

South Pacific Engineers Association Takes Shape

Between 17 and 19 August 2009, engineers from the South Pacific nations gathered to develop the South Pacific Engineers Association (SPEA). The two previous face-to-face meetings were held in New Zealand. This one was in Samoa, hosted by the Institution of Professional Engineers Samoa (IPES). It was also the first time that our colleagues from the Institution of Engineers Papua New Guinea (IEPNG) were able to participate.

Unfortunately, due to travel and other logistical difficulties, representatives from Vanuatu and the Cook Islands could not attend, but the other four nations (Samoa, Papua New Guinea, Fiji and Tonga) worked with the IPENZ President, Chief Executive, and Director of Learning and Assessment towards the launch of the Association in February 2010. The meeting was also attended by **Randall Ah Mu AIPENZ**, President of the Auckland-based South Pacific Professional Engineering Excellence group (SPPEEX).

The launch of SPEA was planned for this meeting, but was delayed due to concerns that the model for the Association needed further development. Previously, the model was centred on individual engineers, because only two out of the five original participating nations had engineering bodies and only about 400 engineers were to be catered for. The involvement of Papua New Guinea (PNG) changed that. IEPNG has about 1,500 members, an office with six to eight staff, and a strong registration act.

There are now three nations (PNG, Samoa and Fiji) with registration acts and there is potential to form associations in the other three nations.

SPEA will now be an association of engineering bodies, rather than engineers. This is a simpler structure that will be easier for IPENZ to support, the only weakness being each nation is required to have a viable engineering body. In the nations without an engineering body there is a role for IPENZ to assist in forming one (or to facilitate it from New Zealand – depending on the wishes of each nation). Assuming that the six national engineering bodies sign up, these national “chapters” will be the members of SPEA.



Primary representatives from Samoa, Tonga, Fiji, Papua New Guinea, IPENZ and the South Pacific Engineering Excellence group.

During the meeting the following objectives were set.

- Inform engineers and their wider stakeholders within the region on important national and international developments and issues affecting engineering.
- Contribute to South Pacific engineering knowledge development and dissemination.
- Support the identification, codification and harmonisation of standards to improve engineering practice within the region.
- Develop competence assessment and registration systems, both nationally and regionally, towards the ultimate goal that regional competence registers will receive wider international recognition.



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President's Message

Building Positive Relationships in the South Pacific

I have just returned from the recent development meeting of the South Pacific Engineers Association (SPEA). Earlier meetings of the participating nations were held in Wellington and Auckland or by teleconference, but this meeting was held in the Pacific Islands, hosted by the Institution of Professional Engineers Samoa. It was my first meeting with our colleagues from the Pacific – our Chief Executive hosted the meetings over the past two years. The outcomes of these meetings are discussed on pages 01 and 03.

It was a delight to be at the table with our colleagues from small nations, to see their enthusiasm and commitment. Travelling to Samoa, meeting informally and hearing their stories highlighted the importance of the work we are undertaking. New Zealand is a small country and our professional engineering community is just big enough to deal with professional issues. With 9,500 non-student Members, it is just possible for IPENZ to find people with the skills, but no conflicts of interest, to participate on accreditation panels, disciplinary committees and to work as assessors.

Papua New Guinea has around 1,500 engineers, Fiji has several hundred, Samoa has less than 200, and countries like Tonga, Vanuatu and the Cook Islands have less than 100 engineers each. It is not possible for these countries to develop and maintain high professional standards in the same way as larger countries, hence the need for collectivism and the SPEA.

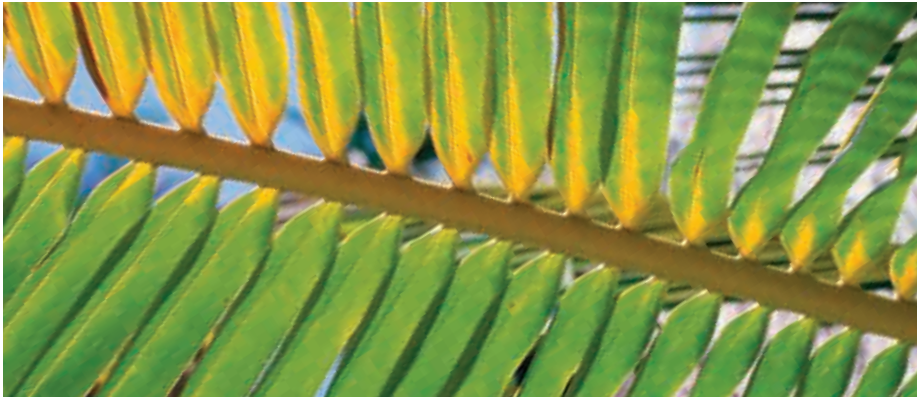
Samoa, Papua New Guinea and Fiji have a Registration Act derived from the (now repealed) 1924 Engineers Registration Act of New Zealand. Other nations aspire to achieve an equivalent so standards can be enforced. Competence assessment, professional development courses, disciplinary processes and qualification accreditation are needed to support the registration systems. We asked our colleagues to identify the type of support they require so we can assess if we are able to provide it. In doing this, we attempted to follow best practice in capacity building – responding to needs identified by the participating community we might work with, rather than imposing our own solutions.

