# PROPOSALS TO CHANGE THE OCCUPATIONAL REGULATION OF ENGINEERS IN NEW ZEALAND

**SUBMISSION TO THE MINISTRY OF BUSINESS, INNOVATION AND EMPLOYMENT**

**31 OCTOBER 2014**

## BACKGROUND TO IPENZ

The Institution of Professional Engineers New Zealand (IPENZ) is the lead national professional body representing the engineering profession in New Zealand. It has approximately 15,500 Members, including a cross-section from engineering students, to practising engineers, to senior Members in positions of responsibility in business. IPENZ is non-aligned and seeks to contribute to the community in matters of national interest giving a learned view on important issues, independent of any commercial interest.

## EXECUTIVE SUMMARY

IPENZ currently self-regulates the profession and the Government's proposals for regulation of engineers align with IPENZ's objectives: protection of life and safeguarding people; community well-being; professionalism, integrity and competence; and sustaining engineering knowledge.

Recognising these common interests, the key points in this submission IPENZ commends to the Ministry of Business, Innovation and Employment (MBIE) are that IPENZ:

- Supports the occupational regulatory system being transparent, independent, accountable and cost effective
- Supports the proposed institutional structure, with a Registration Authority Board accountable to the Minister; consumer involvement in reviewing registration rules and competence and ethical standards; an Industry Occupational Body and the potential for Minister-initiated performance audits of the Registration Authority
- Recommends the key links between the Registration Authority Board and IPENZ be defined in legislation/regulation, and recommends the Registration Authority Board approve rules and standards, rather than the Industry Occupational Body
- Supports the certification of specific building work by chartered structural, geotechnical and fire engineers and recommends formalising the producer statement system. Further, we recommend processes be put in place to identify safety-critical engineering work through a risk assessment, and to enable an extension of regulation to include other areas of safety-critical engineering work.

- Supports the proposed review of chartered professional engineer (CPEng) requirements for structural, geotechnical and fire engineers and believes it essential for the review to extend to all other disciplines covered by CPEng to ensure consistency of assessment systems
- Endorses the introduction of a disciplinary system that offers proactive interventions to raise an engineer's knowledge and competency, before considering punitive disciplinary actions. We also support the proposed raising of potential sanctions.
- Supports serious complaints being the responsibility of the Industry Occupational Body
- Acknowledges more information may be needed on the CPEng register and suggests classes of registration or prescribed areas of practice relating to areas of safety-critical work be developed
- Supports the requirement for engineers to notify Building Consent Authorities of observed building consent and/or Building Code breaches. We recommend a threshold be set to determine when reporting is mandatory, and formal guidelines be developed on actions required from engineers to enable them to discharge their obligations. Some form of indemnity from liability and civil or criminal proceedings, in a similar vein to the Protected Disclosures Act 2000, will also be required.
- Supports the proposal for MBIE to obtain design and construction information from engineers about buildings they have designed or certified, and recommends formal guidelines be developed.

IPENZ would like to continue to work with MBIE officials on a number of key issues highlighted in this submission and on other issues where we could assist.

## IPENZ OVERVIEW

Since 2002, IPENZ has successfully acted as the Registration Authority for chartered professional engineers (CPEngs). There is a strong alignment between IPENZ self-regulating its Members and occupational regulation: both are designed to achieve the same public interest outcome – safety. Maintaining public trust and confidence is central to the long term health of the profession and the interests of IPENZ Members.

Many of IPENZ's professional body functions go beyond those of the Registration Authority defined in legislation or regulation but contribute significantly to its effectiveness as the Registration Authority. It is vital that any new arrangements not only meet the Government's transparency and independence objectives but also take advantage of what a professional membership body such as IPENZ can offer.

IPENZ's degree accreditation processes and Washington Accord membership serve to establish the academic standard for CPEng registration. Membership of multilateral agreements provide an important international benchmark for the CPEng competence standard and facilitate the recognition of New Zealand engineers internationally and overseas engineers in New Zealand. IPENZ is also active in promoting the CPEng quality mark and supporting graduates in their development towards registration.

These activities extend well beyond CPEng register maintenance, competency assessment and disciplinary functions. We consider it essential that the occupational regulation framework for engineers continues to recognise and benefit from the breadth of IPENZ professional body activities and the significant input IPENZ Members voluntarily contribute.

IPENZ supports the Government's desire to bring greater transparency and independence to the current arrangements by creating a statutorily independent Registration Authority Board accountable to the Minister.

We are heartened by the Government's acknowledgement that engineering is a highly technical discipline requiring specialised governance, knowledge and skills. We appreciate this is recognised by the makeup of the Registration Authority Board, with 50 per cent of its membership nominated by IPENZ and the other 50 per cent consisting of wider representation.

The links between the new Registration Authority Board and IPENZ as its operational arm will need to be formally defined. This will ensure the Board is able to leverage IPENZ's broad professional body capabilities and ensure CPEng assessment and disciplinary processes remain integrated and aligned with equivalent IPENZ membership processes. This is essential to avoid the risk of duplicating activities and prevent inconsistencies developing. It will also avoid imposing additional costs on both registrants and IPENZ Members. This aspect of the new arrangements needs to be incorporated in legislation to ensure integration is not eroded over the course of time.

## GENERAL COMMENTS

### THE CONTEXT FOR THESE PROPOSALS

The proposals for the occupational regulation of engineers need to be considered in the context of existing licensing, international agreements, and Government's other licensing initiatives.

#### Existing occupational licensing of engineers

The proposals for occupational regulation (i.e. licensing) of structural, geotechnical and fire engineers to certify the structural integrity of certain buildings need to be considered in the context of existing licensing arrangements in New Zealand.

The purpose of the Chartered Professional Engineers of New Zealand Act 2002 (CPEng Act) was to establish the title of chartered professional engineer as a mark of quality, and to establish the registration system and standards, the Registration Authority and the Chartered Professional Engineers Council (CPEC).

The CPEng Act is not a licensing regime as such, as it does not define areas of work where an engineer may or may not practise and hence it does not have any regulatory power. However, since 2002 the Government has introduced licensing in a variety of areas, usually – but not always – with regulatory objectives relating to public safety. The current seven licensed areas include working with amusement devices, heavy vehicle safety, dam safety and the verifiers in the emissions trading scheme. They are set out in Appendix 1.

New arrangements designed to license some of the activities of structural, geotechnical and fire engineers need to be developed within the context of these existing licensing arrangements, the views of the other relevant government agencies and the impact on other legislation.

#### The international context

There is an international context. IPENZ's degree accreditation processes and Washington Accord membership serve to establish the academic standard for CPEng registration. Membership of the International Professional Engineers Agreement and the APEC Engineer Agreement provide an important international benchmark for the CPEng and the competence standard for CPEng. Fifteen countries are members of the International Professional Engineers Agreement, and a further three countries are provisional members. The APEC Engineer Agreement has 14 member countries. These multilateral agreements, along with specific Admission Pathways Agreements with Engineers Australia and the Engineering Council (UK), facilitate the recognition of New Zealand engineers internationally.

It is very important that new arrangements do not undermine current international mutual recognition arrangements.

#### Recent occupational licensing initiatives

This response by the Government to the recommendations of the Canterbury Earthquakes Royal Commission has similarities to the response to other recent major events.

As a result of the Pike River Mine disaster the Government is establishing a Board of Examiners who will issue Certificates of Competence to mechanical and electrical

superintendents. The Board is expected to include experienced and tertiary qualified mining engineers.

In response to the Global Financial Crisis and the collapse of finance companies, licensing of accountants and related occupations was established for auditors and financial advisors, with the Financial Markets Authority acting as the registration authority.

In both instances, bespoke regulation was and is being developed, although for auditors the arrangements are strongly linked to the New Zealand Institute of Chartered Accountants as an accredited body, and to their systems and processes.

This highlights that in addressing one immediate issue (integrity of commercial, multi-storey and multi-level residential buildings), the wider implications of change need to be taken into account.

## THE PRINCIPLES AND PURPOSES OF OCCUPATIONAL REGULATION

To meet the variety of the Government's regulatory objectives, we believe as a matter of principle occupational regulation[1] of engineers should be:

- Transparent to the public
- Efficient, with the benefits exceeding the costs of administration, and of restricting activities to engineers of a specific competence
- Effective in minimising public risks, providing information and enhancing public confidence
- Clearly accountable to government, consumers, and the public.
- Consistent across regulators.

The purposes of the proposed occupational regulation as outlined in the Proposals Document are to contribute to:

- Ensuring buildings are safe
- Removing unnecessary cost and delays from the building performance system
- Improving construction sector productivity.

