

February 2007 • Issue 56

President's Message



Masters of uncertainty and complexity

Happy New Year to you all, and I hope you had better holiday weather than I did. I was fairly itching to use my fishing rod, but I feared the wind would snap it! Of course, since my return to work the weather has been perfect, and I have had to deny my instinct to take the rod and dog and head off in the other direction.

In my last message, I gave a very short history of the schools of engineering. Since then I have discovered a gem that I want to share with you – the original 1818 prospectus of the American Literary, Scientific and Military Academy. The curriculum is too long to list in full, but I will try to pick out enough detail to demonstrate its scope.

First comes a little Latin, Greek, Hebrew, French and English, followed by such mathematical essentials as logarithms (remember those?) and spherical geometry, with practical applications like surveying and mensuration of heights. Sciences as varied as "chymistry", electricity, optics, navigation, geography, astronomy and agriculture are all included. Then comes all the military skills such as fortification, artillery, tactics, castrametation (the art of setting camp), plus the underpinnings of bookkeeping, drawing, architecture and civil engineering, including the construction of roads, canals, locks and bridges. It's all topped off with the gentlemanly arts of fencing, music, composition and politics. Students were also instructed in elements of soldiering, such as "making out correctly the different descriptions of military reports", all arranged to avoid interfering with their engineering study. What fine and well-rounded engineers these graduates must have been!

I found another gem from the military academy at West Point, the first United States engineering school and a precursor to the institution above. The entry requirements look a little more demanding than those we are used to – amongst other things, applicants must have no legal obligation to support a child, be of good moral character, and undergo an entry exam and physical tests. Here the curriculum consists of an academic core in the arts and sciences plus physical and military programmes. Cadets must pass an annual physical test ("the worst three minutes of the year") and undergo military training at "Beast Barracks". They too learn the ethics and values of the military profession. But, guess what? This is today's curriculum! It still clearly shows its roots of some two centuries ago (and is somewhat reminiscent of Ardmore or the Ilam Fields, I thought).

All this could hardly be more different to our system of engineering education in New Zealand, and yet both systems turn out graduates of generally good quality. So, whatever it is that distinguishes engineers from other professionals, the details of how and what they study do not seem important.

As those of you who have attended my Presidential visits will know, I think that the key attribute of engineers is the ability to prove in advance that a given solution will actually work as designed – this is surely the primary expectation of our employers and clients.

In order to do this, we must cope with uncertainty and complexity. Complexity is an inherent characteristic of most engineering systems, and so the ability to work with complex engineering problems is now specifically required in all of our competency-based qualifications – including accreditation of initial degrees. Uncertainty, of course, is inherent in any dealings with the future or modelling of complex systems, particularly physical or natural systems.

As engineers, we have developed quite structured approaches to both uncertainty and complexity – no doubt you can think how you do this in your own job. This is the key that distinguishes us from other professions, which mostly seek or require absolute certainty in their professional work – except perhaps medics or teachers, but they work on humans! So next time you are asked what you do, don't simply say you design things – tell them you are a master of complexity and uncertainty.

Now where's that fishing rod?

Peter Jackson

President

Setting the Bar – Standards and Accreditation

2006 was another busy and productive year for the IPENZ Standards and Accreditation Board (SAB), which is responsible for setting and maintaining standards for qualification accreditation and competence recognition.

Accreditation activities for the year included visits to the University of Waikato and The Open Polytechnic of New Zealand (TOPNZ). The University of Waikato sought full accreditation for its materials and process, biochemical and electronic engineering degrees and provisional accreditation for new degrees in mechanical and software engineering. TOPNZ requested full accreditation for its three-year Bachelor of Engineering Technology degrees in civil, electrical and electronic, and mechanical engineering, which it delivers in conjunction with the University of Southern Queensland (USQ).

Both of these accreditation visits were successful and resulted in the SAB granting accreditation, as listed above, at its December 2006 meeting.

During the year, the SAB also granted provisional accreditation for a three-year Bachelor of Engineering Technology in highways engineering, offered by the New Zealand Institute of Highway Technology under contract to the Western Institute of Technology. This degree is a specialist qualification that targets people with a Diploma in Civil Engineering, and is offered on a part-time (block course) basis.

Professional engineering programmes at the University of Waikato are relatively new, but the accreditation panel was impressed by the level of commitment and investment from the University and felt that this was reflected in the quality of graduates that are being produced.

TOPNZ offers degrees by correspondence, and requires students to travel to USQ periodically to complete laboratory practice modules. The accreditation panel was impressed by the strong relationship that has been established between TOPNZ and USQ which is the reason for the good outcomes seen by the panel.