Drawing on our experiences in the South Pacific and wider research, IPENZ is participating in a World Federation of Engineering Organisations project to develop a good practice guidebook for capacity development. This work is supported by the United Nations Educational, Scientific and Cultural Organisation (UNESCO). The project intends to help governments and engineering communities in developing nations and is nearing completion, with an intended release date early in 2010.

The focus of the project has moved to encompass developed as well as developing nations. Cascade failures or near misses of infrastructure collapse in the developed world has led to the recognition that even countries like the United States must pay attention to capacity building – ensuring the necessary pipeline of people meet ongoing technical needs. IPENZ calls this “renewal of the profession” – a long-term goal under which we have substantive government-funded projects.

While Members might see our international programme as largely altruistic, it has strong links back to our core activities. It also plays a role in forging the reputation of New Zealand engineering and the Institution in the international scene. The way we were met and treated in Samoa was clear evidence that we are considered a positive force, responding to the needs of others, with a commitment to high standards – a reputation that I believe will help support New Zealand engineers as they travel to widen their engineering experience.

Anthony Wilson
IPENZ President



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- Create a strong representational voice for engineering in the region, including influencing governments and the Pacific Islands Forum on matters related to engineering, the environment and economic development.
- Raise the profile of engineering in communities within the region.
- Build engineering education, towards the ultimate goal that regional engineering qualifications will receive international recognition.
- Raise the technical capacity of engineering-related institutions.
- Represent the region's engineers in the global context.
- Create a network that supports professional development amongst engineers and engineering organisations in the region by regular communication.

The operational concept is that each national chapter will pay a subscription, determined by the size of the body, and this money will be pooled centrally. These funds will meet the costs of the governing body, "the Council", meeting twice a year to set out a programme. One of the goals of Council meetings is to arrange meetings with relevant government ministers to assist

the host institution to promote engineering issues in its own country. In the start-up phase, IPENZ may need to subsidise the participation of small nations.

It was agreed to form a set of three regional competence registers (South Pacific professional engineer, South Pacific engineering technology practitioner, South Pacific certified engineering technician), using the same model as the Engineers Mobility Forum – each participating nation can run a national section of one or more of the registers once it has demonstrated the capability to do so. These regional registers would sit alongside the national register where a national register exists (in the same way that International Professional Engineer (IntPE) sits alongside Chartered Professional Engineer (CPEng) in New Zealand). Each nation, running either a national register or a national section of the regional register, would carry out its own assessments. Fees would need to cover the costs of IPENZ providing moderation and training of the assessment process. IPENZ might donate volunteer or staff time provided travel costs are met.

A considerable part of the time in Samoa was spent with IPENZ's Director of Learning and



Assessment explaining the form of outcomes-based assessment that IPENZ uses.

The participants agreed to progressively assimilate their assessment systems in line with New Zealand's so they can draw on IPENZ's support. They also agreed that each South Pacific engineering institution should adopt the same membership classes so a high degree of consistency occurs across the region.

In addition to putting in place engineering bodies and developing competence assessment and registration systems, the Council will decide on a programme of professional development for 2010, which IPENZ will assess if it can facilitate.

Lastly, IPENZ will immediately commence work with Fiji and continue work with PNG to provide an evaluation of the engineering education offered in those nations. This will initially be an analysis of needs, but will consider how to move towards accreditation in the longer term.

All this will mean a continuing level of subsidy from IPENZ towards the South Pacific. IPENZ believes this will drop back in 2010, in which time IPENZ can achieve the goals that its Membership supports.

Confidential Reporting on Matters in Engineering

Confidential Reporting on Matters in Engineering (CRoMiE) is a mechanism for learning from the experience of others by using confidential reporting. The aim is to alert others of potential pitfalls or mistakes without placing the reporter in danger of repercussions from, for example, employers or clients.

An engineer who knows of a problem, or a situation that could lead to problems, is able to contact the scheme in a completely confidential manner. The subject matter is then rewritten to remove identification. If original documents are submitted they will be returned to the engineer who reported the matter. No record of names or other means of identification are kept.

Stages at which concerns could be detected are the appointment of designers, the design phase itself, procurement and construction of a project, operation of a facility including repair and maintenance, and eventual decommissioning. Concerns may be raised by poor practice, material failures, inappropriate materials, construction methods, and for other reasons.

IPENZ has been inundated with reports on issues regarding fire engineering – these have been dealt with by the first *CRoMiE Newsletter*. CRoMiE reports on other engineering matters have not been forthcoming.

If IPENZ is to learn from the profession's experiences it needs people to come forward and share their experiences. Lessons learnt will help others and ultimately lead to practice notes or other kinds of codified knowledge. Near misses in which nothing happened, but might have done under different circumstances, are also of great interest, as are trends.

The intention is to compile a reservoir of information that can be used to improve safety and reduce deaths, injuries and economic loss.

