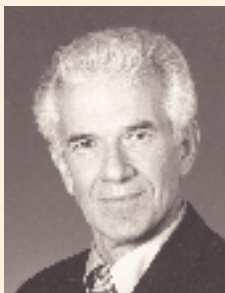


## President's Message

### IPENZ 2005–2009 Strategic Plan



The Board met at the end of May to agree on the framework for the IPENZ 2005-2009 Strategic Plan. Also at the meeting were the four IPENZ Executive Directors, and the Chairs of the Engineering Practice Board (Murray Milner) and the Standards and Accreditation Board (Basil Wakelin). The meeting was facilitated by John Cunningham, a past President.

In last month's column, I told how the day would be organised around four sessions:

- what will the Institution look like in 10 years' time?
- what can we reasonably achieve in three years as we progress towards our long-term goals?
- what are the priorities in each strategic area?
- agreement on outcomes and measurement statements.

These themes provided a good framework for discussion. In addition, the Board used the results of last year's Member survey and a recent paper on the demographics of engineers in New Zealand to focus our thinking on critical issues. We framed some searching questions such as "What will give IPENZ the unequivocal mandate to represent the profession in New Zealand?" and "What would compel New Zealanders to think differently about engineers?". The electronic survey told us that competence and qualification recognition rank most highly for Members and these questions were designed to address those value drivers.

By the end of the day the Board had re-affirmed that:

- the core business of IPENZ was in competence development and qualification recognition. This reinforces the message that IPENZ has been communicating about its brands – MIPENZ is the brand that represents professional standing, CPEng represents current competence for Professional Members, and TIPENZ and AIPENZ are the brands for Technical and Associate Members
- continuing professional development support is a very important area, and aligns with the recent appointment of Sharon Wagg as Knowledge Services Manager to boost this area
- leadership is an important theme, along with raising the profession's profile

These focus areas will form the framework of our updated Strategic Plan. In addition, the Board identified areas for further consideration or development:

- further enhancement of our outbound campaign to increase understanding and use of the portfolio of competence brands for the engineering profession
- market research to better understand the needs of engineers who are not Members of IPENZ
- development of engineering practice activities that better align with our CPEng regulatory role e.g. providing stronger support to the quality marking of good engineering practice
- investment in enhanced support systems to maintain or increase the level of professionalism at National Office level
- ensuring programmes are tightly focused and discontinuing any that do not have strong alignment to the principal themes, to contain costs.

continued overleaf >>>

## Why New Zealand is not in the OECD top 10

Ian Parton hosted and Andrew Cleland presented "*Growing Smartly: A Review of National Policies for Fostering Research, Development, Innovation and Entrepreneurship in New Zealand*" to the Wellington business community on Wednesday 2 June. This was done in keeping with an engineering tradition of contributing to key national issues.

This review critically examines the issues affecting New Zealand's ability to return to the top ten of the OECD. It suggests new ways of improving the means by which we seek to create sustainable growth. It takes a long-term perspective, focusing on the ongoing needs of New Zealand, not the short-term performance of any particular government.

The review concludes that New Zealand's policy environment is neutral or, at best, mildly supportive of the activities and new behaviours required to build a nation in which all New Zealanders have the opportunity to benefit from improving national prosperity, while living in social equity and harmony with the natural world.

The bottom line is that we are currently ranked 20th and without a major overhaul of our policy environment, we won't be able to grow prosperity faster than we currently do, and hence will not make it back to the top group of nations in the foreseeable future, if at all.

New Zealand has unique difficulties such as distance from key markets and too small a local market for companies to develop sufficient working capital to launch internationally. A recent survey by the Growth and Innovation Advisory Board showed that we also want to bypass business development opportunities that are not consistent with our national values. We need to be really smart in our business development and support those businesses seeking distant markets with world-leading, enlightened policies that help them manage the external risks they face.

Our research showed that we do not really have all the mechanisms we need in place. We have relatively poor capability to take up new intellectual property in our industries and poor skills at making the business cases to acquire capital. We may not be particularly good at using that capital to develop our innovations into commercial reality.

Even though we rank as innovative and entrepreneurial, too much of the intellectual property we create is simply not good enough quality. Consequently, investors are staying away as shown by our deteriorating capital:labour ratio compared with Australia.

Continued on page 3>>>

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The previous day the Board had met for its scheduled May meeting. Two important topics were discussed that impact on future strategy, our international relations policy and the concept of a national awards programme. There are a plethora of international, professional organisations with which IPENZ interacts, or has interacted. Many were established some time ago and some no longer align with our present needs. To achieve its objectives of building global leadership, qualification recognition and access to knowledge, IPENZ must interact with a range of professional bodies but does not have the resources to support more than a small number.

