



Department of Building and Housing submission to the Royal Commission on the training of engineers and the organisation of the profession

Purpose

1. The Commission has requested submissions on the training of engineers and the organisation of the profession. This submission focuses on the formal system for developing, recognising and maintaining competence in the engineers working in the building and construction sector in New Zealand.

Context

2. The Department of Building and Housing administers six occupational regulatory Acts¹ in the building and construction sector. The Department provides advice to the Minister on legislation and monitors the performance agreements between the occupational regulatory boards and the Minister for Building and Construction.
3. The Chartered Professional Engineers Act 2002 (the Act) provides for registration of engineers, and protects the title of Chartered Professional Engineer (CPEng). The purpose of protecting public health and safety is not explicit in the Act.
4. The standards of education and training required for registration as a CPEng are approved by the Chartered Professional Engineers Council, and set out in the Chartered Professional Engineers of New Zealand Rules 2002.
5. The registration and assessment processes and maintenance of the CPEng register are undertaken by the Institution of Professional Engineers (IPENZ) which is the registration authority under the Act. The Council hears appeals against the registration authority's decisions and monitors the registration authority's performance of its functions under the Act.
6. The Chartered Professional Engineer title applies to all disciplines of professional engineering. However, the Minister for Building and Construction is responsible for the administration of the Act.
7. There are few engineering registration requirements to work in the building and construction sector. However, from 1 March 2012, restricted building work (work critical to the integrity of a building) is required to be carried out by licensed building practitioners. This includes design work. Chartered professional engineers are considered licensed building practitioners². The Building Act 2004, s149, also sets out the requirements for recognised engineers' in relation to dam safety, which will be introduced when the Building (Dam Safety) Regulations 2008 come into force.
8. The Commission has received a report from IPENZ *Standards and Regulation for Building Construction in New Zealand*³ which covers the history of the regulatory environment for engineering practice in New Zealand, and the processes for approving qualification standards and assessing competence. The information in the IPENZ submission will not be repeated here. However, the Department notes that there are a number of issues covered

¹ Chartered Professional Engineers of New Zealand Act 2002, Plumbers, Gasfitters and Drainlayers Act 2006, Electricity Act 1992 (electrical workers), Building Act 2004 (licensed building practitioners), Registered Architects Act 2005 and Engineering Associates Act 1962

² Building (Designation of Building Work Licensing Classes) Order 2010.

³ ENG.IPENZ.0011F.1





in the IPENZ submission which are not related to the training of engineers and the organisation of the profession, such as building controls and the setting of New Zealand Standards. The Department intends to address these issues in future submissions.

Summary

9. In general, the Department considers that the education of engineers in New Zealand is sound, but there would be benefits in a structured programme of supervised practice after graduation prior to registration through CPEng. The Department also considers that a suitable Masters level qualification should generally complement practical experience for those engineers undertaking specialist structural or geotechnical work.
10. The present system for assessing the on-going competence of chartered professional engineers lacks transparency. This means that the public and employers are not able to access information about the scopes of practice in which chartered professional engineers have been assessed as competent under the registration system. This is a particular concern where they are being commissioned to work on complex buildings where a high level of specialist competence is required. The Department considers that relying on the Code of Ethics to ensure that engineers do not work outside their competency does not provide sufficient protection for the public.
11. The Department supports IPENZ's position that assessment of overseas engineering qualifications should be undertaken by the registration authority.
12. The Department recommends that set programmes of supervised training and graduate assessment are implemented to ensure the engineer meets the expert level of competence for independent practice in the design of large complex building structures prior to registration as a CPEng. The Department will work with IPENZ to be assured that the appropriate oversight and training for new graduates is provided.
13. The Department is strongly of the view that scopes of practice should be developed as the basis for assessing engineering competence.
14. The CPEng register should display the practitioner's discipline and practice area/specialist skills, or scopes of practices when they are developed, to assist the public, building owners and building consent authorities to identify the areas in which engineers are competent to practice.
15. It is recommended that the registration authority consider some form of competence declaration at least every two years as part of the renewal of licence between the formal 5-6 year competence assessments.
16. In relation to the current regulatory framework, the Act provides for the registration of engineers and protects the title of Chartered Professional Engineer, but does not contain any reference to public health and safety. The level of self-regulation of engineers who work in the building and construction sector will need to be carefully considered in light of the potential for serious risk of harm to the public through incompetent practice. These issues will be considered as part of its review of the occupational regulation in the building and construction sector.
17. The Department is strongly of the view that there is a need for greater transparency around the operation of the registration authority. The Department will consider the relative roles of the Council and IPENZ as part of its review of occupational regulation. In the interim, it





recommends that IPENZ move to more clearly separate its role as a professional body from its role as a registration authority.