If you have anything to report please send it to www.ipenz.org.nz/ipenz/practicesupport/cromie/how.cfm

Big Changes in Engineering Education

The National Engineering Education Plan (NEEP) project is a collaborative research and development venture between all major participants and stakeholders in the New Zealand engineering education sector. It will develop a coherent national plan ensuring the right number and types of graduates are produced and the right programmes of study are available to meet New Zealand's needs.



Professional engineer tertiary education

NEEP needs to define the qualification, ensuring continued adherence to international best practice whilst meeting the needs of New Zealand industry. The relevant international benchmark standard is defined by the Washington Accord, which is evolving. The question is whether our engineering education system as a whole needs to transition away from the four-year Bachelor of Engineering (BE) degree.

Engineering technician education

A Diploma in Engineering structure has been developed to a conceptual stage. The diploma would include all engineering disciplines, and be offered within a nationally cohesive governance and delivery framework. The NEEP Governing Group now needs to find out if there is wide support for this proposal.

The decisions will impact on the future of engineering education and it is important that all relevant stakeholders contribute their views. The detailed consultation papers are available at www.ipenz.org.nz/ipenz/education_career/neep.cfm or obtainable by emailing Sharon Wagg at sharon@ipenz.org.nz. Summaries of the proposals are presented below.

The NEEP Governing Group wishes to stress that these proposals will in no way diminish the career opportunities of those studying for present qualifications – if changes are made there will be straightforward transitional arrangements.

If you wish to make a submission on either proposal, please send it to sharon@ipenz.org.nz by 5.00pm 30 September 2009.

Professional engineer education

In June 2009 the exemplar graduate profile of the Washington Accord was enhanced by:

- a stronger statement of the knowledge profile
- an expectation that graduates will be able to operate close to the frontiers of knowledge in their discipline
- an expectation that graduates have the capability to research, rather than just investigate problems
- an expectation that students are exposed to the practice (non-theoretical or codified) knowledge being applied within day-to-day practice in their discipline
- stronger comprehension of contextual knowledge and the ability to apply that knowledge
- an expectation that graduates have the ability to apply ethical principles.

It is suggested by the Washington Accord, that achieving this graduate profile requires four to five years of tertiary education, dependent on the entry level. Possible strategies to ensure that New Zealand's professional engineering qualifications conform to this more-demanding Washington Accord graduate profile include:

- continuing the present qualification structures and entry criteria to both degree types, but removing unnecessary material
- continuing the present qualification structures, but raising the entry standard to the BE degree
- setting a higher entry standard for the BE degree and developing a foundation year, that all but exemplary students would be required to take
- as above, but restricting the foundation course to one semester
- developing a five-year qualification including a one-semester foundation (exempt for the highest-achieving students) and one additional semester
- moving to an integrated five-year qualification
- moving to a first-cycle (three-year Bachelor) and second-cycle (two-year Masters) structure.

An important part of the discussion is whether by producing relatively large numbers of four-year BE graduates, New Zealand is over-educating some graduates for the roles they will perform in employment (which are more technical than professional and might be catered for by a three-year Bachelor of Engineering Technology) yet under-educating other graduates for employment roles in research and development and design.



Replacing the New Zealand Certificate in Engineering

The proposal is for a two-year, fulltime-equivalent (240-credit) New Zealand Diploma in Engineering (NZDE), which includes academic learning, and a one-year, fulltime-equivalent (120-credit) New Zealand Diploma in Engineering (Applied) (NZDE (Applied)), which assesses practical components. The NZDE (Applied) would include the NZDE as a pre- or co-requisite. These diplomas would be available in three disciplines (civil, electrical and mechanical), with possible further expansion.

IPENZ would assess the NZDE for accreditation against the Dublin Accord standard. Completion of the NZDE (Applied) (which involves demonstrating competence as a technician to the international benchmark competence standard) would satisfy the requirements to be registered as a Certified Engineering Technician (CertETn).

Delivery of the NZDE would be through a cluster of institutes of technology and polytechnics (ITPs) and the NZDE (Applied) through

industry training organisations (ITOs). Opportunities for co-delivery in more than one discipline would enable economies of scale in the tertiary providers. Common size units of learning would also be adopted.

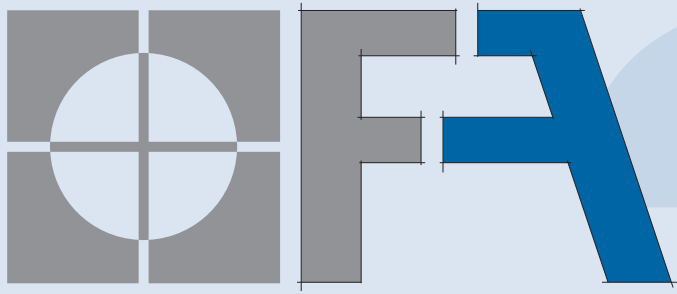
The diplomas would be subject to a national governance structure, based on industry, ITP and ITO representation. The structure includes industry advisory groups as recommending bodies in each of the disciplines, and a national quality assurance system to ensure consistent achievement of equivalent outcomes.