More detail on our international policy is given in a separate item in this issue. One part of the policy is to support the development of the World Federation of Engineering Organisations (WFEO), a single global organisation focused on international leadership by the profession. David Thom DistFIPENZ has been our link with WFEO for more than 10 years, and we are indebted to him for the tremendous amount of voluntary

time he has given to supporting WFEO. He was a Vice-President for several years and responsible for providing leadership in putting sustainability firmly on the international engineering map. Following the Shanghai WFEO conference later this year, David will hand over his WFEO responsibilities to the IPENZ Chief Executive. I want to personally recognise the dedication and commitment that David has shown, and express the Board's gratitude.

The second topic discussed by the Board was the introduction of a national engineering awards programme. The present IPENZ awards programme, which is delivered at Convention, has two principal objectives:

- to celebrate achievement of individuals and organisations
- to promote the contribution that engineers make to the economic, social and environmental outcomes of New Zealand.

Under the proposal, IPENZ would continue to showcase the achievements of its high achiever Members and raise the profession's profile at Convention. However, the proposed national awards would be held at a different time to Convention,

developing their own profile and associated publicity. They would include both "people" and "project" awards, be truly national, sponsored jointly and profession wide.

The Board is planning to launch the new awards late 2005 in Wellington. We would seek to use the event as a showcase for attracting political and business leaders to our table and demonstrating to them the power and value of engineering. We are at the early stages of discussions with ACENZ and Ingenium and would like to involve other participants such as the Collaborating Technical Societies.

A national awards programme aligns strongly with our "Engineers as Leaders" initiative.

Finally IPENZ launched its Research, Development, Innovation and Entrepreneurship Policy Statement, entitled "Growing Smartly", in Wellington on 2 June to business and political leaders. This is a major initiative that is separately reported in this issue.

**Ian Parton**  
President

## Remuneration Survey

IPENZ is offering free survey results and a chance to win a weekend away as an incentive to everyone to complete the 2004 Remuneration Survey by the deadline, 23 July 2004.

An email request with a link to the survey was sent to all Distinguished Fellows, Fellows, Professional Members, Technical Members, Associate Members and Graduate Members.

IPENZ is urging everyone to complete the survey no matter what their work role, employment sector or area of practice. The higher the response rate, the more comprehensive and reliable the survey outcomes.

To motivate people to complete the survey this year, IPENZ has reduced the number of questions and is offering free and immediate access to the full survey results only to those who complete it on time (the rest will have to wait six months for the results). As an added incentive, those who meet the deadline will be entered into a draw for a weekend escape holiday.

If you cannot track down your email which contains the link to the remuneration survey go the Members-only area of the IPENZ website to access the survey.

Information gathered for the purposes of the remuneration survey is confidential and is not used for any other purpose.

If you have any queries or concerns contact Virginia Burton, Director Learning & Assessment, vburton@ipenz.org.nz. ☎

## Futureintech update

### Ambassador programme underway

Training has started nationwide for Futureintech Ambassadors – young people working in technology, engineering and/or science who have volunteered to help out in local classrooms on practical projects.

Ambassadors will help teachers and students with programmes like CREST, Bright Sparks and the Neighbourhood Engineers Award. The training days have given Ambassadors a taste of what to expect in the classroom, what the different programmes involve and advice from those who have been there before.

In Wellington, Ambassadors have already begun school visits to talk about careers in engineering, and facilitators are now working to match local schools with Ambassadors.

Futureintech appreciates the sacrifice made by Ambassadors and their companies, because these young people are very busy and valuable to their employers. That's why the first priority for Ambassadors is always their employment. They won't be asked to do anything that is too demanding or distracting from their work, and are always free to say 'no'.

### The benefits of Ambassadors

Working as an Ambassador can be a great form of professional development, improving confidence, communication and presentation skills. Previous classroom volunteers have found the experience enormously rewarding and refreshing.

It's also a great way to promote your industry and be involved in the local community. Futureintech will promote the activities of Ambassadors and their companies to local media.

### Fact File – the benefits of PR

If we want to convince young people to take technology, engineering and science seriously, then we have to start taking pride in our achievements and let the world know about them. This is what public relations is all about.

Many firms have never considered using PR, yet it can be far more cost effective and wide reaching than advertising campaigns. Good coverage in the media elevates your company's profile, creates name recognition and greater recognition of your brand. When people read about companies in the media they perceive them as market leaders and as an exciting place to work.

Futureintech has put together a Fact File and case study on the benefits of using PR for engineering and IT firms. We have profiled Christchurch company iTouch Business Mobility and the remarkable results they achieved from using PR.