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Full accreditation is only granted to programmes that have produced at least one group of graduates, allowing the quality of graduates' outcomes to be assessed. Prior to that, provisional accreditation can be granted where an assessment indicates that students are likely to have developed the expected attributes by the time they graduate. Provisional accreditation indicates that full accreditation is likely, but not guaranteed.

As well as overseeing these accreditation visits, the SAB:

- reviewed the IPENZ Accreditation Manual and academic criteria documents, which form the basis for the accreditation process
- developed a draft assessment statement for the recognition of technician education programmes under the Dublin Accord (IPENZ was granted provisional signatory status under this agreement at an international

workshop that was held, coincidentally, in Dublin in June 2006)

- contributed to the development of a revised policy for Endorsed Employers, which is currently out for consultation

Thanks to the Members of the SAB for their continuing efforts on behalf of the Institution:

- Basil Wakelin – Chair
- Richard Haverkamp
- Bob Hodgson
- Geoff Hunt
- David Ryan
- Paul Sampson
- Paul Wilson

Young Engineer Finalist Leads IPENZ Initiative



The Young Engineer initiative aims to improve support for the early-stage career development of young engineers. Last November's survey confirmed that young engineers are looking for two strands of professional development and opportunities to network and socialise with other engineers.

IPENZ is expanding its existing programmes and developing new ones to meet these needs, and has recruited **Darren Cash MIPENZ, CPEng** to lead

the initiative on a part-time secondment from his current employer. Full details of the initiative will be presented at Convention 2007.

Darren is an Associate Director with Maunsell and is currently the Manager of the Auckland Transportation Team. His background is in the development and implementation of major highway and civil engineering projects.

He is actively involved with the development of young professionals. He initiated and led the development of the Maunsell Auckland Young Professionals group and was a founding member of the ACENZ Young Professionals group in Auckland.

Darren was a finalist in the ACENZ Future Leader competition in 2003 and was a Young Engineer of the Year finalist in the 2006 New Zealand Engineering Excellence Awards.

Public Policy Key Messages: Energy

IPENZ is currently developing key messages on energy as part of its focus on selected public policy issues. The finalised messages will represent the Membership's majority view and provide a basis for IPENZ to speak out on important issues.

The preliminary key messages on energy are set out below. Please email any feedback, including suggestions for additional or alternative specific issues, to policy@ipenz.org.nz For further information or to discuss these issues, contact Policy Advisor Shelley Pope on 04 479 8949.

Issue	Key Messages
<p>1. Electricity generation</p> <p>New Zealand is at risk because of insufficient generation to meet increasing peak demand. Generation is heavily reliant on limited fossil fuels as a backup for renewable but variable energy sources, such as wind and hydro-electricity.</p> <p>The public response to renewable energy generation is uninformed and therefore not always supportive.</p>	<ul style="list-style-type: none"> • Sustainable, renewable generation using New Zealand renewable resources is the first choice option. • IPENZ strongly supports the expanded use of New Zealand wind and tidal resources in conjunction with more efficient use of hydro and other energy storage systems. • High priority needs to be given to both demand minimisation and to increasing energy efficiency, including active demand-side management to slow demand growth where this is economically justified. • IPENZ promotes ongoing research into and assessment of evolving technologies, especially where these lead to better use of New Zealand resources. • Research into the use of clean coal technologies, biomass conversion, hydrogen and tidal generation is supported. • Reliance on the use of imported fuel for thermally-fired generation should be avoided. This can only be achieved if New Zealand strives towards a situation where a thermal plant, preferably running on indigenous fuel, is primarily used as a backup for a renewable energy-dominated generation system.
<p>2. Electricity transmission</p> <p>New Zealand's geography means renewable hydro and existing thermal generation is not located close to demand growth.</p> <p>Current transmission infrastructure urgently requires upgrading to manage increasing demand and to allow all renewable and existing thermal generation to get to market.</p>	<ul style="list-style-type: none"> • Generation at point-of-use is supported as this will ensure generation is closer to demand and reduce the need for ongoing transmission grid upgrades. It will also reduce reliance on a sole energy producer whilst encouraging wind, solar and other generation methods where cost-effective. • IPENZ supports an upgrade of the transmission grid which ensures that all generation resources are used efficiently whilst mitigating adverse environmental and social effects. • The transmission network will need to change from a one-way supply function to allow excess energy generated by private individuals to be supplied back to the grid. • In order to provide certainty and national leadership, a National Policy Statement on electricity transmission addressing the above is required. A National Environmental Standard to provide uniform levels of mitigation against loss of amenity and address possible health issues where transmission lines cross regional boundaries would also assist.

