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IPENZ Engineers New Zealand

engineering dimension

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President's Message

The Changing World of Professional Practice

This will be my last article for *engineering dimension* as President, and I do not intend to use it to look backwards. Some kind of retrospective is expected from the President at the Annual Convention, and it would be idle to preview its content.

Rather, I would like to consider a question that has been central to my year: the defining characteristics of professional practice in a world of globalisation, privatisation, deregulation, increasing complexity, demanding clients, and intense competition. There are no simple answers, but it seems worth remembering that professional practice, as reflected in our code of ethics and constitution, is largely an artefact of the industrial revolution. The model has served us well for nearly two centuries, but is arguably showing signs of strain.

Professional engineers seek, through expertise and judgement, to minimise risks and maximise rewards. Many definitions of professional engineering have been proposed over the years, but few match the candour and wry humour of one propounded by Dr A R Dykes, then President of the Institution of Structural Engineers, in 1976:

> *Engineering is the art of modelling materials we do not wholly understand, into shapes we cannot precisely analyse, so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance.*

This should give us all pause. Rarely can we understand all the possible consequences of a proposed action. Even more rarely are we wholly in control of system design, development, implementation, maintenance and repair. Usually, we are just part of a large team, sometimes (as in segments of our construction industry) with minimal interaction between members. We need to think hard about the extent to which other members of such loosely-knit teams will understand the thinking behind our contributions.

Most engineering failures stem from a chain of events, where those who might have been expected to recognise emerging risks are absent, have focused their attention too narrowly, or have simply become distracted. I remember sitting in a courtroom listening to a chilling account of how a major building failure had unfolded. It cost seven lives, and could easily have cost many more.

Continued overleaf >>>

Notification of Revised Regulations for Investigation and Determination of Complaints against Members

At its meeting held 11 February 2003 the governing Board of IPENZ resolved that new IPENZ Regulations be made for investigating and determining complaints against members. These regulations come into force on 1 April 2003, and will be used for processing complaints received from that date. The full set of Regulations is available in the public area of the website (www.ipenz.org.nz/ipenz/finding/complaints). Members are hereby notified of the revised procedures, which are summarised below. Where possible, they are matched to the equivalent CPEng procedures.

- Complaints against Members can relate to either an alleged breach of the IPENZ Code of Ethics or alleged incompetence in relation to the Membership class the Member holds.
- As well as acting on complaints made by Members or the general public, the Institution can initiate inquiries into the behaviour of a Member of its own volition .
- Complaints are initially investigated by a Complaints Research Officer who reports to the Chair of Investigating Committees on whether the complaint relates to a competence or ethical matter; the Chairperson then decides whether to proceed.
- If a complaint proceeds, an Investigating Committee consisting of senior Members of the Institution is formed and they investigate the matter.
- The Investigating Committee will decide whether the matter should be dismissed or a Disciplinary Committee should be formed.
- If a Disciplinary Committee is formed it will include two lay members in addition to Members of the Institution. It will decide what, if any, disciplinary action will be taken.
- Possible disciplinary actions include expelling, suspending, censuring and fining the Member concerned.
- The Member concerned may appeal, and in this case an Appeals Committee is formed to hear the matter, with the authority to reverse the decision of the Disciplinary Committee.
- The governing Board may resolve to publish the name of any member and a summary of the proceedings.

The key differences from previous procedures are that the role of the Complaints Research Officer, which was previously informal, is now formalised, and that there is a separation of ethical (moral) matters from matters of competence. Members should be aware that the Board intends that matters of competence will be dealt with in a way that acknowledges that competent engineers can and do make occasional mistakes (this said without in any way prejudicing or influencing decisions on cases that may arise).

<<< Presidents Message continued

Briefly, the structural engineer had prepared a competent and unremarkable design, with a steel frame designed to carry vertical loads. Reinforced concrete floors, cast in situ, were to act as diaphragms, transferring the lateral loads to slip-formed service cores at the ends of the building. To reduce the need for temporary bracing during construction, the engineer had specified certain joints as moment-resistant, and recommended an appropriate construction sequence.

The steelwork drawings were passed to a fabrication company, whose chief design draughtsman, following common practice, carried out the detailed design of the joints, but failed to note that some should be moment-resistant. A different engineer supervised the construction, and did not pick up the discrepancy.