Contact us at 04 473 2023 or enquiries@futureintech.org.nz if you'd like a copy.

### Website reminder

Don't forget to visit the Futureintech website and check out the profiles of young professionals and the companies they work for, along with information about different career paths and scholarships. www.futureintech.org.nz ☎

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One of the fundamental problems is the limited relationship between the research sector and industry. In the 1990s, we actually avoided public funding of proposed research that had market linkages. As a result, the information flow about market opportunities to those performing publicly-supported R&D is far too weak. We need to encourage strategic technology transfer partnerships between industry and the research sector to counter this problem.

We need to bring in policies that simulate personnel transfer between industry and the research sector. This would improve the commercial benefits for industry, and create opportunities for new talent to grow in our Crown Research Institutes (CRIs) and universities, rather than see skilled workers leave New Zealand.

In the United States, a PhD in engineering has an expectation of moving into industry with his or her technology and then working up through that industry to a senior management role. New Zealand has relatively low numbers of engineering graduates per head of population, yet others have learnt that the key to technology transfer is to have the sorts of skills that engineers bring to bridge between research and business.

We have observed that the way in which the tertiary sector and CRIs are funded for research has progressively become more similar. We question whether this is using the difference in governance between the two types of organisation as well as it could be. Universities, by their nature will not be directed by the Crown, yet CRIs are very much agents of Government created for a purpose.

That purpose is to increase the progress towards sustainable development and meeting of our social and environmental goals. For the last decade or more, the CRIs' performance has been measured at a quite low level – the research outputs they created. We suggest that a far better way to measure their performance is in the outcomes they deliver to the nation as a whole. If a particular institution is demonstrably adding value to New Zealand by spawning new intellectual property-based industrial development, and at the same time lowering our resource use per unit of value created, then we want to reward them and purchase more of the same.

Our review came to the conclusion that CRIs and research associations could be improved as delivery mechanisms, by substantially increasing devolution – lump-sum funding, application of outcomes-based performance criteria, and contestability of the level of lump-sum funding according to overall institutional performance.

There are some encouraging signs on a small scale – the Foundation for Research, Science and Technology is moving towards outcomes-based measurement systems. The recent budget did include some extra money to be used in ways that are consistent with our recommendations.

However, we are not seeing the commitment to make the complete policy system change we believe is needed. It does not need to be a revolution – by a number of carefully designed, small changes we could get there in less than five years. However, if we are not clear about the final policy system design we want, then incremental changes could well end up being sub-optimal, and New Zealand will continue to languish.

This matter is too important to become politicised – the future prosperity and sustainability of the nation is at stake. We need to reach a national consensus soon on what to do, and then design and make the changes to get to the agreed goal. The problem is not too hard for a small nation to solve. If we are really as innovative and entrepreneurial as we would like to think then we can do it, with little pain on the way. ☺

Enhancing  
Engineering  
Competence



# Professional Development

## IPENZ Mentoring Foundation Workshop

Auckland – 16 June                      Napier – 6 July

This one-day workshop is designed to develop mentoring and coaching skills and make mentors more effective in their interactions with mentees, team and project members, and clients.

This is an interactive foundation programme. Participants can directly apply what they learn, and learn from each other in a supportive environment, in individual, paired, group and round-robin exercises and discussions.

## Professional Communication for Engineers

Auckland – 24-25 June

Do you wish to enhance your competitive advantage? This successful two-day course covers Effective Report Writing and Professional Presentations. However, people may register for only one of the days.

### Effective Report Writing

By the end of the day techniques will have been given to:

- structure documents with a logical flow of information that meets the needs of all readers
- write concise text with clear main points
- write well-structured and supported Executive Summary, Conclusions and Recommendations sections.

### Effective Professional Presentations

By the end of the day participants will have competencies needed for the following situations: presenting proposals to small groups of decision makers, both in-house and more widely; presenting the results

of completed projects to fellow professionals and to lay audiences; conference presentations; presenting technical information to community groups; informing potential users of products and programmes; explaining techniques, concepts as part of a training programme.

## Preventing Disputes Under the Construction Contracts Act 2002

Auckland – 29 June

Did you read the article "Construction Contracts Act – the practical effects" by Peter Degerholm in the March/April issue of *e.nz*? Changes to the role of engineers have occurred creating a need for strategies to prevent disputes.

This one-day course aims to provide an overview of the key elements of the Construction Contracts Act 2002, with particular reference to the role of the engineer in the management of payments, variations and disputes under common forms of contract.

Places on each course are limited to 20 so register early to avoid disappointment. Registrations close one week before the start of the course in each location.