	Issue	Key Messages
3.	<p>Security of supply</p> <p>New Zealand's dependence on imported oil, combined with dwindling gas reserves and dry periods affecting hydro-generation, creates an environment of uncertainty.</p>	<ul style="list-style-type: none"> • We recognise that it will be necessary to continue to use oil and gas over the short to medium term. • Domestic gas and oil exploration is encouraged, where cost-effective, in order to ascertain the size of the remaining stock so that society can make informed decisions on its use. • Nuclear energy use should be re-evaluated and be subject to ongoing assessment.
4.	<p>Demand management and energy efficiency</p> <p>New Zealand's energy consumption is growing fast. Demand management and energy efficiency are tools which could be used to greater effect.</p>	<ul style="list-style-type: none"> • Demand minimisation should have top priority, generally having a better return on capital than either improving the efficiency of energy-using plant, or enlarging supply systems. • Active demand management to manage growth is required. Key demand management tools must be identified to reduce peak demand and help to slow increasing consumption. This should be accompanied by consumer education in the comparable energy efficiency of appliances and their use. • Minimum energy standards need to be introduced and enforced, for example in the Building Code. Efficiency will also be improved by better utilisation of point-of-use technology such as solar energy and wind resources where cost-effective. • Price signalling should continue to be utilised – the marginal cost of thermal generation needs to be seen in the market. • The introduction of mandatory energy efficiency standards in all new buildings is strongly recommended. Incentives should be provided to ensure existing homes are made more energy efficient.
5.	<p>Transport fuels</p> <p>Transport fuel is New Zealand's most rapidly rising unsustainable energy use. New Zealand has very little control over the supply of oil, so New Zealand's dependence on oil as a transport fuel should be under continual review.</p>	<ul style="list-style-type: none"> • Using rail and coastal shipping for bulk haulage of goods around New Zealand where appropriate is encouraged. • Demand management tools for urban transport should be used where these optimise our use of transport fuels. • IPENZ supports public transport systems and investments in cycleways and pedestrian facilities. • Where appropriate, teleworking infrastructure should be strengthened to minimise the need for transport to workplaces. • The tax on transport fuel needs to reflect all costs, including carbon. • Incremental vehicle technology change, for example low-sulphur diesel, must continue to be promoted. • Vehicle efficiency standards need to be developed. • A variable road tax system should be introduced to discourage the use of inefficient vehicles and to promote the use of electric, hybrid and fuel-efficient vehicles. • Ongoing assessment of significant vehicle technology changes is required. • The use of fuels such as ethanol, hydrogen and biodiesel created by sustainable processes is encouraged. • We encourage the development of a National Policy Statement on transport fuels including a strategic plan addressing uneconomic or scarce fuel and managing the transition to alternative transport if necessary.
6.	<p>Transport infrastructure</p> <p>Our transport infrastructure is both inadequate and unsustainable.</p>	<ul style="list-style-type: none"> • Government should undertake the necessary policy analysis to ensure that public investment in freight transport is optimally distributed between rail, coastal shipping and road transport. • Improved urban design to minimise the need for or desire of people to travel is critical to limit the growth in total transport demand. • Public investment and ongoing financial incentives to increase use of public transport systems, cycleways and pedestrian facilities can be justified as a public good. • Other than the above, the full costs of each transport mode should be reflected in the pricing system, including the time-of-day costs generated by peak demands, to improve decision making on travel options and limit the extent to which expansion of road capacity is required. • After the measures above have been deployed, further investment to limit or reduce road congestion is still justified if we are to avoid severe economic penalties in terms of lost productivity in our economy.

INVESTING IN THE FUTURE VISION 2020

Convention 2007
21–23 March
Hyatt Regency, Auckland

We have a great line-up of speakers planned for Convention 2007, including Dick Hubbard, John Ansell (the PowerPoint guru), Christine Rankin, David Chapman (Chief Executive of the New Zealand Institute of Management) and Jim Bradley. Four concurrent streams will also provide delegates with a variety of interesting technical speakers on Friday 23 March.

The entertaining Tim Shadbolt will speak during the Fellows' and Achievers'

Dinner. This dinner is a great opportunity to take part in the celebrations as the Institution recognises its Members' achievements.

One of the best parts of Convention is the chance to meet new people and catch up with old friends during the many networking opportunities. Don't miss the Meet and Greet Dinner at the start of the Convention with inspirational and motivational speaker Tony Christiansen.

For more information, visit the Convention website www.ipenz.org.nz/convention or email Kavita Kansara on kkansara@ipenz.org.nz or phone 04 474 8980.

Get Alongside a Careers Advisor



Electrical engineer Linda Salamoun of Opus, with students from Sunny Hill Primary School, Auckland.

The Schools team is delighted to announce a new opportunity for IPENZ Members to assist in the promotion of the industry.

