

March 2007 • Issue 57

President's Message



Looking back, looking forward

As this is the last of my Presidential messages, I thought I'd reflect on some of the highlights of the year. One of the most striking developments is the degree to which the nature of issues at Board level has changed. When I began my time on the governing Board three years ago our reserves were just recovering from a very low level, we were wondering how and when to move to a new

building and whether we could afford the rent, and we were just starting out on the CPEng path after years of planning that particular journey.

Today our new building space is fully tenanted and branded – on my last trip to Wellington the taxi driver not only knew where to find Engineers New Zealand but quoted the street number. Our Membership is growing strongly, and reflects a fairly flat age distribution from 30 to 60. Our reserves should now be able to carry us through any foreseeable crisis and our income is much more diversified, with only 39 per cent currently coming from Members' subscriptions.

All this means that the focus of today's Board is far less on financial issues and far more on strategic issues, particularly those relating to renewal of the profession, professional standards and public profile, and young engineers. The views of IPENZ on engineering issues are not only being heard but are actively sought by government. We have successfully launched the New Zealand Engineering Excellence Awards (of which we are a founding partner), strengthened service and ties to Branches, and started to rebuild our graduate development programme.

But by far the most encouraging outcome of my last year has been finding out just how talented our young engineers are. I have spent most of my professional life teaching engineering to bright young people and watching them metamorphose from school kids into professional graduates, sometimes with a few transitional states in between. However, it has been just as rewarding to see how much more they develop within a few years of graduating. I recently judged the essay competition for younger Members which required entrants to write about "The Value of IPENZ in 2020", and was greatly impressed with the quality of entries.

A couple of common themes emerged during the last year. One was sustainability and global warming, both of which have now sprung rapidly into public consciousness. Of course engineers have always been aware of these issues but we have struggled a little to work out how to respond to them, and particularly how to persuade others to respond to the matters that we have little control over. The current high level of public awareness is removing this second impediment to change, and our young engineers are all too aware that it is they who will need to be leading the way by 2020.

The second theme was a quite sophisticated awareness that engineers may actually have to work even harder in future to make their voices heard on issues such as global warming. This is because other voices will also be demanding to be heard, as matters like this become more prominent and more politicised. For that reason we will have to speak with one voice and speak with a respected voice.

This was one of the roles which our young writers foresee as being increasingly important for IPENZ.

Coming up this year is our Young Engineers initiative. This will be rolled out at Convention, but part of the plan has been to budget for Branches to be actively involved in their own activities. Please do get engaged in this, whatever your age.

Overall my Presidential year has gone very quickly. I particularly enjoyed my visits to Branches. Although I still have a year to run as Past President, I would like to take this chance to say that I have found my committee and Board work with IPENZ to be a lot of fun as well as rewarding. I have learned a lot from my mentors and colleagues, met many interesting characters, and made a great many friends. I thank you all.

Peter Jackson

President

Profiling our Volunteers

Volunteers are the lifeblood of any self-regulating professional body and IPENZ is no exception. IPENZ Members support the concept of self-regulation and want to assist in building and maintaining the health of their profession. Self-regulation also implies that peers decide standards and recognise competence in a collegial manner, which means Members must meet and work together. On a practical level, volunteers reduce the organisation's reliance on paid staff, which helps keep Members' subscriptions as low as possible.

At its February meeting, the governing Board agreed on a policy designed to ensure the volunteering experience is a positive one for both IPENZ and our volunteers. The key features of the policy are:

- expectations should be defined – the tasks that volunteers are asked to perform should be described, together with an estimate of the required level of commitment
- volunteers should be assisted to identify roles that suit their interests and skills, circumstances and motivation
- new volunteers should: be supported by an identified staff member or experienced volunteer; receive appropriate induction, training and mentoring; and have identified performance standards
- volunteers should receive constructive feedback on their performance and be provided with further training if required
- volunteers and their roles should be recognised – occasional thanks and public acknowledgement for a job well done is all most volunteers seek

In implementing the new policy, the Board resolved that a new regular feature should be introduced to *engineering dimension* – volunteer profiles. Each month we will identify a group of volunteers, tell you about the nature of their role, and give you a taste of what they get out of their involvement.