IPENZ supports these purposes but notes there are other factors such as construction quality which contribute to building safety.

[1] Based on Cabinet Office Circular CO(99)6(1999) with the addition of consistency

## SPECIFIC COMMENTS: RESPONSES TO QUESTIONS IN THE PROPOSALS DOCUMENT

### ISSUES WITH THE CURRENT REGULATORY SYSTEM FOR PROFESSIONAL ENGINEERS

**1. How well does this characterise the issues arising from the current regulatory system for professional engineers? What issues, if any, are missing?**

IPENZ notes the Government's concerns listed on pages 13 and 14 of the Proposals Document are as follows:

- The public cannot be sure those designing commercial and multi-unit/storey residential buildings have the appropriate knowledge, skills and competence levels
- Engineers are not always held to account when their designs are sub-standard
- There are doubts as to whether the rigour and level of CPEng is appropriate and whether CPEng is equivalent to overseas titles
- The regulatory system is self-regulating with the Minister having little leverage over the Registration Authority, insufficient scrutiny, potential conflicts of interest and the regulatory system not being proportional.

Firstly, as the Canterbury Earthquakes Royal Commission noted[2], with the exception of two buildings, modern buildings met New Zealand's building regulatory goal of life-safety following the Canterbury earthquakes in September 2010 and February 2011. This suggests there are no major issues with the engineering profession or with building design, rather small tweaks are needed to improve current practice and performance.

Our responses to each of the Government's concerns are as follows:

**Public confidence**

IPENZ concedes the current system does not adequately relate building complexity/risk with regulatory control. The current system relies on engineers' ethical obligations to identify work they are competent to undertake. While we do not believe there are issues with this, we support moves to prescribe an engineer's competency to undertake complex and potentially high-risk building design.

We believe controls should also be placed on other (non-construction) safety-critical work to ensure the associated risks are mitigated and the work is undertaken by a CPEng with the appropriate competency.

**Accountability of engineers**

IPENZ receives approximately 60 to 70 complaints per year, with around 60 per cent of these being about CPEng registrants. Complaints relating to the building and construction sector tend to relate to ethical and competency matters, substandard design and poor quality work. Although the numbers of upheld complaints are low, we are aware, anecdotally, of more general concerns about the quality of work being

[2] Canterbury Earthquakes Royal Commission (2012). *Final Report: Volume Three: Low-Damage Building Technologies*. Retrieved from: http://canterbury.royalcommission.govt.nz/vwluResources/Final-Report-docx-Vol-3-S1_2/$file/Vol-3-S1_2.docx

produced by some engineers. Such reports are of concern as they can threaten the good standing of the profession in the eyes of the public and clients. IPENZ is mindful of the need for the public to be able to have confidence in engineers and their work. We thus support initiatives to increase this confidence, along with moves to improve the performance of engineers.

**Appropriateness of CPEng**

IPENZ considers the CPEng assessment process to be well defined and applied appropriately. Applicants are required to show competence against 12 elements in their practice area. Assessment panels (with appropriate Staff and Practice Area Assessors) consider CPEng applications and make recommendations to the Competency Assessment Board regarding whether the applications should be approved. The rigour of these procedures has been reviewed in recent times. IPENZ is a member of the International Professional Engineer and APEC Engineer Agreements and has been subject to reviews of its assessment standards and processes (in 2006 and 2013) for continued membership of these agreements.

With regards to the level at which CPEng is set, it is set at the level at which an individual is able to demonstrate competence for independent practice. This point is typically reached four to eight years after graduation, depending on the variety and quality of post-graduation work experience. This level of registration is in line with that of other similar countries, with the CPEng standard being almost identical to the exemplar competence standard approved by the International Engineering Alliance in 2007. IPENZ is aware some structural engineering assessors would prefer CPEng be set at a higher level. IPENZ believes the current level is appropriate as an entry level qualification and that regular reassessments of current competence ensure engineers must show their ability to perform at an appropriate level.

**Self regulation**

We agree there is room for increased accountability to and scrutiny by the Minister. We also appreciate MBIE perceives there to be a potential conflict of interest with IPENZ acting as both professional body and regulator through its role as Registration Authority for CPEngs under the CPEng Act. While there may be a potential perceived conflict, we do not believe there is a real conflict of interest.

A review undertaken by CPEC in 2013 found IPENZ as the Registration Authority follows good practices internally – IPENZ governing Board members (who are also currently Registration Authority Board members) are not appointed as decision makers on registration or disciplinary matters and make no attempt to interfere in such matters. This is due to IPENZ adopting good practice although it is not set out in legislation or regulation. The CPEC review noted that externally, the separation of IPENZ's roles is less clear-cut and IPENZ introduced new branding for the Registration Authority to make it clear when it is acting in its regulatory role and when it is acting in its role as a professional body.

We support moves to address these issues including making the Registration Authority Board accountable to the Minister, enabling the Minister to appoint Registration Authority Board members and enabling Minister-initiated performance audits of the Registration Authority. We believe these changes will strengthen an already robust system and provide more transparency and accountability.

**2. In your view, what are the problems with the current regulatory settings? What brings you to this view?**

IPENZ believes additional issues with the current regulatory setting include regulators mandating requirements over and above the CPEng quality mark and poor work by engineers not being reported to IPENZ.

**Regulators mandating requirements over and above the CPEng quality mark**

As explained in our General Comments, since 2002 Governments have introduced licensing in a variety of areas. In general CPEng is required but there are two exceptions – climate change and dam safety.

The Climate Change (Unique Emissions Factors) Regulations 2009 require a verifier to be a CPEng with at least five years' experience after achieving CPEng or 100 working days' verification.

Under the Building Act 2004 those undertaking work related to dam safety are required to be a "recognised engineer" who is defined as a CPEng with prescribed qualifications and competencies, and no financial interest in the relevant dam.

Some Building Consent Authorities (BCAs) also require the input of CPEngs to complete producer statements for design, with some BCAs also prescribing particular competencies.

In these cases the regulators have made one-off adjustments such that the mandated requirements are above those envisaged in the CPEng Act. These adjustments are, in our view, unnecessary. Provided the regulation of engineers is robust, it is inappropriate and unnecessary for regulators to introduce one-off and inconsistent refinements to the requirements of the CPEng Act.

**Issues with engineers' work not being reported to IPENZ**

MBIE and most BCAs have only recently recognised the need to provide feedback to occupational regulators for the system as a whole to function. Up until late 2013 BCAs were not required to include a process to provide feedback to the occupational regulator in their accredited systems and processes. Hence they saw reporting as voluntary rather than a duty – a distraction from their real business, and too onerous.

Similarly, due to commercial obligations and the risk of liabilities, engineers have been reluctant to act on observations of poor work being undertaken by others. Education by IPENZ over a number of years has been unsuccessful in improving the culture. IPENZ is looking to strengthen engineers' obligations by including it within code of ethics obligations. This will require engineers to report breaches of the code of ethics (which includes expectations on an engineer's competency) and observed matters affecting safety. Such obligations will apply to CPEngs (currently numbering 3,360) and Members of IPENZ (around 11,000).

However, such duties cannot be imposed on engineers who are neither CPEng nor IPENZ Members, thought to be in the order of 15,000. IPENZ mandating reporting requirements for engineers can only be effective through wider occupational regulation of specific types or work where practitioners are required to meet certain professional and technical obligations i.e. licensing.

The Proposals Document recommends amendments to the current disciplinary system to introduce interventions such as knowledge and competency improvement

requirements before issues become serious, and punitive disciplinary sanctions are applied. This is intended to give engineers, who are made aware of issues, an opportunity to raise their performance or remedy the problem, before alternative action is considered. IPENZ supports such an initiative and is keen to investigate how its disciplinary processes could be modified to accommodate such intervention strategies, while preserving the critical principles of natural justice. This is discussed further in this submission in our response to Question 27.

**3. How significant are these problems for engineers, the construction sector, clients and/or the public?**

IPENZ believes the CPEng quality mark is at risk of being devalued as regulators are introducing additional and inconsistent refinements to requirements of engineers.

In relation to under-reporting of issues with engineers' work, we have anecdotal evidence only. MBIE and IPENZ are attempting to determine the validity and extent of these concerns.

With the increase in number and complexity of complaints the effectiveness of the sanctions allowable as a deterrent will become more relevant.

**4. What are the possible impacts on the structural integrity of buildings and on public safety?**

Design and construction issues with high occupancy buildings can potentially present public safety risks. However, IPENZ has no firm evidence of issues with the current regulatory settings that are significantly or directly impacting on the structural integrity of buildings and is not able to quantify any impacts that do exist.