Cost:	Two Days	\$855.00 incl GST	IPENZ Members
		\$945.00 incl GST	Non-Members
	One Day	\$495.00 incl GST	IPENZ Members
		\$540.00 incl GST	Non-Members

Additional cost if assessment option is included: \$54.00 incl GST.

Full information on these courses and other courses offered later in the year is available on <http://www.ipenz.org.nz/ipenz/nzecal> ☺

# From 'CPD Approval' to 'Current Competence'

The introduction of the Chartered Professional Engineers Act (CPEng) 2002 signals a paradigm shift for professionals.

Consumers, as represented by Government, are no longer satisfied that evidence of participation in professional development is sufficient proof of current competence.

They demand a much tougher test for professionals as a way of minimising risk and thereby protecting public health, safety and wellbeing.

Consumers of professional services want to know that a professional whose services they engage has been proven to be currently competent to perform those services. Consumers also know that they have insufficient knowledge to make this competency assessment and must rely on the professional's peers to make this assessment.



## So what does this mean for the engineering profession?

The fundamental change is that engineers who are successful in gaining entry to any Government-backed register will need to undergo regular assessments (normally every five years) to demonstrate their current competence. At present, under the CPEng Act 2002, this current competency requirement only applies to professional engineers. However, in the future, further registers may be developed for engineering technologists and technicians that will have a current competence expectation.



## What does this mean for IPENZ Members?

IPENZ Membership is evidence of a commitment to ongoing learning and development – through declaring adherence to the IPENZ Code of Ethics a Member not only commits to “continue to develop their own knowledge” but they also commit to developing and sharing “the profession’s knowledge, skills and expertise in the art and science of engineering”. The standards of any profession will only be maintained if there is a strong, vibrant and outward-focused professional group that provides mechanisms whereby knowledge can be shared and individuals supported in their endeavours to enhance their competence. However, IPENZ Membership, on its own, will not provide evidence of current competence.



## How does this impact on the IPENZ Continuing Professional Development Policy?

The IPENZ CPD policy has had to be fundamentally changed to reflect the paradigm shift from evidence of CPD participation to evidence of current competence. Although the CPD guidelines remain basically unchanged, the ‘auditing’ of CPD records is no longer valid for most classes of Membership. A Member’s

CPD records will now be a critical part of their evidence to demonstrate competence when they undergo an IPENZ Initial or Current Competence Assessment. Members are now expected to be reflecting on how their CPD activities are linked to their performance using the relevant IPENZ Competency Standard as a benchmark.



## Do I still need to keep a record of my professional development activities?

Yes. All IPENZ Members are still bound by the IPENZ Code of Ethics which explicitly states that: “Members shall continue to develop their own and the profession’s knowledge, skills and expertise in the art and science of engineering.” So whether an IPENZ Member is currently on the CPEng register or not, in terms of exhibiting good practice, they should still be keeping records of their professional development. Just through keeping a record, Members will thereby spend some time reflecting on their performance, identifying possible learning needs and they will generally be more proactive in planning their ongoing professional development.

For those on the CPEng register, a significant part of the current competence assessments will be providing assessors (peers) with evidence “that they have taken reasonable steps to maintain the currency of his or her professional engineering knowledge and skills within his or her current practice area”. (CPEng Rules 2002, Section 20 (b) p13). So CPD records will still be important, yet just part of the evidence that an engineer presents to demonstrate their current competency.



## Should my CPD records still show around 50 hours of participation per year?

IPENZ has now developed a set of ‘Professional Development Good Practice Principles and Guidelines’. One of the guidelines is that CPD records should show at least 50 weighted hours of CPD activity per year, however this now has less emphasis than demonstrating the outcome or benefit.



## So what are the other CPD Good Practice Principles and Guidelines?

All Members should refer to the draft Professional Development policy to see whether or not the suggested guidelines are sensible. Some of these guidelines are:

- that a Member’s professional development activities should show a balance between passive and interactive activities

- networking and dialogue with other engineering professionals should be an integral part of all Members’ professional development
- a significant proportion of CPD activities, for senior professionals, is likely to fall under the heading of ‘Services to the Engineering Profession’ or ‘Services to the Broader Community’
- at least 50% of CPD activities should be closely aligned to the Member’s current area of engineering practice.