Key questions for the consultation include the nature of reporting assessment and achievement in the NZDE – whether it should be based on a graded 10-point (E to A+) or competence-based (not achieved, achieved, merit, excellence) system. This has consequences for the registration of the NZDE on the National Qualifications Framework alongside the NZDE (Applied).

Unified diploma system

Feature	Academic diploma	Applied diploma
Name	New Zealand Diploma in Engineering	New Zealand Diploma in Engineering (Applied)
Abbreviated title	NZDE (Discipline)	NZDE (Applied) (Discipline)
Level	Level 6	
Responsibility	Leadership shared by ITPs/ITOs	Led by ITOs
Total credits	240 credits	120 credits
Paper credits	Multiples of 15 credits	Four 15-credit papers or two 30-credit papers and one 60-credit paper ¹
Knowledge and practice	Reasonable coverage of relevant body of knowledge in discipline, some knowledge of related disciplines	Knowledge and its application to the workplace
Common elements between majors	Mathematics, management and others as appropriate	
Assessment	Model 1 – achievement-based assessment graded above a minimum standard for course work and set pieces Model 2 – competency-based assessment	Competency-based assessment
International standard and professional membership	Graduate attributes of the Dublin Accord apply	Competence standard aligned to international exemplar recognised by the International Engineering Alliance (and used by IPENZ for entry to competence-graded Membership (AIPENZ) and CertETn register)
Entry level	Successful study in NCEA – Level 2 in Mathematics, Physics and English	Completion of specified elements of the NZDE would be a pre-requisite or co-requisite for different parts of the NZDE (Applied)
Delivery	Flexible – fulltime, part time, block courses and distance	
Quality assurance	National with industry input	
Marketing	Coherent national marketing co-ordinated through the Governance Group, but also marketing within individual industries via the relevant ITO	

¹The four 15-credit or two 30-credit papers would have specific elements of the NZDE as pre- or co-requisites, in order to attempt the 60 credits to complete the NZDE (Applied) it would be necessary to have completed the NZDE as a pre-requisite. The 60 credits would be assessed holistically for competence in the practice area of the candidate to the international exemplar standard for engineering technician competence.



Fellows & Achievers

Fellow

This category acknowledges a Member's contribution, recognised by peers, to the advancement of the profession or IPENZ, or leadership in one or more of the following areas:

- creation of engineering knowledge by research
- development of improved engineering practices, codes or standards
- development and enhancement of IPENZ and/or its subsidiary organisations
- education that builds engineering and technology skills in New Zealand
- raising the profile and standing of engineering in the community
- an engineering innovation, creation or design with wide impact
- leadership.

Distinguished Fellow

This category recognises an existing Fellow's eminent contribution, over an extended period of time, to leadership in engineering in a technical or wider context.

Distinguished Fellows are recognised for eminent achievements in one or more of the following areas:

- research
- engineering practice
- leadership
- contribution to the community
- innovation or invention
- fostering of engineering in business.

Honorary Fellow

This category recognises an eminent contribution to the advancement of engineering over an extended period by a non-engineer or a person holding an engineering qualification, but whose career has been outside engineering in a traditional sense.

Honorary Fellows are recognised for eminent achievements in one or more of the following areas:

- research
- engineering practice
- leadership
- contribution to the community
- innovation or invention
- fostering engineering in business.



Turner Award for Professional Commitment

This award recognises a Member's demonstrated commitment to the ideals of a self-regulating profession as judged by some of the following criteria:

- actively upholding and promoting the ideals of a profession
- contributing to the processes of self-regulation – voluntary activities on committees, taskforces, panels etc
- willingly disseminating technical information to colleagues, as well as the wider community
- promoting engineering as a career to young people and/or mentoring young engineers
- consistently demonstrating and upholding the IPENZ Code of Ethics
- being actively involved in community affairs
- ongoing commitment to upskilling and maintaining their own knowledge and professional skills.

Supreme Technical Awards for Engineering Achievers

Sponsored by Opus International Consultants

The Supreme Technical Awards recognise technical expertise in engineering as exemplified by contributions to the advancement of engineering practice, innovation or technical breakthroughs. Evidence may include:

- technical papers advancing knowledge
- major improvements in engineering practice through codification or standard development
- recognition by others (nationally or internationally) of leadership in a practice field
- a track record of creating new solutions to engineering problems
- ingenious new artefacts, products, systems or services with enhanced properties.

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Each year at the Fellows' and Achievers' Dinner IPENZ recognises leaders, contributors and achievers in a number of categories.

Expressions of interest for the 2009 Fellowships and awards are now open in the following categories.

Nomination and entry forms are available at www.ipenz.org.nz or by contacting the Awards Co-ordinator, Dionne Needham, on awards@ipenz.org.nz

Nominations close 31 October 2009.



2010

Dobson Award

Transportation infrastructure – the design, construction, development or operation of any form of land, sea or air transport infrastructure assets, including bridges, tunnels, rail, road, port, airport construction, transportation and traffic engineering.

