A NEW MEMBERSHIP PATHWAY FOR ENGINEERS

STRENGTHENING TRUST & CONFIDENCE IN ENGINEERING

DECEMBER 2016

Purpose of this paper

1. This paper outlines the Institution of Professional Engineers New Zealand (IPENZ)'s proposed changes to its membership model as part of a broader strategy to raise the standard of professionalism, ethics and competence across the engineering profession in New Zealand.
2. This strategy will also support a core IPENZ outcome of increasing public safety and confidence in the engineering profession.
3. We understand that IPENZ's strategy is broadly consistent with the intentions of the Building and Housing Minister and the Ministry of Business, Innovation and Employment (MBIE) to develop a proposal to strengthen the industry's regulatory licensing regime.
4. This paper identifies some of the alignment and implementation impacts arising out of the proposed changes to the IPENZ membership model, including those relating to members who are also registered under the Chartered Professional Engineers Act 2002.
5. Finally, this paper seeks to consult MBIE and, if appropriate, the Minister on the proposed changes to obtain their feedback on the design and implementation of the new membership pathway.

Introduction

New Zealanders expect the engineering profession to keep them safe in their built environment and their infrastructure. New Zealanders should be safe – and feel safe. The Ministry of Business, Innovation and Employment (MBIE) and IPENZ share this mutual goal of public safety in all buildings and public infrastructure. Our respective levers for achieving this are strong regulation and an active, accountable and credible membership.

This paper was drafted before the Kaikoura earthquake. That event and all its ramifications (both positive and challenging for the profession and the New Zealand public) reinforce the importance of both these critical features in a profession that New Zealanders rely on and trust.

Our members have told us that they consider it a core role of IPENZ to promote and uphold the reputation and credibility of engineers. For our profession to be active, accountable and credible, we need a modern and relevant membership model that provides clear entry and progression pathways. It needs to be based on professionalism, competence and strong ethical conduct. Our current model does not deliver on this.

In February this year, the IPENZ Board approved a new membership structure as part of a range of changes aimed at better supporting higher and broader standards of engineering competence and professionalism. Our new membership structure will create a simpler, clearer and more inclusive membership pathway that supports and drives higher levels of professionalism at all stages of membership. It will also contribute to the increasingly robust standards for engineers in the building and construction industry and the goal that all players within the industry are appropriately qualified, trained and regulated.

Enabling engineering professionals to be part of a professional body and requiring compliance to a code of ethical conduct is a fundamental to this. It enables us to support them to achieve and maintain high standards of professionalism. It also enables accountability. Their professional body must be able to respond appropriately in any instance where the ethical or professional standards of a member are called into question.

Our intent is to have membership of IPENZ recognised within the profession, across industry (both in New Zealand and internationally) and by the public as a quality mark. This will position our members as trusted professionals who have the backing and oversight of a body that upholds the interests of its members as well as those of the industry and New Zealanders more generally.

A strong and credible membership will support any regulatory or licensing regime. In certain areas (in our view safety critical engineering work) we think there is real justification for task specific licencing where the technical or specific requirements may need to be even more prescribed - that is where occupational licensing has a strong role. But to be truly effective we think it will be best served by being underpinned by a strong professional membership body which in itself denotes a level of competence and professionalism. Membership of a professional body should also include a broader catchment than those that need to be regulated by statute (which is usually for different and/or discrete purposes).

To credibly achieve these aims, IPENZ membership scope needs to extend to engineers across a range of engineering disciplines including engineers who are registered under the Chartered Professional Engineers Act 2002 (CPEng Act) and those for who CPEng Act is perceived as 'irrelevant'.

We believe that the intention of our revised membership structure is consistent with, and will complement MBIE's proposed introduction of a task-based occupational licensing regime for safety-critical areas of engineering work (initially structural, geotechnical and fire engineering). To help MBIE smooth the transition to task-based licensing, we are proposing to introduce more specific assessments for CPEng engineers seeking to align their practice area with the Geotechnical or Structural engineering practice fields. We would do this by incorporating assessment against the structural and geotechnical engineering Bodies of Knowledge and Skills (BOKS) that are currently under development in conjunction with the Structural Engineering Society New Zealand (SESOC) and the New Zealand Geotechnical Society (NZGS). This will be quickly followed by work with the Society of Fire Protection Engineers to develop the fire safety Body of Knowledge.