**5. What evidence is available that could inform any further analysis of the issues?**

IPENZ is able to provide further information about CPEngs, the CPEng assessment process, international agreements and the disciplinary process if that is of interest to MBIE. Evidence of poor design work by engineers or deficient buildings would need to be sourced through the local and national regulatory authorities.

## PROPOSED REGULATORY SYSTEM – KEY FEATURES

**6. Do you think that the above package of proposals and options are the appropriate ones to consider for improving current regulatory settings for engineers? If not, why not?**

Generally we endorse the package of proposals and options that have the overall intention to:

- Provide greater assurance and confidence in engineers designing commercial and multi-unit/multi-storey residential buildings
- Ensure engineers are held to account
- Ensure there are sufficient checks and balances to protect the public interest.

Hence we support the proposal to mandate CPEng for structural, geotechnical and fire engineers. This will ensure and demonstrate competence to certify the integrity of these types of building and manage their associated risks.

However, it should be noted that structural, geotechnical and fire engineers make up just 38 per cent of current CPEng registrants. The numbers of engineers in each practice field are shown in the following graph:

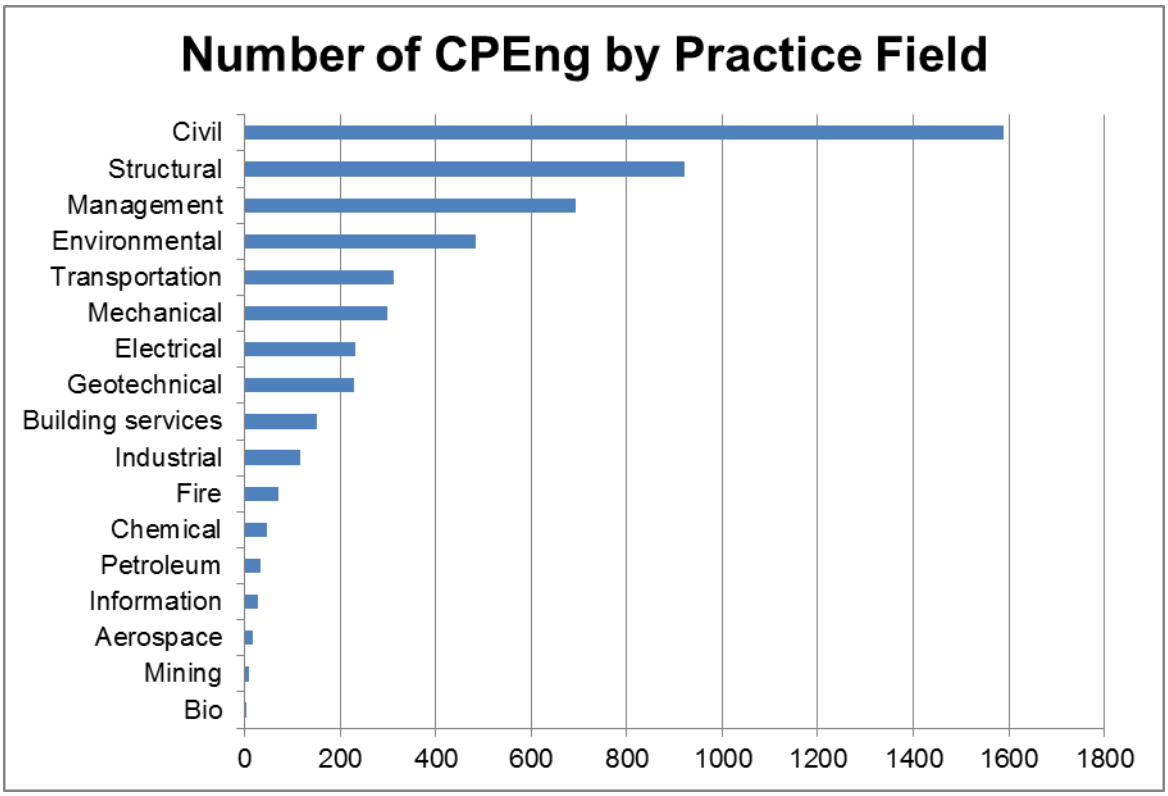


Figure 1 – Chartered professional engineers by practice field

Figure 1 shows the spread of practice fields. Almost half of registrants are civil engineers.

Safety-critical building and construction work is not confined to commercial and multi-storey/multi-unit construction – it extends to the wider building and construction sector such as bridges, retaining walls, and low-rise industrial buildings.

In addition, safety-critical work occurs in many other practice fields including mechanical, civil, electrical, chemical, environmental, petroleum, aerospace, food, transportation and mining engineering. We strongly recommend the opportunity be taken to create empowering legislation to enable later regulation of all engineering occupations with safety-critical work, rather than just focus on construction[3].

We consider empowering legislation should be drafted now so regulatory change for all safety-critical work would be a matter of changes to rules or regulations only. There is major public benefit if the legislation put in place now provides for regulation to be extended for this type of work without further legislative change. Other regulated engineering work may not necessarily be at the same competence level as geotechnical, structural or fire engineering work. A comprehensive piece of legislation is needed to give the Minister the regulatory power to create new registers under the CPEng Act, each with a distinct title and competence standard. IPENZ is strongly of the view that unless the opportunity is taken now whilst

[3] These fields align with the current Practice Fields under CPEng. IPENZ Members also suggest pressure equipment, cranes, passenger ropeways, marine, medical, large infrastructure design, flood assessments.

engineering regulation has a high legislative priority, the future needs of New Zealand may not be met.

Regarding Issue 3, we have a high level of confidence in the current competency assessment process for all the 17 practice fields but accept there is always room for improvement. We recommend the review cover all fields of engineering to ensure that standards and processes remain consistent for all fields of practice.

**7. Which particular proposals and options do you consider are not appropriate? Please explain why.**

We have some suggested changes to the functions of the Registration Authority Board and the Industry Occupational Body. We discuss these in more detail in our response to Question 32.

**8. In your view, what other options should be considered to improve current regulatory settings? How would you see these working?**

IPENZ has no other options to present.

**9. How would these proposals impact on you and your business or group?**

The proposals will have a financial impact on CPEng registrants. This is discussed in our response to Question 32.

**POTENTIAL BENEFITS AND COSTS OF THE PROPOSED CHANGES**

**10. How well does this summary represent the potential benefits and costs of the proposed changes? Which, if any, do you disagree with? Why?**

We generally agree with the benefits and costs in this summary but believe it will not be feasible to show or quantify any long term efficiency gains.

**11. What other potential benefits, costs and risks are not listed above and should be taken into account?**

In light of the objectives for the occupational regulation of engineers described above, we believe potential benefits, costs and risks are as set out in the table below.

| Potential benefit | Potential cost | Potential risk |
|---|---|---|
| Increased clarity from provision of more information | Establishment and operating costs to registrants of an additional body | Potential for inconsistency in standards and competency processes for structural, geotechnical and fire engineers and other engineers on the register |
| Increased confidence in the safety of buildings | Costs to registrants and the Registration Authority of providing more detail on the register | Inconsistency in competency standards and processes developing over time due to the different views of the Minister, the Industry |

| | | |
|---|---|---|
| | | Occupational Body, the Registration Authority and IPENZ |
| Increased competency of engineers | Costs to registrants to demonstrate compliance with potentially changed competency requirements | Exacerbation of the shortage of engineers to undertake structural assessments of earthquake-prone buildings and to design retrofit solutions, due to different and or stricter competency requirements |
| Greater transparency and accountability | | |

We discuss the costs in more detail in our response to Questions 32.

## DETAIL OF PROPOSALS AND OPTIONS

### PROPOSAL 1: A CHARTERED PROFESSIONAL ENGINEER (REGISTERED WITHIN AN APPROPRIATE PRACTICE FIELD – E.G. STRUCTURAL, GEOTECHNICAL OR FIRE) WOULD BE REQUIRED TO CERTIFY THE STRUCTURAL INTEGRITY OF COMMERCIAL AND MULTI-UNIT/MULTI-STOREY RESIDENTIAL BUILDINGS REQUIRING CONSENT

**12. Should a Chartered Professional Engineer be required to certify the structural integrity of buildings that, in future require a:**

- **Commercial building consent;**
- **Multi-unit/multi-storey residential building consent; or**
- **Building consent for buildings assessed by building consent authorities as being complex?**

Whilst we believe engineers have generally acted ethically in ensuring they only undertake work for which they are competent, we appreciate the importance of public confidence that those undertaking building and construction work are suitably skilled and competent. We support this Proposal's intention to balance competency with potential risk associated with the work. We thus support the proposal that those certifying the structural integrity of more complex buildings such as commercial buildings and multi-unit/multi-storey residential buildings be required to be CPEng in an appropriate practice field. However, we note there are also complex residential buildings which might require specific design or sophisticated structural analysis by a CPEng. Care is thus needed to ensure prescribing competencies adequately correlates with risk.