18. The Department supports IPENZ's view that in general CPEng should be required for engineers practicing in the building and construction sector, and that Building Consent Authorities should inform the registration authority when a practitioner consistently produces sub-standard consent applications which may reflect on competence.

Introduction

19. Engineers carry a heavy financial and technical responsibility for their clients and need to be properly trained to do so. The risk of serious harm to the public involved in the building and construction sector increases significantly if under-qualified or inexperienced people are commissioned to do work for which they are not adequately trained. Unlike the health system where hospitals ensure that there are also organisational controls, in building and construction the public, employers and building consenting authorities place a heavy reliance on the competence of engineers and other building practitioners to ensure that buildings meet the Building Code.
20. In general the Department considers that New Zealand is well served in terms of engineering education. There are also good systems for taking new knowledge through to general practice, with IPENZ and other technical societies and specialist group such as the NZ Society for Earthquake Engineering. However, there are a number of areas in which the registration system could be strengthened and made more transparent to support the development and maintenance of on-going competence. These are addressed below.

Do the current education settings deliver an appropriately skilled engineering workforce for the building and construction sector?

Undergraduate education programmes for structural and geotechnical engineers

21. The undergraduate programmes currently delivered by the University of Canterbury and Auckland University are broad, and prepare students for generalist practice to a standard where they are able to apply the principles that underpin core subject areas. Graduates working in the structural and geotechnical areas must develop their competence in these areas after graduation.
22. The University of Canterbury delivers a 4-year honours degree in civil engineering⁴. Their submission to the Royal Commission concludes that due to the constraints imposed by a 4-year degree, and the desire to train civil engineers with breadth, it is not currently possible to train experts in structural or geotechnical engineering at undergraduate level. It is the university's view that future education of engineers with expertise in structural and geotechnical earthquake engineering must come from a specialised Masters degree.⁵
23. The University of Auckland structural and geotechnical content is delivered within the 4-year undergraduate programme. The degree delivers graduates who are generalist civil engineers, who need to build on their knowledge through appropriate education or industry experience. Those graduates who chose civil engineering sub-disciplines of structures or geotechnics in their fourth year will have reached the level to design basic structural elements, and understand the intricacies of complex structural systems. The university's

⁴ ENG.UNI.001.1

⁵ ENG.ACA.0021.1





submission noted that most experts overseas had Masters Degrees, while the uptake of the Masters degrees in NZ was very low.

24. The Department considers that the undergraduate education provided for engineers provides an appropriate base for the development of the engineering workforce. However, it considers that engineers masters level qualifications should generally be required for engineers undertaking complex specialist structural or geotechnical work, in combination with appropriate experience.

Are the current systems for ensuring competence for CPEng registration adequate for the building and construction sector?

Registration standards

25. The Chartered Professional Engineers Council (the Council), a statutory body established under the Act, approves the minimum standards for registration. The legislation provides scope for the registration authority to set standards for registration for particular areas of practice. The Act requires rules setting minimum standards of competence and an ethical code. The assessment of achieving the competencies will be dependent on the robustness of the assessment process, and the specialist knowledge and experience of the assessors. The rules do not refer to particular qualifications, but require the applicant to demonstrate competence in their practice area.
26. The registration authority must be satisfied that the applicant meets the standards contained in the rules. One of the requirements under the rules is that graduates apply for CPEng registration when they have completed their degree and are able to demonstrate competence for practice in their practice area, by producing work samples collected after graduation. This is generally after four years post graduation experience. Competence is assessed in the applicant's current areas of practice against 12 general elements which represent broad areas of professional engineering performance.
27. IPENZ in their submission notes that the assessment by the New Zealand Qualification Authority of overseas engineering qualifications may include recognition of qualifications which do not meet the competency requirements for registration. Their preference is for the qualification assessment system to be undertaken by the registration authority. This is in line with other regulatory authorities in other sectors which assess and approve international programmes for registration purposes. The Department supports this position.
28. Applications for CPEng registration can be made at any time after a practitioner feels that they have reached the registration standard. In the absence of a set programme for generalist engineering graduates, or programmes for graduates focussing on specialist areas of practice, applicants self assess their preparedness for meeting the registration standard.
29. The registration authority contracts engineers, who, where possible, are highly experienced in the relevant practice areas to carry out competence assessments. The IPENZ submission notes that some of the assessors would prefer it if the standard were set higher for independent practice because entry level design skills are insufficient for complex building structures.
30. If the practitioner is assessed as competent, they are registered as a CPEng. Their registration certificate does not declare the area of practice in which the engineer has been





assessed as competent. The area of practice can be unique to a practitioner, rather than meeting competence requirements for a prescribed scope of practice.