The April issue of *engineering dimension* will showcase this year's IPENZ award winners, Fellows, Distinguished Fellows and Honorary Fellows. Awards like the President's Award for public service and the Turner Award for Professional

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Commitment recognise Members with the highest level of commitment to volunteering in the pursuit of a strong self-regulated profession. Enjoy reading these examples, and then look forward to our first volunteer profile in the May issue of *engineering dimension*.

If you know of a group of volunteers that you think we should profile, please contact Charlotte Stapleton, Managing Editor, email cstapleton@ipenz.org.nz, phone 04 474 8943.

Public Policy Key Messages: Education, Skills, Innovation and Economic Growth

IPENZ actively develops key messages on public policy issues for use when speaking to the media and other interested parties. Below are the peer-reviewed key messages that summarise the IPENZ position on education, skills, innovation and economic growth.

IPENZ extracts key messages from peer-reviewed submissions and policy projects,

or develops them through an iterative peer-review process. They therefore represent the majority view of the Institution's Members.

Please note that these messages have already been peer-reviewed, as had the key messages on energy that were published in the February issue of *engineering dimension*. We apologise for any confusion caused.

Peer reviewed – current as at February 2007		
	Issue	Key Messages
1	<p>Labour productivity</p> <p>Our low rate of growth in labour productivity is a result of poor performance in a number of areas.</p>	<ul style="list-style-type: none"> • The benefit: risk ratio for investment has favoured private sector financial capital investment in property over investment in physical capital and innovation which could result in the creation of products and services for sale. • Public sector funding of research and development (R&D) has been directed towards the creation of intellectual capital value (ICV) in areas where there are no realistic opportunities to attract private sector capital to pick up and use the research results. • Our investment in human capital (in both tertiary education and ongoing professional development) has been overly directed into less productive areas of the economy. • We have failed to adequately and appropriately skill our workforce as a whole to deploy and derive benefits from any physical capital investment made. • Our private sector workforce has inadequate capability to effectively use R&D. • Shortfalls in our national infrastructure are affecting our economic efficiency to the extent that the international competitiveness of some industries may be at risk. • The compliance costs of doing business and the risks associated with planning and getting approval for major projects are impeding development, and may be impacting negatively on our economic efficiency.
2	<p>Economic development</p> <p>The Government must adopt new actions that are different to the present centrally-planned approach to economic development.</p>	<ul style="list-style-type: none"> • Measures to improve the relative benefit: risk ratio of investment in productive plant and machinery compared to property investment must be introduced to encourage the private sector to redirect its capital. • The funding of Crown Research Institutes under the economic goal of Vote Research, Science and Technology must be determined against key performance indicators related to lifting private sector innovation capability, such as private sector co-funding commitment and transfer of R&D literate personnel to industry. • Public sector R&D investment under the economic goal should be directed towards activities that create ICV in areas where private sector capital is more likely to be attracted for follow-through to commercialisation. • The capability of our workforce to use physical capital must be built through assertive action to increase participation in critically-important disciplines. This can be achieved by reshaping qualifications so that graduates in technical disciplines can work better at the nexus of engineering, technology, creative design and business. • The unique difficulties faced by small- to medium-sized enterprises in undertaking or using innovation must be addressed by government preparedness to co-invest with the owner to develop in-house capability. • Government must demonstrate leadership and articulation of the plan for economic development and must be a role model in its own activities. • Increased public sector capital investment programmes in key infrastructure and the development of high-quality systems to allocate limited resources between potential users must continue. • To attract private capital, our regulatory and compliance framework must be reviewed with the aim of reducing risks to infrastructure projects or innovation-based projects. • Government should ensure that the compliance costs imposed on New Zealand businesses do not create undue penalties compared to international competitors.