## Do I still need to send in my CPD records to IPENZ National Office for approval?

No. CPD records are part of the evidence that an engineer provides when undergoing an IPENZ Initial Competence Assessment or, in the case of CPEng, a Current Competence Assessment. The test of one’s CPD will be: “Do these records demonstrate that you have taken reasonable steps to maintain/enhance your competence?” Some questions you could ask yourself are:

- Are your CPD activities aligned to element/s of the relevant IPENZ Competency Standard?
- Is there sufficient evidence that you have taken active steps to keep up to date with current good practices in your area of engineering practice?
- Is there evidence that you are engaging with your profession by networking at branch events, contributing to the development of standards or codes of practice, reading, or mentoring other members of the profession and that you are therefore part of a ‘community’ of engineering practitioners?
- Is there evidence that you, at least once a year through participation in an external conference, course or seminar, take some time out of your day-to-day work environment to reflect on your development and performance?

IPENZ National Office, as a Member service and on request, will provide advice and guidance as to whether or not a Member’s CPD records meet the IPENZ CPD Good Practice Guidelines.



## Change in career path and work role – how will this effect my CPD?

Members will be expected to be much more proactive in planning and developing their careers. Their CPD records, over time, should provide evidence of this planning. The Professional Development Good Practice Guidelines state that “it would be unlikely that a significant change in an engineering role could be successful solely through experiential learning”. As an example, if an engineer was trained as an engineering technician and then wished to move into a professional engineering role, their CPD records would be expected to show some evidence of formal learning aimed at

# – what does this mean for IPENZ Members?

enhancing their understanding and application of the engineering principles underpinning complex engineering activities. Similarly, if an engineer was to significantly change their area of practice then there would be an expectation that some of the activities on their CPD records reflected this planned change.



## What will be the expectation of Graduate Members?

The IPENZ Professional Development policy has been broadened to include the expectation that IPENZ Graduate Members, within the first four years of their experiential learning, should be participating in an IPENZ Competency Development Programme. This means they should be able to provide evidence of:

- recording their work experience and analysing their progress in acquiring the competencies expected of competent engineering practitioners using one of the IPENZ Competency Standards as a benchmark
- having a mentor to support them through this period of their experiential learning
- maintaining CPD records – recording professional development activities that fall outside of their day-to-day experiential learning.

IPENZ, in the Member-only area of the IPENZ website, has a web-based system for each of the above records. When Graduate Members apply for an IPENZ Initial Competence Assessment for entry into one of the competency-based membership classes (AIPENZ, TIPENZ, MIPENZ/CPEng), they will be expected to provide the above records as part of their portfolio of evidence.



## If I am a Professional Member (MIPENZ) but not CPEng what will be my CPD expectations?

You are still bound by the IPENZ Code of Ethics, however, you will not be audited for compliance to the Professional Development Good Practice Guidelines and nor will you undergo current competence assessments. Of course, nor will you carry a quality mark of current competence which will increasingly be expected of those undertaking work as a professional engineer.



## What will be the expectation of Associate Members (AIPENZ) and Technical Members (TIPENZ)?

At this stage there are no public registers for engineering practitioners working as an engineering technologist or engineering technician. IPENZ will, therefore, continue the practice of auditing, as a quality assurance measure, up to 15% of Associate Members and Technical Members per year for adherence to the IPENZ Professional Development

Good Practice Principles and Guidelines. On request these Members will be expected to submit their CPD records for review.



## I am fully retired. Am I supposed to be keeping CPD records?

No.



## What services does IPENZ provide to support me in developing and maintaining my competence?

IPENZ divides its professional development services into three categories:

- **Competency Development:** those activities aimed at supporting engineers, mainly graduates, through their initial professional formation period. Services include the web-based competency development recording systems (work history and responsibility summary); mentoring log; CPD recording system as well as mentoring services; IPENZ Quality Marking of Employer; cost-effective EEC courses tailored specifically to the needs of engineers; opportunities to engage with the profession; and information seminars.
- **Competency Maintenance or Enhancement:** those activities aimed at supporting engineering practitioners who, having gained formal, peer recognition of their professional competence, are continually reflecting on, and taking active steps to maintain or enhance their competence throughout their working lives. Services include CPD recording system; the IPENZ Competency Standards as a way of externally benchmarking their competence; cost-effective EEC (Enhancing Engineering Competence) courses tailored specifically to the needs of engineers; CPD Accreditation as a way of identifying quality professional development events; publications; and networking opportunities.
- **Career Development:** those services aimed at supporting Members as they plan their career paths so that they have maximum opportunity and satisfaction working as an engineering professional. Services include career planning and advice; employment contract advice; remuneration survey; job vacancies; and access agreements if pursuing career opportunities overseas.

A copy of the revised draft IPENZ Professional Development Policy is available in the Member-only area of the website. 



IPENZ is seeking your comments on a revised version of its Professional Development Policy. Although the policy document itself is not large, the appendices are substantial, collating all professional development systems, procedures, services and membership expectations into one document.