Rabone Award

Information, communication, electrical and electronic technology (ICEET) – the design, development or operation of improved or new communications, hardware, software, embedded systems, broadcasting, telecommunication, electrical or electronic products and controls.

John Cranko Award

Mechanical and manufacturing – the design, development or operation of improved or new products, processes or services using mechanical engineering, mechatronics, or which arise in the manufacturing sector. This category includes elaborately transformed manufactured goods, automated production facilities, mechanisation, control systems (where there is a mechanical component) and robotics, and excludes mechanical devices permanently fitted as part of building services.

Furkert Award

Sustainability and clean technology – application of the world's best practice in minimising non-renewable resource use, waste minimisation or improving sustainability.

2011

Freyssinet Award

Building and construction – the design and construction of buildings, including fire engineering, building services, geotechnical, structural and earthquake engineering (excludes bridges and dams).

Angus Award

Water, waste and amenities – the design, construction and operation of reliable supply of services to communities and/or their distribution networks in respect of any of water supply, water storage, wastewater, flood works, community amenities such as swimming pools, beaches, marinas, solid waste, but excluding transportation, communications and energy services.

Skellerup Award

Food, bioprocess and chemical – the development of improved or new bioprocess technology involving chemical processes, biological processes, food processing, storage and specialised transport and materials handling.

Evan Parry Award

Energy systems – the design, development, implementation or operation of improved or new products or services for generation, transmission, reticulation or use of gas and electricity, including motor and engine technology.

Promoting Technology Education



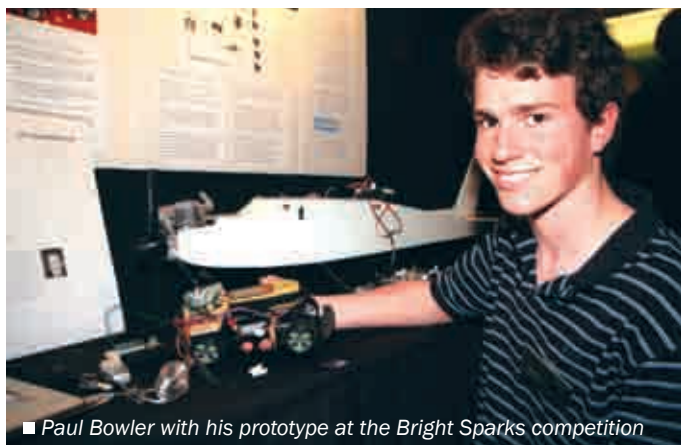
Techlink was established in 2003 as part of IPENZ's strategic goal of renewal of the profession. It encourages and supports teachers and students and promotes technology education as a useful prerequisite for tertiary education and careers in engineering or technology. Techlink is funded by the Ministry of Education to provide resources for teaching and learning in technology education.

Techlink promotes technology by generating media coverage for local schools and producing print advertisements in popular publications such as *North & South* and *Listener* magazines. Recent advertisements have provided information on the benefits of technology and how parents can find out how technology is being delivered in their child's school. There is also a section on the Techlink web site providing information of particular interest to parents.

By engaging the wider community through promotional activities, Techlink aims to raise the profile of technology to ensure that people are aware of the opportunities it can lead to. Studying technology can provide a clear career pathway that attracts students and equips those who are interested in making a career in engineering or technology with the right skills and knowledge.



Below are two of the many examples of students who took technology at secondary school and have moved on to tertiary study in engineering and technology.



■ Paul Bowler with his prototype at the Bright Sparks competition

Paul Bowler

Paul Bowler studied electronics throughout his senior secondary years at school and for his Year 13 project decided to develop and build an autopilot that could receive and interpret GPS data and translate these signals into accurate servo control commands.

His idea was to create an autopilot for radio-controlled airplanes that would use an onboard GPS unit to control the direction of the plane and allow it to fly automatically through a set route, similar to an unmanned military aircraft.

With the help of PICAXE microcontrollers, Mr Bowler developed a system where he could override the manual steering controls of a radio-controlled plane and switch them to an autopilot, which, after receiving data from an onboard GPS receiver, would steer the plane to a series of designated points.

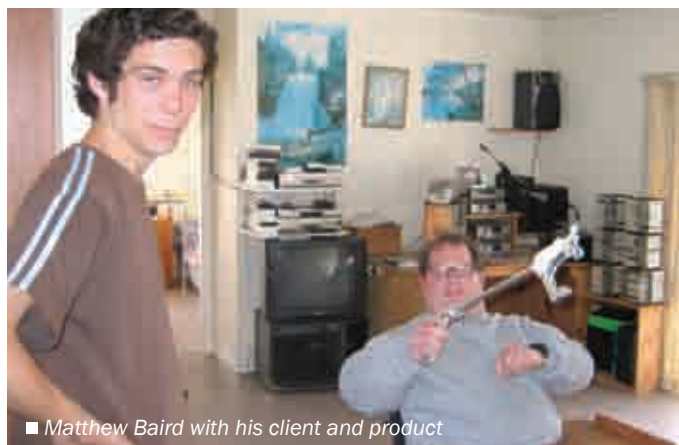
His autopilot also transmits a stream of data to a laptop on the ground, keeping the user informed on the plane's current velocity, direction and bearing to its next destination.