We appreciate this new model has potential impacts on the current CPEng regime, so we are seeking to consult with MBIE and, if appropriate, the Minister on the proposed changes to our membership pathway.

We are planning on implementing these changes from 1 October 2017.

CPEng and occupational licensing

Regulation for the future - task-based statutory licencing supported by a stronger membership body

When MBIE consulted on proposed changes to the occupational regulation for engineers in 2014-15, IPENZ initially advocated for any licensing regime to occur within the CPEng Act through the development of defined classes of registration.

We still consider that there is a strong argument for the introduction of task-based licensing in the building and construction sector for safety critical or specifically defined work. However, we now believe that cannot be effectively achieved through the CPEng Act and such a scheme should replace CPEng, with an engineer's general professional competence and engagement signified by Chartered status conferred by the professional body. This would mean that licenced engineers would need a different identifier.

There are a number of reasons for this. Three key ones are:

- The current CPEng status is not seen as specific or robust enough for certain types of engineering (such as structural or geotechnical). At the same time it's perceived as 'too civil focussed' to be attractive to most engineers in other disciplines (as discussed further below). The continuing reassessment is only really relevant for practising engineers.
- A Chartered status within the membership body would fit with engineering regimes around the world, global engineering accords and other professional membership bodies. The Chartered status has greater recognition within a professional body than it does as a regulatory quality mark. And should be separate for a label designed to denote specific and important additional attributes.
- This complementary system (membership and task-based licencing) would raise the bar across the profession and allow for appropriate government regulation in agreed areas. We think that would enhance the credibility of the profession and increase public trust. It would also avoid public confusion if there was clarity about which type of engineers had to meet specific areas of competence for their discipline and were identifiable as such. [We also believe that any statutory licensing regime must be extendable over time to other areas of safety-critical engineering work; for example, design verification under Pressure Equipment, Cranes and Passenger Ropeways (PECPR) regulations, amusement device certification, water supply engineering and electrical engineering design.]

During 2015, discussions with the New Zealand Institute of Architects (NZIA), the New Zealand Registered Architects Board (NZRAB), and the Association of Consulting Engineers New Zealand (ACENZ) led to an in-principle agreement on a model for reform. This model would see occupational regulation in the building and construction sector organised in a way that is similar to the health sector.

During these discussions, two key issues were flagged for future resolution:

- the relationship between the CPEng Act and any omnibus building and construction sector legislation, and
- the tensions between an industry-specific licensing model, the broad reach of the engineering profession and IPENZ as the professional body.

We believe these proposals (a stronger more robust membership pathway focussed on professionalism dovetailed with occupational licencing) resolves both those issues.

Why the CPEng Act (and CPEng as a quality mark) is not meeting the needs of a modern profession, or the needs of the regulators or the public

The current CPEng Act and Rules establish CPEng as a voluntary quality mark of current competence for engineers. IPENZ has always actively promoted CPEng to all engineers but this message has not been universally embraced. Currently just 3400 of our 6000 Professional Members and Fellows hold CPEng. This proportion of Chartered Professional Engineers is even lower when considered against the estimated 20,000 professional engineers practising in New Zealand. Over the last two years we have asked the profession why this is. Many engineers have told us the following - repeatedly:

- They perceive that CPEng is focussed on technical engineering design and so not relevant or appropriate for them.
- They say that increasing use of the CPEng register in a licensing context for consenting-related work in the building and construction sector reinforces a perceived civil engineering bias, and a view that CPEng is only relevant to a

select group of engineering disciplines at a particular time in an engineer's career (when they are actually doing technical engineering design).

- Where there is support for CPEng (by structural and civil engineers for whom it has the most relevance), it is not seen even by those engineers as specific or robust enough.
- Many engineers see the re-assessment requirement as onerous. The current re-assessment regime is unique within the engineering profession internationally. While we (and the profession) consider it appropriate in the context of a structured licensing system, we believe that it places an unnecessary burden on the profession (and another barrier to engagement) in the context of a general professional recognition or 'protection of title' framework. In disciplines where there is no compulsion to become CPEng, increasing numbers of engineers see overseas quality marks, such as CEng through a UK institution like the IChemE, as easier to retain than CPEng because there is no reassessment requirement so they opt for that.