Further, as set out in response to Question 6, professional engineering is much broader than just structural, geotechnical and fire engineering – only 38 per cent of CPEng registrants are structural, geotechnical or fire engineers. We believe that all engineers who undertake safety-critical work should be regulated to ensure public confidence and protection of health and safety. For example, we believe those undertaking design work in relation to medium to high risk mines should also be required to be CPEngs in a relevant practice field such as mechanical or electrical engineering.

**13. At what stages in the building control process should engineering review and certification processes be required?**

During the design phase for complex buildings there needs to be a progressive review process, to ensure key stakeholders have an opportunity to contribute and buy-in to the design, and that specific elements of the design have been subject to independent overview. These review processes should be integral to the quality system of the design firm. When a design is submitted for building consent approval the Building Consent Authority should satisfy itself that the appropriate level of review has been undertaken, and may, where necessary to demonstrate compliance with the Building Code, call up a separate peer or regulatory review. Peer and technical reviews are a critical component of a design quality system.

During construction the review of critical elements of the build by a competent engineer is important. The identification of the critical design elements to be overseen, and hence level of monitoring required, should be based on the recommendation of the design engineer. Given that such monitoring is not supervision of the building work, there need to be additional checks and balances to provide assurance that the constructed building fully complies with the consented design.

The producer statement system, although no longer having statutory status, is a widely accepted element of the current certification process whereby a competent professional provides an opinion, on a "reasonable grounds" basis, that a design of building work complies with relevant clauses of the Building Code, or that the construction complies with the approved building consent.

Review and certification are critical elements of design and construction and should be more structured and formalised under the Building Act. The producer statement system, or a similar methodology, should return to having statutory status with its use restricted to competent professional engineers – CPEngs.

**14. What are the main benefits and costs of this proposal?**

The potential benefits and costs of this proposal are set out in the table below.

| Potential benefits | Potential costs |
|---|---|
| Public confidence that those undertaking work are appropriately skilled and competent | Small engineering firms may be pushed out of safety-critical work if maintaining CPEng status is cost or resource prohibitive |
| Increased accountability of engineers undertaking safety-critical work | Increased cost of design, particularly in smaller more remote areas where few or no CPEngs are based |
| Increased ability of public to have a complaint about an engineer considered due to increased jurisdiction of Regulatory Authority, noting that of the 49 current complaints, 20 have been from members of the public, 19 are from other engineers and six from the Registration Authority itself. | Exacerbation of the shortage of engineers to undertake structural assessments of earthquake-prone buildings and to design retrofit solutions, due to different and or stricter competency requirements |
| Safety-critical elements are only able to | Longer waiting times for design |

| | |
|---|---|
| be designed by competent professionals. | completion as a smaller pool of professionals is required to carry out a greater amount of work. |

**15. How would this proposal impact on the engineering profession?**

IPENZ foresees this proposal having limited impact on the engineering profession as the vast majority of engineers who certify the structural integrity of complex buildings are already CPEng. We do however believe the proposal will in the short term have a significant impact on the availability of design professionals to carry out design work, increasing already long design and consenting times. It will however help ensure CPEng is seen as a high value quality mark and will require more graduate engineers to aspire to become a CPEng.

**16. How would this proposal impact on the quality, integrity and safety of buildings?**

Although many engineers who currently design and certify complex buildings are already CPEngs, the wider mandating of the requirement for all commercial and multi-unit/multi-storey residential buildings will raise the general quality, integrity and safety of buildings. The universal use of competent design professionals, bound by ethical obligations to work only within their competency and to maintain the currency of their knowledge, will give increased confidence that building designs are compliant and safe.

**PROPOSAL 2: INTRODUCE CONSUMER PARTICIPATION IN PREPARING AND MAKING PROFESSIONAL REGISTRATION RULES, AND SETTING COMPETENCE AND ETHICAL STANDARDS SUPPORTING THE PROPOSED PUBLIC INTEREST PURPOSE STATEMENT IN THE ACT**

**17. Would it add value to have consumers involved in making the professional registration rules, and setting competence and ethical standards? What value would be gained by having consumers involved?**

IPENZ supports the principle of consumers being involved in the occupational regulatory system for CPEngs where possible and appropriate.

Consumers are currently involved as:

- Complainants against individual engineers being on the CPEng register
- Complainants against individual engineers' conduct
- Part of Disciplinary Committees – Rule 8 of the CPEng Rules (No 2) 2002 requires that every Disciplinary Committee include one person who is not an engineer and who is nominated by a body considered to be representative of consumer interests (this person is currently nominated by Consumer NZ). A Disciplinary Committee must also comprise a Chair and a CPEng and potentially a further two people, one of whom is not an engineer.
- Part of CPEC – section 50 of the CPEng Act sets out that CPEC must have one member nominated by the Minister to be representative of consumers. The Minister can also nominate a further one to three people.

In making rules and setting standards, IPENZ (as the Registration Authority) already consults with members of the public and consumers. IPENZ recently consulted on a proposal to make changes to the CPEng Rules (No 2) 2002 – to change the fees for CPEngs. The proposal document was posted on the Registration Authority website

and emailed messages containing a link were sent to all CPEng registrants. Further, it was advertised to IPENZ Members via its electronic publication *Engineering Direct* and placed on the IPENZ website which is available to both Members and non-members. IPENZ also consulted with approximately 35 organisations to ensure the proposal was not only well known but also well reviewed and considered. IPENZ undertakes similar processes for other rule changes and standard changes – with consultation taking place with those the rule or standard is likely to affect in accordance with the "Rule Making Procedure" as prescribed in Part 6 of the CPEng Rules.

We thus support the proposal that consumer representatives be consulted with when changes are being made to rules and standards. We note the proposed consumer groups to be consulted (building owners and landlords, property management organisations, commercial real estate representatives and/or building occupants and user representatives) as set out on page 21 of the Proposals Document. Some rule changes (such as a rule change to simply increase CPEng fees) may be of little interest to these consumers. However we are happy to undertake such consultation as we believe transparency is desirable.

In relation to the value consumers add, we believe consumer input ensures rules and standards appropriately reflect the expectations society has for engineers. We also see consumer input as an important means of ensuring the occupational regulatory system is transparent, effective and accountable – all objectives we seek as set out in our General Comments.

### PROPOSAL 3: THE REGISTRATION AUTHORITY WOULD PUBLISH MORE DETAILED INFORMATION ABOUT PROFESSIONAL ENGINEERS AND THEIR COMPETENCY LEVELS

**18. Should the Registration Authority publish more information about engineers' qualifications, experience and practice areas as proposed?**

IPENZ understands the purpose of the register to be three-fold. It is to enable:

- Members of the public to know who is a CPEng (as per s16(2)(i) of the CPEng Act)
- The public to select a suitable engineer (as per s16(2)(i), s16(2)(iii) and s16(2)(iv) of the CPEng Act)
- Regulators to know who is competent to undertake specific types of work.

Engineers work within practice fields and practice areas. Practice fields such as structural, geotechnical and fire provide indicative guidance as to the field an engineer practices in. A practice area is a free text description, agreed between an engineer and their assessors, of the areas of practice in which competency has been demonstrated for granting of CPEng status.

With the above purposes in mind, in addition to the information already required to be published, the Registration Authority has determined to publish practice field information, (and associated descriptions of those practice fields) and to enable the register to be searched by geographical region. Consideration could be given to formalising the requirement to publish this additional information within the Rules.

The Registration Authority considered publishing practice area information as part of its initial response to the Canterbury Earthquakes Royal Commission recommendations. After careful consideration and consultation, it was resolved to publish practice field information on the register. The rationale for this decision was that it was consistent with international best practice, and no engineering knowledge

or expertise is needed to interpret the nature of engineering in which the registrant has demonstrated competence of his or her engineering skills. The Registration Authority was also concerned about practice areas being interpreted as “scopes of practice”. While practice area descriptions do provide a reasonable description of the area in which the engineer was able to demonstrate competence at their last assessment, they are not intended to be comprehensive statements of the scope of an engineer’s practice or competence. The publication of comprehensive scopes of practice would require change to the current assessment process, would add time and cost to the assessment process and may have unintended consequences, such as stifling innovation.