"Get Alongside a Careers Advisor" is aimed at enabling Members to become a resource for local schools by answering questions on how to get into engineering and what it entails, and giving

advice as needed. The campaign launched in December 2006 and received a very positive response, with 17 registrations of interest in the first day.

The scheme operates on a simple principle. Members make themselves known to the careers advisor at their local school and indicate they are willing to act as a source of information on the industry. By offering to answer questions on careers in engineering, provide advice on work experience and inform careers advisors of

the resources offered by IPENZ, Members can make an enormous difference to students' understanding of the possibilities open to them.

As each case represents an individual and distinct relationship between the school and an IPENZ Member, involvement can be tailored to the capabilities and time constraints of each person. Some Members may be happy to give presentations to a group of students, for example, while others may prefer to answer specific questions as they arise.

For the last four years, IPENZ has successfully addressed the need to promote engineering to the next generation through the Futureintech initiative, which recruits young engineers, technologists and scientists to act as Ambassadors.

It is anticipated that the Get Alongside scheme will complement these efforts by focusing on the areas of New Zealand where Futureintech does not operate, in order to maximise the number of students that benefit.

If you are interested in ensuring that students are aware of the opportunities of a career in engineering, and that bright young people continue to rejuvenate the industry, consider becoming involved. For further information, please contact Susan Weekes on sweekes@ipenz.org.nz

Schools Update

Use of online resources increases

The Schools team has been working behind the scenes during December and January, preparing for the beginning of the new school year in February. Encouragingly, it appears that teachers are using the resources offered by both Techlink and Futureintech in their own preparations for 2007.

The Techlink website, www.techlink.org.nz, has seen a steady increase in visitors throughout the year, but there has been a dramatic rise in traffic over the holidays with the number of returning visitors peaking at 1,247 in December. This suggests that visitors consider the information and use it to plan for the next year. The Beacon Practice schools case studies, which showcase best practice in technology education, are achieving especially high visitor numbers.

The website will expand in 2007 to include more summaries of student work in a wide range of technological disciplines, and offer examples of successful approaches used in Beacon Practice classrooms.

New Futureintech publications

This year, Futureintech will produce new brochures for students, parents and careers advisors that highlight career choices within the fields of technology, science and engineering.



In order to present authoritative material in a new and engaging way, Futureintech will write and design the brochures in collaboration with relevant partners. The first of these is likely to be written in partnership with the New Zealand Computer Society, and will offer synopses of what is involved in and required by the full range of careers in ICT. Further joint efforts are planned in biotechnology, chemical engineering and food science.

Futureintech will continue to recruit enthusiastic young technologists, scientists and engineers to act as

Ambassadors in schools this year, and to provide up-to-date advice on the website. A new look for the site is planned for early this year, but it will continue to offer wide-ranging, detailed information on careers, courses, Ambassadors and employers. You can find recent school activities and new Ambassador profiles online at www.futureintech.org.nz

Past President Honoured in New Year's List



IPENZ congratulates **Gerry Te Kapa Coates FIPENZ**, who became a Member of the New Zealand Order of Merit in the 2007 New Year's Honours for his services to engineering. He has been an active member of the engineering profession for over 30 years, and is an expert in forensic investigations, governance, electric and energy studies, strategic planning and engineering ethics.

Gerry founded Engineers for Social Responsibility in 1983. As an active IPENZ Member, he has held a number of offices including Board Member and President, and was honoured with the President's Award in 1995 and Professional Commitment Award in 2001.

He has held governance positions with Land Transport New Zealand, Te Runanga o Ngai Tahu and his own consulting business, Wise Analysis Ltd. He has contributed to numerous technology publications, is a published poet and fiction writer, and was short-listed for the 2001 and 2003 Maori Literature Awards.

Movers and Shakers



Adam Thornton FIPENZ CPEng IntPE and **Professor Andy Buchanan FIPENZ** have been appointed for three-year terms as members of the Department of Building and Housing's Chief Executive Building Advisory Panel. The role of the panel is to provide independent and specialist advice to the Chief Executive about current and emerging trends in building design and technologies, and other factors that may affect the building industry.

Adam is a Director of consulting engineers Dunning Thornton Consultants Ltd, having joined the firm in 1986, and is a current Member of the IPENZ Engineering Practice Board. He has been involved for several years on a Standards committee, is a past President of ACENZ, and served on the 2003 IPENZ Structural Engineering Taskforce.



Andy is the Chair of Timber Design at the University of Canterbury's Department of Civil Engineering, having recently stepped down as Head of the Department. He is an international expert on fire safety and earthquake resistance of timber buildings, and has been involved in the structural design of buildings in New Zealand and overseas. A past Member of the IPENZ governing Board and Professional Standards Board, Andy has been on the management committees of the New Zealand Society for Earthquake Engineering and the Structural Engineering Society, and President of the New Zealand Timber Design Society.