As a way of highlighting the key issues encompassed in the policy document and appendices, Virginia Burton, Director – Learning & Assessment has developed a briefing document in the form of questions and answers. Feedback on these key issues is welcomed. A discussion forum has been set up in the Member-only area where Members share their views. Alternatively Members can email [vburton@ipenz.org.nz](mailto:vburton@ipenz.org.nz).

Feedback will be collated and taken into consideration by the IPENZ Standards and Accreditation Board when they develop a final draft of the Professional Development Policy. Feedback will need to be received by 15 July.

## National Historic Heritage Workshop – “Engineering Heritage”

IPENZ is joining with the Department of Conservation and the New Zealand Historic Places Trust to hold a workshop on the topic of engineering heritage. Anyone interested in engineering heritage – engineers, other heritage agencies, council planners, consultants, community group representatives – is invited to join and contribute.

**When:** 3–4 August 2004

**Where:** National Library,  
Molesworth Street,  
Wellington

For full information go to  
<http://www.ipenz.org.nz/heritage>  
and open Heritage Workshop pdf

# IPENZ as part of the global profession

## A Strategy for International Relationships 2004-2010

Engineering is a global profession in many ways, but a highly national one in others. The primary knowledge base from which engineering draws is a set of universal physical laws, and many of the materials engineers use have properties that vary little across jurisdictions. Nevertheless, there are important differences in engineering practice between jurisdictions.

The IPENZ Board is currently considering our international strategy. The proposal for 2004-2010 has five areas:

### 1. Building global leadership by the profession

IPENZ recognises the need for an organisation representing the global profession and which is mandated to assist the international community resolve multinational or global issues. This will be achieved by ongoing engagement with the World Federation of Engineering Organisations (WFEO). IPENZ would pay a subscription to allow participation in WFEO at a level where we can seek to influence its strategy. There would be selected involvement and financial support for WFEO activities aligned with our own national leadership work programme. We would also seek to offer regional support to the South Pacific Island Nations (such as Fiji, Samoa, Cook Islands and Tonga) to help them develop a sustainable and effective engineering profession that would meet the needs of their communities and represent their own needs in wider international forums. In 2003/2004 we have committed \$14,000 to this area plus about 200 hours of staff time and some volunteer time.

### 2. Increasing mobility of New Zealand engineers

IPENZ is committed to providing means whereby NZ-educated engineers can travel and work in a variety of jurisdictions, and whereby NZ-based engineering businesses are not limited in seeking business in other jurisdictions by concerns about the qualifications or competence of their staff. We would thus commit to active involvement in all existing and emergent multi-lateral, international agreements involving mutual recognition of engineering qualifications and competent practitioners from engineering technician to professional engineer level. This will require consistent and regular

representation at all meetings and workshops relevant to the agreements. We would also have to contribute to the overhead costs of the agreements – in the short to medium term IPENZ has committed to provide the website underpinning all agreements rather than take on the activities of a particular secretariat (but in the longer term there may be a direct charge on each Member to pay for a permanent secretariat). In 2003/2004 we have committed \$34,000 to this area, plus several hundred hours of staff and volunteer time.

### 3. Building internationally-compatible engineering practice standards

IPENZ will ensure that our practice standards reflect international best practice as well as our own jurisdictional needs. We will continue to engage with national standard setters and seek to develop an ethos of using international or Australasian standards wherever possible. In practice, this will be achieved by supporting engineers working on standards committees in both Australia and New Zealand, searching for codes of practice developed by other professional bodies that might be introduced to New Zealand with a co-brand, and identifying areas of practice and potential international partners for co-development of codes (in the short term with primary focus on Engineers Australia). In 2003/2004, \$12,000 was made available to support engineers' travel to standards committee meetings, here and in Australia.

### 4. Gaining access to engineering knowledge

IPENZ will assist our Members to access the engineering knowledge they need to perform their engineering activities. Through the Deputy Chief Executive, we have begun negotiating some agreements with internationally relevant (typically UK- and US-based) professional bodies or learned societies for advantageous rates for access to their international engineering knowledge products. The budget requirements in addition to staff time are for occasional (typically every two years) travel to the US and UK, about \$5000 per year.

### 5. Gaining intelligence and sharing best practice in professional body management

IPENZ must gain and keep our Membership

in competition with other professional bodies whose primary location is offshore. Accordingly, we must ensure that our portfolio of services is up to date and relevant in the international marketplace for such bodies. We already closely engage with Engineers Australia at a senior office bearer and senior staff level on both strategic and operational planning issues. We will increasingly develop staff visit and exchange programmes with Engineers Australia to assist implementation of joint programmes between the two countries. The 2003/2004 budget allowed \$12,000 for the twice-yearly interchange of senior office bearers and other activities with Australia.