Given these factors, the CPEng Act is not proving to be the optimal vehicle for the general professional recognition of engineers across the disciplines and areas of practice that make up engineering in New Zealand. In fact, the current Act may be a barrier to our aspirations to better represent the broader engineering profession in New Zealand. Ultimately, reduced engagement by engineers with their professional body has an adverse effect on the status and standing of the profession in New Zealand and on the quality of engineering services that the profession provides.

IPENZ's new strategy and what it means for the profession

Over the last year, IPENZ has reassessed its strategic direction.

Research commissioned by IPENZ told us that many of our members see the Institution as old fashioned, overly conservative and lacking in diversity. The public's understanding and perception of what engineers do is not reflective of the high standards of professionalism and the contribution our members make to society. This is in stark contrast to how engineers see themselves: as a profession that solves difficult problems for the advancement and good of society.

The research reinforced that, like other professional membership organisations in New Zealand and around the world, IPENZ cannot assume on-going relevance. We are clear that as an Institution we need to provide value to both our members and to New Zealand society. We will do that by setting high standards of professionalism and competence for our members, holding our members to account, celebrating their achievements publicly and proudly representing them both at home and abroad.

We have developed a new vision for IPENZ, "engineering a better life for New Zealanders", and our mission is to "bring engineering to life". We will do this by building greater credibility for engineers so New Zealanders have confidence and trust in their work and by creating greater connection with the industry and across society. We also need to grow our influence and to generate greater public recognition for the fundamental contribution engineers make to society. We will also look to continuously raise the bar on relevant professional standards and ethics, facing into engineering issues and demonstrating the ability to hold engineers to account appropriately and proportionately.

IPENZ cannot achieve this in isolation. But it fits with and will support MBIE's work - and the Minister's desire - to drive higher standards and greater levels of public safety through a revised occupational licencing/regulation regime. Both the Christchurch and Kaikoura earthquake events have highlighted the critically important role engineers (and their professional body and expert technical societies) play in the design and construction of buildings and other infrastructure as well as in the response and recovery phases following natural disasters. Any occupational regulation regime is going to be much more effective if underpinned by a strong and vibrant professional body with its own high standards of accountability, competence and professionalism.

This body must be widely representative and draw on the best and brightest from a broad range of engineering disciplines to provide leadership within the profession, as well as providing thought leadership to the society that we serve. Necessarily, a professional body's membership should draw on a wider group of expert professionals than any government licencing regime.