Mike Underhill FIPENZ is the new Chief Executive of the Energy Efficiency and Conservation Authority (EECA).

Mike has spent more than 35 years in the gas and electricity sectors in New Zealand and overseas. He is currently the Chief Executive of WEL Networks, a Waikato-based electricity distribution company, and is a former Chief Executive of TransAlta NZ, and a former Chairman of EECA. He was involved with the deregulation of the New Zealand electricity industry and in 1995 he was awarded a Distinguished Services Award by the Electrical Supply Association.

Mike also served as Chairman of the Business to Hamilton initiative, and Chairman of Katolyst, Waikato's economic development agency.



Peter Brothers FIPENZ has been appointed the new Chief Executive of the Manukau Institute of Technology (MIT).

Peter joins the Institute after nine years of successful tenure as Dean of the School of Engineering at the University of Auckland. His earlier career included 20 years in the United States, where he worked as a teacher, university researcher and senior manager in industry. He is a former director of Auckland Regional Transport Network Ltd and serves on the board of UniServices Ltd, the University of Auckland's intellectual property company.

He holds a PhD in civil engineering from Colorado State University in addition to ME and BE degrees in engineering science, and a BSc in mathematics and physics from the University of Auckland.



Axel Wilke GIPENZ has been appointed to the board of BikeNZ, an umbrella body embracing all national cycling organisations.

Axel is a Director of Traffix, a Christchurch-based traffic engineering and transport planning consultancy that specialises in sustainable transportation.

He recently published *Stops and Goes of Traffic Signals*, a Land Transport New Zealand manual for signal engineers. He also developed *Fundamentals of Planning and Design for Cycling*, a course on the principles of design for cycling in New Zealand that won a 2004–05 Cycle-Friendly award.

He has been active on IPENZ Transportation Group committees, including the National Committee, and he was a member of the Land Transport New Zealand Research Strategy Group. Axel is a guest transportation lecturer at Canterbury University and is a committee member of Cycling Advocates' Network, the national cycling advocacy group.

Member Services

IPENZ Branches

On joining IPENZ, Members automatically become affiliated to their local IPENZ Branch. By attending Branch meetings you will have a unique opportunity to network, share information, and learn from your peers. Meetings are also a conduit for career development and engineering practice support, and provide opportunities for getting involved in your local community. Branch meetings generally involve a guest speaker or visit, followed by an informal gathering for networking and discussion.

IPENZ has Branches in the following regions: Northland, Auckland, Waikato, Tairāngia, Taranaki, East Coast, Wanganui, Manawatu, Hawkes Bay, Wellington, Nelson/Marlborough, West Coast, Canterbury, South Canterbury, Otago and Southland.

Contact information for your local Branch is available at www.ipenz.org.nz/ipenz/who_we_are/organisation/Our_Branches.cfm or by phoning Branch Facilitator Kathryn McGavin on 04 474 8989.

Other Membership Benefits

As a fully financial Member you receive:

special Membership rates for IPENZ Short Courses and Convention

reduced rates for American Express credit cards and income protection insurance

e.nz magazine – our flagship publication promoting New Zealand's engineering innovation, technology and achievements (past issues can be searched at <http://e.nz-magazine.co.nz/main.htm>)

engineering dimension – our monthly newsletter covering Institutional activities and information

engineering direct – our weekly electronic newsletter providing up-to-the-minute news across the range of Membership services

IPENZ Professional Development Short Courses

Our Professional Development Programme is specifically designed to contribute to developing and maintaining Members' competencies as professional engineers, engineering technologists and engineering technicians.

Full details are available at www.ipenz.org.nz/ipenz/nzecal/ks.cfm or by emailing CPD@ipenz.org.nz or by phoning Josie Nolan on 04 474 8982.

Bernard (Bert) Dekker QSM MIPENZ JP

21 October 1925 – 7 December 2006

Bert Dekker, prominent civil engineer and winner of the Queen's Service Medal for Public Service, died on 7 December 2006, aged 81.

Bert grew up in The Hague, Holland. He began to show promise as a mechanical engineering student but World War II interrupted his studies and he was deported to Germany to work in a factory. His health deteriorated and he was hospitalised for nine months with pleurisy and tuberculosis in 1944.

Following his experiences in Germany, Bert returned to Holland to study civil engineering. He graduated in 1951 and emigrated to New Zealand a year later to join the Ministry of Works in Wellington. Shortly after arriving, his tuberculosis relapsed and he was readmitted to hospital where he underwent four major operations, including one to remove his right lung.