	Issue	Key Messages
3	<p>Tertiary education</p> <p>The tertiary education sector is not providing the necessary skills to drive our economy forward.</p>	<ul style="list-style-type: none"> • The Performance-based Research Fund (PBRF) needs to be adjusted to ensure that working with industry is recognised as a valuable and high-quality research activity. • The design of engineering and technology qualifications may need to be reviewed to ensure that we develop cutting-edge technical graduates – a master's degree might become the norm for professional engineers. • The public sector student component should reflect the real cost of providing tertiary education to eliminate the distortion created by the necessity for tertiary education organisations to cross-subsidise between categories. • National needs for specialised technical skills must be addressed by collaborative approaches between tertiary education organisations.
4	<p>Primary and secondary education</p> <p>The compulsory education system does not provide an adequate grounding in technology education and therefore does not meet the wider educational needs of students living in a technological society.</p> <p>The number of enrolments in tertiary education in technology and engineering is below the national need. This is because insufficient numbers of students are studying maths, science and technology in schools and retaining sufficiently positive attitudes to these subjects.</p>	<ul style="list-style-type: none"> • The New Zealand curriculum (currently under review) needs to ensure that all students participate in science, maths and technology, and are provided with relevant, stimulating and good-quality learning experiences. • The New Zealand curriculum needs to deliver a higher level of technological literacy through all three strands. Technological literacy should be broad-based in the early years but increasingly specialised towards one or more of the digital, artefact or processing domains in senior school years. • Schools need to be adequately resourced to deliver appropriate and up-to-date technology teaching – there are major concerns about facilities and professional development for staff.

Getting it Right First Time – Structural Engineering

At its February meeting, the governing Board received an update on progress in two areas of the programme for action.

Technical information

A 12- to 15-month programme for the production of six design guides has been agreed with the Structural Engineering Society (SESOC). Details have been given to other Collaborating Technical Societies that had previously expressed an interest in being involved. One topic – the design of ground anchors – has been identified as being of interest to the New Zealand Geotechnical Society and arrangements will be made to co-ordinate the Society's input.

Office practice

The outline structure for the *Practice Note* has been agreed by the IPENZ/ACENZ working group and further work on this was completed during a teleconference meeting in February. The group has also been asked to look at overseas responses to concerns about industry practices, for example the United Kingdom's Standing Committee on Structural Safety. One of the committee's recent initiatives is a process for members to confidentially share concerns or experiences.



The New Zealand Engineering Excellence Awards honour the engineering profession and recognise outstanding individual achievers.

Entries are now open for the 2007 Awards and entry forms can be downloaded from www.nzeeawards.org.nz/2007/awards-2007.cfm. An indication of interest on pending entry should be received by Friday 1 June 2007 and entries and all supporting material must be received by 5.00pm on Monday 2 July 2007.

Individual awards

William Pickering Award for Engineering Leadership
 New Zealand Young Engineer of the Year
 New Zealand Engineering Entrepreneur of the Year
 New Zealand Engineering Innovator of the Year
 Award for Excellence in Engineering Journalism

Category awards

Building and Construction
 Utilities, Networks and Amenities
 Roads and Transport
 Information and Communication Technology
 Food, Bioprocess and Chemical

Mechanical and Manufacturing
 Electrical and Systems
 Sustainability and Clean Technology

Young Engineer of the Year

Anyone thinking about entering the Young Engineer of the Year award should note that the maximum age limit is decreasing from 2008. The age limit will reduce from 35 to 32 years of age by 2010, as follows:

- 35 years of age in 2007
- 34 years of age in 2008
- 33 years of age in 2009
- 32 years of age in 2010

Guidance for applicants

To help applicants put together submissions for the NZEE Awards, the judges have put together some handy tips about what they look for in a winning submission. They are available at www.nzeeawards.org.nz/2007/guidance-to-award.cfm

The Awards will be presented at a gala dinner at Te Papa on 21 November 2007, so mark your diary now – it's an event you don't want to miss.

Schools Update



New school year

Futureintech has made an enthusiastic start to the new school year. Up to 30 schools have indicated their interest in having industry Ambassadors speak to their students, and a number of Ambassadors are due to visit schools over the next few weeks.

Some of these represent continuing relationships, where a successful visit triggers a request for further involvement, such as a presentation or ongoing assistance with a project. In other cases new Ambassadors are engaging with schools for the first time.

The first Futureintech Ambassador training session for the year took place in Auckland on 20 February, with 25 new Ambassadors signing up to volunteer to promote their careers and support the curriculum. The group included five new Ambassadors from the Navy – a Futureintech first!