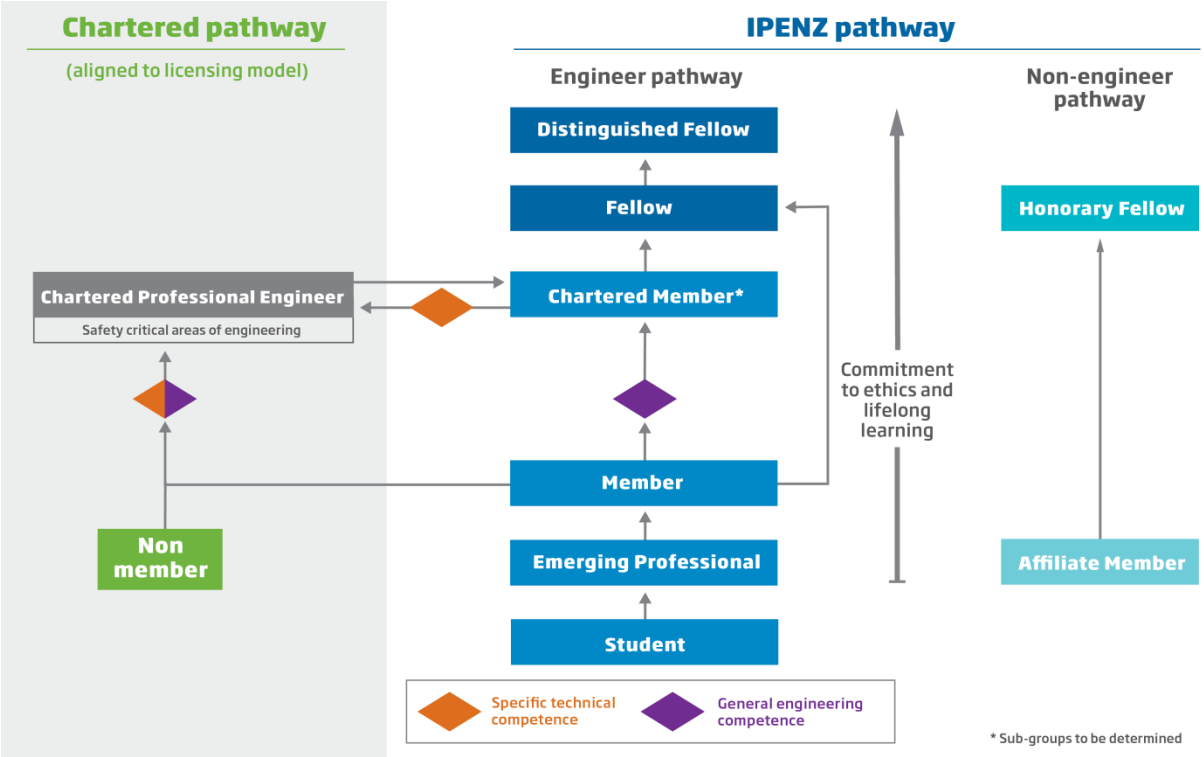
Our new Membership Pathway

At its heart, IPENZ needs a membership model that tests and recognises professionalism, engineering competence and problem-solving in the technical domain – as well as providing membership accountability. Our new membership model has the following key objectives:

- embedding professionalism and the code of ethics as a fundamental and foundational tenet of IPENZ membership at all levels,
- aligning the membership structure to potential changes in the occupational regulation system,
- raising the bar across the profession through appropriate accountability,
- creating a simpler, clearer and more inclusive pathway that brings more engineers into their professional home (including engineering technicians and engineering geologists) and increases the impact of the professional voice for the good of society,
- retention of the value of the current competence-assessed membership grades, as part of a broader strategic objective to enhance the global mobility and standing of our members,
- developing more meaningful, career-long membership options for all engineers and engineering-rich occupations (such as engineering geology), from graduation through to retirement,
- addressing the issue of long-term Graduate Members who choose not to progress to technical competence assessment (the title Graduate Member no longer appropriately describes their career stage), and
- establishing a suitable class of membership for those who join during their career or who choose to take career breaks midway through their careers.

Our new membership model and pathway is more broadly representative of the wider engineering profession and provides an option for the professional recognition of engineering technicians currently registered under the Registered Engineering Associates Act 1961. We are also seeking to reduce the current confusion between membership-based classes and regulatory quality marks, registers or licences by appropriately differentiating these.

The proposed membership model and pathway is set out below. The new model anticipates the potential introduction of a task-based occupational licensing scheme and reflects discussions to date with officials from MBIE and a wide cross section of engineering professionals throughout New Zealand.



Planned features of our membership pathway (subject to Board approval) include:

- A membership-based Chartered brand – 'Chartered Member'. Chartered status would continue to involve an assessment of engineering competence that is aligned with general competence requirements for licensing. It would embrace a common focus on problem solving for society in the technical domain.
- A greater degree of flexibility in assessment for the membership-based Chartered brand, so that it fully embraces engineering leaders, project managers and academics. At the same time, it would continue to align with internationally benchmarked competence standards in support of international recognition and mobility.
- The introduction of an ongoing learning regime for all members rather than any requirement for periodic reassessment.
- Establishing categories of Chartered membership for engineering technologists, engineering technicians and engineering geologists.
- Grand-parenting all existing competence-based members to the new Chartered membership categories -including Professional Member (MIPENZ), Technical Member (TIPENZ) and Associate Member (AIPENZ).
- Establishing a single non-competence-based class of Member, which would be open to those with engineering qualifications and experience aligned with achieving any category of Chartered membership. These would include, for example, engineering geologists who pledge a commitment to the Code of Ethical Conduct and meet the required professionalism competencies.
- The introduction of an Emerging Professional class to recognise and support recent graduates while they work through an approved (typically 2-3 year) graduate development programme and/or gain the requisite experience to achieve the level of professionalism expected of a non-competence assessed Member.
- Chartered Member status (as with other membership classes) would carry with it the same ethical obligation that currently applies to Chartered Professional Engineers and would be underpinned by an equivalent, membership-based, complaints and disciplinary process. A recent change to the IPENZ Rules means that an engineer cannot resign their IPENZ membership to escape from their professional accountabilities in the face of a current (or pending) complaint investigation.

- Introducing a commitment to professionalism and ethics from all members.
- Retaining Fellowship as a mark of recognition and esteem.