At the time of making the decision to publish practice fields, the Registration Authority anticipated this information might be supplemented in the future by the development of a limited number of classes of registration or prescribed areas of practice relating to areas of safety critical work. For example, drawing from *Hot Topics*, the 2007 report from the Fire Engineering Advisory Taskforce, prescribed practice areas or classes in the field of fire engineering might include:

- Fire safety design and management of buildings
- Fire safety design and management of industrial processes and facilities

Registration in a class or prescribed practice area would require an engineer to demonstrate competence in a defined scope of activity, which would likely form part of the wider practice area in which the engineer was assessed.

We do not support the proposed publication of an engineer’s qualifications or previous work experience on the CPEng register. We see such information as an input into the CPEng assessment process and believe publication of such information will result in third parties making their own assessment of an engineer’s competence level when they are not in a position to do so, thereby undermining the CPEng assessment process. Information published on the register that is intended to reflect the area or level of an engineer’s competence, should be restricted to the outcomes of an assessment or information that has been verified through that process.

In conclusion, we acknowledge information in addition to the practice field may be needed and suggest this information might be supplemented in the future by the development of a limited number of classes of registration or prescribed areas of practice relating to areas of safety critical work.

IPENZ is keen to work with MBIE officials on the specific practice information that should be provided on the register and the use of classes of registration.

**19. If so, what additional information might be beneficial for consumers and territorial authorities to determine an engineer’s experience and competency?**

Please refer to our response to Question 18.

In considering the approval of designs for consent, regulators (including BCAs) should assure themselves of the competency of the engineer submitting the design. It has become the practice of some BCAs to refer to the engineer’s practice area in making that assessment. Generally BCAs have sufficient technical knowledge to interpret practice area descriptions.

Prior to the current review of occupational regulation, the Registration Authority was considering providing regulators, such as BCAs, with online access to an extended version of the CPEng register that included practice area descriptions. It was

considered this might improve the efficiency of the consenting process and mean that BCAs no longer saw the need to maintain their own lists of “approved engineers”.

### PROPOSAL 4: REQUIRE ENGINEERS TO NOTIFY BCAS (BUILDING CONSENT AUTHORITIES) OF OBSERVED BUILDING CONSENT AND/OR BUILDING CODE BREACHES

**20. Should engineers be required by law to notify building consent authorities and building owners of breaches of building consent and/or Building Code for commercial and multi-unit/multi-storey residential buildings, similar to the Building Act 2004 (section 89)?**

We note that licensed building practitioners (including CPEngs) are already required to notify building consent authorities and building owners of breaches of building consents under section 89 of the Building Act 2004. The proposed new code of ethics for CPEngs and IPENZ Members will include a requirement for engineering matters, where there is a risk of adverse consequences, to be brought to the attention of the regulator where it is apparent, on reasonable grounds, that the matter is not being dealt with appropriately.

Therefore IPENZ fully supports an obligation on CPEngs to report on matters of concern. However for such a system to be practical and pragmatic we strongly believe there needs to be a threshold above which reporting becomes mandatory. Encouraging the reporting of minor breaches of the Building Code, where there is no risk of adverse consequences, would likely overwhelm the system for no realisable benefit or lead to abuse of the system. In non-serious situations or for minor breaches, the correct professional practice should be to first notify the appropriate person in order to seek a remedy to the situation.

Guidance will be needed to help engineers understand what actions are required to discharge their obligations. This guidance needs to clearly set out the expectations of the reporting processes, and what if any, other actions (such as record keeping) are required of the engineer in order to discharge their obligations. IPENZ is keen to work with MBIE officials on developing this guidance material.

The reporting of building consent and/or Building Code breaches could in some cases contravene commercial confidentiality obligations. Therefore some form of indemnity from liability and civil or criminal proceedings, in a similar vein to the Protected Disclosures Act 2000, will be required.

Engineers may be reluctant to report issues with another engineer’s work due to the small size of the industry, potential negative reputational outcomes, and the irrecoverable time and costs involved. Although the new code of ethics will obligate engineers to report matters of concern; we must remain cognisant of the potential implications. Therefore any mandatory notification must be pitched at a level that enhances public safety but discourages frivolous actions.

Finally, in line with our desire for occupational regulation for all safety-critical work, we recommend the scope of the obligation to notify be broadened. This proposal only deals with building consent and Building Code breaches and notification to building consent authorities. We believe there is merit in expanding the obligation to notify other regulatory authorities where breaches of relevant legislation lead an appropriately skilled and competent engineer to have concerns about public health and safety.

**21. What are the likely benefits, costs and risks of this proposal?**

The potential benefits, costs and risks associated with this proposal are presented below.

| Potential benefits | Potential costs | Potential risks |
|---|---|---|
| Early awareness of breaches, enabling remedy of issues | | Engineer whose work is being notified may not be given opportunity to rectify issues |
| Greater collaboration between engineers to resolve issues before the matter is escalated to a regulator | | Engineers unfairly facing disciplinary action for non-notification e.g. for breaches they were not aware of but others feel they should have been aware of |
| Increased building safety and public confidence in the built environment | | Regulator overwhelmed with the numbers of breaches reported and the effort require to investigate and resolve them |

**PROPOSAL 5: DECISIONS ON COMPLAINTS AND DISCIPLINARY HEARINGS AND ACTIONS AND INTRODUCE A DISCIPLINARY PROCESS FOR ADDRESSING NON-SERIOUS BREACHES OF THE ACT**

**22. Would a mentoring type arrangement or supervision, work for disciplinary breaches that occur through deficiency of knowledge or minor competency issues? Are these types of responses practical to implement? If not, what is an appropriate sanction for this type of error?**

IPENZ endorses the introduction of the system which, where appropriate, offers proactive interventions aimed at raising the knowledge and competency of engineers, before considering referring the matter to a disciplinary committee. Regardless of the system in place, it is vital the principles of natural justice (or procedural fairness) prevail.

The diagram in Figure 2 illustrates a potential alternative disciplinary framework which expands on the current CPEng model.

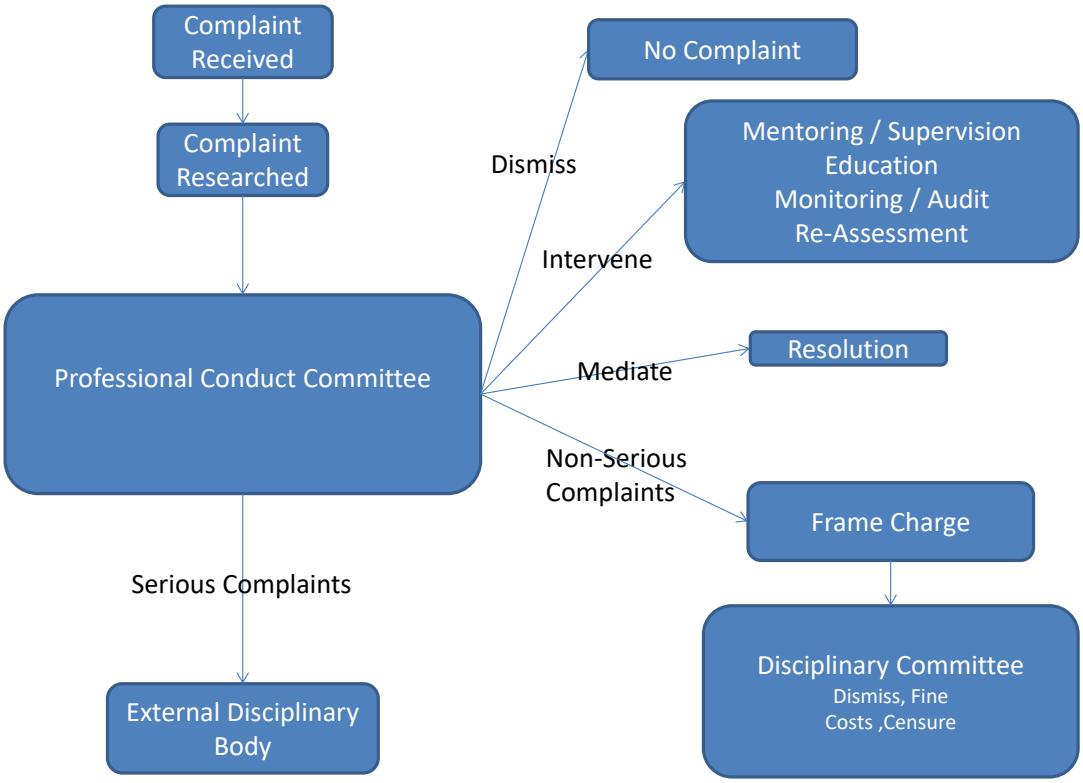


Figure 2 – Alternative disciplinary framework

Under this framework a professional conduct committee would be established within the Registration Authority. This would be a standing committee comprising appointed CPEngs and laypeople. Legal support would be available to the committee for advising on matters of law, procedures or evidence. The committee would draw its technical expertise from a panel of experts drawn from the profession's technical interest groups and collaborating technical societies, covering the 17 fields of engineering. For more complex issues additional experts could be appointed to assist in the committee's deliberations.