The social side of volunteering to be a Futureintech Ambassador has also been emphasised this year, with a successful day of lawn bowls in Auckland at the end of January.

New Futureintech publications

A new Futureintech brochure for parents and caregivers, printed in Samoan, has proved successful and these have already been distributed in schools across the country. The brochure outlines possible careers in technology, science and

engineering, and the resources offered by Futureintech. It complements the existing English and Māori language versions, and appeals directly to a significant proportion of the New Zealand population.

A new Futureintech Fact File for industries is in production. It will focus on the procedures for and benefits of cadetship programmes for both students and companies. This will join the current industry Fact Files on flexitime, PR and scholarships.

The Get Alongside campaign has been positively received, and has generated an encouraging response. Any IPENZ Members who want to “Get Alongside a Careers Advisor” and provide engineering careers advice to secondary students, can email sweekes@ipenz.org.nz or phone 04 473 2021 for an information pack.

Futureintech Ambassadors try their hand at lawn bowls.



February Board Highlights

The IPENZ governing Board met on 13 February, with the following outcomes and activities:

- Recipients of technical and other Institutional awards and the election of five Distinguished Fellows, two Honorary Fellows and 27 Fellows were approved in accordance with the recommendations of the relevant panels. These will be announced at the Fellows’ and Achievers’ Dinner on 22 March.
- The Board agreed on the strategic planning matters that will be discussed by Members at the 2007 Branch and Technical Group Forum. It is intended to release discussion papers on 1 April. The primary issue for discussion will be raising the profile of the profession.
- Feedback from Members on the second and third registers project was considered. In line with the feedback, it was agreed that the postnominals should be shortened from EngTechPract to ETPract (for the Engineering Technology Practitioner register aligned to Technical Membership), and from CertTech(Eng) to CertETn (for the Certified Engineering Technician register aligned to Associate Membership). Staff will undertake work to launch the

registers by mid-2007.

- The Board approved a paper prepared by staff setting out revised means to assess the competence of engineers whose careers are no longer “in” engineering but use engineering in wider contexts. As a result, what has been termed the business practice field will be split into engineering management and business in a wider context.
- A proposal to improve IPENZ’s working relationship with the New Zealand Centre for Advanced Engineering (CAENZ) was discussed, and the Board agreed to explore synergies further.
- The annual report of the Engineering Practice Board was received. It was agreed to continue efforts to address what seemed to be systemic practice issues, particularly in the structural engineering field of practice, in line with the programme of action (see page three).
- A proposal to improve access to New Zealand-derived new engineering knowledge by creating a portal on the IPENZ website was discussed. Staff were asked to investigate the resource implications as soon as possible.

Life Member



IPENZ congratulates **Peter Davenport FIPENZ** who has achieved 50 years of Membership.

Peter completed his BE (electrical) at Canterbury University College in 1955. On completing a cadetship with the New Zealand Electricity Department, he joined the Thamas Valley Electric Power Board and was initially responsible for reticulating the Coromandel.

In 1964, Peter joined Tolley Industries as an electrical engineer, ultimately becoming Executive Director of Operations. Peter became General Manager of the Natural Gas Corporation (NGC) in 1979, and

when Petrocorp subsidiaries integrated in 1984, he became CEO of NGC. He later accepted a business development role in head office when Fletcher Challenge acquired Petrocorp.

In 1991, Peter was appointed the first CEO of Standards New Zealand, where he promoted timely and commercially-oriented electronic outputs using the Internet.

Peter has been active with Standards development for over 37 years. He was Head of Delegation when Standards New Zealand joined the International Electrotechnical Commission (IEC) in 1979, and served as President of the New Zealand IEC committee. He was awarded a Standards New Zealand Fellowship when he retired in 1996.

Movers and Shakers



The summer has been a busy time for **Professor R M (Bob) Hodgson FIPENZ**, Director of the Massey University School of Engineering and Technology.