Developing the competence of engineering graduates

31. Generally an applicant with a 4-year degree plus 4 - 8 years of practical experience will meet the CPEng standard. This is comparable to international standards for professional registration, although the processes for gaining and maintaining registration differ.
32. There is no commonly structured graduate development programme, and no specified requirement for engineers who are specialists in the practice areas to monitor and/or supervise graduate development programmes prior to registration.
33. In some overseas jurisdictions engineering graduates are registered after graduation and follow a programme of supervised practice to gain the necessary skills for independent practice. The Engineering Council of South Africa registers graduates as Candidate Engineers. They have a set graduate programme for each discipline and scope of practice, and provide a list of approved mentors to oversee their practice. There is also a register of employers who have a "Commitment and Undertaking" agreement with the Engineering Council to supervise graduate programmes for registration.
34. IPENZ has created a "Professional Development Partner" list of companies who undertake graduate development, but state that these are still a minority of those employing significant numbers of engineering graduates. These companies are registered with IPENZ for graduate training, and prepare graduates to meet the competency standard for registration. However, IPENZ carries out this role as a professional body, not in its statutory role as the registration authority.
35. The engineering profession needs to address the level of proficiency to be demonstrated by specialist engineers before they are allowed to undertake complex engineering problems. Employers need to recognise the requirement for further post graduate education in specialised areas, and the need for supervision by a professionally qualified engineer during the first 4-5 years of employment post graduation.
36. The Department recommends that set programmes of supervised training and graduate assessment are implemented to ensure the engineer meets the expert level of competence for independent practice in the design of large complex building structures prior to registration as a CPEng. The Department will work with IPENZ to be assured the appropriate oversight and training for new graduates is provided.

Scopes of Practice

37. The registration authority refers to "practice areas". Practice area means the area within which he or she has engineering knowledge and skills; and the nature of his or her professional engineering activities. These are self defined. In contrast other occupational registration systems refer to "scopes of practice," which are normally linked to a particular qualification and competence level and are defined by the standards setting authority.
38. Formally setting scopes of practice provides a standard setting body with a transparent system of ensuring that practitioners meet the standard to practice safely in that scope. It also provides the basis for assuring others that the person has been assessed by the registration body as competent in that area of practice.





39. There are 17 engineering disciplines recognised internationally: Building Services, Civil, Structural, Mechanical, Electrical, Fire, Geotechnical, Transportation, Environmental, Industrial, Mining, Chemical, Petroleum, Aeronautical, Information and Management and Bioengineering. An engineer's expertise is defined by the discipline of their degree, their practice area and their practice field. These details appear on registers in Australia and South Africa.
40. If a scope of practice approach applied to engineering, the Council would need to define the scope of practice by discipline, and the qualification required to underpin that scope. For example, the design of complex buildings would be under the discipline of structural or civil engineering and engineers would need to demonstrate that they met the Council's standards for competence in the design of complex buildings.
41. The IPENZ Structural Engineering Taskforce⁶ identified a need to ensure that those competent in simple design (normal loads) and those competent in design of complex structures (considering the varying loads that occur in seismic events) were identified, and that structural work is limited to those with the relevant competence for the nature of the design required. The Council has recognised the need for applying different competence standards to assessing competence in complex engineering activities.
42. In the IPENZ submission it is noted that "...part of the structural engineering community has argued there should be a higher competence level than CPEng for designers of complex structures, others believe that self-certification under the code of ethics is sufficient means of differentiation."
43. The CPEng Code of Ethical Conduct (Code) requires engineers to take reasonable steps to safeguard health and safety. The registration authority places high trust in engineers' compliance with the Code as a means to ensure safe practice. This includes trusting them to practice only in areas in which they are competent. In effect the absence of clearly defined scopes of practice means that contracting for engineering services is based on a practitioner's self-declaration of competence in the relevant area. This is a significant risk in the case of complex building work.
44. Chartered professional engineers are also trusted to seek mentoring or supervision if required when changing practice areas, even though this is not a requirement in the Code. There is no legislative requirement for them to report engineering issues which may pose a risk of harm to the public, and IPENZ relies on practitioners' professional ethics to do so.
45. The Department is strongly of the view that scopes of practice should be developed as the basis for assessing engineering competence.