The professional conduct committee would investigate such matters brought before it and decide an appropriate course of action. This might include:

- Dismissing the complaint
- Imposing an intervention such as further compulsory education, a period of supervision, periodic audits of design work or a re-assessment
- Considering whether the matter should be noted on the respondent's record or the register
- Mediating between the complaint and respondent to arrive at an agreeable resolution to the matter
- Considering that the complaint is serious enough to be considered by a Disciplinary Committee and prosecuting a charge through the disciplinary process.

Serious complaints, i.e. those rare events involving loss of life or high potential public safety risks such as the CTV Building and Southland Stadium collapse would be referred directly to the external Industry Occupational Body. However such a

body must be capable of carrying out its disciplinary functions across all fields of engineering. There is precedent for this – the Health Practitioners Competence Assurance Act 2003 prescribes a tribunal made up of experienced High Court lawyers and health practitioners. Alternatively, serious complaints, such as complaints about alleged misconduct which could potentially cause death or serious injury could be referred to the Employment Court.

The purpose of any disciplinary action is not to provide compensation for those who might be subject to poor engineering standards; rather it is to protect the public by ultimately removing substandard engineers from practice and raising the standard of engineering practice. Corrective interventions such as education and supervision could play a key role in achieving this in a non-punitive manner. However in order to preserve the rules of natural justice such interventions would need to be implemented as additional options under a formal framework for managing complaints and disciplinary matters. The effectiveness of such a regime would be further enhanced through the use of random auditing of engineer's work, as a proactive and pre-emptive means of identifying and addressing poor practice, and mandatory independent peer review of certain design work. However, we also note that poor performance that contributes to financial loss may be dealt with through legal remedies and the extent of such poor performance may not be evident due to legal privilege constraints.

We support the proposals for appeals on disciplinary matters and competence assessment decisions to be managed by the proposed Industry Occupational Body. In addition to the disciplinary process it is important to ensure CPEngs have a way of appealing decisions of the Registration Authority. Currently under the CPEng Act and Rules, an engineer can appeal a decision of the Registration Authority's decision to the Chartered Professional Engineers Council. Under Rules 31-33 of the Chartered Professional Engineers of New Zealand Rules (No 2) 2002 an engineer can request a review of assessment on the ground that the assessment was not carried out in accordance with the procedures set out in the CPEng Act or the CPEng Rules. To date four procedural reviews have been undertaken. We believe the ability to appeal such decisions and the assessment process is important and recommend this ability continue into the future, regardless of the institutional structure in place.

Further, we recommend consideration be given to broaden the scope of appeals. As noted above, appeals can currently only look at procedures. Under the IPENZ Regulations for Competence Registers[4], which apply to those on IPENZ managed registers (except the CPEng Register), a person can apply to IPENZ for a review of the Competency Assessment Board's decision on either of the following grounds:

- The assessment was not carried out in accordance with the procedures set out in the Regulations, or
- The decision reached by the Competency Assessment Board is manifestly at odds with the evidence presented in the application.

We believe broadening the grounds for appeal by CPEng applicants would ensure Registration Authority decisions are transparent and fair, giving engineers confidence in the assessment process.

[4] IPENZ (2007). *IPENZ Regulations for Competence Registers*. Retrieved from https://www.ipenz.org.nz/ipenz/forms/pdfs/IPENZ_Competence_Register_Regulations.pdf

**23. Should the management of complaints and discipline for professional engineers be separated from the professional body IPENZ? If so, who should manage complaints?**

IPENZ cannot conceive of an engineering matter being investigated by a person or persons that do not have any engineering knowledge. In the same way as it is inconceivable that a complaint against a medical practitioner is not dealt with by a tribunal with medical knowledge or a legal matter being dealt with by a tribunal without knowledge of the law.

Lord Benson in his oration to the House of Lords in 1992 described the nine obligations of a profession to the public. Stating, “the first and paramount of these is that the profession must be controlled by a governing body which in professional matters directs the behaviour of its members. The fifth requires that governing body to take disciplinary action, including, if necessary, expulsion from membership should the rules and standards it lays down not be observed or should a member be guilty of bad professional work”.

Lord Benson continued “There will never be perfection but the striving is there. [and…] “As far as I know all [professions] seek to improve their standards year by year; to tighten their disciplines and to give better service to the public”.

IPENZ considers the oration of Lord Benson as relevant today in New Zealand as it was to the House of Lords in 1992. We consider it is entirely appropriate the management of complaints about engineers be entrusted to the engineering profession, represented in New Zealand by IPENZ.

**24. What are the potential benefits, costs and risks of these proposals?**

Apart from raising the general performance of engineers and the level of engineering safety, introducing interventions could potentially deliver financial savings through the avoidance or streamlining of what can be a time consuming and costly complaints investigation and disciplinary process. However, simply imposing an intervention without monitoring its result or effectiveness will not lead to changes in behaviour or the raising of the quality of engineering practice. Mentoring and supervision requires commitment from specialist senior engineers, largely committing their time on a volunteer basis. Where demand is high, facilitating such support might present challenges. As such there is likely to be an overall net increase in costs associated with the introduction of an interventions based approach.

IPENZ is keen to work with MBIE officials on the specific legislative and regulatory requirements for enhancing the current disciplinary framework.

Having IPENZ manage both the CPEng and IPENZ disciplinary processes makes sense from a cost and consistency perspective. Having separate bodies undertaking what are essentially identical processes would not be efficient.

## PROPOSAL 6: REVISE SANCTIONS FOR PROVED DISCIPLINARY ACTIONS

**25. Are the disciplinary sanctions proposed strong enough to incentivise engineers not to breach the grounds for discipline in the Act? If not, what sanctions would be appropriate for minor breaches or mistakes and serious breaches such as misconduct, negligence or bringing the profession into disrepute?**

We support the proposed increase in disciplinary sanctions. We believe the maximum sanction for very serious complaints should align with other comparable legislation e.g. environmental legislation.

While we note the importance of having financial sanctions, we believe removal of registration, which is possible under the current legislation, is the ultimate sanction as it removes an engineer's right to practice.

We recommend the existing provisions for recovering costs are not diluted in any revision to the sanctions regime, although some guidance on the imposition of costs would be helpful.

In relation to the language used in the proposals document, where an engineer's registration is cancelled for a period of time with the intention of reinstating it, the use of the term "suspended" would be more appropriate.

## PROPOSAL 7: THE REQUIREMENTS FOR CPENG FOR STRUCTURAL, GEOTECHNICAL AND FIRE ENGINEERS ARE INDEPENDENTLY REVIEWED TO ENSURE THAT THEY ARE SET AT AN APPROPRIATE QUALITY LEVEL AND THAT THE ASSESSMENT PROCESS IS RIGOROUS AND CONSISTENT FOR ALL APPLICANTS

**26. For structural, geotechnical and fire engineers, should the requirements, assessment process and competency framework for CPEng be reviewed? Why?**

The CPEng Standard is set as the minimum standard for a reasonable practising engineer. We believe this appropriately reflects the level of competence required to gain CPEng and is consistent with international benchmarks.

In our view, there is already significant independent evidence available to show that the Competence Standard for CPEng registration is well aligned with international standards. This includes:

- IPENZ membership of the Washington Accord and the widespread use of the Washington Accord as the academic benchmark for professional registration internationally
- IPENZ membership of the International Professional Engineers Agreement and APEC Engineer Agreement along with the associated six-yearly reviews
- Admission Pathways Agreements with Australia and the United Kingdom.

It is essential any review of matters relating to the overall standard and processes for registration is across all practice fields to ensure the minimum standard for registration remains consistent across, and appropriate to, all fields of engineering. In our view, the only matters raised in the Proposals Document that would justify a more targeted review are consideration of the development of a class of registration for Recognised Structural Engineers, and the associated question of defining other classes of registration or prescribed areas of practice in the areas of structural, geotechnical or fire engineering.

There is always scope to improve the consistency and rigour of the application of the competence standard. Progressive changes to the assessment process since the introduction of the CPEng Act in 2003 have been aimed at improving the rigour of the assessment process. Specific changes have included:

- Incorporation of a formal knowledge assessment process
- Making interactive assessments mandatory for Continued Registration Assessments
- Increased moderation of assessments (use of the Senior Assessor Group to conduct peer audits of assessors)
- More targeted and refined assessor training that aims to replicate actual assessments in the training process
- Improved guidance to candidates on the nature of "good evidence" required to demonstrate the required level of competence
- On-line systems for submitting portfolios of evidence for assessment. This offers facility for improved guidance and a wider range of formats of evidence (videos, photographs, audio etc.).