Mr Bowler was awarded second place for his prototype in the Bright Sparks competition, held annually to encourage students from around the country to create innovative and unique projects in electronics and software.

He is now in his first year of university and is studying towards a Bachelor of Engineering (honours) in electrical engineering at the University of Canterbury.

What can IPENZ Members do to help?

As professional engineers there are many things you can do to support technology students. Members can sign up to be a neighbourhood engineer to assist students in their projects for the Transpower Neighbourhood Engineers Awards (see www.nea.org.nz/default.cfm) or become a Futureintech Ambassador (see www.futureintech.org.nz) or take an active interest in what's happening in technology in their local schools as parents and community members. To find out more about technology education visit www.techlink.org.nz



■ Matthew Baird with his client and product

Matthew Baird

In Year 13 Matthew Baird designed and constructed a disability grabber for his client who was immobile from the waist down and in a wheel chair.

Due to his disability, his client needed a tool to help him pick things up, get dressed, and pick up other items such as paper and hard cylindrical and heavier flat objects.

For his development work Mr Baird worked with a local equipment manufacturing company who helped with the functional modelling stage of the development process and the manufacturing of the final product.

With careful planning, Mr Baird co-ordinated ongoing contact with both the manufacturing company and his client to ensure the final product would suit his needs.

His client was very pleased with the results and was impressed not only with the quality of the final product but also the process he used. With his creative design and hard work Mr Baird was able to provide his client with greater independence and ease of living.

He is currently studying towards a Bachelor of Engineering, majoring in mechanical engineering at the University of Waikato.

The Engineering Leadership Forum



Making the voice of engineering heard by decision makers is an ongoing objective of IPENZ and a number of other organisations operating in the wider context of engineering. These organisations can be loosely classified into two groups – those trying to affect and alter public policy, and those wanting to improve the practice of engineering. Those in the former group are normally also in the latter. However, most of what we term Collaborating Technical Societies (CTSs) and Technical Interest Groups (TIGs) operate almost entirely in the latter.

The main engineering bodies operating to influence policy are generally characterised by having a professional chief executive and a number of staff. Organisations meeting this criterion include Rooding New Zealand, the Association of Local Government Engineers New Zealand (Ingenium), Association of Consulting Engineers New Zealand (ACENZ), Water New Zealand, Centre for Advanced Engineering New Zealand, New Zealand Contractors Federation and IPENZ.

Over the last two months these organisations have been considering better ways to advance the common voice of engineering on policy issues. To this end, a model has been developed for what was termed the Engineering Leadership Forum (ELF). Of the bodies named above, six, including IPENZ, chose to co-operate in making submissions to the Auckland super-city debate using the identity of “members of the Engineering Leadership Forum”. The impact on the Select Committee was significant and the ELF submission had much greater weight as a result.

Based on this success, there is agreement amongst a group of organisations to keep working on new issues of common interest using the ELF identity – likely projects include submissions to the next round of the Resource Management Act amendment process, and also the possibility of using the Forum to promote discussion on the engineering education issues arising from the national engineering education plan (NEEP) project. One more technical project has also been suggested – providing collective advice on the forms of engineering contract available and advice on when each is most appropriate.

The ground rules are simple – the relevant chief executives meet bi-monthly, agree and apply resources to specific projects involving joint representation and/or joint output. The focus is not just infrastructure, and includes engineering in the widest sense. It is intended that the mode of operation be quick to be able to respond at short notice. Hence the requirement to have a chief executive with delegated authority to make decisions on how their organisation is prepared to be represented on collective outputs.

IPENZ is keen that this new identity does not confuse the relationships we have between the parent body, National Office and our TIGs, and between the many parts of IPENZ and the various CTSs. Those relationships tend to be focused on professional issues and servicing engineers on engineering practice issues particular to the domain of the TIG or CTS. However, it is inevitable that the some projects undertaken under the ELF identity, like the possible project on forms of engineering contract, will come close to programmes operating within TIGs and CTSs. IPENZ National Office staff will keep a close watch on the potential for overlap, and endeavour to manage win-win relationships when such situations arise.

In the longer term, the wider purposes of a successful Engineering Leadership Forum could include:

- anticipating and acting on issues and opportunities related to engineering in the wider economy
- coherent/collective representation of engineering
- improved profiling of engineering
- facilitating and promoting world-class performance in New Zealand (for example, technical standards).

In the short term, most of the organisations involved in the early discussion on establishment want to achieve some success while working informally, to learn how to manage a collective approach. IPENZ wants to ensure that the activities undertaken through ELF are complementary to the activities already undertaken by IPENZ, our TIGs and CTSs, and that the ELF activities add more value to the engineering profession as a whole.