In 1954, Bert began work on the Atiamuri Powerhouse project. By 1955, he was in charge of construction at the Ohakuri Dam, and both the Ohakuri and Waipapa Dam projects. He transferred to Matahina Power in 1962 and helped carry out dam construction and engineering investigations for the Kaituna, Kopuriki and Motu rivers.

When the Tongariro Power Scheme began, Bert worked as Inspecting Engineer, where he dealt with several major tunnelling contracts including the 19-kilometre Moawhanga Tunnel. He became Project Engineer in 1971, cutting the number of project fatalities by 80 per cent.

Bert retired from the Ministry of Works in 1984, and was awarded the Queen's Service medal for Public Service the following year in recognition of his contribution to his adopted country. *Thanks to Geoffrey Thornton and Robert Offer*



David Bruce Dallas MIPENZ

30 August 1908 – 25 September 2006

Bruce Dallas, former Commissioner for the West Coast, died on 25 September 2006, aged 98.

In his last year at Balclutha District High School in 1924, Bruce read about six-year civil engineering cadetships at the Public Works Department. He worked for the Department for several years before he was appointed as a civil engineering cadet in the

Buller Gorge one month before the Inangahua earthquake in 1929.

During the 1930s, Bruce worked on several land, highway and drainage projects in the Hutt Valley and Kapiti Coast, and was the engineer in charge of completing

the Plimmerton-Paekakariki coast road and railway duplication. In the South Island, he worked on railway and construction development on the West Coast and drainage projects in Milford.

Bruce planned Wellington's Kaitoke water-supply scheme during the 1940s, and worked as Resident Engineer for Auckland City Council's Lower Nihotupu dam (at the time the largest earth-fill dam in New Zealand), and served as Investigating Engineer for several Waikato power development projects.

Bruce was Resident Engineer in Gisborne and Trentham during the early 1950s, and was promoted to District Civil Engineer for the Wellington region in 1959. After four years service on the urban motorways, Bruce became Planning Engineer and then District Commissioner of Works in Christchurch.

Bruce served on local body boards, community organisations and voluntary groups, and after his retirement in 1968, he became Commissioner for the West Coast to encourage social and economic rehabilitation, and to develop export-led industry and tourism initiatives in the region. *Thanks to Eric Heine*

Raymond Fenton (Ray) McCullagh FIPENZ

1 May 1925 – 4 September 2006

Ray McCullagh, who died on 4 September aged 81, will be remembered as a strong-minded engineer who gave 35 years of service to the electrical industry.

Ray was born in Hamilton and gained matriculation at Hamilton Boys' High School in 1943. He completed his engineering intermediate at Auckland and worked as an electrical fitter at both Arapuni and Karapiro before completing his BE at Canterbury College.

Ray joined the State Hydro-Electric Department in 1952 as an engineering cadet. He was involved in substation construction for 12 years, moving up the levels to Senior Engineer and then Construction Engineer. During this time he looked after a large number of projects and an equally large number of young engineers during their formative years.

When an opportunity arose to join a team tasked with reviewing the structure of the organisation, he moved to Wellington. Following the review, Ray became Personnel Manager.

In 1975, Ray was appointed District Manager Palmerston North, later returning to Head Office as Chief Engineer Operations. In this position he had overall responsibility for the operation and maintenance of the complete system, including generating stations, transmission lines and supply substations. During this period the 1000MW Huntly Power Station was commissioned. *Thanks to Brian McGlinchy and Lorna McCullagh*

Membership Changes 1 October 2006 – 31 January 2007

Elected to Graduate Member:

R Adamson, HP Anderson, GC Basas, J Behl, TG Bennett, FN Berrysmith, DJ Bethell, AJ Beukes, SC Bird, DP Bon, BE Bonita, MR Boyle, KG Brogden, JC Bueno, SR Burrough, KJ Butterfield, DMA Campbell, P Cannin, J Cao, D Corbu, DG Croll, JC Daly, K Dasgupta, CM Deakin, CF Duggan, CM Dullnig, KR Duncan, AM Farreyre, F Farzinbeh, KR Fearnside, LG Fletcher, RC Fogarin, CJ Forrest, DG Francis, ADC Geneta, NJS Gilbert, SB Glue, DS Grajo, JW Grieve, R Grobler, PJ Hanaray, PD Hemming, KH Hjelmstrom, ED Hohneck, J Hubley, RS Inger, KJ Ingram, MA Iqbal, AK Jackson, SB Jesen, RDC de Jesus, HL Jopson, JJ Kearney, PN Kidson, IN Langdon, PH Lau, EKY Lee, AJD Leslie, RA van Lierop, YBL Lobo, S Lu, TMQ Ma, X Ma, RS Mander, JW Matthews, K McGrannachan, GC Mendoza, DPM Middle, K Moran, N Morrice, DA Mouravlev, A Mylvaganam, F Neumayr, GK Osborne, HG Ow, DI Pavel, Y Peng, LI Pooch, AC Prestidge, PH Priest, J Puchert, W Qiu, SA Quinn, JH van der Schyff, SCS Scornavacca, GKW See, A Setiawan, F Sharif, DA Sharman, TY Sii, JP Sim, P Simon, BAE Simpson, S Singh, V Singh, MI Sohel, DH Strydom, V Tanielu, DP Taylor, LJ Theng, CM Toh, W Van Houtte, MS Vohra, RJ Welbourn, KG Wigram, AS Williams, GKN Wong, LJ Wong, SK Wong, J Wood, N Woodward, KF Yuen, RWT Yuen