Most recently, a joint working group has been established with the Structural Engineering Society (SESOC) to consider opportunities to further improve the consistency of the assessment of structural CPEng candidates. Areas of focus for the working group are likely to include:

- The selection and training of structural assessors
- Review of the guidelines for structural CPEng candidates and assessors
- Opportunities to strengthen the Knowledge Assessment process for structural CPEng candidates who do not have a Washington Accord accredited degree
- Options to strengthen the assessment of fundamental structural engineering principles, potentially as part of both the application for admission and continued registration assessment process.

Discussions have also recently been held with the New Zealand Chapter of the Society of Fire Protection Engineers (SFPE) with similar objectives in mind.

We are confident that any outcomes from such working groups will be able to be implemented within the current Rules and without compromising CPEng as a common standard for professional engineers across all disciplines.

In the area of geotechnical engineering, the recent development of the Professional Engineering Geologist Register has assisted in delineating the role of geotechnical engineers and eased the pressure on the Registration Authority to recognise engineering geologists within the CPEng regime.

In conclusion, IPENZ notes there is always scope for improving the consistency and rigour of the application of the competence standard. We support the proposed review and recommend its scope be widened to all fields of engineering.

**27. Is there a need for a new higher qualification such as a Recognised Structural Engineer or for CPEng to be tiered to identify practitioners' competency to undertake more complex engineering design and construction oversight work? If so, why?**

IPENZ supports a model that effectively provides for a tiered CPEng register through the creation of specific classes of registration which may require assessment against a standard of competence in advance of the minimum standard for registration.

The minimum standard for CPEng registration is not set at the level of competence required to design complex or high risk structures (although we note that some high risk structures may be relatively simple) and we consider it entirely appropriate that this is the case. As a result, given the public interest in gaining greater assurance of the structural integrity of such buildings, we consider there could be justification for the development of a class of registration for Recognised Structural Engineers, which would likely involve assessment against a higher standard of engineering knowledge and/or competence.

However, the cost and benefits of establishing a tiered register or class of registration need to be considered against other options for assuring the structural integrity of such structures, such as strengthened quality assurance arrangements (peer review, construction monitoring etc.) coupled with a reinforced ethical obligation to practice within the bounds of one's competence. We recommend the issue be further evaluated as part of the scope of the proposed review of the CPEng assessment process and competency framework.

**28. Should the requirements for, and provision of, post-graduate continuing professional development be strengthened to enable graduates to obtain CPEng? If so, what suggestions do you have?**

Given the breadth of engineering practice, it is difficult to envisage a structured programme of graduate development that could be applicable to all engineers. However, we support consideration of some level of prescription of continued professional development modules in generic areas of professional practice, such as ethics, or linked to technical or regulatory developments for engineers seeking registration or continued registration in a prescribed practice area (or class).

We also note the current IPENZ/SESOC working group is expected to consider options for strengthening the processes for assessing the underpinning specialist technical knowledge of structural engineers. Similar processes could subsequently be undertaken with the New Zealand Geotechnical Society (NZGS) and the Society of Fire Protection Engineers (SFPE).

**29. Do you agree with the following objectives for the institutional arrangements for the regulation of engineers:**

- **A high level of transparency and accountability**
- **A high level of professional input into the development of professional standards**
- **Cost effective delivery of registration**
- **Effective monitoring and enforcement of professional standards**

**Are any objectives missing?**

In our General Comments we outlined the desired characteristics of the occupational regulatory system for engineers. One issue of concern to us is the consistency of application of the CPEng Act by government agencies

As explained previously, there are two current inconsistencies of regulatory application of the CPEng Act – in the Building Act 2004 for verification of dam specifications and audit of dam safety assurance programmes (Recognised Engineers), and in the Climate Change (Unique Emissions Factors) Regulations 2009 for verifiers of unique emissions factors (CPEng plus five years). We recommend consistency to ensure the value of the CPEng quality mark is not eroded.

These proposals, while focussed on structural, geotechnical and fire engineers, should not further exacerbate the existing inconsistencies in the calling up of CPEng, or introduce inconsistency within the competency assessment systems and processes.

## PROPOSAL 8: APPOINTMENT/REMOVAL OF REGISTRATION AUTHORITY BOARD MEMBERS

**30. Should the composition of the Registration Authority Board and the member's appointments process be changed? Why?**

IPENZ supports the Government's desire to bring greater transparency and independence to the current arrangements by creating a statutorily independent Registration Authority Board accountable to the Minister.

Thus IPENZ supports the proposed makeup of the Registration Authority Board, with 50 per cent of its membership nominated by IPENZ and the other 50 per cent consisting of wider representation.

Any new arrangements need to meet the Government's transparency and independence objectives, while taking advantage of what a professional membership body such as IPENZ can offer. Many of IPENZ's professional body functions go beyond those defined in legislation or regulation but contribute significantly to the effectiveness of its current Registration Authority role.

IPENZ's degree accreditation processes and associated membership of the Washington Accord serve to establish the academic standard for CPEng registration. Membership of the International Professional Engineers Agreement and the APEC Engineer Agreement provide an important international benchmark of the competence standard for CPEng. These multilateral agreements, along with specific Admission Pathways Agreements with Engineers Australia and the Engineering Council (UK), promote the recognition of New Zealand engineers internationally and facilitate the recognition of overseas engineers in New Zealand. IPENZ is also active in promoting the CPEng quality mark and supporting graduates in their development towards registration. These activities extend well beyond CPEng register maintenance, competency assessment and disciplinary functions. We consider it essential that the occupational regulation framework for engineers continues to recognise and benefit from the breadth of IPENZ professional body activities.

The links between the new Registration Authority Board and IPENZ as its operational arm will need to be formally defined. This will ensure the Board is able to leverage IPENZ's broad professional body capabilities and ensure CPEng

assessment and disciplinary processes remain integrated and are aligned and not inconsistent with equivalent IPENZ membership processes.

This is essential to avoid the risk of duplicating activities, to prevent inconsistencies developing and to avoid imposing additional costs on both registrants and IPENZ Members. This aspect of the new arrangements needs to be incorporated in the new legislation to ensure integration is not eroded, over the course of time, and these efficiencies and the alignment of objectives are not lost.

**31. Are all the relevant interest groups and engineering practice areas represented in the composition of the Registration Authority Board? If not, what groups should be added?**

In answering this question the number of people on the Registration Authority's Board needs to be considered. On the assumption the number of people on the Registration Authority Board is similar to the number on the IPENZ governing Board (ten people)[5], and 50 per cent are appointed by IPENZ, this leaves five to represent the relevant interest groups/practice areas.

The five nominees from IPENZ could potentially consist of IPENZ governing Board senior office holders and the chairs of the Competency Assessment Board and the Standards and Accreditation Board.

The other five nominees could include one from academia, one from a consumer group, and one from the Association of Consulting Engineers NZ (ACENZ). For the remaining two nominees, consideration needs to be given to the breadth of CPEngs. As shown in Figure 1 in our response to Question 6, the highest proportion of CPEngs are in the civil, structural, management, environmental and transportation practice fields. This suggests these practice fields need representation on the Registration Authority Board. Such representation could be by having a representative of the following Technical Interest Groups on the Registration Authority Board: Structural Engineering Society, New Zealand Earthquake Engineering Society, Rivers Group, Sustainability Society and the Transportation Group.

This suggests the Registration Authority Board may need to be bigger than the IPENZ governing Board. However, the number of Board members will need to be limited to enable efficient decision-making and prevent excessive costs.

We would welcome further detailed discussion with MBIE on the representation and size of the Registration Authority Board.

### PROPOSAL 9: A NEW INSTITUTIONAL STRUCTURE IS PROPOSED FOR THE REGULATION OF ENGINEERS

**32. What changes, if any, would you make to the institutional structures, statutory roles and functions outlined in the proposals? What do you consider are the benefits and costs of any changes?**

The Proposals Document proposes disestablishing the Chartered Professional Engineers Council (CPEC) and establishing two new independent bodies – the Registration Authority Board and the Industry Occupational Body.

[5] Registered Architects Board has minimum of six, maximum of eight, and the Electrical Workers Registration Board has seven.

We support this proposed institutional structure. However, as the Registration Authority Board will be transparently independent from IPENZ we believe the approval of rules and standards, previously undertaken by CPEC, should be the responsibility of the Registration Authority Board. The Registration Authority Board will report directly to both to the Minister and the Industry Occupational Body. The disadvantages of having dual accountability will be mitigated if the Registration Authority Board is able to approve rules and standards.