CPEng Public Register

46. Section 16 (2)(a) (i) and (ii) of the Chartered Professional Engineers of New Zealand Act 2002 states that the purpose of the register is to enable members of the public to select a suitable engineer from a list of chartered professional engineers and know what the status and relevant history of the person's registration is. However, the area of practice in which a practitioner is assessed does not appear on their licence, or on the CPEng register.
47. Details on the CEng register have been the subject of considerable debate. IPENZ has determined that neither the engineering discipline, nor the area of practice in which the

⁶ ENG.IPENZ 0011F.1





CPEng has been assessed as competent, will be noted on the practitioners licence or on the CPEng register, as it evolves over time.

48. IPENZ recognised that moving towards risk-based consenting⁷ may require evidence of higher skills to carry out complex building work. They are suggesting a multi-tiered registration system to achieve this. The Department considers that the same objective would be achieved if scopes of practice were developed.
49. Identification of the specialist scope of practice on the register will help ensure that appropriately qualified and competent people are engaged for specialised services (such as structural engineers' competence in complex structures, building safety evaluators and 'recognised engineers'⁸ under the Building Act 2004). Noting scopes of practice on the register does not limit a practitioner's area of practice, or prevent a practitioner practising in the general scope of practice of their discipline.
50. On large projects where there is a team of engineers; work may be signed off by a CPEng who may not have undertaken any of the work in the specialised areas. Sometimes these are signed by the manager of the design team on the basis that the team in the company were appropriately selected and competent. In the absence of information on scopes of practice on the register, there is no independent way for building consent authorities to verify that the work was carried out by suitably competent engineers.
51. Practitioners may become members of any number of technical societies based on technical practice areas. Members of these societies may appear to be highly credentialed because they use the post nominals, (but often in association with other registration and professional requirements) but membership of these organisations is not competence based. This can mislead the public in respect of the practitioner's level of competence or qualification for undertaking specialist tasks safely.
52. The Department is strongly of the view that the CPEng register should display the practitioner's discipline and practice area/specialist skills or scopes of practices when they are developed, to assist the public, building owners and building consent authorities to identify the areas in which engineers are competent to practice.

Continuing Competence for maintaining CPEng registration

53. It is necessary for the public to have confidence in the continued competence of chartered professional engineers. Continuing competence assessments are carried out every 5-6 years. The 5-year assessment follows the same process as that used for initial registration.
54. The registration authority notes that practice areas may change during this 5-year period, and reliance is placed on CPEng compliance with the code of ethics to limit their practice to areas in which they are competent. The registration authority is also confident that practitioners will seek mentoring and peer review when developing new practice areas, although there is no evidence to support this.
55. The Department is aware that there are engineers, number unknown, who are practicing in geographic isolation and have limited ability to participate in specialist networks.

⁷ A Building Amendment Bill currently awaiting its second reading introduces provisions to allow for reduced oversight by Building Consent Authorities for low risk or simple residential housing where the work is carried out by licensed building practitioners. The Bill also allows for the new processes for commercial consenting.

⁸ The Building Act 2004, s149, sets out the requirements for 'recognised engineers' in relation to dam safety, which will be introduced when the Building (Dam Safety) Regulations 2008 come into force.





56. It is a concern that there is no mechanism for satisfying the public, that between the 5-6 yearly assessments, practitioners remain competent by upgrading their skills and knowledge of the latest technological advances and best practice in their practice areas. Registration is renewed on an annual basis by payment on invoice. No other information is required.
57. By contrast, Licensed Building Practitioners must demonstrate competence to practice in their scopes of practice every two years. Chartered professional engineers are considered licensed building practitioners for the purposes of restricted (residential) building work. Bringing in some form of competence declaration at least every two years as part of the renewal of licence between the formal 5-6 year competence assessments would synchronise the two systems and provide greater public assurance that practitioners remain competent.

Should engineers without CPEng registration be able to practice within the building and construction sector?