Reasons for the title 'Chartered Member'

In many professions both here and internationally the title of 'Chartered' has a well-defined and understood meaning. A Chartered professional is a person who has gained a certain level of skill or competence in a particular field of work and has been recognised with a formal credential by the relevant professional body. Chartered has prestige and international currency and is considered a mark of professional competency. It is commonly used by accountants, engineers and scientists.

'Chartered' is the logical choice for an assessed membership class denoting a high level of professionalism and general technical competence. It also provides the requisite international equivalence and recognition.

In New Zealand the CPEng Act frames the use of the Chartered label in a regulatory setting with specific requirements. However, the perception of CPEng being mainly relevant for civil and structural engineers means it hasn't attracted the levels of membership first anticipated. If New Zealand shifts to a 'licensing of tasks' regulatory regime, we do not consider the Chartered label appropriate in that context. It is not the Act's intention that this title be the preserve of select groups within the profession.

We have thought carefully about whether it would be possible to introduce a 'Chartered Member' grade while the current CPEng Act is in place and we have a Chartered Professional Engineer recognised by statute. We recognise the potential for confusion. However, given that the changes are designed to raise standards generally across the profession and strengthen public trust and confidence, it would be a lost opportunity to delay making the changes that are proposed. On balance, we believe it is possible and preferable to adopt the Chartered Member nomenclature and, if carefully managed, can be accommodated for the following reasons:

- Confusion already exists between CPEng and IPENZ membership.
- There is strong logic for the title 'Chartered Member', because of its recognised status and international currency.
- Alternatives we have looked at such as 'Accredited' or 'Certified' (instead of Chartered Member) are not attractive to the profession, could add further confusion, and wouldn't be sustainable. While there is a potential legal risk of challenge for using the Chartered term, that can largely be mitigated through full and proper consultation with key stakeholders – MBIE, the Minister, members, and CPEC. This paper is part of that process.

Managing the change and opportunities for strengthening current CPEng requirements for certain practice areas

We are conscious that any change (and this one in particular) will require a comprehensive programme of member and stakeholder communication.

We are currently developing our communication strategy along with a comprehensive change management plan for all our key stakeholders within the profession and across the wider industry, as well as our international constituents. This will include targeted member communication and education on the new pathway, face-to-face meetings and presentations in all regions, public information sessions and resources for procurers of engineering services and other key stakeholders.

Irrespective of the nomenclature that is ultimately adopted, we intend to embrace the widely held perception of CPEng as a licensing scheme for aspects of (principally) civil engineering work. While CPEng would continue to be accessible to all engineers who chose to apply, we would:

- Step back from actively promoting CPEng as a general quality mark for all engineers. Instead we would promote our new Chartered Member (or equivalent) grade for this purpose.

- Within the CPEng regime, introduce more specific assessments of engineers seeking to align their practice area with the geotechnical or structural engineering practice fields. We would do this by incorporating assessment against the structural and geotechnical engineering Bodies of Knowledge and Skills (BOKS) that are currently under development in conjunction with SESOC and the NZGS. This would increase the level of assurance to the public and regulators in key safety-critical areas and would also streamline the transition to any licensing regime.
- We would also formalise the CPEng (Structural), CPEng (Geotechnical) and CPEng (Fire) designations for engineers who have demonstrated competence against the relevant Body of Engineering Knowledge and Skills currently under development by SESOC and NZGS.
- Clearly and consistently affirm CPEng as the quality mark that should be relied on by other Regulators seeking assurance of an engineer's current technical competence in a NZ context. We will not be promoting Chartered Membership as equivalent to CPEng for any regulatory or licensing purpose.

How our new Membership Pathway aligns with current and future regulatory regimes

We support the introduction of task-based occupational licensing in the building and construction sector (recognising it is likely to extend beyond engineering) and consider it is essential that any such licensing regime is extendable (over time) to other areas of safety-critical engineering work.

An omnibus regulatory regime modelled on the health sector that delegates key standard-setting functions to appropriate professional bodies or boards is a model that we have advocated for as a potential licensing model.

We note and highlight that our proposed membership model has implications for the CPEng Act. Implementation of our new membership regime would preferably be accompanied by amendment of the CPEng Act or the passage of a new Act. Our revised membership structure is intended to complement the proposed introduction of task-based licensing for safety-critical areas of engineering work (initially structural, geotechnical and fire engineering).

The introduction of task-based licensing creates an opportunity to simplify and clarify the overall framework for the recognition of engineers in New Zealand and raise the bar of professionalism across the profession in all its diversity.