The steelwork was erected easily, but technical problems delayed completion of the service cores. The contractor's proposal that precast floor units with reinforced structural topping be substituted for the cast in situ floor slabs of the original design was accepted. The floor manufacturer, under financial and other pressures, requested that units be accepted on to site as soon as possible. Fearing that the manufacturer might go under, and be unable to complete the work, the contractor agreed. There was nowhere on site to store the units, so the contractor lifted them into place on the steel frames as they were delivered. Miraculously, this process passed without incident, and pouring of the structural topping began.
Then the wind blew...

Minor computation errors rarely cause disasters, unless they are systematically repeated. By contrast, failure to recognise the real parameters within which a system may operate, or the vulnerabilities of a proposed solution, can be dangerous. Henry Petroski, in *To Engineer Is Human*, spelt out the implications:

> *Engineers ... are not superhuman. They make mistakes in their assumptions, in their calculations, in their conclusions. That they make mistakes is forgivable; that they catch them is imperative. Thus it is the essence of modern engineering not only to be able to check one's own work but also to have one's work checked and to be able to check the work of others.*

In tendering and pricing we reflect in our estimates the competitive edge that experience gives us. That is fine when the work lies well within our experience, and we can be sure that our drawings and specifications can be understood by those implementing them, and by those supervising their work. It is widely believed that the worst-case result is a pedestrian, possibly sub-optimal, but *safe* design. But this is not always the case.

In the past, most professions set or recommended fee scales, to ensure reasonably efficient practitioners sufficient income to exercise their responsibilities properly and safely. The system was criticised as anti-competitive, and as dragging expert practitioners down to the level of the least competent. Fee scales have vanished, and consumers of engineering services have benefited, at least in the short term. However, financial margins have eroded seriously in some areas, and the risk of error increases when practitioners cannot afford time to review designs properly, or to supervise their implementation thoroughly.

I can offer no simple solutions. Efforts have been made to persuade consumers to purchase engineering services on the basis of experience, quality and capability, rather than price, and some do so. They are less likely to when they will not own and operate the resulting structures or systems. Engineering judgement is required in considering not only the technical aspects of a project, but also the framework in which engineering services are to be delivered.

I cannot resist concluding with two quotations from Douglas Adams.

> *The major difference between a thing that might go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong, it usually turns out to be impossible to get at and repair.*

Choosing the right quality marks – 2003 and beyond

With the opening of Chartered Professional Engineers (CPEng) Register organisations are considering the implications of the IPENZ quality marks on their staff development policies and quality assurance systems; they are deciding what engineering credentials are important for their professional engineers and considering how the IPENZ quality marks link in with the branding of their own organisation. Financial and other compliance costs are being balanced against the potential benefits of embracing the IPENZ quality marks.

IPENZ is encouraging members, and their employers, to embrace an integrated quality mark (MIPENZ, CPEng), in the belief that the member services, ethical behaviour, collective voice and shared wisdom of the engineering profession underpin engineering standards. We believe, therefore, that registration of competent people (CPEng) must be linked to the wider activities of the engineering profession via IPENZ, the only New Zealand-based professional body for engineers.

Organisations and individuals must decide which combinations of IPENZ quality marks they should embrace. Organisations may restrict certain positions within their organisations to professional engineers who are CPEng. They may contribute financially to IPENZ membership as part of their professional development or staff retention strategies. They may encourage team leaders to gain entry to the International Professional Engineers Register (IPER) if the organisation is tendering for work overseas. Such measures will contribute to their human resource capability.

IPENZ quality marks may impact on organisations in the ways outlined opposite.

There is a serious message there as for engineers: our work will affect generations of users of the products we design, most of whom will be totally unaware of the assumptions we made about the ways in which they are likely to use them. And, after all:

> *A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools.*

I cannot end on such a pessimistic note. Being President of IPENZ is not just an honour, it is also a wonderful opportunity to encounter very special people, and to recognise their contributions to their communities. Engineers create real wealth – not just financial returns on investment, but improved standards of living for whole societies. We do no favours if we set the value of our services too low, and thereby fail to achieve the best possible long-term outcome for all parties. We should remember that a dollar spent at the design stage will almost always return tens, hundreds or even thousands of dollars over the service life of a project, and may save lives as well.

The first tenet of our Code of Ethics has been placed in that position for a purpose.