58. As discussed above, graduates are practising without registration, and without any public guarantee of the quality of supervision and peer review they receive. This leaves many graduates/practitioners outside the registration system, and outside the jurisdiction of the registration authority to monitor oversight, practice standards and conduct, or take action on complaints.
59. The Department understands that it has been the experience of IPENZ that if an engineer has been practicing without IPENZ membership or CPEng for 5 years, they are less motivated to seek membership or registration, and do so only where the law requires CPEng for particular areas of work.
60. The Department supports IPENZ's view that in general CPEng should be required for engineers practicing in the building and construction sector.
61. In its submission IPENZ argues that Building Consent Authorities should inform the registration authority when a practitioner consistently produces sub-standard consent applications which may reflect on competence. The Department agrees strongly with this recommendation.

Is the regulatory framework for the registration of engineers involved in building and construction adequate to protect public health and safety?

62. The Act establishes a registration system for professional engineers, and protects the title of Chartered Professional Engineer. The Registered Architects Act 2004 has the same purpose. These Acts are co-regulatory form with a large element of self-regulation, based on the type of regulation used for lawyers and accountants, where competence and conduct are governed by code of ethics rather than prescriptive legislation. This is in contrast to other occupational regulation in the building and construction sector which makes the link to public safety very clear⁹. For example, the Plumbers, Gasfitters and Drainlayers Act 2006 follows a similar form of competence-based occupational regulation to that which applies in the health and education sectors.

⁹ e.g. The Plumbers, Gasfitters and Drainlayers Act 2006, and Licensed Building Practitioners under the Building Act 2004





63. The Chartered Professional Engineers Act 2002 designates IPENZ as the registration authority. IPENZ is the also professional body which represents professional engineers from all disciplines in New Zealand. The Department believes that a greater level of transparency and clarity of roles (including the role of the Council) is required. The issues are illustrated by this comment from Architectural Accreditation Council of Australia in its submission to the Australian Productivity Commission inquiry into the regulation of architects: “ AACA believes that in any model, the body regarded as the voluntary professional body, or ‘learned society’ representing its professional members, should avoid any perception of a conflict of interest in the public’s mind, by being separate from the body administering legislation¹⁰.”
64. The IPENZ website contains both the CPEng register and a number of other practitioner registers. The role of the Council under the Act, of approving the standards for competence, is not clear.
65. IPENZ receives complaints against its members and against CPEng. The number of complaints received to date is very low. Complaints related to competence and unprofessional conduct follow the same disciplinary process, creating a public perception for of the public that members may be protected as the complaints are sent to a professional body. It is important that the disciplinary system be reviewed, and be seen to be independent and transparent, to increase public and practitioner confidence in the system.
66. It is the Department’s view is that the registration authority functions should be separated from the function of IPENZ as a professional organization and as an intermediate step that IPENZ takes steps to create the necessary transparency.
67. The Department administers six occupational regulatory Acts governing the professions in the building and construction sector. The boards of each profession have different powers and functions, under different regimes. These baseline differences are contributing to fragmentation in the sector, and the Department plans to review all occupational regulation in the building and construction sector, to ensure the protection of public health and safety by having a base of qualified and competent practitioners. One of the objectives of the proposed review is to achieve consistency and clearer connectivity between occupational regulation and the building regulatory system.
68. In relation to the current regulatory framework for Chartered Professional Engineers, the Act provides for the registration of engineers and protects the title of Chartered Professional Engineer, but does not contain any reference to public health and safety. The level of self-regulation of engineers who work in the building and construction sector will need to be carefully considered in light of the potential for serious risk of harm to the public through incompetent practice.
69. The Department is also strongly of the view that there is a need for greater transparency around the operation of the registration authority. The Department will consider the relative roles of the Council and IPENZ as part of its review of occupational regulation. In the interim, it recommends that IPENZ move to more clearly separate its role as a professional body from its role as a registration authority.

¹⁰ Australian Productivity Commission inquiry “Regulating the Architectural profession”:
http://www.pc.gov.au/__data/assets/pdf_file/0004/23278/sub055.pdf





Minister's powers and board accountability

70. Members of the Council are appointed or removed from office by the Governor General on the advice of the Minister for Building and Construction.
71. There is an accountability agreement between the Minister and the Council which is currently based on outputs. The split between the registration functions and Council functions complicate the monitoring process: The Council monitors the registration authority and receives annual performance reports. The Council is required to provide an annual report to the Minister on its own, and the registration authority's performance.
72. The Department plans to improve the monitoring criteria in the Council's accountability agreement with the Minister to make it more robust and outcomes focussed.

