides important mentoring and advice to young engineers.

Brent Meekan is elected a Fellow of IPENZ for his contribution to both leadership in the engineering profession and the advancement of engineering practice. He has been consulting the engineering industry as an industry leader through the Association of Consulting Engineers New Zealand. He has also been involved in the development of new industry standards of engagement for consultancy services. In parallel with leadership roles on several major projects he has helped develop and maintain relationships for the engineering industry with key clients.

Nick Miller is elected a Fellow of IPENZ for contributing to leadership in the engineering profession. He is recognised for developing a strong professional ethos in the road construction sector, including leading important changes during the emergence of Roading New Zealand as a revitalised industry association. He has contributed to improved safety and quality standards. Through his initiatives in growing his company's share of the Australian market he has been able to offer opportunities for people and companies on both sides of the Tasman. Nick is a role model for young engineers and is encouraging of those who want to enter the industry.

Alexei Murashev is elected a Fellow of IPENZ for helping advance engineering practice. He has made an important contribution to geotechnical engineering practice. He has expertise in applying soil mechanics to the design of foundations for demanding soil conditions, and in the evaluation of the seismic performance of bridge structures. Alexei shares his knowledge readily through presenting technical papers, including prepared design guidelines for geosynthetic-reinforced soil structures. He has also contributed to the profession by mentoring young engineers and through his involvement in the New Zealand Geotechnical Society.

Allan Neilson is elected a Fellow of IPENZ for contributing to the advancement of engineering practice, particularly in the railway engineering sector. Allan has specialised in signals' engineering and railway safety on which the national railway owner has relied for many years. More recently he has provided technical leadership in upgrading the electrically-powered traction systems that form part of the municipal passenger network systems' upgrades. He has also contributed to the railways industry through his active involvement in the Institution of Railway Signal Engineers and the Railway Technical Society of Australasia.

Roger Nokes is elected a Fellow of IPENZ for his contribution to the advancement of engineering knowledge and education. His main contribution has been through his research into environmental fluid mechanics. Roger has been recognised internationally for his research into the development of software tools, now used by others, for analysing images obtained from experimental fluid flows. He has received excellence awards for teaching (he teaches at tertiary level), and is an active participant in initiatives to improve engineering education.

Shusheng Pang is elected a Fellow of IPENZ for helping advance engineering knowledge. He is recognised for his contribution to advancing knowledge in the processing and use of woody biomass. His international publication record is extensive and includes major contributions to drying soft wood timber, biomass gasification, biomass-based liquid fuels and wood-recycled plastic composites. Shusheng has been instrumental in getting research funding, enhancing collaboration and ensuring the industry takes up the applications of his research.

James Phillis is elected a Fellow of IPENZ for his contribution to leadership in the profession. He has made a strong contribution to developing the international scope for New Zealand-based engineering consultancy. He saw key areas in which New Zealand engineering practice was world-leading, and was able to develop business opportunities overseas, based on applying this competitive advantage. He has been instrumental in promoting the important contribution engineering consultancy services can make to the New Zealand economy.

Wayne Raymond is elected a Fellow of IPENZ for contributing to the advancement of engineering practice and innovation in the creation of engineering works. Wayne is recognised for helping advance structural engineering construction practice. By applying innovative construction methodologies in multi-storey building construction he has helped enhance productivity. He has contributed to codes of practice for using pre-cast concrete as a building material and was a key contributor to the 2003 IPENZ Structural Engineering Task Force. Among other bodies he has been active for many years in the New Zealand Concrete Society.

Graeme Smart is elected a Fellow of IPENZ for his contribution to the advancement of engineering knowledge. Graeme has been involved in research in river mechanics, sediment transport and flood hazard prediction and mitigation and sediment transport. He has particular expertise in gravel-bed river behaviour under flood conditions and is a sought-after adviser to a number of regional councils. He is an author of the Smart-Jaeggi sediment transport equation for steep gravel-bed rivers, and has developed a flow meter suitable for rivers with high gravel and sediment loads. He also leads hazards research programmes.

Clive Tilby is elected a Fellow of IPENZ for contributing to innovation in the creation of engineering works and leadership in the profession. He is recognised for his work in the construction industry and for making a wider contribution to public good activities. In the construction sector he was an early leader in involving constructors early in project design. He has also been involved in initiatives to lift the industry's performance levels. Clive has been recognised by the Government and others as having a keen analytical mind well-suited to investigative and advisory panels into matters of public interest.

Ross Vincent is elected a Fellow of IPENZ for the important contribution he has made to the Institution. Ross is recognised for developing the growth of Ingenium as a significant membership-based organisation. He oversaw the business strategies that enabled Ingenium to procure sufficient resources to develop and maintain a professional staff resource for IPENZ Members. This included developing offshore revenue streams for some of Ingenium's leading asset management products. Additionally, Ross has been elected Vice President of the International Federation of Municipal Engineering.

Ted Willson is elected a Fellow of IPENZ for contributing to the advancement of engineering practice, particularly in advancing timber engineering. Ted was involved in the pioneering design of long span timber nail plate trusses in commercial buildings at a time when timber was rarely used outside of domestic construction. A number of exemplary buildings were built and a new market was opened for timber as a construction material. He also contributed to the first use of plywood diaphragms for commercial and industrial buildings. Ted's work has been recognised through a number of awards.

Governing Board

ELECTED, RE-ELECTED AND CONTINUING BOARD MEMBERS

Results of the recent Board election were announced at the 97th IPENZ Annual General Meeting held on 18 March 2011. The IPENZ governing Board for the term April 2011 to March 2012 is:

President	**Steve Reindler FIPENZ**
Deputy President	**Graham Darlow FIPENZ**
Vice President	**Derrick Adams FIPENZ**
Immediate Past President	**Garry Macdonald FIPENZ**
Re-elected Board Members	**Tiina Hall-Turner FIPENZ**
	Bryan Leyland FIPENZ
	Elena Trout FIPENZ
Continuing Board Members	**Richard Muggleston MIPENZ**
	Steve Abley FIPENZ
	Allan Williamson FIPENZ

NEW MEMBER OF THE BOARD

Derrick Adams FIPENZ holds a Bachelor of Engineering from The University of Auckland. He is currently Chief Executive of HEB Construction Ltd and serves on the Executive Council of Roading New Zealand. He previously held management positions at Watercare Services Ltd and McConnell Dowell.

Derrick believes his experience in the planning, creation, operation and maintenance of infrastructure from client and commercial perspectives will allow him to make a valuable contribution to the professional engineering community. He is interested in ensuring that professional engineers are well represented in key decision-making areas across New Zealand, as this is essential to driving the country's development.

The induction of the new senior office holders at the Fellows' and Achievers' Dinner 2011. From left to right: Steve Reindler, Graham Darlow and Derrick Adams.

IPENZ
ENGINEERS NEW ZEALAND

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Pūtahi Kaiwetepanga Ngaio o Aotearoa

President
Stephen Reindler
president@ipenz.org.nz

Deputy President
Graham Darlow
deputy.president@ipenz.org.nz

Chief Executive
Andrew Cleland
ce@ipenz.org.nz

Registrar
Jeff Wastney
registrar@ipenz.org.nz

Editor – Member Communicatons
Matthew Winthrop
editor-comms@ipenz.org.nz

Membership Enquiries
Michele Boniface
membership@ipenz.org.nz

National Office
Ground Floor
158 The Terrace
Wellington
New Zealand

04 473 9444
ipenz@ipenz.org.nz
www.ipenz.org.nz