Happy engineering.

John Webster
President

Structural Engineering Practice Review

In the last issue of *engineering dimension* (February 2003) members were made aware of the Practice Review in Structural Engineering. The task force would like to hear your views on the following questions about structural engineering practice:

A Professional practice issues

1. Is there evidence of a widespread low standard of technical competence, for example
   - commonly used practices that are at odds with well known documented "best practice"?
   - a lack of appreciation of the special requirements of seismic engineering?
   - deficiencies in reinforced concrete, precast concrete and steel design?
   - poor computer modelling of structures?
   - inconsistency in design approach for all but the simplest of structural elements?
2. Is there a lack of motivation and commitment to continuing professional development (CPD) beyond the initial graduate training period?
3. Is there evidence of poor documentation, leading to inadequate designs and difficulties in peer review prior to issue of consents?
4. Are members aware of any unreported incompetent or unprofessional behaviour by engineers?
5. Has competition in fees led to unsatisfactory lowering of standards?

B. Territorial Authorities

6. Is there evidence of systemic failings by territorial authorities? (For example there is a view that some TAs accept inadequate design documentation and do not require appropriate checks with sufficient peer review as the final "gate keeper".)

C. Construction Industry

7. Is the construction industry delivering the quality required to achieve the intended design? for example:
   - are QA procedures delivering the required quality or is only lip service being paid?
   - has self-certification gone too far?

Please send submissions in writing (preferably by e-mail) to Murray Isdale, Engineering Practice Manager (misdale@ipenz.org.nz), to be received by Friday 21 March 2003.

Professional Development

Encouraging staff to be *Professional Members of IPENZ (MIPENZ)* provides them with an avenue to engage with their profession and access to career development and engineering practice support, and allows them to contribute to the development and maintenance of engineering standards. All of this contributes directly and indirectly to the quality of organisational outputs.

Chartered Professional Engineers (CPEng) are required to undergo competence assessment at regular intervals (normally five years). This ensures that professional engineers continually reflect critically on their practice, which research has shown to be an effective technique for professional development. Regular current competence assessment will encourage engineers to participate in further learning experiences.

Quality Assurance

Establishing CPEng as the benchmark standard for professional engineers is a valid quality assurance strategy. In this way organisations can benchmark the quality standards of their professional engineers externally, using the IPENZ competence assessment processes. The IPENZ quality marks then constitute an independent verification of organisational capability. They are also about attitude: by encouraging their engineers to be active members of IPENZ, organisations recognise that professions set and regulate standards for acceptable and ethical practice.

Recruitment and Retention

IPENZ quality marks facilitate occupational classification. Requiring potential professional engineering recruits to be eligible for professional membership of IPENZ and CPEng registration in New Zealand reduces the time it takes to select competent professional engineers. IPENZ is the New Zealand agency that administers the IPER. This register is particularly relevant for organisations recruiting from an international pool.

If an organisation contributes towards professional membership and registration fees this is a good indicator to prospective employees of a supportive professional and learning culture – which can enhance its ability to attract quality staff. There is plenty of evidence that a strong learning culture within an organisation aids staff retention.

Graduate Development

The IPENZ competency development programmes help graduate engineers acquire the competencies expected of engineering practitioners. The IPENZ quality marks, MIPENZ and CPEng, are a motivational tool, providing a goal for graduate engineers, and a focus for their development. The required mentoring of graduates helps develop a strong learning culture, where graduates and mentors both benefit from critical reflection on their practices, and a supportive work environment. When the graduate engineers pass an IPENZ competence assessment, this provides organisations with an independent verification of the quality of their graduate development programme.

Credentialling

The IPENZ quality marks are relevant, valid and transparent credentials for professional engineers, recognised in New Zealand and overseas. The Chartered Professional Engineers (CPEng) register helps users of engineering services identify those currently competent to undertake professional engineering services in New Zealand; and the IPER recognises engineers who meet an internationally recognised standard of competence. Credentialling of professional engineers will be increasingly important as regulators and other users of engineering services restrict certain engineering activities to those with the appropriate credentials to minimise risk.

CPEng Application – FAQs

Q Can my work history summary (PR140) be verified only by a CPEng or recognised equivalent? I would prefer that my previous work partner verify three years of my work history as she is the most familiar with this part of my work history. However she is an architect. Would that be acceptable?