Summary of recommendations

1. The Department considers that appropriate masters level qualifications should generally be required for engineers undertaking complex specialist structural or geotechnical work, in combination with appropriate experience.
2. The Department supports IPENZ's position that assessment of overseas engineering qualifications should be undertaken by the registration authority.
3. The Department recommends that set programmes of supervised training and graduate assessment are implemented to ensure the engineer meets the expert level of competence for independent practice in the design of large complex building structures prior to registration as a CPEng. The Department will work with IPENZ to be assured that appropriate oversight and training for new graduates is provided.
4. The Department is strongly of the view that scopes of practice should be developed as the basis for assessing engineering competence.
5. The CPEng register should display the practitioner's discipline and practice area/specialist skills, or scopes of practices when they are developed, to assist the public, building owners and building consent authorities to identify the areas in which engineers are competent to practice.
6. It is recommended that the registration authority consider some form of competence declaration at least every two years as part of the renewal of licence between the formal 5-6 year competence assessments.
7. The Department intends to consider the issues related to the relative roles of the Council and IPENZ as part of its review of occupational regulation in the building and construction sector. In the interim, it recommends that IPENZ move to more clearly separate its role as a professional body from its role as a registration authority.
8. The Department supports IPENZ's view that in general CPEng should be required for engineers practicing in the building and construction sector, and that Building Consent Authorities should inform the registration authority when a practitioner consistently produces sub-standard consent applications which may reflect on competence.





Appendices

- 1 Occupational Regulation of Chartered Professional Engineers in New Zealand - The Regulatory Framework.
- 2 Chartered Professional Engineers Council Board members.





APPENDIX 1

Occupational Regulation of Chartered Professional Engineers in New Zealand - The Regulatory Framework

Background

1. The Engineers Registration Act 1924 created a register of engineers who were of good character and had attained a recognised education level, plus a specified period of practice. There were no ongoing competence assessments. Continued registration was based on payment of an annual fee. The only grounds for discipline were criminal convictions and bringing the profession into disrepute. From 1944 public works required the supervision of a registered engineer, but this was not required in the private sector. The 1924 Act was repealed in 2003.

Chartered Professional Engineers Act 2002 (the Act)

2. The Act came into force on 1 July 2002. The purpose of this Act is to reform the law relating to the registration of engineers and to establish the title of chartered professional engineer as a mark of quality. The Act:
 - a. establishes a registration system for chartered professional engineers, under which persons who wish to be chartered professional engineers must meet minimum standards to be, and continue to be, registered;
 - b. requires a code of ethics and a complaints and disciplinary process to apply to chartered professional engineers;
 - c. requires a professional body to carry out the functions relating to the registration system, the code of ethics, the complaints and disciplinary process, and establishes a statutory body to oversee aspects of those functions;
 - d. repeals the Engineers Registration Act 1924.
3. The Department of Building and Housing administers the Act.
4. The professional body currently undertaking the registration authority (registration authority) functions is the Institute of Professional Engineers New Zealand (IPENZ).
5. The statutory body is the Chartered Professional Engineers Council (the Council).

Chartered Professional Engineers of New Zealand Rules (No 2) 2002

6. The approved rules made under the Act are contained in the Chartered Professional Engineers of New Zealand Rules 2002 (the rules) and came into force on 1 January 2003. Some of the rules were updated in 2004 and 2005 and 2011, but the rules that contain standards have not been changed since 2002.

The Registration Authority

Functions and powers of the registration authority

7. *IPENZ, as the registration authority* has registered 2,691 engineers as CPEng. Approximately 80 CPEng are not members of IPENZ.
8. *IPENZ, as the professional body* for all disciplines of professional engineering, has 13,000 members.





Registration authority administrative functions

9. The registration authority maintains the CPEng register, and makes rules, including rules for:
 - a. Minimum standards for registration
 - b. governing the use of the title “Chartered Professional Engineer”
 - c. setting classes of registration and period of re-certification
 - d. setting additional information to be recorded on the register
 - e. settings charges/fees for registration
 - f. governing information required for receiving complaints against chartered professional engineers
 - g. governing investigation and disciplinary committees, the powers and procedures of these committees, and how decisions must be implemented.
10. Registration authority decisions relating to registration or discipline (but not making rules) may be appealed to the Council. The Council monitors the standard setting body and monitors the registration authority’s performance and approves the minimum standards proposed by the registration authority.
11. The registration authority may also make other rules to govern its practice and procedures for carrying out its functions under the Act, and where rules are desirable in the interests of natural justice. All rules must be consistent with the Act.