We support the creation of the Industry Occupational Body. Its functions would include appeal processes, considering serious disciplinary complaints, monitoring the Registration Authority's performance and undertaking audits. However, given the breadth of engineering and of CPEngs, we recommend the Construction Industry Occupational Body be renamed to reflect the breadth of work of chartered professional engineers.

These new institutional arrangements need to recognise the professional body activities IPENZ undertakes that underpin the CPEng quality mark. These include accreditation of engineering qualifications, international liaison and benchmarking, graduate support, register promotion and the provision of continuing professional development.

The arrangements also need to take into account the significant time and effort IPENZ Members voluntarily provide towards the CPEng system. IPENZ draws on the expertise of 450 practice area assessors. IPENZ Members also act as technical experts and take up other roles. The role of volunteers needs to be recognised and the new registration system needs to be designed to ensure the high level of volunteer commitment is maintained.

We note and support the proposal in principle to introduce a legal mechanism to undertake disciplinary actions against those registered under the Engineers Registration Act 1924 who designed buildings prior to 2002.

Regarding the cost of these new arrangements we would be concerned if the operating costs of the new independent Registration Authority Board and Industry Occupational Body (in addition to the IPENZ Board) are passed on to CPEng registrants.

The proposal would result in increased administration costs. IPENZ currently pays a levy of $70,000 to contribute to the funding of CPEC[6]. CPEC has seven members and met four times in 2012/13. As discussed above, the Registration Authority Board might have ten (or more) members meeting say four times per year, and the Industry Occupational Body might be similar in size to CPEC (seven members) and also meet four times a year. This would result in extra operating cost compared to the *status quo* – which IPENZ estimates to be around $80,000 to $100,000 per annum.

If this were passed onto registrants it translates to an increased cost of approximately five per cent to seven per cent per annum. In addition to these operating costs are the establishment costs for the two new organisations which we presume will be met by the Government.

Given the Industry Occupational Body's intended wider role (beyond just engineers), we recommend its establishment and operating costs be paid for by the Government and not by registrants.

[6] Chartered Professional Engineers of New Zealand Levy Regulations 2004

**33. Are there other options that should be considered?**

Apart from the amendments suggested above, IPENZ has no other options to suggest.

## PROPOSAL 10: INTRODUCE MINISTER INITIATED PERFORMANCE AUDITS OF REGISTRATION AUTHORITY

**34. Are performance audits of the Registration Authority's processes and procedures a good idea? If so, why and what benefits would be gained?**

IPENZ supports the introduction of Minister-initiated performance audits of the Registration Authority as a means of enhancing its performance and the quality of CPEngs.

We note the intention, according to MBIE officials, is that the focus of the audit would be on the Registration Authority's practices and processes, not decisions regarding individual engineers' CPEng registration. We support this scope and would be very concerned if the Minister or their representative were to become involved in the registration process itself or to influence who becomes a CPEng.

## PROPOSAL 11: INTRODUCE POWERS FOR MBIE TO OBTAIN DESIGN AND CONSTRUCTION INFORMATION FROM ENGINEERS ABOUT BUILDINGS THAT THEY HAVE DESIGNED OR CERTIFIED

**35. How important is it that relevant officials can access engineers' design and construction information to identify and investigate building issues or failures that have significant public interest or life safety implications?**

We support this proposal, although we note MBIE already has access to BCAs' design records.

We recommend clarity be provided as to which situations the provision of design and construction information would apply and how the information would be used and stored. There will also need to be safeguards to protect the privacy of individuals and commercial interests. Design and construction information is the intellectual property of design firms and/or clients, not individual engineers, and this needs to be recognised.

It should also be noted that each engineering organisation will have its own filing and archiving policies and practices. Engineering organisations may currently retain design and construction information for the long stop periods specified under the Building Act 2004 and the Limitation Act 2010. We recommend guidance be prepared to inform engineering organisations of their obligations to retain engineers' designs and construction information to ensure they are able to fulfil the obligations of this proposal. IPENZ is keen to work with MBIE officials on developing this guidance material.

**36. What would the costs be to provide such information?**

We believe this proposal could result in financial costs to engineering organisations due to the need to retain engineers' design and construction information and to respond to officials' requests for designs and information as required. Any additional costs will ultimately be borne by the clients of the engineering services.

## CONCLUSION

We appreciate the opportunity to make this submission and wish to continue to work with MBIE officials on the following issues that we have highlighted in this submission as follows:

- Question 18 – the specific practice information that should be provided on the register and the wider use of classes of registration
- Question 20 – guidance material on notifying building consent authorities and building owners of breaches of building consent and/or Building Code
- Question 24 – the legislative and regulatory requirements for enhancing the current disciplinary framework
- Question 31 – the representation and size of the Registration Authority Board
- Question 35 – guidance material on organisations retaining design and construction information.

We would involve other relevant members of the profession in these discussions and we are also happy to work with MBIE on any other issues where we could assist.

For more information please contact:

Kieran Devine

Interim Chief Executive, IPENZ

Email ce@ipenz.org.nz

Phone 04 474 8935

PO Box 12241, Wellington 6144

## APPENDIX 1: CURRENT LICENSING OF CHARTERED PROFESSIONAL ENGINEERS

| Legislation | Requirement | Licensed Role | Regulator |
|---|---|---|---|
| Amusement Devices Regulations 1978 | CPEng with a qualification in mechanical engineering | Examination of amusement devices and issuing of engineer's certificate | WorkSafe NZ, local authorities |
| Building Act 2004 | Recognised engineer: CPEng, prescribed qualifications; and prescribed competencies, no financial interest in dam. | Verification of dam specifications, audit of dam safety assurance programmes | MBIE |
| | CPEng | Building work for which building consent is not required under Schedule 1 of the Building Act | |
| Building (Designation of Building Work Licensing Classes) Order 2010 | CPEng | Automatically licensed in building work licensing class | MBIE |
| Climate Change (Unique Emissions Factors) Regulations 2009 | CPEng and at least five years' experience after achieving CPEng or 100 working days' verification experience, obtained within the three years immediately before the date of application to become verifier | Verifier of unique emissions factors.<br><br>This can also be performed by Chartered Accountants | Environmental Protection Authority |

| Legislation | Requirement | Licensed Role | Regulator |
|---|---|---|---|
| Electricity Act 1992 | Registration as electrical engineer – requires:<br>Bachelor of Engineering (Electrical) qualification and passed Electricians' Regulations written examination; and completed the Electricians' practical three stage assessment or passed the practical examination (if available); and completed approved safety training within the prescribed time frame.<br><br>OR<br><br>Holds a National Diploma in Engineering (Electro technology) Level 6, or New Zealand Certificate in Engineering (Electrical); and passed the Electricians' Regulations written examination; and passed the Electricians' practical examination (if available) or three stage assessments; and completed approved safety training within the prescribed time frame; and completed three years' practical | Undertaking prescribed electrical work | MBIE |

| Legislation | Requirement | Licensed Role | Regulator |
|---|---|---|---|
| | experience which is satisfactory to the Board. | | |
| Fire Service Act 1975 | Engineer with qualifications suitable for the purposes of the Act | Issuing a valuation certificate | Department of Internal Affairs |
| Health and Safety in Employment Regulations 1995 | CPEng with a qualification in mechanical engineering | Restoration of self-propelled mobile mechanical plant.<br><br>This can also be done by manufacturer's principal agent | WorkSafe NZ |
| Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 | CPEng with a qualification in mechanical engineering | Investigation of circumstances of accident event.<br><br>This can also be performed by inspection body | WorkSafe NZ |
| Heavy Motor Vehicle Regulations 1974 | CPEng | Issuing of certificates following inspection of bridges and provision of advice regarding fixing weight or speed limits | Road controlling authorities |
| Land Transport Rule: Heavy Vehicles 2004 | Road transport certifying engineer: CPEng (mechanical) | Setting of masses and forces on heavy vehicles<br><br>This can also be performed by manufacturer or vehicle inspector | NZ Transport Agency, Ministry of Transport |

| Legislation | Requirement | Licensed Role | Regulator |
|---|---|---|---|
| | | Inspection of heavy vehicles and connections | |
| Pressure Equipment, Cranes and Passenger Ropeways Regulations 1999 | CPEng and certificate stating they are suitably qualified to carry out specified activity in relation to specified equipment | Design verifier | WorkSafe NZ |
| Securities Act 1978 | A qualification entitling the holder to practise the profession of engineering in New Zealand – suggests membership of IPENZ | Exemption from the Act | MBIE |