A Yes – there is some flexibility as to who can verify work history summaries. This form needs to be verified for accuracy; verifiers are not expected to apply engineering judgement, so non-engineers are acceptable as verifiers.

Q Do I need two referees who are CPEng equivalent? I am currently MIPENZ/RegEng and work with mostly non-engineers. I can identify only one current IPENZ Professional Member who knows me well enough to be my referee.

A The CPEng Rules state that applicants for CPEng assessments must have *two* referees who are CPEng equivalent. Although we have some flexibility as to who we can recognise as CPEng equivalent, you will still need to name two referees. You may be able to identify CPEng equivalent engineers through the registers on the IPENZ website www.ipenz.org.nz/ipenz/finding/. You could then engage in a peer support/extended mentoring arrangement with such a person; if you are an IPENZ member we can facilitate such arrangements. We can even align members with an IPENZ member who is not only CPEng equivalent but has competence assessment experience. Your mentor/peer support person will need to complete the Referee Report Form PR 171, declare their mentor/peer support role and complete the sections of the referee report form where they are able to make some assessment.

Q Who can be recognised as a 'CPEng Equivalent'?

A Refer to Appendix 3 of the Handbook for Applicants PR100. Any professional engineer who has been licensed or registered through one of the organisations listed in Section 3 (Credit Schedule) can be a referee, as long as they can declare on the Referee Report Form that they have recently worked in New Zealand as a professional engineer for a reasonable period of time. The IPENZ competence assessments are peer assessments, so professional engineers should assess your competence.

Q May I submit more than two referee report forms? I would like one of my regular clients (who is not an engineer) to complete a referee report form. Is that acceptable?

A Yes. You must have two referees who are CPEng equivalent, but you may submit testimonials or further referee report forms completed by non-CPEng equivalent persons. They may be able to comment on such areas as communication and management skills, and ethical behaviour, which are not engineering-specific. Remember you may include whatever evidence you like in your portfolio of evidence – your Assessors look at the totality of your evidence. After all, current competence is being assessed, not evidence compliance!

Q I gained entry into the class of Professional Member (MIPENZ) 10 years ago. However I went through a further professional assessment for CEng status in the UK through CIWEM only 12 months ago. Does that mean I provide only the documentation required for CPEng assessment for those assessed less than two years ago?

A No – The Chartered Institute of Water and Environmental Management (CIWEM) is not listed in the IPENZ Credit Schedule – refer to Appendix 3 of the Handbook for Applicants PR100. You will need to submit evidence required for those applicants that have previously been assessed more than two years ago as outlined in Section 8.3 of the Handbook for Applicants PR100.

Q I have CPD records for only two years, as I lost my diary for the year 2000. What should I do?

A You should present the best records that you can, including nil returns if the information has been lost. The IPENZ Assessors will consider the totality of your portfolio of evidence. The key issues will be the quality of your listed CPD activities and their relevance to the maintenance of your current competence.

Q I received an email the other day stating that I should submit my application for a CPEng assessment in September as my surname starts with 'S'. I would rather apply earlier than that. Is that acceptable?

A Yes. A timetable for previously assessed candidates was issued to ensure that the bulk of CPEng applications would not arrive towards the end of the year, which would mean that we would not have time to process them all during 2003. We need to spread the Assessors' workload throughout the year. IPENZ National Office, however, will process applications if they are received *before* the month in which they are due.

Q I do not know what assessment fee to submit with my CPEng application as I do not know if I will be required to undertake an interactive assessment.

A If you are a "previously assessed candidate" you should submit only the desktop assessment fee with your CPEng application. If your Assessors require you to undertake an interactive assessment they will inform you *after* they have completed a desktop assessment, and the interactive assessment fee will be due at this stage. If, however, you are applying for an Initial Competence Assessment, you should submit the full assessment fee (desktop plus interactive assessment fee) with your application. Note that there are rebates if you are currently a member of IPENZ.

Q I have been an IPENZ member and Registered Engineer for over twenty years. The application documentation requires me to complete a Competence Self Review Form (PR 161) which is a blank sheet. What sort of information should I write on this form?