In December he hosted and chaired an inaugural joint meeting between the Australian and New Zealand Councils of Engineering Deans held to coincide with the Australasian Association for Engineering Education conference. In early January, he was appointed to the IEEE Region 10 executive as Recognised Program Coordinator. In February, at a meeting held at the University of Malaya in Kuala Lumpur, he was made President of the Association for Engineering Education in South and East Asia and the Pacific. AESEAP was established in 1970 with the assistance of UNESCO and has 15 member countries. Professor David Elms was the last New Zealand President in 1990.



Joe Deans FIPENZ has been appointed to Associate Professor of Mechanical Engineering at the University of Auckland.

Joe began his engineering career with a craft apprenticeship in Scotland and continued with undergraduate and postgraduate studies in mechanical and chemical engineering at the University of Strathclyde.

After completing his postdoctoral fellowship, Joe specialised in the construction and commissioning of large process plants and power stations in the Middle East, South East Asia and New Zealand.

Since joining the University of Auckland's Department of Mechanical Engineering, Joe has researched a wide range of thermal processes and has published studies on the analysis of geysers, the design of heat exchangers and the thermometric detection of landmines.



Janina Mazierska MIPENZ has been elected to a two-year term as Director of the Institute of Electrical and Electronics Engineers (IEEE) for the Asia Pacific region. She is the first woman to hold the position and will lead more than 66,000 IEEE members in the Asia Pacific region.

Janina completed her PhD in electronic engineering at the Warsaw University of Technology in Poland. She spent the next four years on assignment in Nigeria to assist the development of a degree in electronics and applied physics.

She held various roles at James Cook University in Australia, including Deputy Dean for the Faculty of Engineering, before moving to New Zealand to become Professor and Head of the Institute of Information Sciences and Technology at Massey University's Palmerston North campus.



Roger Foy MIPENZ has been appointed Executive General Manager Transmission and Distribution at Transfield Services.

Roger has been with Transfield Services and its previous entities since 2002. He holds a Bachelor of Engineering degree, has experience in the heavy industrial, generation and electricity industries, and is a current Member of the IPENZ Maintenance Engineering Society New Zealand.

Transfield Services has a relationship with national transmission grid operator Transpower to deliver maintenance services for the substation, line and switchyard assets and network operation services. In his new role, Roger will deal with Transpower and other long-term clients PowerNet, Unison, Eastland Networks, Orion and Vector.

Notice of Annual General Meetings

The 93rd Annual General Meeting of The Institution of Professional Engineers New Zealand Incorporated will be held at the Hyatt Regency Hotel, corner Princes Street and Waterloo Quadrant, Auckland at 8.00am on Thursday 22 March 2007. This will be followed by the fourth Annual General Meeting of the Institution of Professional Engineers New Zealand Practice College.

Take this opportunity to participate in an important part of the IPENZ governance process.

Member Services

engineering treNz

IPENZ publishes peer-reviewed technical papers in an online series called *engineering treNz* (Transactions of Engineers New Zealand). Publishing good-quality, peer-reviewed technical papers creates a valuable resource for the engineering community and reflects well on individuals, their employers and the profession as a whole.

Papers published in *engineering treNz* are freely available on the IPENZ website www.ipenz.org.nz/ipenz/publications/treNz.cfm and the keyword search can be used to search for papers from both *engineering treNz* and its predecessor *Transactions*.

For further information or to discuss or submit a paper, please contact the Editor of *engineering treNz* Lindsay Robertson at lindsay@tech-vantage.com or by phoning 021 240 6863.

Engineering Practice Support

IPENZ encourages Members to follow recognised professional practices in their day-to-day engineering activities. To assist Members in doing so IPENZ, together with ACENZ, has developed some standard contractual documents for use in selling consulting services. Documents include: short- and long-form contractual agreements, guidelines for consulting engineers and clients, PS1, PS2 and PS4 forms. These are available for free download from www.ipenz.org.nz/ipenz/practicesupport/EndorsedInfo

To discuss the use of these documents contact our Engineering Practice Manager Cam Smart on 04 495 1644 or email practicemanager@ipenz.org.nz

Informatory Notes

IPENZ seeks to contribute on matters of national interest. One method of doing so is via *Informatory Notes* which give a learned view on important issues independently of any commercial interest. Such notes are not consensus papers of the Institution's Membership but rather an exploration of the issues and possible outcomes. There are 12 *Informatory Notes* currently available on a range of subjects including: economic growth; education; sustainability; climate change; innovation, research and development; and resource management. *Informatory Notes* are freely available from www.ipenz.org.nz/ipenz/media_comm/informnotes.cfm



Norman Grant Major FIPENZ

3 August 1932 – 21 December 2006

Norman Major, consulting roading engineer and former IPENZ Executive Vice President – Qualifications, died on 21 December 2006, aged 74.