Producer Statements



IPENZ prepared Practice Note 1 *Producer Statements* to guide engineers on the needs of the Building Act 1991. The Building Act 2004 does not mention producer statements by name, nevertheless they continue to be used as a means to assure building consent authorities (BCAs) that a proposed design meets the requirements of the *Building Code*, or that the construction satisfies the conditions of the building consent. In 2008 the Department of Building and Housing held that the definition of “producer statement” from the Building Act 1991 has become the ordinary and natural meaning of the term in the context of building controls.

IPENZ withdrew its outdated practice note on producer statements some years ago. **Adam Thornton FIPENZ** is currently preparing an updated version, with a first-draft target date of mid-September.

National Office fields many enquiries on producer statements, and would like to draw attention to the following points.

- IPENZ provides producer statements in pdf form and, despite many requests, have resisted issuing Microsoft Word versions. With Adobe Acrobat Standard, it is possible to enter the data, use “save as” to save electronically, and then print to sign a paper copy. Adobe Acrobat Reader is less suitable, as it is not possible to save an electronic copy.
- The standard co-branded IPENZ/Association of Consulting Engineers (ACENZ)/New Zealand Institute of Architects (NZIA) producer statements (PS1, PS2, and PS4) are specifically designed for use with the *Building Code*. They are sometimes used in connection with other legislation, such as the Resource Management Act, when it is necessary to remove the words that relate only to the *Building Code*.
- In 2008 the Department of Building and Housing held that the producer statements were evidence of opinion, not evidence of fact.
- Some users have found the “All” and “Part only” circles to be ambiguous. Tick “All” if you are certifying the entire design for a particular clause of the *Building Code*. Tick “Part only” if you are certifying only a part, then specify that part.
- Some BCAs like to have a “design features report” with the PS1. This is a good place to describe a “part-only” PS1. The report is described in the Construction Industry Council guidelines, available free of charge from the Construction Industry Council web site.
- IPENZ prefers that only Chartered Professional Engineer registrants and Registered Architects sign producer statements, but is aware that many others do so. Some building consent authorities insist that only Chartered Professional Engineers or Registered Architects sign producer statements and IPENZ supports this stance. It adds weight to IPENZ’s contention that the CPEng register overcomes the desire of some BCAs to maintain local lists of producer statement authors.
- IPENZ recommends that all PS2s are issued with a clear statement as to the nature and depth of the review. Practice Note 2 *Peer Review* is to be revised in the near future.

- IPENZ no longer issues PS3 – construction producer statements. These have been replaced by the sixth schedule of NZS 3910:2003, which may be reproduced as the copyright is waived. Note that this certifies that the building works have been completed in accordance with a contract.
- PS4 – construction review – encourages engineers to provide construction monitoring (CM) services in one of five categories CM1–CM5. These are described on the IPENZ web site (use the Google toolbox on the home page). IPENZ encourages designers to include CM within their scope of services and also encourages BCAs to make CM a condition of consent. There are situations in which it is appropriate for an engineer other than the designer to monitor the construction, and then the designer should carefully brief the CM engineer.
- Senior engineers “supervise” junior engineers in a design office. Site foremen “supervise” tradesmen and labourers on site. Both forms of supervision are part of “building work”. Construction monitoring is the process by which engineers are satisfied that construction work is proceeding in accordance with the consent – CM is not supervision.
- The PS4 certifies that the building works have been completed in accordance with the consent and its amendments, not the original design, contract, or the *Building Code*. The PS4 is not the certificate of practical completion.

Advice for using producer statements

- Use the most recent versions of the standard form on the IPENZ/ACENZ web sites. The current versions date from 2007.
- Take care to enter *Building Code* clause numbers, building consent numbers, and building consent amendment numbers in the right places.
- Be specific when describing the building work. Do not give a general description such as “alterations and additions” and enclose calculations without headings. For example, describe your work as “beams, foundations, bracing”, and head your calculations accordingly.
- Accurately demonstrate the means of compliance with the *Building Code*. For example, a design for a new foundation on an expansive soil might be claimed to comply through the acceptable solution route B1/AS1, NZS 3604 section 17, AS 2870. The compliance route for a concrete building might be through the verification method B1/VM1, AS/NZS 1170, NZS 3101. A fire engineer might use an alternative solution developed from specific fire engineering design.
- Sometimes it is necessary to do a small amount of specific design within an otherwise acceptable solution. IPENZ discusses examples in *Hot Topics*, available from the IPENZ web site.
- Ensure that you have professional indemnity insurance for the work being described.
- Check that there is a building consent for the works. It is an offence to carry out any building work (unless exempt) except in accordance with a building consent. The terms “building work”, “site work”, and “supervise” all have their own interpretations in the Building Act. An infringement system exists for 22 offences which the Department of Building and Housing has described as potentially dangerous.
- Do not use the word “inspection” when you mean “construction monitoring”. In a recent legal case the judge held that inspection of building work amounted to building work, and it followed that it was an offence to inspect in the absence of a building consent. This has important ramifications, and IPENZ is investigating further.
- Obtain or see the building consent and amendments well before signing the PS4. Earlier versions of the PS4 allowed the designer to make “authorised variations” identified by drawing numbers, but this is no longer permitted.