A Explain in 500 to 800 words how you believe you meet the Initial Registration Standard for CPEng as outlined in Appendix 2 of the Handbook for Applicants PR 100. This is an opportunity to highlight key aspects of your current performance and link your evidence to elements of the Competency Standard for Professional Engineers. There are completed examples of this form on the IPENZ website http://www.ipenz.org.nz/ipenz/Join/Register_Apply.cfm

Q I wish to be assessed for entry onto the IPE register as well as the CPEng register. Do I need to supply any other information?

A **YES** if you are applying for an IPENZ Competence Assessment *for the first time* or undertook your Competence Assessment less than two years ago: you must complete the Form PR180 Summary of Responsibility for Complex Engineering Activities.

NO if you have previously undertaken an IPENZ competence assessment or recognised equivalent *more than two years ago*.

Your portfolio of evidence for an IPER assessment should clearly show that you have taken responsibility for complex engineering activities for two years or more. This is one of the requirements for entry onto the IPER. If you have been a MIPENZ or registered engineer for more than two years your Assessors will assume that you meet the requirement for "two years of responsibility for complex engineering activities," and should be able to ascertain this from your work history summary form.

Practice Area Assessors

During February IPENZ began a series of one-day workshops to introduce Practice Area Assessors (the new title for volunteer assessors) to the new Competency Standard for Professional Engineers and revised assessment procedures. On each panel, the Practice Area Assessor provides expertise specific to the practice area/s of the applicant. The other member of the panel is a Staff Assessor.

Practice Area Assessors are required to attend a training session to become familiar with the competency standard, understand the impact of the CPEng Act and Rules in terms of assessment procedures and standards, and be made fully aware of the role requirements of practice area assessors. They are then asked to sign an 'Accountabilities Form' that gives a basic outline of the responsibilities and accountabilities of both IPENZ National Office and the Practice Area Assessor.

IPENZ will continue to run training workshops until all those members who volunteered have been trained. We are still interested in hearing from Professional Members who would like to contribute to Competence Assessments as a Practice Area Assessor. The work helps maintain current knowledge of the Competency Standard and Assessment process. This constitutes a valid professional development activity, and makes Assessors valuable to their employers, for example as a source of advice to graduate employees.

Practice Area Assessors are listed on the IPENZ website (www.ipenz.org.nz/ipenz/finding/ipenz/) by name, primary practice area/s and employer.

Movers&Shakers

Congratulations to Professor Roy Sharp FIPENZ on his recent appointment as Vice-Chancellor of the University of Canterbury. His present position is Deputy Vice-Chancellor at Victoria University of Wellington, where he is credited with significantly improving financial health and staff relations.

Professor Sharp knows the University of Canterbury well. As a member of Auckland University's engineering faculty, he visited the campus frequently, and has had extensive interaction with engineering staff.

Professor Sharp holds Oxford MA and PhD degrees in the science and engineering of metals. While studying there he met and married his New Zealand-born wife, moving on to MIT in a research role. Thirty years ago he started work at Auckland, rising from lecturer to senior lecturer and associate professor, being appointed Professor of Materials Engineering in 1990.

He moved into administration – a deliberate choice – in 1992, as Dean of Engineering at Auckland, later holding the positions of Assistant Vice-Chancellor, Chair of the Deans' Committee and Deputy Vice-Chancellor. In 1997 he took up the Deputy Vice-Chancellor position at Victoria University of Wellington, also serving as Acting Vice-Chancellor for most of 2000.

Professor Sharp has extensive tertiary-sector experience, as a member of the NZVCC's working party on degrees and the Qualifications Framework, Victoria's University Council, and the University of the South Pacific's University Grants Committee; and as author of the engineering section of the Ministry of Research, Science and Technology's Knowledge-Base Survey and of the NZVCC's *The Way Forward for Universities and the Tertiary Sector*. He describes first-hand academic experience as "very helpful but not absolutely critical" to the Vice-Chancellor's role.

Professor Sharp's management style is to keep administration and bureaucracy to a minimum. He says a major role for the Vice-Chancellor is to develop and maintain strong links with the local community, and to continue to pressure Government for increased funding.

2003

Project Showcase
at Convention

Project Showcase will feature many of the finalists in the IPENZ awards, along with other projects. We have confirmed entries from Easteel, Beca, Sinclair Knight Merz, and MWH. The presentations should be of real interest to the practising engineer – a chance to celebrate success and to learn from others' professional experience.

We have enough entries for the session, and if numbers grow we can offer another parallel stream. Space for displays is also available (at a charge).