We believe any licensing regime should replace, rather than be accommodated within or alongside, the current CPEng Act and Rules for the following reasons:

- The retention of a statutory 'protection of title' regime (the CPEng Act and Rules) alongside task-based licensing and professional body affiliation and recognition would create unnecessary complexity.
- The 'Chartered' title should become available to denote general professional competence and professional engagement by all members of the profession (which will raise the standards generally). IPENZ believes that a licensing regime that is restricted to limited (albeit safety-critical) areas of engineering practice does not need what is more broadly understood as a general competency and professional level that should available to all members across all disciplines. Licenced engineers should be specifically identifiable as such.
- The current 'quality mark' is not seen as robust enough in certain areas (thus the bodies of knowledge work for certain types of engineering being undertaken now) and is seen as 'too technical and civil/structural based' for those that are not undertaking safety critical work (it's seen as irrelevant).

The inclusion of Registered Engineering Associates

The new membership pathway also provides an option for the ongoing professional recognition of Registered Engineering Associates (REAs). While we have had some initial discussions with the current Chair of the Engineering Associates Registration Board (EARB) about the future of the REA Act, we have not yet engaged directly with the EARB on our specific membership model. Previous discussions did, however, highlight difficulties aligning REAs to our

current engineering technician register (Certified Engineering Technician - CertETn), given the periodic reassessment obligation that it carries.

Within our new membership model, we propose to discontinue our existing CertETn register, which is hard to align with REAS and we would encourage registrants to take up the appropriate category of Chartered Membership. Current REAs would also be offered the opportunity to be grand-parented into that Chartered Membership category, which would carry an ongoing commitment to the IPENZ Code of Ethical Conduct and continuing professional development. If areas of safety-critical work were identified at an engineering associate level (for example, the testing and certification of lifts, escalators and travellators) an appropriate task-based licensing class could be established.

Timing and next steps

Our members asked us to design a clearer, more compelling membership proposition which we believe we have achieved. As already mentioned, IPENZ's preference is to work with MBIE to make these changes to our membership model and pathway alongside any necessary changes to the CPEng Act and in conjunction with the introduction of a task-based licensing regime. We appreciate that the Minister's and the Government's legislative programme may not align to our proposed timing for the transition to a new membership model. As the professional body for engineers we intend to take the opportunity right now (before any broader regulatory or occupational licencing review) to both introduce a more compelling membership pathway *and* to strengthen the existing CPEng designations for particular areas (such as geotechnical, structural and fire engineering) - both of which would provide a sensible transition into any future regulatory changes.

As outlined above, any confusion in introducing a new Chartered Member class now while we still have Chartered Professional Engineer can be mitigated with clear, compelling communications and proactive engagement with as wide a group of stakeholders as possible. Our members (many of whom are actively practising as engineering professionals) want us to make these changes now. They urge us to create a more robust framework that will generate greater accountability and greater credibility in the eyes of the public. The profession itself has a responsibility to take these steps for the betterment of the profession and New Zealanders.

Transforming IPENZ into a more representative and inclusive organisation is a key strategic priority for the IPENZ Board. We intend to introduce key changes from 1 October 2017.

Summary and considerations

Ultimately, public safety is our goal.

We believe our new membership pathway, signalled changes to strengthen assessment and identify designations for particular disciplines in the existing regulatory framework, along with changes to our complaints process and our developing design audit programme, will deliver higher levels of accountability, professionalism and competence throughout the engineering industry in New Zealand. Coupled with a strong and appropriately targeted regulatory regime (both now and in the future) these changes will support a world class engineering profession that the public can rely on and have confidence in.

Considerations for MBIE

We would like MBIE to consider our intention to use the term 'Chartered' for our new Chartered Member class, in the context of this whole paper, and advise us of any concerns with the planned development and implementation of our new Membership Pathway as discussed in this paper – and/or any ways we might mitigate those concerns.

We also ask MBIE to consider our feedback on task-based occupational licensing, our support for the introduction of a task-based licensing regime focused on safety critical disciplines in the building and construction sector and our recommendation to repeal the CPEng Act and remove the CPEng classification.

Finally we ask that MBIE consider and endorse our intention to focus the current CPEng regime more narrowly on safety critical engineering disciplines in line with the introduction of a broader, more general Chartered Member under our proposed new Membership Pathway model.

We would appreciate the opportunity to meet and discuss our intentions with you and obtain your feedback.