Rivers Group Launch



Left, field trip participants visit works on the Hutt River. Right, The **Hon. Dr Nick Smith FIPENZ** officially launches the Rivers Group.

On 21 August 2009, the Rivers Group was formally launched by the Minister for the Environment, The **Hon. Dr Nick Smith FIPENZ**. The Rivers Group is a joint technical group of the Institution of Professional Engineers New Zealand (IPENZ) and Water New Zealand. Founded to provide a forum for those interested in rivers, flood-risk management and the operational and environmental issues of catchments and river systems, the Group aims to incorporate a wide variety of fields of practice and interest to do with rivers, promoting a multi-disciplinary and multi-cultural approach for river management in an integrated and holistic manner.

The launch event began with a field trip to the Waiwhetu Stream and the Hutt River. The 80 people present viewed the start of works on an 18-month project to lower flood levels, provide ecological enhancement, and remove contaminated sediments from the Waiwhetu

Stream – one of the most polluted waterways in the country. The Hutt River provided examples of river management works and the challenges around managing a river which has two cities built on its floodplain.

Following the field trip, the inaugural meeting of the Rivers Group was held at Macs Brewery in Wellington. At this meeting, the hard work of the formative steering and working group committees was acknowledged, along with the support of IPENZ staff. The Group rules and strategic plan were presented and the sponsors – IPENZ, Water New Zealand, CPG, Fletcher Construction and Brian Perry Civil, Sinclair Knight Merz, DHI, Opus International Consultants, Hydra Software Ltd, Aurecon, and the Greater Wellington Regional Council – were acknowledged. The inaugural committee was also introduced at the meeting. This committee will serve until the first annual general meeting, planned for the

middle of 2010, when nominations for the committee will be called for, and committee members will be elected.

Dr Smith spoke of the value of New Zealand water resources, and the desire for multi-sector input into the management of these resources – both key tenets for the formation of the Rivers Group. Following the launch, those present celebrated with dinner and drinks at Macs Brewery.

The Rivers Group is for those who are passionate about New Zealand's majestic and dynamic rivers and their sustainable use and management. Activities planned for the coming year include symposia, the publication of newsletters, and continued promotion of the Group to potential members. Membership of the Rivers Group is free until 1 October 2009. Further information and contact details can be found at www.ipenz.org.nz/riversgroup

engenerate update

This year, IPENZ Members had another chance to flex their creative muscles and think outside the square in the engenerate/IPENZ photography competition, thanks to continued generous support from Beca. The theme for this year's competition was "Engineering or Art?".

Judging takes place in September, and Members have the opportunity to vote for their favourite photo in the Members' choice section via the weekly online poll in *engineering direct*.

Coldstore Engineering

IPENZ is planning a series of one-day seminars on the topic of coldstore engineering and the prevention of fire hazards in coldstores. The seminars will build on IPENZ's practice note *Coldstore Engineering in New Zealand*, published in June this year.

While topics will be coldstore-specific, with emphasis on design guidelines, there will be a scope wide enough to cover legislative requirements, fire engineering, insulation and structure. Seminar speakers are co-authors of the IPENZ practice note and are well-regarded experts in the field of coldstore engineering.

Dates and locations are on the engineering calendar at www.ipenz.org.nz/ipenz/nzecal

If you wish to express your interest or have any queries relating to the seminar series, please contact the Professional Development Team at cpd@ipenz.org.nz or call us on 04 474 8984.



Professional Development Events – IPENZ Events

September 2009

Introduction to Corrosion in Engineering
Christchurch 16 September

Effective Report Writing for Engineers
Wellington 17 September

Specification Practice
Napier 22 September

Legal Issues for Professional Engineers
Wellington 24 September

Relationship Management and Effective Communication
Auckland 24 September

Engineers and Consultation: "Current Practice and Lessons Learnt"
Auckland 28 September

October 2009

Contract Management for Engineers
Wellington 6 October

Risk Management Techniques for Engineers
Auckland 7 October
Wellington 14 October

Engineers and Consultation: "Current Practice and Lessons Learnt"
Christchurch 14 October

Finance for Engineers
Auckland 14 October

Effective Report Writing for Engineers
Whangarei 20 October

Legal Issues for Professional Engineers
Christchurch 27 October

Managing Variations and Claims in a Project/Contract Environment
Auckland 28 October

Specification Practice
Auckland 29 October
Wellington 30 October

Cost for IPENZ short courses (incl. GST):
\$520 – IPENZ Members
\$540 – Technical Interest Group members
\$605 – Non-members

Managing Risks to Infrastructure and Communities from Our Changing Climate

Auckland 15 September
Christchurch 17 September
Hamilton 29 September

Cost for Climate Change Seminars (incl. GST):
\$475 – IPENZ Members
\$495 – Technical Interest Group members
\$575 – Non-members

Transportation workshops: Moving Forward in Transport

Christchurch 16 September
Wellington 22 September

For more information on these courses please visit www.ipenz.org.nz/ipenz/nzecal



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