If you wish to make a presentation, please contact Murray Isdale (misdale@ipenz.org.nz or 04 474 8986). Presentations should be power-point based and not overly technical, though pitched at an audience of mostly engineers.

30 March – 1 April 2003 • Quality Hotel Convention Centre, Hamilton • www.ipenz.org.nz/convention2003

Formation of the IPENZ Practice College

At its meeting on 11 February 2003 the governing Board of IPENZ resolved to make Regulations creating an IPENZ Practice College on 1 April 2003. Those Regulations are reproduced below, and are also available on the IPENZ website (www.ipenz.org.nz/ipenz/finding/practice_college.cfm).
The Regulations should be read in conjunction with the Rules of IPENZ, which are in the back of the 2002 Annual Report.

Rationale

Many but not all engineers are keen to promote their expertise in a more specific way than a general listing of competence. The difficulty is that specifying a practice area must not be seen to restrict the system of self-certification of competence that allows engineers to roam across a variety of work within their competence. The inclusion of practice area listings as part of CPEng was rejected by engineers during consultation on the original Nick Smith Bill. Their view was that with statutory backing such listings would inevitably be seen as prescriptive, to the detriment of the successfully operating system of self-certification.

IPENZ is concerned that many engineers have sought to indicate their area of practice by listing the discipline of their degree. This can be misleading, because the discipline may no longer align with their current competence after a number of years of practice. IPENZ has therefore developed a voluntary system by which Professional Members and Fellows who are currently competent can indicate in their post-nominal, at their own discretion, the area of practice within which they most recently demonstrated their competence. Thus the Practice College allows practice area information to be made available more widely, to the benefit of College members.

We also expect that the Practice College will provide an additional mechanism for consultation, and for important debate on topical engineering practice issues and competence standards. Practice Colleges are used for a similar purpose by other professions, and other Institutions serving the engineering profession internationally. The Regulations state that any individual may choose to opt out of the IPENZ Practice College.

Use of the Extended Post-Nominal

- All IPENZ Professional Members and Fellows will continue to use their previous post-nominal – MIPENZ, FIPENZ or Dist. FIPENZ – regardless of whether they are practising engineering, retired, or working outside engineering.
- Currently competent Members may choose to use the extension (X) where X names the broad practice area(s) within which the Member has proved their competence, but the use is entirely discretionary.
- The list of available practice area designations is given in the regulations and is aligned with international practice.
- The practice areas that can be indicated are NOT self-selected, but defined at the time of the most recent competence assessment.
- Members of the Practice College are not restricted to working in the practice area for which they are listed; but they must undertake work only within their competence, which they self-certify in relation to the particular requirements of the potential work.
- IPENZ suggests that degree disciplines should not be shown if they no longer align with current competence.
- IPENZ recommends the integrated post-nominal for currently competent practitioners, e.g. BE, MIPENZ(X), CPEng.

The Institution of Professional Engineers New Zealand Incorporated Regulations for Creation of the IPENZ Practice College

These Regulations are made by the Board of The Institution of Professional Engineers New Zealand Incorporated, on 11 February 2003, in accordance with Rules 22 and 28 of the Rules of the Institution, which were approved by a Special General Meeting of the Institution, held on 3 December 2002 and registered on 6 December 2002.

1 Commencement

These regulations come into force on 1 April 2003.

2. Creation and Name of the IPENZ Practice College

A Practice College, named "The IPENZ Practice College" is created under Rule 28 of the Rules of The Institution of Professional Engineers New Zealand Incorporated, and is subject to that Rule and all other Rules of the Institution, and in addition, these regulations.

3. Membership of the College

3.1 Each fully financial member of IPENZ in any of the membership classes Distinguished Fellow, Fellow or Professional Member who is either

a. registered as a Chartered Professional Engineer, or

b. has current competence as determined by passing a competence assessment approved for this purpose by the Board within the last five years, and

c. who is not suspended from membership or registration for disciplinary reasons, shall be a member of the College

Any member who ceases to fulfil the requirements under 3.1 shall immediately cease to be a member of the College.

4. Use of Post-Nominal

4.1 Any member of the Practice College shall be entitled to use an extended post-nominal of the form MIPENZ(X), FIPENZ (X) or Dist.FIPENZ(X) as the case may be, where X is the name of one or more practice areas (separated by commas) within which the member proved their current competence at the time of their most recent relevant competence assessment by the Institution.