Elected to Professional Member:

DJ Anderson, R Castillo-Barahona, DN Castree, HT Chiang, DC de Villiers, BJM Donnell, S Ekanayaka, JP Flanagan, SG Ford, TB Fraser, VN Gin, D Giroux, NM Gordge, SG Hall, TV Hills, PW Ingram, SA Jemmett, LS Jones, RB Kingsford, CY Ko, ZD Lai, PA LaRoche, CD Lawrence, R Marsay, CFA Martin, AA Metherell, M Pratt, PA Reed, MRJ Schruer, RA Scott, CM Screech, NJ Sharpun, AJ Smith, MD Smith, ML Spillane, JK Su, I Sumner, S M Taylor, H van Zyl, M Walmsley, TH Wu

Elected to Technical Member:

FA Sawai, WJ Wolfaardt

Elected to Associate Member:

NR Pye, AJ Snyman, WM van Til

Elected to Affiliate Member:

AT Brimelow, E Cafe, PM Macaiba, DG Pettigrew, CAN Reeves, S Tiatia, B Tracey, I Waghorn

New Poster Promotes IPENZ Membership



This month we launch our exciting new IPENZ poster. The poster features 36 IPENZ Members who work in different disciplines, and are at various stages of their engineering careers – communicating to Members and non-members alike that IPENZ is an inclusive, proactive organisation for engineers.

Thank you to all Members who agreed to “lend their faces” to this initiative.

If you would like a copy of the poster for your workplace, please contact marketing@ipenz.org.nz or phone Kavita Kansara on 04 473 9444.

2005/2006 Annual Report Available

The IPENZ Annual Report for the year ending 30 September 2006 was sent to all New Zealand-based Members with the January/February issue of *e.nz magazine*.

Members residing overseas can access an electronic copy via the IPENZ website www.ipenz.org.nz/ipenz/forms/pdfs/ or request a hard copy of the Annual Report by emailing ipenz@ipenz.org.nz

Notice of Annual General Meetings

The Institution of Professional Engineers New Zealand Incorporated

The 93rd Annual General Meeting of The Institution of Professional Engineers New Zealand Incorporated will be held at the Hyatt Regency, Corner Princes Street and Waterloo Quadrant, Auckland at 8.00am on Thursday 22 March 2007.

Agenda

1. Notice of the Meeting – Confirmation
2. Apologies for Absence
3. Visitors
4. Obituaries
5. Honours Lists
6. Announcement of Honorary and Distinguished Fellowship Awards
7. Confirmation of Minutes of 92nd Annual General Meeting held on 22 March 2006
8. Confirmation of Minutes of Special General Meeting held on 3 October 2006
9. Matters Arising
10. Announcement of Board Election Results
11. Vote of Thanks to Scrutineers
12. Vote of Thanks to Retiring Board Members
13. Approval of 2005/2006 Annual Report and Statement of Accounts
14. Motions of Which Prior Notice Has Been Given
15. Appointment of Auditor
16. Vote of Thanks
17. General Business

The Institution of Professional Engineers New Zealand Practice College

The fourth Annual General Meeting of the Institution of Professional Engineers New Zealand Practice College will be held at the Hyatt Regency, Corner Princes Street and Waterloo Quadrant, Auckland on Thursday 22 March 2007, following the IPENZ Annual General Meeting.

Agenda

1. Notice of the Meeting – Confirmation
2. Apologies for Absence
3. Confirmation of Minutes of Third Annual General Meeting held on 22 March 2006
4. Presentation of Annual Report
5. General Business

Dr AC Cleland

Chief Executive

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Member Services

Energy Library

Members can access specialist technical material at the Energy Library.

The Energy Library is the main access point for technical and scientific information in the New Zealand energy sector and related industries.