Registration Authority – drafting rules for standards

12. Where rules contain CPEng standards, the registration authority must consult with all persons affected by the proposed rule, or the amendment or revocation of a rule, and must take into account international best practice and New Zealand’s international obligations.
13. The Council must consider and approve all rules containing CPEng standards before the registration authority can make the rules. These rules are those relating to minimum registration standards of competence and ethics for registration as a CPEng, and for ongoing competence for maintaining a current practising certificate.
14. The registration authority may delegate any of its functions to any person or persons. Such delegations may be revoked at will, and delegations do not prevent the registration authority from carrying out the delegated function or power.

Registration Authority accountability

15. The Council monitors the registration authority. The registration authority must provide an annual performance report to the Council. The Council must report to the Minister on the registration authority’s performance in exercising its functions under the Act.

The Chartered Professional Engineers Council

Functions and powers of the Chartered Professional Engineers Council

16. The Council is a body corporate with perpetual succession. The Council has full rights, powers and privileges to carry on or undertake any activity, do any act, or enter into any transaction. The Council must exercise its powers only for the purpose of performing its





functions. The Council is accountable for professional engineering standards, and for monitoring the registration authority.

17. The Council's functions are to:

- a. review and approve proposed rules containing chartered professional engineering standards (CPEng standards)
- b. hear appeals from decisions of the registration authority
- c. report to the Minister on the registration authority's performance and exercise of its functions and on its own performance

18. The Council may delegate to a member, an employee or to any other person or persons approved by the Minister, any of the functions or powers of the Council or the board. Such delegation does not prevent the Council from carrying out the delegated function, and may be revoked at will by board resolution.

Council composition

19. The Council must have at least 6, and no more than 8 members appointed by the Governor-General on the recommendation of the Minister.

20. The Minister must recommend:

- a. 3 persons nominated by the Institution of Professional Engineers of NZ Inc.
- b. 1 person nominated by the Association of Consulting Engineers of NZ
- c. 1 consumer representative nominated by the Minister
- d. 1 to 3 other persons nominated by the Minister.

21. The Minister must recommend people who are knowledgeable about professional engineering, and have regard to the aim that the members collectively represent the range of engineering practise and disciplines. Council members may not be registration authority governing body members, or employees of the registration authority.

22. The Minister may appoint a Council chair and deputy chair. The chair remains in that position until resignation or removal by the Minister, or ceases to hold office as a member.

23. Members are appointed for a term up to five years and may be reappointed. A list of the current board members is set out below.

Minister's powers and Council accountability

24. The Council must provide the Minister with an annual performance report on the registration authority, and its own annual report on its operations. The Council must also provide any information that the Minister requests, except where there is good reason for withholding such information.¹¹

25. A Council board member is accountable to the Minister for performing their duties and responsibilities. The Governor-General, may on the advice of the Minister, and after consultation with the Attorney-General, remove a member from office for breach of duties

¹¹ Good reasons to withhold are that the information is necessary to protect the privacy of a person if the need to protect the privacy is not outweighed by the Minister's need to have the information in order to discharge the Minister's ministerial duties, or if the information relates to a matter where the Council is required to act judicially.





or the board's collective duties, failure to perform, or inadequate performance, misconduct or any other just cause. A list of current Council members is appended.

26. The Council has an accountability agreement with the Minister for Building and Construction. The Department of Building and Housing supports the Minister by carrying out the monitoring activities related to the Council's functions. The object of this accountability agreement is to establish the Minister's expectations of the Board's performance, and enables the Minister to hold the Board accountable for its performance.

Liability of Council and others

27. The Council, its members, employees or agents are not liable for any act or omission done in good faith in the exercise of its functions and powers.





APPENDIX 2

Chartered Professional Engineers Council Board members

Mr Graham Shaw, Chairman, appointed 8 October 2008 until 13 October 2016.

Mr Shaw is a Wellington based Director in Corporate Concerns, providing commercial advisory services and specialising in strategic development and the mentoring and coaching of senior executives. He brings accountancy skills and a history of working in the engineering sector. Mr Shaw initially worked in finance roles and later had five years experience as Chief Executive of Works Infrastructure. He also held the role of Chief Executive at Kensington Swan for two years while overseeing a period of restructuring. Mr Shaw also holds directorships in the private sector as well as sitting on a number of advisory boards and is Deputy Chair of the Aroha Care Centre for the Elderly Trust and Taita Home Trust Boards.