4.2 The list of practice areas recognised for the purpose of creating an extended post-nominal is:

Civil	Structural (Struct)
Geotechnical (Geotech)	Environmental (Environ)
Mechanical (Mech)	Electrical (Elect)
Industrial (Indust)	Mining
Chemical (Chem)	Bio
Information (Inform)	Business

4.3 The practice areas approved for this purpose will be maintained on the membership register of the Institution and displayed with the member's name in all cases where that name will be displayed in response to a search of the expertise or membership registers on the Institution website.

4.4 Any member of the Practice College may give written notice to the Chief Executive requiring that the practice area or areas not be shown according to Regulation 4.3 in his or her case.

5. Management Committee

5.1 The Board of the Institution shall be the Practice College Committee.

5.2 The Board delegates to the Chief Executive the authority to maintain the register of members of the College and to determine the eligibility of members according to these regulations.

6. Annual General Meeting of the Practice College

6.1 Commencing in the 2003/2004 financial year of the Institution, the Annual General Meeting of the Practice College shall be held in conjunction with the Annual General Meeting of the Institution and shall be notified in the notice of meeting thereof.

6.2 Unless the Management Committee so decides, no meetings of the Practice College will be held other than the Annual General Meeting.

7. Subscription

There shall be no subscription fee for membership of the College and costs will be borne from membership subscriptions.

Board Highlights

11 February 2003 – these will affect you as members

Major outcomes from the meeting of the IPENZ Board:

- New IPENZ Regulations for the hearing and determination of complaints against Members were approved, to come into force on 1 April 2003. These Regulations are described in this issue of *engineering dimension*. They update the procedures to make them complementary to those applicable under CPEng.
- New IPENZ Regulations were approved to form the IPENZ Practice College on 1 April 2003. All Professional Members and Fellows who have demonstrated current competence within the last five years will automatically become Members of the Practice College.
- It was decided to elect 26 Fellows, four Distinguished Fellows and two Honorary Fellows at the Awards Dinner on 31 March. The careers of the recipients will be celebrated in the April issue of *engineering dimension*.
- A small net gain in membership since 1 October 2002 was noted, this year being the first in five to show such a gain at this time of year.
- A discussion was held with the National Network of Technological Societies about the proposal to form an Academy of Engineering and Technology. Further research will be carried out over the next two months.
- A preliminary proposal was reviewed for IPENZ to take a larger role in providing professional development opportunities to help Members retain current competence. It will be considered further at the next meeting; the Board would appreciate feedback from Members on whether course provision should be a key role for the Institution, even if it needs subsidy from subscriptions.
- The formation of a new Technical Interest Group, to be called the NZ Society for Sustainability Engineering and Science, was approved in principle, and will be established as soon as some administrative matters are resolved.
- A Memorandum of Understanding with ACENZ was approved for signature later the same day.
- The programme for the consultative forum with representatives of Branches and Technical Groups to precede the 2003 Convention was reviewed, to ensure that representatives could bring forward the views of Members in a constructive way.
- The Standards Board (a subsidiary Board) was renamed the Standards and Accreditation Board to reflect international naming practice for the functions it performs.

International Science Fair Success

Kali Stratford, a Year 11 Marlborough Girls' High School student, has taken first prize in the international physics class of the Taiwan Science Fair. Kali's entry, an investigation into the effect of the height of the net on rallies in table tennis, won the IPENZ Award at the 2002 Genesis Energy National Science and Technology Fair. This award provided her with travel to the Taiwan Science Fair.

Kali stayed with a host family who took her to see many of the tourist attractions in Taiwan. She said she particularly enjoyed meeting students from other countries and cultures, and made life-long friends.

Table tennis, the fastest ball sport in the world, has become so fast that rallies have become very short. Kali investigated the effect net height has on speed of the ball, spin and rally length. She found that increasing the height of the net by up to 10cm decreased the speed and spin, thus increasing the average length of a rally.