The Board has asked the Chief Executive for further advice on prioritising the above five areas for its July 2004 meeting. Highest priority must go to the second area – mobilisation of New Zealand engineering qualifications and competent practitioner status. This area would potentially provide the greatest returns for Members, as well as aligning with the primary reason that Members join the Institution.

The first area, a contribution to global leadership, is really an obligation of the national professional body. However, we must seek to find the right balance between meeting obligations and obtaining real benefits. Our ability to obtain major returns is modest except in carefully targeted programmes.

The fifth area is vitally important – we are finding that by working with Engineers Australia on new developments we can share their knowledge and achieve economies of scale. Our staff can learn the most from those people doing similar jobs to them in Australia.

This leaves the third and fourth areas. No-one would doubt that they are important, but they are difficult ones in which to meet the different needs of our Members. Most activities in these areas are highly specialised, benefiting only a few Members at a time, and the costs per Member assisted can be considerable. Hence the Membership at large may not support a high level of spending unless there is some benefit for all, and that is difficult to foresee. For this reason, low-spending levels in these areas are likely to continue.

Any feedback on priorities would be most welcome, and should be directed to the Chief Executive. ☺

## Movers and Shakers at BECA's



### **Patrick Breen**

New Zealand-born senior mechanical engineer, Patrick Breen MIPENZ, trained and worked in the UK before returning to New Zealand where he joined Beca.

He specialises in mechanical and hydraulic building services, managing projects which range from full building services engineering of new developments, to building conversions, air conditioning upgrades, ecologically sustainable building design and energy audits. His broad experience has seen him contributing to projects such as the Westpac Stadium, Wellington Hospital, the St James and Embassy Theatres, and Wellington International Airport.



### **Ross Plumpton**

University of Auckland-trained Ross Plumpton MIPENZ is a specialist mechanical engineer at Beca AMEC's Auckland office. He specialises in feasibility studies and project development; project

management of heavy industrial and mining and metals projects; ports and bulk materials handling and storage including conveying systems and shiploading; construction, and commissioning management. His career has taken him around the world from New Zealand to New Caledonia, Colombia, Peru, Canada and the USA, to work on projects such as the upgrade of existing bulk handling and shipping terminals, furnace rebuilds and the design of materials handling equipment.



### **Stuart Wilson**

Stuart Wilson MIPENZ trained at the University of Canterbury before joining Beca's Wellington office in 1999 as a power systems engineering consultant.

He specialises in revenue metering design and certification, hydropower station auxiliaries, HV outdoor equipment layout, 400V services, power and instrument transformers, 110kV and 11kV cables, and

substation earthing. Since joining Beca, Stuart has worked on numerous projects for Transpower and Wellington Regional Council and his expertise is a continuing asset to Beca and its clients.



### **Craig Ridgley**

Senior geotechnical engineer Craig Ridgley GIPENZ has a civil engineering degree with 1st class honours from the University of Auckland. He joined Beca's geotechnical section in 1999 where he

specialises in site management for large-scale offshore civil engineering works. He is experienced in airport civil infrastructure and heavy-duty pavement design for aircraft applications. His geotechnical engineering expertise and experience in site investigations, landslip inspection, assessment and remedial works design have been invaluable on projects ranging from airport runway design, to water treatment facilities, sewerage pipelines and property developments. 

## Obituary



### **Hugh Alexander Fullarton CMG, DistFIPENZ 1908-2004**

Hugh Fullarton was a Distinguished Fellow of IPENZ. He served New Zealand in Washington during WWII, and once he returned home worked his way up through the Ministry of Works, until his appointment as New Zealand's first Public Works Department's Planning Engineer. In this position he took a leading role with Wellington's original urban

motorway development, then one of the country's largest and most sensitive engineering projects.

Hugh was the District Commissioner of Works (1960 – 68) and oversaw the development of Wellington's motorway. This task was especially sensitive because of the impact the work had on the local community – both environmentally and commercially, as the motorway divided the historic Bolton Street cemetery.

He took a leading role in the difficult reconciliation of construction with the protection of the Bolton St Cemetery, and with his extensive background in planning, was able to bring this project to a successful conclusion. Once retired Hugh stayed in touch with the Friends of Bolton St Cemetery, and was chair for a time, which was a testament of his care to the project.

Hugh Fullarton was born in Glasgow, Scotland on 25 July 1908. He came to New Zealand in 1911, and was educated at Wellington College, and Victoria and Canterbury University Colleges from which he graduated BE Civil in 1931. He joined the workforce at the peak of the depression, and succeeded in obtaining a posting to the Waimakariki River Trust as an engineer from 1931 to 1934 – a major task being the supervision of relief work.