Mr Andrew Read - FIPENZ, Deputy Chairman, appointed 18 December 2009 until 17 December 2014

Mr Read is a Director of Pedersen Read Ltd, a consulting electrical engineering firm based in Christchurch. Andrew has 25 years experience working on commercial construction projects both within New Zealand and in the UK. He is a past board member and past president of the Association of Consulting Engineers New Zealand (ACENZ) and has served on the ACENZ "Awards of Excellence" judging panel.

Andrew has been a practice area assessor for both CPEng and IPENZ applicants for a number of years. Andrew is also a member of the Business Practice Committee of FIDIC, the International Federation of Consulting Engineers.

Mr Roland Frost - FIPENZ, member - IPENZ nominee, appointed 8 October 2008 until 13 October 2013.

Mr Frost graduated with a civil engineering degree from Canterbury University in 1972. His first employment was the Ministry of Works in Waikato. The range and scale of projects undertaken by the Ministry through the 1970s and 1980s enabled Mr Frost to gain a variety of experience in the civil, structural and geotechnical fields. In 1997 Mr Frost moved on to Beca, opening their Hamilton office before relocating to Auckland where he held a senior position as Beca's general manager civil engineering. He continued to lead major infrastructure projects for Beca until 2005 when he joined Transit New Zealand. In this role Mr Frost has responsibility for the operations of the total state highway network including engineering standards, managing network demands, and maintenance. He recently rejoined Beca as a senior shareholder in Tauranga. Mr Frost is also a past president of IPENZ.

Mr Andrew Hazelton, Lawyer, member, appointed 18 May 2003 until 29 October 2013.

Mr Hazelton is a partner in the specialist construction law practice of Hazelton LAW. He has a Masters Degree in Construction Law from the Centre for Construction Law and Management, Kings College, London, and as part of that degree he studied technical issues relating to construction and engineering. Mr Hazelton's professional experience ranges from litigation, arbitration and adjudication relating to substantial construction and engineering issues to the drafting of project documentation. He has also represented parties at quasi-judicial disciplinary bodies, as well as prosecuting and defending clients under environmental legislation

Ms Jane Nees, Consumer Representative, member, appointed 10 October 2011 until 13 October 2014.





Dr Arthur O'Leary - FIPENZ, member, appointed 30 October 2010 until 29 October 2013

Dr O'Leary is a structural engineer recently retired from the practice of Sinclair Knight Merz Ltd. (SKM). Arthur was the practice leader in earthquake engineering. He continues to undertake consulting assignments for SKM in areas where he has specialist knowledge.

Arthur graduated from the University of Canterbury with a first class honours degree in Civil Engineering in 1966 and completed his PhD in 1970. He has spent all his professional life as a consulting engineer, having worked mostly in New Zealand but with two years in the UK and shorter periods in Australia, Asia and Portugal. His experience includes medium and high rise commercial and institutional structures, industrial structures, and civil structures for water and waste water projects in both Australia and New Zealand.

Arthur has been the recipient of the American Concrete Institute (ACI) Maurice P Van Buren Award for Structural Engineering for a paper published by the ACI. He has published several papers on concrete and earthquake resistant design, and has served on international study groups related to state of the art concrete design technology. Arthur has served on the executive of the NZ National Society for Earthquake Engineering and has been involved on working committees for both IPENZ and the ACENZ. He has been a member of NZ Standards committees including the current Earthquake Loading standard.

Ms Sharyn Westlake - FIPENZ, member, appointed 25 August 2006 until 5 October 2012.

Ms Westlake is a civil engineer, with both regional government and engineering consultancy experience. She is currently Team Leader Strategy and Technical Support in the Flood Protection Department of the Greater Wellington Regional Council.

Ms Westlake was a member of the Institution of Professional Engineers New Zealand (IPENZ) governing Board from 2000 to 2006 and in 2003 served on the Competence Assessment Board (CAB) as the IPENZ Board representative. The CAB is the decision making body on registration decisions. Prior to 2000 she served for several years on the Committee of the New Zealand Coastal Society.

Mr Jon Williams - FIPENZ, member, appointed 1 July 2010 until 30 June 2015.

Mr Williams is Auckland based and works for Beca Group of Consulting Engineers.