ESR engineers for social responsibility

17th NATIONAL CONFERENCE
Building a Sustainable Future

Saturday 29 March 2003, The Buttery, Bryant Hall, Waikato University, Hamilton

The ESR Annual Conference theme complements that of the **IPENZ Convention 2003**, "Building engineering capability to meet new paradigms," and emphasises appropriate resource use, the social and environmental impacts of development, and especially the issues of world poverty and inequality. The goal must be a better quality of life for all people, in New Zealand and throughout the world. In the past, the national focus has been on economic development and higher consumption, but now engineers must take a much broader approach to achieve the more appropriate goal of a sustainable and equitable future for all the world.

Dr Morgan Williams, Parliamentary Commissioner for the Environment, will give the keynote address, on **Achieving Quality of Life through Sustainable Development**.

Dr Rodger Spiller, Executive Director, NZ Centre for Business Ethics and Sustainable Development, will lead a session on **The Role of Business in Building a Sustainable Future.**

Rae Julian, Executive Director, Council of International Development, will speak on **Barriers to Sustainable Development faced by Developing Nations – what happened at the WSSD in Johannesburg.**

A session on **Sustainable Technology** will be addressed by **Ron McDowall,** Director, Centre for Sustainability Engineering and Research, Auckland University**; Professor Frank Scrimgeour**, Professor of Economics, Waikato University**;** and **Norm Stannard**, Management and Quality Services Ltd.

For further information, contact adrian.ferguson@rheemnz.co.nz, or visit the ESR website www.esr.org.nz

Are your business card and stationery valid?

With the passing into law of the CPEng Act, it is time to ensure that your business cards are valid under the Act and associated CPEng rules. The requirements are:

- if you hold CEng from the United Kingdom, immediately amend your cards to read CEng(UK)
- if you hold CPEng from Australia, immediately amend your cards to read CPEng(Aust)
- if you hold PEng from a North American jurisdiction, immediately place an identifiable abbreviation of the jurisdiction in brackets after PEng.
- ensure that any reference to Registered Engineer is removed from items you promulgate after 31 December 2003

If you are going to use your business cards in other countries and have qualified for CPEng in New Zealand, you may use CPEng(NZ) to be clear. You should also read the article on the IPENZ Practice College in this issue of *engineering dimension* – if you qualify for the Practice College, you may use the extended MIPENZ post-nominal including a practice area.

There is no extreme urgency – cards need not be changed overnight: but as the first three amendments should have already been made to comply with the letter of the law, engineers should endeavour to conform within a reasonable period of time.

Examples: a Susan Smith at present lists BE (Hons), FIPENZ, Reg.Eng. on her business card. She achieves entrance to CPEng by demonstrating her competence in the mechanical practice area in April 2003. In May 2003 she prints new business cards showing BE(Hons), FIPENZ(Mech), CPEng. She chooses to forgo the reference to registered engineer at this point, even though she remains registered until 31 December 2003.

Fred Jones at present lists BE, MIPENZ, CPEng, CEng, Reg.Eng. on his business card. He achieves entrance to CPEng by demonstrating his competence in the structural practice area in June 2003. In July 2003 he prints new business cards showing BE, MIPENZ (Struct), CPEng(NZ), CPEng(Aust) CEng(UK). He also chooses to forgo reference to registered engineer.

Coming Events

Making Teams Work
University of Canterbury two-day course for people who work in teams – group development theory, practice, troubleshootin
When: 18 and 19 March 2003
Cost: $795 (GST incl)
Contact: psc@canterbury.ac.nz
Website: www.cont.canterbury.ac.nz/short_courses.html

Land Pipeline Engineering
Seminar in Auckland and Wellington, covering best practice in pipeline construction and operation
When: Wellington 20–21 March; Auckland 27–28 March 2003
Where: Wellington, Te Papa; Auckland, Crowne Plaza
Cost: $1794.38 (GST incl)
Contact: register@conferenz.co.nz
Website: www.conferenz.co.nz

Urbanism down under 2003 Conference
Transforming Cities in Australia and New Zealand
When: 20–22 March 2003
Where: Sky City Centre, Auckland
Contact: www.cce.auckland.ac.nz/urbanismdownunder

Heating, Ventilation and Air Conditioning
Two-day workshop on HVAC fundamentals for engineers and technicians
When: 24–25 March 2003
Cost: $1099 (10% discount for IPENZ members)
Contact: register@idc-online.com
Website: www.idc-online.com

IPENZ Convention
Enough said
When: 30 March –1April 2003
You wouldn't be considering doing anything else that weekend, would you?

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Engineers New Zealand

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