In 1934 to 1943 he worked in the Design Office of the Public Works Department under Charles Turner – a period of far-reaching and innovative engineering in a wartime environment. He was then appointed as the

Technical Adviser to the New Zealand Supply Mission in Washington D.C., a position he held for three years. During this period he studied American design and construction techniques, which he then instilled into the New Zealand scene.


In 1947 he returned to the Aerodromes Branch in Wellington – a period of great expansion of commercial and agricultural air transport, and was adviser to the Civil Aviation Branch of the Air Department.

From 1951 to 1955 he was Assistant District Engineer for the Otago and Southland Region, and then returned to Head Office as the Department's first Planning Engineer, a position he held for five years.

In 1968, prior to his planned retirement from Works, he was invited by the Government to take up the post of the Chairman of the Fourth Local Government Commission. His outstanding service saw his chairmanship extended so that he served for 10 years and finally retired in 1978.

He was a firm and outspoken advocate for the setting up of a limited number of strong District and Regional Councils to replace the plethora of municipal and county authorities. It is somewhat ironic that his far-sightedness reached far beyond that of many of the political pundits of the day, and his reward was the untimely termination of the services of the entire Commission including himself as Chairman. Most of the reforms which he advocated have since taken place, speaking well of his fearlessness and single-mindedness in his task of re-organising local authority administration.

Hugh Fullarton would be one of the most talented, articulate and personable people to have left his mark on engineering and government administration during and since World War II. New Zealand is fortunate to have benefited from his wisdom over his lifetime.

Hugh is survived by his wife Marjorie, with two sons Robert and David, and his daughter Jillian. He was awarded the CMG in 1976. 

# Engineering graduate salaries compare favourably

The New Zealand Vice-Chancellors Committee's latest survey of graduates (2003) showed very little difference in starting salaries for male and female engineers.

The survey, comprising data on 2003 graduates, showed that male BE graduates started on \$38,500 compared to \$37,750 for female BE graduates. This difference in male/female salary rates in engineering is less than just about any other science-based degree.

Comparison with other degrees is difficult. Degrees such as commerce include a large number of part-time students who are already in highly paid employment. The average age of commerce graduates is 30, compared to 23 for engineering. The best way to try to get a true comparison is to look at the salaries of graduates with honours degrees. Honours graduates in other disciplines are heavily weighted towards school leavers. Also, all honours degrees are four or more years. The data is shown in rank order, averaging the male and female figures. The health sector clearly distinguishes between male-dominated and female-dominated occupations!

Overall, this is good news for our profession. ☺

*\*The age figure given for health honours graduates in the report (20) is clearly a mistake so we have not reproduced it here.*

Category	Median Age	Median male salary	Median female salary
Health	n/a*	\$50,000	\$35,000
Technology and engineering	22	\$38,000	\$37,000
Maths and info sciences	22	\$38,750	\$36,000
Biological sciences	22	\$36,000	\$33,164
Commerce/Business	22	\$36,000	\$33,600
Social and behavioural sciences	24	\$35,500	\$35,000
Architecture/ Planning etc.	22	\$34,000	\$30,000
Physical sciences	22	\$31,000	\$33,000
Humanities	24	\$32,000	\$31,000

## Coming Events

### Effective Business Negotiation

Negotiation has a number of rules and if you know the rules and the structure of negotiation you will gain more from each negotiation, including win-win results.

**When:** 28 June 2004

**Where:** Wellington

**Cost:** \$825 plus GST

**Contact:** wgtn@ccltraining.co.nz

### Manager's Guide to Employment Law

This course, through the use of practical examples, will provide participants with a solid understanding of employment and human rights legislation. It will focus on the important relationship between an employer and employee, starting with recruitment advertising and hiring staff. It will then

consider the ongoing issues of the employment relationship. Finally it looks at what happens if the relationship breaks down and procedures and legislation for dismissing staff.

**When:** 29–30 June 2004

**Where:** University of Canterbury

**Cost:** \$894

**Contact:** psc@canterbury.ac.nz

### Business Benefit Realisation

Realising the business benefits using project management based strategies —This 1 day workshop is for organisations that want to ensure they achieve the business benefits from their projects anticipated in the business case. Performance measurement is essential to the learning organisation. In general terms, a performance measurement framework enables

managers to determine the extent to which stated objectives are achieved.

**When:** 30 June 2004

**Where:** Wellington

**Cost:** \$525 plus GST

**Contact:** training@projectplus.co.nz

## Stop Press!

Congratulations to Rick van Barneveld FIPENZ who has been appointed Chief Executive of Transit NZ. A full article will appear in the next issue of *engineering dimension*.



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