There is also considerable overlap with more general information needs, for example, IPENZ contributes a range of technical and heritage publications to the collections at the Energy Library. The Energy Library also holds collections from the Energy Efficiency and Conservation Authority, Liquid Fuels Trust Board, New Zealand Energy Research and Development Committee, and New Zealand Water and Wastes Association.

IPENZ has negotiated a membership deal with the Energy Library which gives Members:

a reduced individual membership fee (\$85 plus GST instead of the standard \$120 plus GST)

access to the Energy Library database of resources

borrowing and usage rights for a substantial collection of books, standards and journals

research services

a monthly email alert service for newly acquired and free information resources

For further information about the Energy Library visit www.energylibrary.org.nz

Public Policy

IPENZ contributes to the public good by providing an engineering perspective on matters of national importance. This includes researching key issues, publishing papers and *Informatory Notes*, making submissions and generating public debate.

We provide up-to-date policy information to keep our Members informed and encourage their participation in the public policy process.

To find out more visit www.ipenz.org.nz/IPENZ/Media_Comm/PP_Intro.cfm

New Zealand Engineering Calendar

What's on? Visit www.ipenz.org.nz/ipenz/nzecal/default.cfm to find out. Members can access and/or place information about engineering events including courses, lectures, meetings, exhibitions, visits and other notices.



This year the IPENZ Professional Development Short Course Programme includes a range of new courses as well as our core courses which are back by popular demand.

Finance for Technical Professionals

Every business person needs to understand the financial implications of their decision-making. This two-day course will assist you to "know your numbers" and give you a competitive advantage regardless of your engineering discipline.

Auckland 28 February–1 March

Demystifying Strategy

NEW

The purpose of this course is to present strategic planning and management as a no-frills, logical and usable activity at all levels of the organisation. Strategy is important to managers at all levels – to differing degrees – and it is preferable to develop expertise in strategy before assuming a position of power and influence.

Wellington 2 March

IPENZ Mentoring Workshop

This one-day workshop is designed to develop mentoring and coaching skills, and make mentors more effective in their interactions.

Taupo 6 March

Travel and Parking Workshops

NEW

This workshop is presented by New Zealand Trips and Parking Database Bureau personnel and arranged jointly on behalf of IPENZ, NZPI, LGNZ, the University of Auckland, the University of Canterbury and the Ministry for the Environment. It is aimed at professional engineers and planners who are directly involved in operational aspects of travel, trips and parking, as well as those working at the policy level.

IPENZ Professional Development Short Courses

February – March 2007

Christchurch	6 March
Dunedin	8 March
Wellington	13 March
Hamilton	15 March
North Shore	19 March
Auckland	20 March
Palmerston North	26 March

Leadership and Management Essentials

This one-day course covers the essentials for engineers and business managers to enhance their leadership and management practices. Participants will learn how to handle their dual leader and manager role.

Auckland 13 March

Moving from Technical Expert to Management

This one-day course looks at the "soft skills" required to move successfully from being a technical expert to managing other technical experts in an engineering setting.

Auckland 14 March

Business Development and Professional Engineers

This one-day course outlines practical strategies for the complete cycle of effective business development – finding and keeping the right clients. It is based on the *IPENZ Practice Note 06* "Developing and Maintaining Client Relationships".

Christchurch 27 March

Negotiation Skills for Technical Professionals

This interactive, practical one-day workshop enables participants to identify their current strengths and build skills to improve their ability to negotiate successfully. These skills are applicable to the technical, contract and conflict negotiations that often involve engineers.

Dunedin 27 March

Avoiding Ethical Dilemmas

This one-day course, offered jointly with the Royal Society of New Zealand, introduces participants to the ethical values that underpin their profession and the obligations that flow from them.

Taupo 28 March
Wellington 30 March

Cost:

One day \$495 incl GST – IPENZ Members
\$540 incl GST – non-members

Two days \$945 incl GST – IPENZ Members
\$1,035 incl GST – non-members

Participants may choose to do a work-based project after some short courses and submit it to the facilitator for feedback. If this assessment option is chosen, the additional cost is \$54 incl GST. All short courses may be tailored to suit the needs of organisations.

Project Management Distance Learning Course

IPENZ and PPM Ltd are offering a distance-learning course in project management consisting of 125 hours of course study and assignment work. Full information is available at www.ipenz.org.nz/ipenz/nzecal/distance-learning.cfm

Short Courses in Project Management

IPENZ is collaborating with ProjectPlus to offer a range of one- and two-day short courses for IPENZ Members which are suitable for experienced project managers and engineers new to project management.

Registrations close one week before the start of the course or seminar in each location. Full details are available at www.ipenz.org.nz/ipenz/nzecal/ks.cfm or by emailing CPD@ipenz.org.nz or telephoning Josie Nolan on 04 474 8982.



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