Born in Wellington, Norman completed his BE (civil) at Canterbury University College in 1954. Later the same year he joined the IPENZ Wellington Branch Committee as a graduate representative.

His career began as an engineering cadet with the Ministry of Works and Development (MWD), where he worked as an engineer until 1961. He then moved to Sydney where he completed a Master of Engineering Science in traffic engineering at the University of New South Wales. After returning to New Zealand, he took a position as Senior Engineer responsible for highway surfacing and pavement materials.

During his time with MWD, Norman was a Research Engineer, Pavements

Engineer and Inspecting Engineer (Personnel), where he was responsible for consulting on recruitment, career development and human resource management.

In 1987, Norman became Principal Design Engineer (Roading) and later Principal Roading Consultant for Works and Development Services New Zealand. Three years later, he joined Opus International Consultants as Associate Consultant where he completed various projects for Transit New Zealand, including investigations into highway chipseal and aggregate performance. He retired in 1998.

During his career, Norman published over 36 papers, training materials and manuals, including good practice guidelines for pavement construction, maintenance and rehabilitation. Norman also maintained his involvement with IPENZ, serving as Executive Vice President – Qualifications in the late 1970s. He chaired the Wellington Region Transportation Group from 1990–92 and was a keen participant in heritage issues, working as an IPENZ Engineering Heritage Committee Member until 2004.

*IPENZ also notes with regret the passing of Life Member **Bruce Swanson MIPENZ** who died on 13 February 2007 aged 78.*

IPENZ Engineering Heritage

IPENZ has an active programme that identifies and promotes New Zealand's engineering heritage, and a national engineering heritage database located at www.ipenz.org.nz/heritage

The objective of this programme is to inspire and teach present and future generations about New Zealand's engineering heritage by preserving the legacy of the past through its identification, maintenance and promotion. The programme aims to:

1. Identify and promote New Zealand's engineering heritage.
2. Record the biographical details of retired and eminent engineers.
3. Support and co-operate with individuals, organisations and institutions that document, maintain, educate and disseminate engineering heritage.

A heritage item may be a book, such as Furkert's *Early New Zealand Engineers*, an influential learned paper or a physical work such as the Wellington Railway Station.

Within the database, the heritage register lists those items that have undergone formal research and review. Register items generally have more verified information to provide a reliable source for formal research and publishing activities. They may have a plaque, an interpretive signboard or even a substantive set of events celebrating the work or person.

We would like your help to add to the information in the database and the register. Anyone with Internet access can visit the website and enter information on a heritage item. This usually takes no more than 10 minutes. After it has been assessed for basic accuracy, the new information will be made available to everyone visiting the heritage page on the IPENZ website.

Should you feel that the item deserves greater attention, please consider proposing it for the register. This takes longer and may require some research but the benefits are well worthwhile and your effort helps enrich the engineering heritage of New Zealand.

The Earle Travel Fellowships in Technology

The Earle Travel Fellowships support and encourage young food technologists and professional engineers by increasing their knowledge and skills through an overseas experience, thereby enhancing their ability to improve technology in New Zealand on their return. The development of creativity and the generation of new product or process ideas for practical application are important elements in the concept of the Fellowships.

Fellows study or gain practical experience overseas in either:

- product development and innovation management, or
- process development in bioprocessing or food processing

In 2007, one Fellowship of up to \$10,000 will be awarded, although the amount may be increased to \$15,000 under special circumstances. The Fellowship is tenable with other awards, but the aggregate circumstances of the individual and the desirability of using available funds to best advantage will be taken into account.

The Fellow will be overseas for a maximum of three months within 12 months of the Fellowship being awarded. They must agree to return to New Zealand and work for at least one year in New Zealand.

Applicants must be under 40 years of age, employed in one of New Zealand's

technological industries (products or services) or an associated research organisation, and New Zealand citizens or permanent residents with at least three years' proven residence in New Zealand immediately preceding the year of selection. Applicants must be Professional Members of either IPENZ or the New Zealand Institute of Food Science and Technology (NZIFST).

In considering each Fellowship application, the Fellowship Committee will take into account:

- the practical relevance of the proposed trip to New Zealand technological industries (products or services)
- possible outcomes of the trip in terms of innovative technologies and exports
- the support of the applicant's employer for the trip
- the ability and previous experience of the applicant
- creativity and innovative ability shown by the applicant

Application forms can be downloaded from www.ipenz.org.nz/ipenz/Education_Career/Earletravel.cfm Applications must be submitted by 10 May 2007, and the recipient will be chosen by 1 June 2007. For further information please contact Susie McCutcheon, Director – Operations, email Dir.Ops@ipenz.org.nz, phone 04 473 2029.

Professional Development for Engineers and ICT Professionals



IPENZ has been part of a consortium contracted by the Tertiary Education Commission under the Growth and Innovation Pilot Initiatives (GIPI) to focus on the professional development needs of engineers and ICT professionals in the ICT sector.

The pilot was completed in 2006 and involved the development of a postgraduate qualification for engineers and ICT professionals. The Postgraduate Certificate in Professional Development (Electronics and ICT) (see www.ipenz.org.nz/pgcert/) combines business and technical topics. It was offered for the first time in July 2006 by the University of Canterbury and Massey University, and this year both Auckland University of Technology and the University of Waikato have become involved in programme delivery.

The purpose of the current GIPI project is to identify the education and training needs of people in engineering and computer science-related roles who do not have a graduate education in the ICT sector. The research phase for the GIPI project is complete and the draft report is now under review.

Developments at the British Computer Society (BCS) were of particular interest during the research process. With an assessment process administered by BCS, BCS professional members can apply for the following titles:

- Chartered IT Professional (CITP)
- Chartered Engineer (CEng) – Engineering Council title, CEng holders may also apply for European Engineer (EurIng)
- Incorporated Engineer (IEng) – Engineering Council title
- Chartered Scientist – Science Council title

Profession Maturity Model

In 2006 BCS published *Report on the Study of Established Professions to Validate the IT Professionalism Model*. It includes a maturity model derived from the Carnegie Mellon University Capability Maturity Model which can be used to measure a profession's progress towards maturity:

- level one – the industry field is recognised as a community
- level two – a qualification regime is defined
- level three – the industry field is governed by a framework of professional institutions
- level four – the nine tests of public obligation for a profession are satisfied
- level five – the profession is regulated by law for the benefit of the public

BCS recognises that IT has reached level one; professions aspire to reach levels four or five. The full report can be accessed at <http://www.bcs.org/server.php?show=ConWebDoc.7298>

If you would like further information on the GIPI projects or would like to comment on the Profession Maturity Model, please contact Knowledge Services Manager Sharon Wagg, at swagg@ipenz.org.nz or 04 473 2022.

New Staff



Cam Smart joins IPENZ as Engineering Practice Manager. He plans to smooth the transmission between the engineering professional engine and the wheels of clients' projects. He plans to do this by working with the Engineering Practice Board and adding to the store of *Practice Notes*.

Cam graduated from the University of Canterbury in mechanical engineering and began working with numerical control of machine tools. He moved into parts production, fuel systems and vibration in aircraft; and then built test rigs for the base isolation method of seismic protection.

While overseas, Cam spent time in Malaysia with the Volunteer Service Aboard scheme, where he taught and helped equip a new Polytechnic School of Engineering. He also completed his master's degree at Cranfield University in England, where he specialised in vibration of turbine blades. He spent time in Iraq working on aircraft fuel systems.

When he returned to New Zealand, Cam applied the finite element method to many problems in stress and vibration analysis. For the past 17 years, he has added new antennas to telecommunications towers, and strengthened the superstructures and foundations to resist wind and ice loads.

He has worn out his ankles and knees by fencing and running, so now skis slowly, walks in the mountains, and operates a model railway. Cam says that the purpose of his job at IPENZ is to make engineers shine.

Member Services

IPENZ Technical Interest Groups

Members can also join IPENZ Technical Interest Groups which provide a programme of activities and services associated with a particular engineering specialty or discipline.

The Group informs Members of national and international developments and issues, contributes to knowledge development, supports the identification of good engineering practice, prepares informed comment on public policy issues and creates a national network amongst Members with similar technical interests by regular communication.

For more information on IPENZ Technical Interest Groups visit www.ipenz.org.nz/ipenz/who_we_are/organisation/technical_groups.cfm or phone Saltanat Cole on 04 474 8937.

JobHunt

The IPENZ JobHunt service (sponsored by Career Engineer) is the premier job finding and recruitment site for engineers and technologists. It enables jobseekers to efficiently search for employment online by personalising their search criteria. Employers may also advertise a position using selective criteria.

Visit the JobHunt website www.jobhunt.co.nz for more information and to browse the listings.

Engineering Practice Support

IPENZ encourages Members to follow recognised professional practices in their day-to-day engineering activities. To assist Members in doing so IPENZ has developed a series of *Practice Notes* as a source of endorsed advice to engineers on practice-related issues.

Practice Notes currently available include:

- Note 1 – Producer Statements
- Note 2 – Peer Review
- Note 3 – Media Tips
- Note 4 – Safety and Engineers
- Note 5 – Sustainability and Engineers
- Note 6 – Developing and Maintaining Client Relationships
- Note 7 – Design for Safety in Buildings and Other Structures
- Note 8 – Engineers and Ethical Obligations

To discuss the use of these documents contact our Engineering Practice Manager Cam Smart on 04 495 1644 or email practicemanager@ipenz.org.nz

IPENZ Professional Development Short Courses

March – April 2007

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
Auckland 17 April

IPENZ Mentoring Workshop

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

Christchurch 2 April

IPENZ Mentoring Follow-up Workshop

This half-day workshop is designed for experienced mentors to further develop their mentoring and coaching skills. It aims to make mentors even more effective in their interactions with mentees, team and project members, and clients.

Christchurch 3 April

Specification Practice

A key aspect of converting a requirement into a technical system is the ability to specify the need in technical terms and then progress this specification to the lowest levels of execution. This course addresses the fundamentals of formulating proper specifications for engineered systems, products and components.

Wellington 3 April

Time and Priority Planning

This workshop enables participants to use effective time management techniques to meet current and future work, professional and personal objectives. The workshop also explains how to master workloads, set priorities and create life balance.

North Shore 19 April

Finance for Technical Professionals

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

Wellington 23–24 April

Effective Report Writing

This course explains the techniques for writing documents that enable participants to convey clear information to both engineering and non-engineering readers.

Auckland 20 April

Innovating – New Ideas to Keep Your Business Alive

This course is a must for anyone searching for new initiatives and a fresh approach to unlocking opportunities, successfully launching a new product or service, or techniques to eliminate product and service failures.

Christchurch 20 April

Contract Management

This course introduces participants to the principles of establishing contractual relationships and managing these relationships in a project environment, to ensure successful delivery.

Christchurch 30 April

Cost:

Half day \$315.00 incl GST – IPENZ Members
\$360.00 incl GST – non-members

One day \$495.00 incl GST – IPENZ Members
\$540.00 incl GST – non-members

Two days \$945.00 incl GST – IPENZ Members
\$1,035.00 incl GST – non-members

Earthquake Engineering for New Zealand

This one-day course extends the 2006 earthquake

engineering seminars and introduces additional topics of everyday relevance to practising structural and civil engineers. The emphasis is on applying earthquake engineering principles to engineering design using NZS 1170.5:2004 where relevant.

Queenstown 16 April
Christchurch 17 April
Nelson 18 April
North Shore 20 April
Auckland 23 April
Taupo 30 April

Cost:

\$315.00 incl GST – IPENZ, NZSEE, SESOC, Geotechnical Members
\$360.00 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 including 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, 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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